Hamsar®

A Methode Electronics Company

PRODUCT CATALOGUE

2019

Innovative Lighting and Electronic Solutions.

GRAKON
GROUP

Hamsar
A Methode Electronics Company

Burlington, ON
Canada

BMAC
A Methode Electronics Company

Manchester, UK

Research Development & Engineering Center
Farmington Hills, MI

Sales & Program Management
Greensboro, NC

Sales & Program Management
Denton, TX

Grakon
A Methode Electronics Company

Grakon HQ
Seattle, WA

Grakon®
A Methode Electronics Company

European Headquarters
Helmond, Netherlands

Engineering
Shenzhen, China

Accounting & Customs
Hong Kong, China

Grakon®
A Methode Electronics Company

Manufacturing & Engineering
Dongguan, China

WE SEE THINGS IN A DIFFERENT LIGHT.

Hamsar® creates custom lighting solutions for specialized vehicle markets through our deep engineering expertise and obsessive customer follow-through to elevate the vehicle experience.

ILLUMINATING IDEAS.

At Grakon Group, we believe in the power of lighting to transform the vehicle experience. We create innovative lighting solutions that provide a next-level environment within transportation, freight, specialized vehicles, recreation, and beyond. We're helping make our customers a little more successful, vehicles a little smarter, drivers a little safer and more comfortable.

5320 Downey Street
Burlington, Ontario
Canada L7L 6M2
T   905.332.4094
F   905.332.9020
www.hamsar.com

Grakon®
A Methode Electronics Company

BMAC®
A Methode Electronics Company

Hamsar®

A Methode Electronics Company

ISO9001:2015
ISO14001:2015

ENGINEERING

Before beginning any new project, we listen to our customer's vision, and strive to bring that vision to reality. Product design and development is at the heart of everything we do. We identify success as a thoughtful balance of competing factors resulting in products that exceed customer expectations.

Our program management process considers every alternative, enabling us to deliver inventive solutions that delight vehicle owners and create OEM brand identity.

DESIGN AND DEVELOPMENT

Early in the design and development phase, our teams are proactively engaged to ensure that solutions are identified to make the seemingly impossible, possible. Our expertise covers a wide spectrum of design and development activities including:

- Industrial Design
- Mechanical Design
- Electrical Design
- Optical Design Simulation
- Thermal Analysis
- Finite Element Analysis
- Realistic Design Imaging
- Mold Flow Analysis
- Testing | Validation
- Rapid Prototyping
- CAD Modeling & Surfacing
- Regulatory Compliance
- Electronic CAD Interchange
- In-House CNC Mold Making
- Photometrics
- Advanced Product Quality Planning

CAD SUPPORT

Our innovative design team can produce native CATIA and Pro-E CAD data and regularly exchange data with customers and suppliers that use other CAD software by means of STEP and IGES files.

Grakon® · Hamsar · BMAC®

QUALITY

Full in-house testing facilities mean outstanding accuracy, efficiency and short turnarounds.
All design, production and delivery processes are governed by an ISO9001:2015 registered quality control system.

MANUFACTURING

We design and manufacture our lighting and electronic products at our facility located in Burlington, Ontario, Canada.
Through continued investment, our team continually analyzes and improves manufacturing standards in order to hone our process and yield optimal, tangible, measurable results.

- SMT Electronics Assembly
- Assembly
- Wire Harness
- Sonic Welding
- Wave Soldering
- PCB Populating
- CNC Potting | Adhesives
- Robotics

SHIPPING AND LOGISTICS

With a distribution centre in our Canadian Head Office and a second distribution centre in Temecula, California we have established ourselves as a reliable supplier of ISO quality products with an exemplary fill rate and a dependable shipping record.

CUSTOMER SERVICE

Our focus on providing our customers with the best possible service is evident in our:

- Field Support
- Service Scorecarding
- Annual Customer Survey
- Real Time Email

Grakon
A Methode Electronics Company

Hamsar
A Methode Electronics Company

BMAC
A Methode Electronics Company

Heavy Equipment

Page 18

Page 40

Page 30

Grakon®
A Methode Electronics Company

Hamsar®
A Methode Electronics Company

BMAC®
A Methode Electronics Company

1.800.567.5483

Page 125

Page 24

Page 79

www.hamsar.com

Grakon
A Methode Electronics Company

Hamsar
A Methode Electronics Company

BMAC
A Methode Electronics Company

7

Jeep

Page 50

Page 56

Page 73

Grakon

Hamsar

BMAC

Light Duty Truck

Page 20

Page 51

Page 84

Grakon
A Methode Electronics Company

Hamsar
A Methode Electronics Company

BMAC
A Methode Electronics Company
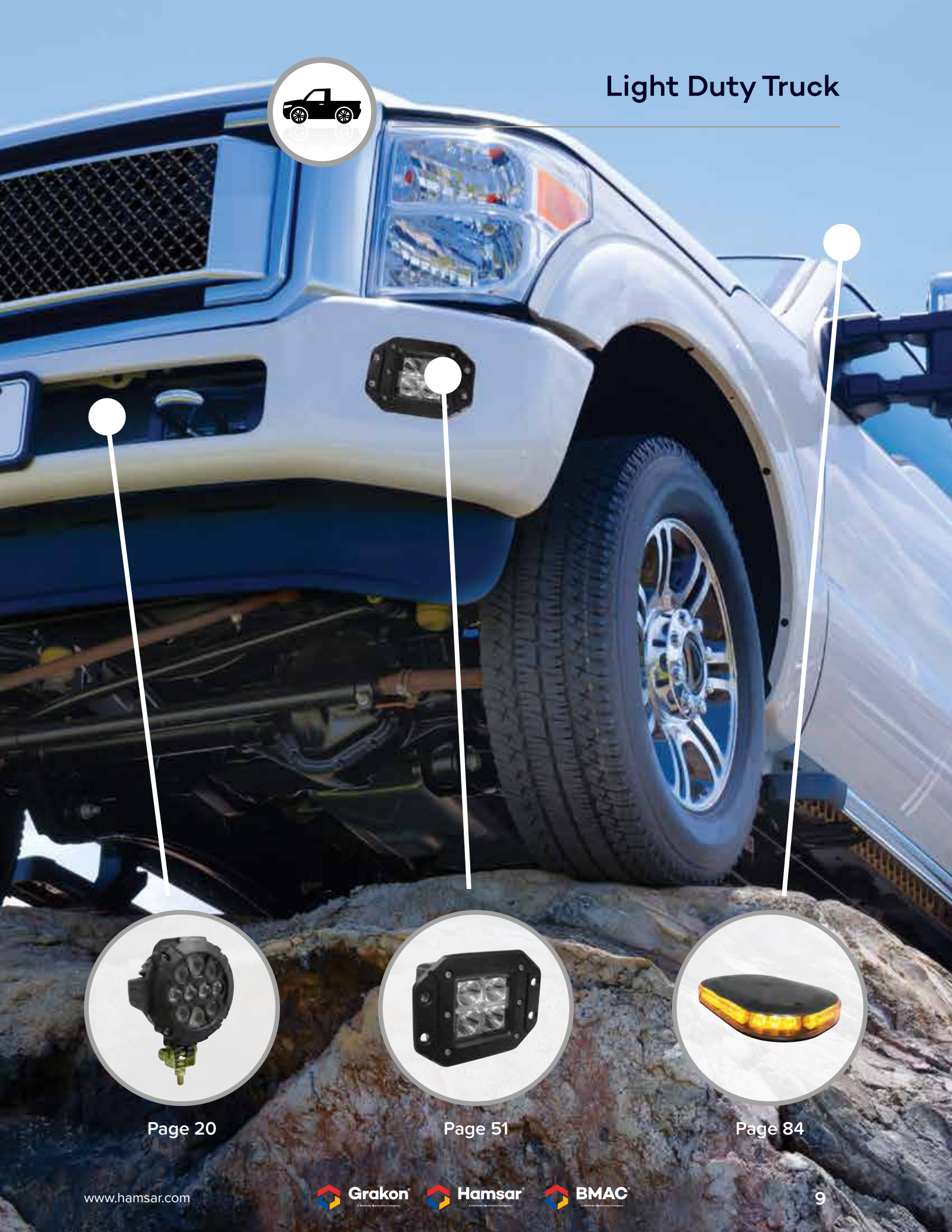
Powersports

Page 108

Page 55

Page 26

Grakon®
A Methode Electronics Company

Hamsar®
A Methode Electronics Company

BMAC®
A Methode Electronics Company

Page 129

Page 128

Grakon
A Methode Electronics Company

Hamsar
A Methode Electronics Company

BMAC
A Methode Electronics Company

Material Handling

Page 44

Page 80

Page 86
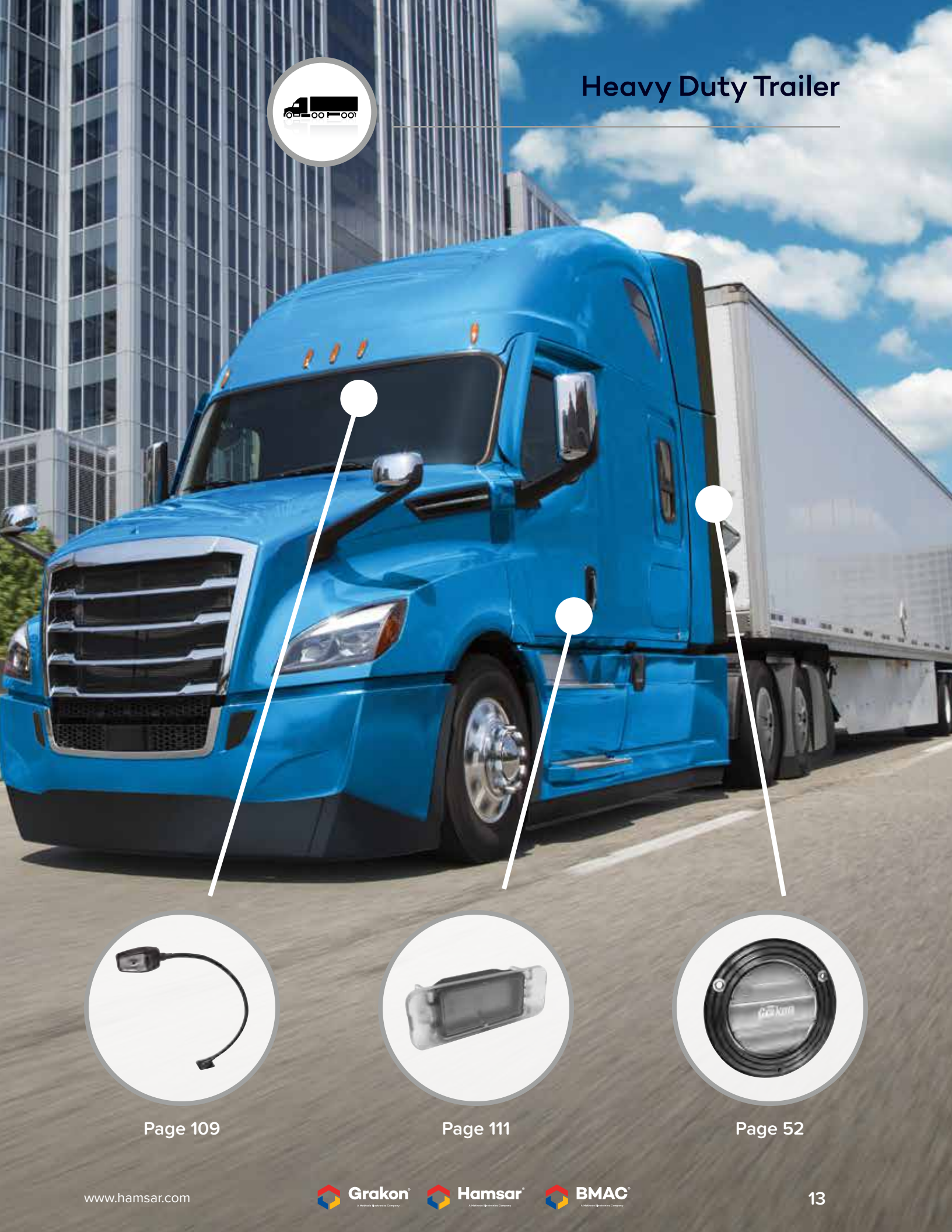
Grakon
A Methode Electronics Company

Hamsar
A Methode Electronics Company

BMAC
A Methode Electronics Company

1.800.567.5483

Heavy Duty Trailer

Page 109

Page 111

Page 52

Grakon *A Methode Electronics Company*   Hamsar *A Methode Electronics Company*   BMAC *A Methode Electronics Company*

TABLE OF CONTENTS

Grakon
A Methode Electronics Company

Hamsar
A Methode Electronics Company

BMAC
A Methode Electronics Company

1.800.567.5483

WORK LIGHTS

Hamsar®
A Methode Electronics Company
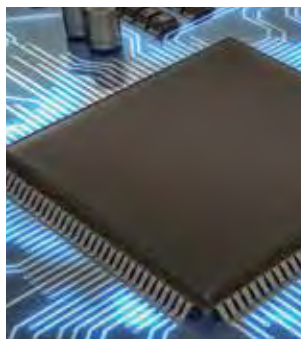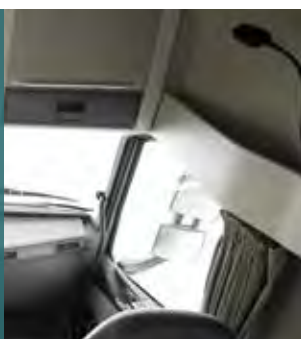
Robust design. Superior illumination. Long lasting.

Our LED work lights are ideal for heavy duty applications such as mining, construction, forestry, agriculture, military and off-road vehicles.

We offer a wide range of sizes, shapes and lumen output, designed to suit any lighting need.

Contents

LED Work Lights | Heavy Duty Series

Model	Lumens	Operating Current @ 12Vdc
XWL-800	2500	1.8A
XWL-810	1260	1.2A
XWL-812 3000	3000	2.8A
XWL-812 2000	2000	2.0A
XWL-812 Select	1500	1.3A
XWL-812 Premium	1380	1.2A
XWL-813 5000	HDM	5000	4.2A

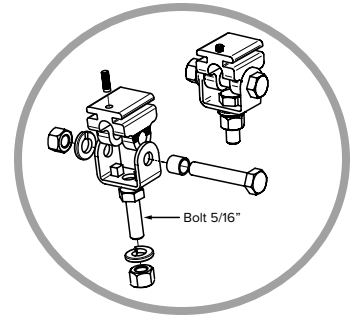| Power Consumption	IP Rating	Key Features and Typical Uses
22W	IP68	4 Attachment Points. Heavy Duty Equipment, Truck Body & Trailer, Jeep, Light Duty Truck
14W	IP68	Compact Size, 2 Attachment Points. Heavy Duty Equipment, Truck Body & Trailer, Jeep, Light Duty Truck, Powersports
33W	IP68	Electronic Thermal Management System. Heavy Duty Equipment, Truck Body & Trailer, Jeep, Light Duty Truck, Material Handling
24W	IP68	Electronic Thermal Management System. Heavy Duty Equipment, Truck Body & Trailer, Jeep, Light Duty Truck, Material Handling
15W	IP68	Electronic Thermal Management System. Heavy Duty Equipment, Truck Body & Trailer, Jeep, Light Duty Truck, Material Handling
14W	IP68	12 - 76Vdc. Heavy Duty Equipment, Truck Body & Trailer, Jeep, Light Duty Truck, Material Handling
50W	IP68	Heavy Duty Mount. Heavy Duty Equipment, Truck Body & Trailer

- 2500 lumens
- Die cast aluminum housing, polycarbonate lens and high impact bezel - virtually unbreakable
- IP68 & IP69K - will withstand dust, dirt and sand, and is resistant to submersion up to a maximum depth of 1.5m underwater for up to thirty minutes
- 4 attachment points - if one attachment point fails due to a collision, rotate to the next channel point and re-mount the light
- Low current draw - energy efficient, save on fuel costs as it consumes less energy (22W)
- Constant current circuit draw - light does not dim even if voltage fluctuates
- 4 beam patterns - get light where it's needed for the job
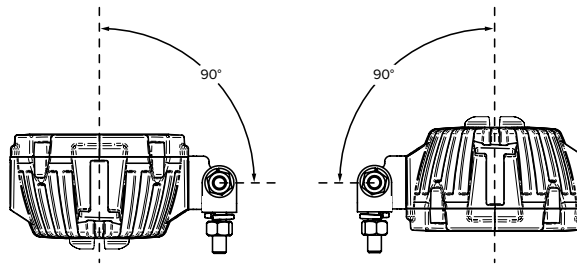- 50,000+ hours LED service life and 5 year warranty

4.6" (117mm)

2.6" (66mm)

4.6" (117mm)

4.6" (117mm)

1.8" (46mm)

Bolt 1/2"

Bolt 5/16"

C-Bracket

Swivel Bracket

Swivel Bracket Option

Allows 360° rotation plus 90° tilt forwards & backwards

90°

90°

"4 Lives in 1" Mount System

4 attachment points

Grakon
A Methode Electronics Company

Hamsar
A Methode Electronics Company

BMAC
A Methode Electronics Company

1.800.567.5483

XWL-800 Series
Work Light | 10 LED

Specifications

Operating Voltage:	12 - 24Vdc
Operating Current:	1.8A @ 12Vdc
	0.9A @ 24Vdc
Power Consumption:	22W
Temperature Range:	-40°C to +80°C
Ingress Protection:	IP68 & IP69K
Weight:	2.2lbs (1.0kg)
Housing:	Die Cast Aluminum Alloy A380
	Black E-Coat
Lens:	Automotive Optical Grade
	Hard-Coated Polycarbonate
Connection:	6" Wire
Polarity:	Reverse Voltage Protected
Vibration Resistance:	10-500Hz @ 5Grms
Mounting:	C-Bracket (Powder Coated Steel)
	Swivel Bracket (Zinc Dichromate Plating)
EMC Rated:	EMC EN 13309: 2010

Part #	Beam Pattern	Lumens	Operating Voltage
81261/HO	Spot	2500	12 - 24Vdc
81262/HO	Wide Flood	2500	12 - 24Vdc
81263/HO	Medium Flood	2500	12 - 24Vdc
81281/HO	Hybrid	2500	12 - 24Vdc

Swivel Bracket

Part #	Beam Pattern	Lumens	Operating Voltage
81264/HO	Spot	2500	12 - 24Vdc
81265/HO	Wide Flood	2500	12 - 24Vdc
81266/HO	Medium Flood	2500	12 - 24Vdc
81267/HO	Hybrid	2500	12 - 24Vdc

Accessories

HW02A	Hardware Kit	C-Bracket
98189	Hardware Kit	Swivel Bracket
98195	Easy Grip Handle - Black	Blue	Orange
	(see page 53)

Beam Patterns

Spot Pattern

Distance in Metres (Feet)

Wide Flood Pattern

Distance in Metres (Feet)

Medium Flood Pattern

Distance in Metres (Feet)

Hybrid Pattern

Distance in Metres (Feet)

Grakon®   Hamsar®   BMAC

WORK LIGHTS | XWL-800 SERIES

- 2500 lumens
- Die cast aluminum housing, polycarbonate lens and high impact bezel - virtually unbreakable
- IP68 & IP69K - will withstand dust, dirt and sand, and is resistant to submersion up to a maximum depth of 1.5m underwater for up to thirty minutes
- 4 attachment points - if one attachment point fails due to a collision, rotate to the next channel point and re-mount the light
- Low current draw - energy efficient, save on fuel costs as it consumes less energy (22W)
- Constant current circuit draw - light does not dim even if voltage fluctuates
- 3 beam patterns - get light where it's needed for the job
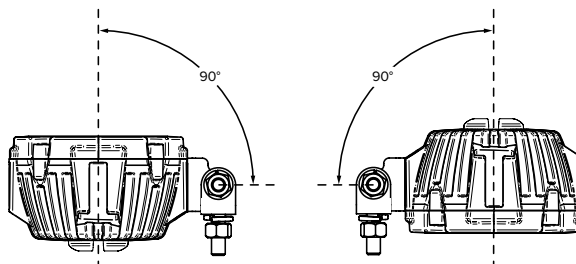- 50,000+ hours LED service life and 5 year warranty

ENHANCED BEZEL

XTL-800 Series - Features enhanced bezel styling with added lens protection.

4.6"
(117mm)

3.3"
(84mm)

4.6"
(117mm)

4.6"
(117mm)

1.8"
(46mm)

Bolt 1/2"

Bolt 5/16"

C-Bracket

Swivel Bracket

Swivel Bracket Option

Allows 360° rotation plus 90° tilt forwards & backwards

90°   90°

"4 Lives in 1" Mount System
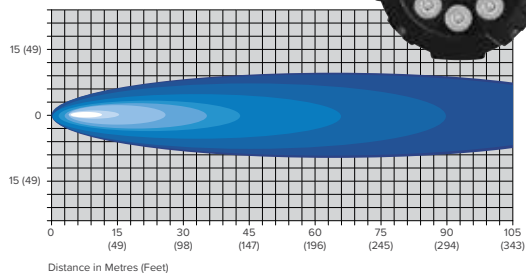
4 attachment points

Grakon
A Methode Electronics Company

Hamsar
A Methode Electronics Company

BMAC
A Methode Electronics Company

1.800.567.5483

XTL-800 Series
Work Light | 10 LED

Specifications

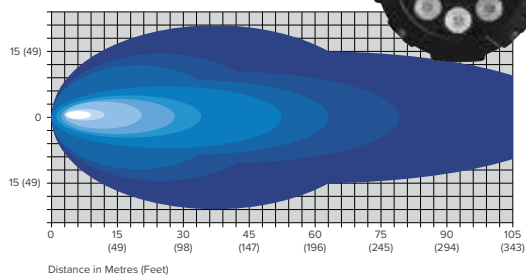|	
Operating Voltage:	12 - 24Vdc
Operating Current:	1.8A @ 12Vdc
	0.9A @ 24Vdc
Power Consumption:	22W
Temperature Range:	-40°C to +80°C
Ingress Protection:	IP68 & IP69K
Weight:	2.2lbs (1.0kg)
Housing:	Die Cast Aluminum Alloy A380
	Black E-Coat
Lens:	Automotive Optical Grade
	Hard-Coated Polycarbonate
Connection:	6" Wire
Polarity:	Reverse Voltage Protected
Vibration Resistance:	10-500Hz @ 5Grms
Mounting:	C-Bracket (Powder Coated Steel)
	Swivel Bracket (Zinc Dichromate Plating)
EMC Rated:	EMC EN 13309: 2010

Part #	Beam Pattern	Lumens	Operating Voltage
**Black Bezel	C-Bracket**			
81861/HO/B	Spot	2500	12 - 24Vdc
81863/HO/B	Medium Flood	2500	12 - 24Vdc
81881/HO/B	Hybrid	2500	12 - 24Vdc
**Black Bezel	Swivel Bracket**			
81864/HO/B	Spot	2500	12 - 24Vdc
81866/HO/B	Medium Flood	2500	12 - 24Vdc
81867/HO/B	Hybrid	2500	12 - 24Vdc
Accessories			
HW02A	Hardware Kit	C-Bracket		
98189	Hardware Kit	Swivel Bracket		

Beam Patterns

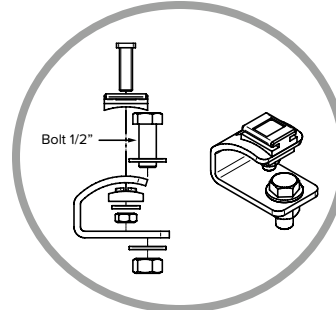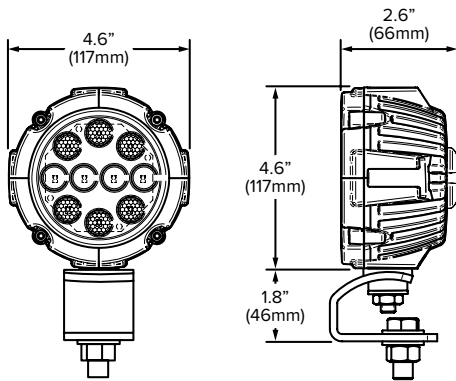Spot Pattern

Medium Flood Pattern

Hybrid Pattern
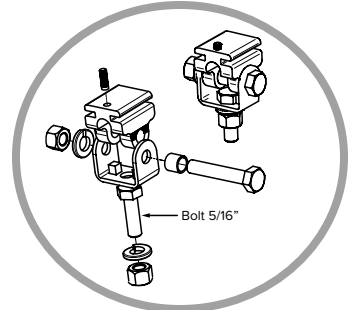
WORK LIGHTS | XTL-800 SERIES

**SOFT
START**

Soft Start Function - Gradual illumination allows eyes to adjust to the bright light, improving safety.

- Soft start function reduces the "in rush current", improving electronic component life and easing the load on existing wiring and battery
- 2500 lumens
- Die cast aluminum housing, polycarbonate lens and high impact bezel - virtually unbreakable
- IP68 & IP69K - will withstand dust, dirt and sand, and is resistant to submersion up to a maximum depth of 1.5m underwater for up to thirty minutes
- 4 attachment points - if one attachment point fails due to a collision, rotate to the next channel point and re-mount the light
- Low current draw - energy efficient, save on fuel costs as it consumes less energy (22W)
- Constant current circuit draw - light does not dim even if voltage fluctuates
- 4 beam patterns - get light where it's needed for the job
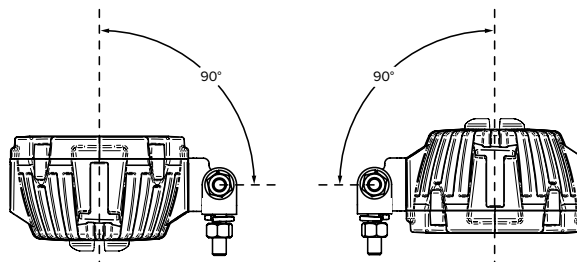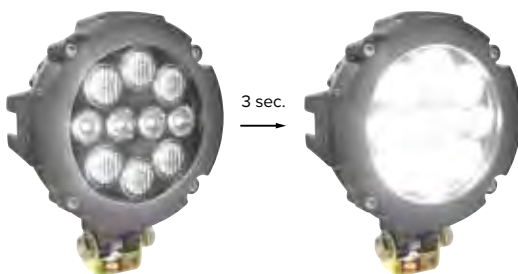- 50,000+ hours LED service life and 5 year warranty

4.6"
(117mm)

2.6"
(66mm)

4.6"
(117mm)

1.8"
(46mm)

Bolt 1/2"

Bolt 5/16"

C-Bracket

Swivel Bracket

Swivel Bracket Option

Allows 360° rotation plus 90° tilt forwards & backwards

90°   90°

Gradual Illumination

3 seconds to full power

3 sec.

"4 Lives in 1" Mount System

4 attachment points

Grakon
A Methode Electronics Company

Hamsar
A Methode Electronics Company

BMAC
A Methode Electronics Company

XWL-800 Series
Work Light | 10 LED | Soft Start

Specifications

Operating Voltage:	12 - 24Vdc
Operating Current:	1.8A @ 12Vdc
	0.9A @ 24Vdc
Power Consumption:	22W
Temperature Range:	-40°C to +80°C
Ingress Protection:	IP68 & IP69K
Weight:	2.2lbs (1.0kg)
Housing:	Die Cast Aluminum Alloy A380
	Black E-Coat
Lens:	Automotive Optical Grade
	Hard-Coated Polycarbonate
Connection:	6" Wire
Polarity:	Reverse Voltage Protected
Vibration Resistance:	10-500Hz @ 5Grms
Mounting:	C-Bracket (Powder Coated Steel)
	Swivel Bracket (Zinc Dichromate Plating)
EMC Rated:	EMC EN 13309: 2010

Part #	Beam Pattern	Lumens	Operating Voltage
81901	Spot	2500	12 - 24Vdc
81902	Wide Flood	2500	12 - 24Vdc
81903	Medium Flood	2500	12 - 24Vdc
81904	Hybrid	2500	12 - 24Vdc
Swivel Bracket			
81911	Spot	2500	12 - 24Vdc
81912	Wide Flood	2500	12 - 24Vdc
81913	Medium Flood	2500	12 - 24Vdc
81914	Hybrid	2500	12 - 24Vdc

Accessories

HW02A	Hardware Kit	C-Bracket
98189	Hardware Kit	Swivel Bracket
98195	Easy Grip Handle - Black	Blue	Orange
	(see page 53)

Beam Patterns

Spot Pattern

Distance in Metres (Feet)

Wide Flood Pattern

Distance in Metres (Feet)

Medium Flood Pattern

Distance in Metres (Feet)

Hybrid Pattern

Distance in Metres (Feet)
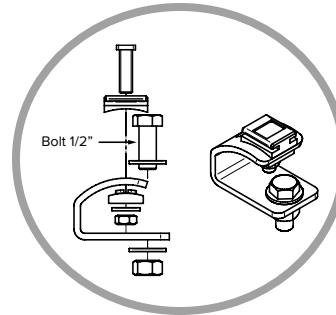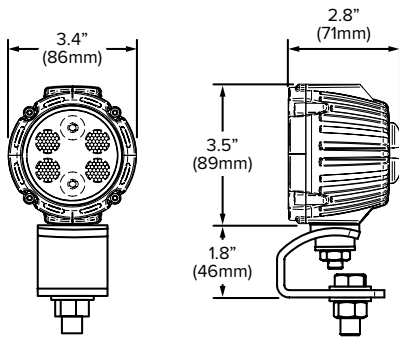
Grakon® | Hamsar® | BMAC®
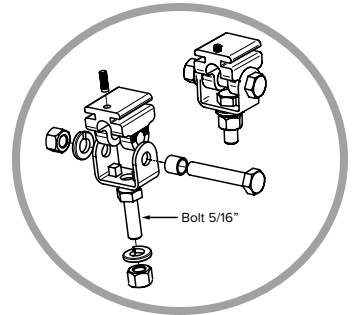
WORK LIGHTS | XWL-800 SERIES
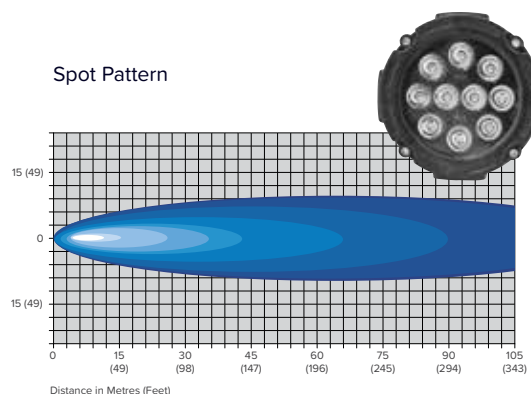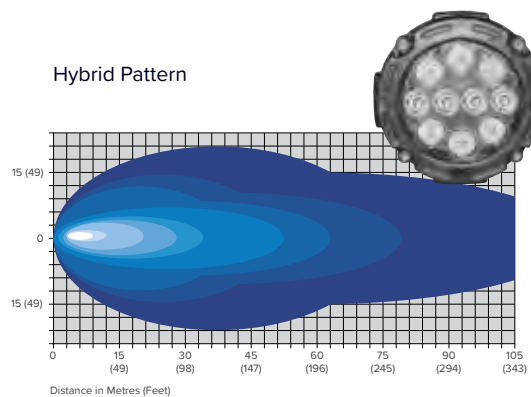
XWL-810 Series
Compact Work Light | 6 LED

- 1260 lumens
- Die cast aluminum housing, polycarbonate lens and high impact bezel - virtually unbreakable
- IP68 & IP69K - will withstand dust, dirt and sand, and is resistant to submersion up to a maximum depth of 1.5m underwater for up to thirty minutes
- 2 attachment points - if one attachment point fails due to a collision, rotate to the next channel point and re-mount the light
- Low current draw - energy efficient, save on fuel costs as it consumes less energy (14W)
- Constant current circuit draw - light does not dim even if voltage fluctuates
- 4 beam patterns - get light where it's needed for the job
- 50,000+ hours LED service life and 5 year warranty

3.4"
(86mm)

2.8"
(71mm)

3.5"
(89mm)

1.8"
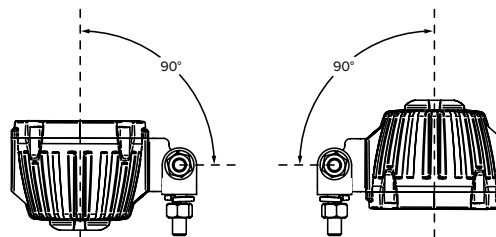(46mm)

Bolt 1/2"

Bolt 5/16"

C-Bracket

Swivel Bracket

Swivel Bracket Option

Allows 360° rotation plus 90° tilt forwards & backwards

90°   90°

"2 Lives in 1" Mount System

2 attachment points

Grakon
A Methode Electronics Company

Hamsar
A Methode Electronics Company

BMAC
A Methode Electronics Company

1.800.567.5483

XWL-810 Series
Compact Work Light | 6 LED

Specifications

Operating Voltage:	12 - 24Vdc
Operating Current:	1.2A @ 12Vdc
	0.6A @ 24Vdc
Power Consumption:	14W
Temperature Range:	-40°C to +80°C
Ingress Protection:	IP68 & IP69K
Weight:	1.3lbs (0.6kg)
Housing:	Die Cast Aluminum Alloy A380
	Black E-Coat
Lens:	Automotive Optical Grade
	Hard-Coated Polycarbonate
Connection:	6" Wire
Polarity:	Reverse Voltage Protected
Vibration Resistance:	10-500Hz @ 5Grms
Mounting:	C-Bracket (Powder Coated Steel)
	Swivel Bracket (Zinc Dichromate Plating)
EMC Rated:	EMC EN 13309: 2010

Part #	Beam Pattern	Lumens	Operating Voltage
81271	Spot	1260	12 - 24Vdc
81272	Wide Flood	1260	12 - 24Vdc
81273	Medium Flood	1260	12 - 24Vdc
81274	Hybrid	1260	12 - 24Vdc

Swivel Bracket

81275	Spot	1260	12 - 24Vdc
81276	Wide Flood	1260	12 - 24Vdc
81277	Medium Flood	1260	12 - 24Vdc
81278	Hybrid	1260	12 - 24Vdc

Accessories

HW02A	Hardware Kit	C-Bracket
98189	Hardware Kit	Swivel Bracket
98195	Easy Grip Handle - Black	Blue	Orange
	(see page 53)

Beam Patterns

Spot Pattern

Distance in Metres (Feet)

Wide Flood Pattern

Distance in Metres (Feet)

Medium Flood Pattern

Distance in Metres (Feet)

Hybrid Pattern

Distance in Metres (Feet)

WORK LIGHTS | XWL-810 SERIES
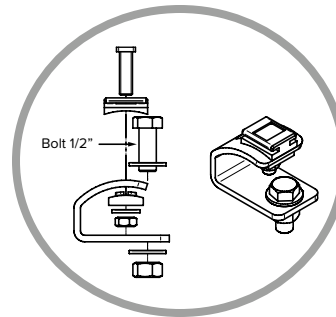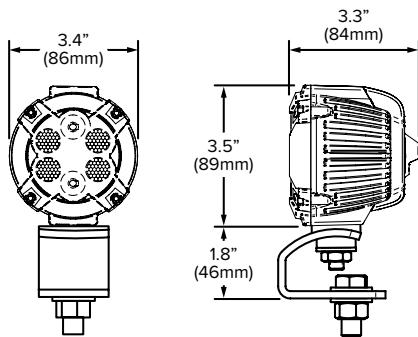
Grakon® | Hamsar® | BMAC
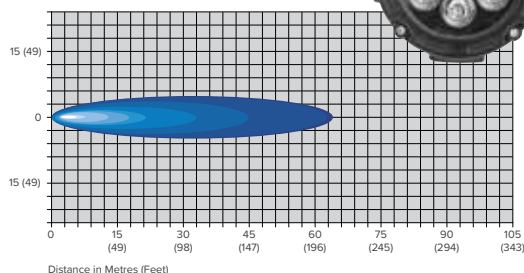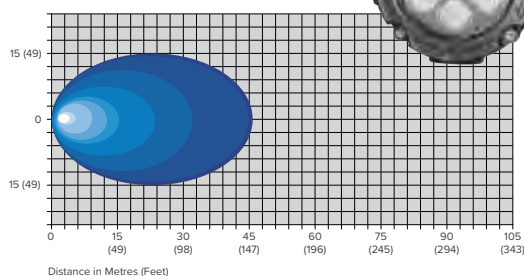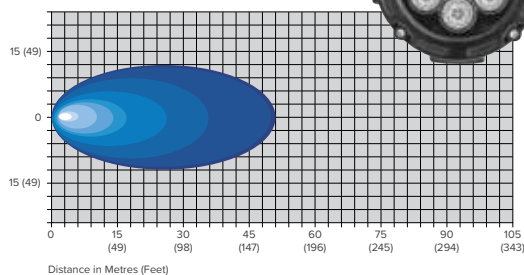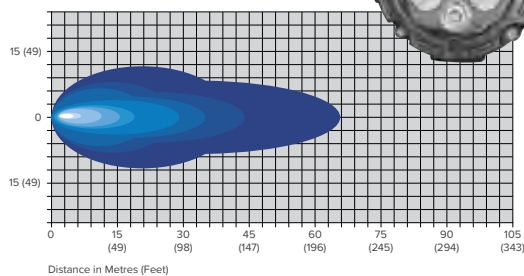
XTL-810 Series
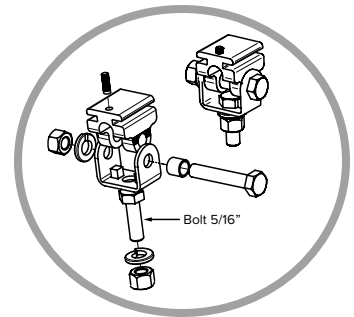## Compact Work Light | 6 LED

XTL-810 Series - Features enhanced bezel styling with added lens protection.

- 1260 lumens
- Die cast aluminum housing, polycarbonate lens and high impact bezel - virtually unbreakable
- IP68 & IP69K - will withstand dust, dirt and sand, and is resistant to submersion up to a maximum depth of 1.5m underwater for up to thirty minutes
- 2 attachment points - if one attachment point fails due to a collision, rotate to the next channel point and re-mount the light
- Low current draw - energy efficient, save on fuel costs as it consumes less energy (14W)
- Constant current circuit draw - light does not dim even if voltage fluctuates
- 3 beam patterns - get light where it's needed for the job
- 50,000+ hours LED service life and 5 year warranty

3.4"
(86mm)

3.3"
(84mm)

3.5"
(89mm)

1.8"
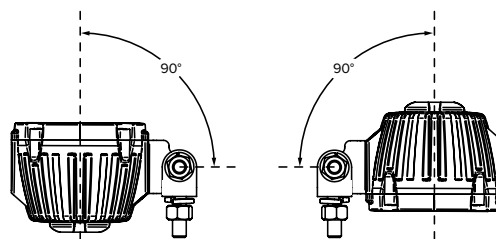(46mm)

Bolt 1/2"

Bolt 5/16"

C-Bracket

Swivel Bracket

Swivel Bracket Option

Allows 360° rotation plus 90° tilt forwards & backwards

90°

90°

"2 Lives in 1" Mount System

2 attachment points

Grakon
A Methode Electronics Company

Hamsar
A Methode Electronics Company

BMAC
A Methode Electronics Company

1.800.567.5483

XTL-810 Series
Compact Work Light | 6 LED

Specifications

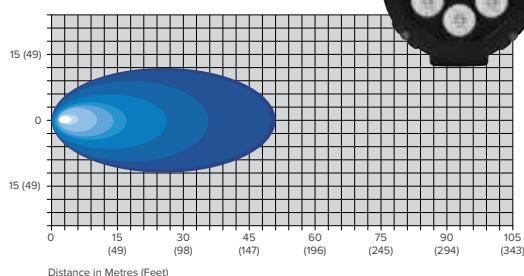|	
Operating Voltage:	12 - 24Vdc
Operating Current:	1.2A @ 12Vdc
	0.6A @ 24Vdc
Power Consumption:	14W
Temperature Range:	-40°C to +80°C
Ingress Protection:	IP68 & IP69K
Weight:	1.3lbs (0.6kg)
Housing:	Die Cast Aluminum Alloy A380
	Black E-Coat
Lens:	Automotive Optical Grade
	Hard-Coated Polycarbonate
Connection:	6" Wire
Polarity:	Reverse Voltage Protected
Vibration Resistance:	10-500Hz @ 5Grms
Mounting:	C-Bracket (Powder Coated Steel)
	Swivel Bracket (Zinc Dichromate Plating)
EMC Rated:	EMC EN 13309: 2010

Part #	Beam Pattern	Lumens	Operating Voltage
**Black Bezel	C-Bracket**			
81871/B	Spot	1260	12 - 24Vdc
81873/B	Medium Flood	1260	12 - 24Vdc
81874/B	Hybrid	1260	12 - 24Vdc
**Black Bezel	Swivel Bracket**			
81875/B	Spot	1260	12 - 24Vdc
81877/B	Medium Flood	1260	12 - 24Vdc
81878/B	Hybrid	1260	12 - 24Vdc
Accessories			
HW02A	Hardware Kit	C-Bracket		
98189	Hardware Kit	Swivel Bracket		

Beam Patterns

Spot Pattern

Distance in Metres (Feet)

Medium Flood Pattern

Distance in Metres (Feet)

Hybrid Pattern

Distance in Metres (Feet)

WORK LIGHTS | XTL-810 SERIES

Grakon®
A Methode Electronics Company

Hamsar
A Methode Electronics Company

BMAC®

SOFT START

Soft Start Function - Gradual illumination allows eyes to adjust to the bright light, improving safety.

- Soft start function reduces the "in rush current", improving electronic component life and easing the load on existing wiring and battery
- 1260 lumens
- Die cast aluminum housing, polycarbonate lens and high impact bezel - virtually unbreakable
- IP68 & IP69K - will withstand dust, dirt and sand, and is resistant to submersion up to a maximum depth of 1.5m underwater for up to thirty minutes
- 2 attachment points - if one attachment point fails due to a collision, rotate to the next channel point and re-mount the light
- Low current draw - energy efficient, save on fuel costs as it consumes less energy (14W)
- Constant current circuit draw - light does not dim even if voltage fluctuates
- 4 beam patterns - get light where it's needed for the job
- 50,000+ hours LED service life and 5 year warranty

3.4" (86mm)

2.8" (71mm)

3.5" (89mm)

1.8" (46mm)

Bolt 1/2"

Bolt 5/16"

C-Bracket

Swivel Bracket

Swivel Bracket Option

Allows 360° rotation plus 90° tilt forwards & backwards

90°

90°

Gradual Illumination

3 seconds to full power

3 sec.

"2 Lives in 1" Mount System

2 attachment points

Grakon
A Methode Electronics Company

Hamsar
A Methode Electronics Company

BMAC
A Methode Electronics Company
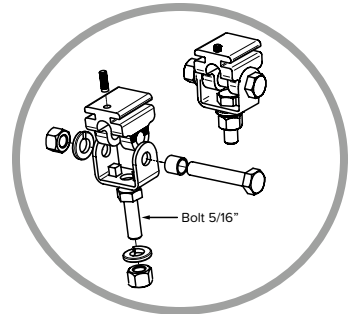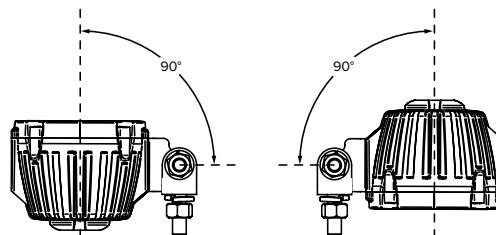
XWL-810 Series
Compact Work Light | 6 LED | Soft Start

Specifications

Operating Voltage:	12 - 24Vdc
Operating Current:	1.2A @ 12Vdc
	0.6A @ 24Vdc
Power Consumption:	14W
Temperature Range:	-40°C to +80°C
Ingress Protection:	IP68 & IP69K
Weight:	1.3lbs (0.6kg)
Housing:	Die Cast Aluminum Alloy A380
	Black E-Coat
Lens:	Automotive Optical Grade
	Hard-Coated Polycarbonate
Connection:	6" Wire
Polarity:	Reverse Voltage Protected
Vibration Resistance:	10-500Hz @ 5Grms
Mounting:	C-Bracket (Powder Coated Steel)
	Swivel Bracket (Zinc Dichromate Plating)
EMC Rated:	EMC EN 13309: 2010

Part #	Beam Pattern	Lumens	Operating Voltage
81801	Spot	1260	12 - 24Vdc
81802	Wide Flood	1260	12 - 24Vdc
81803	Medium Flood	1260	12 - 24Vdc
81804	Hybrid	1260	12 - 24Vdc
Swivel Bracket			
81811	Spot	1260	12 - 24Vdc
81812	Wide Flood	1260	12 - 24Vdc
81813	Medium Flood	1260	12 - 24Vdc
81814	Hybrid	1260	12 - 24Vdc

Accessories

HW02A	Hardware Kit	C-Bracket
98189	Hardware Kit	Swivel Bracket
98195	Easy Grip Handle - Black	Blue	Orange
	(see page 53)

Beam Patterns

Spot Pattern
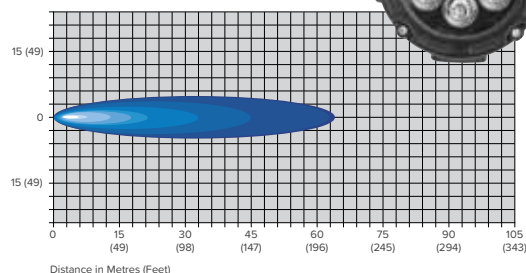
Wide Flood Pattern

Medium Flood Pattern

Hybrid Pattern

WORK LIGHTS | XWL-810 SERIES

Grakon   Hamsar   BMAC
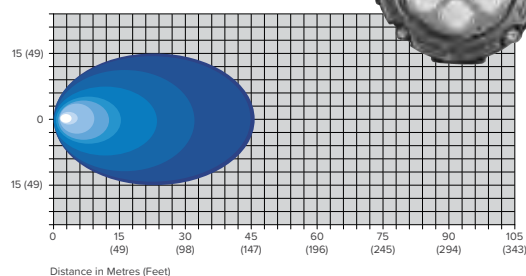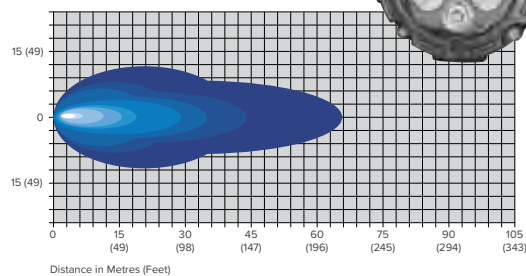
XWL-812 3000 Series
Work Light | 6 LED

- 3000 lumens
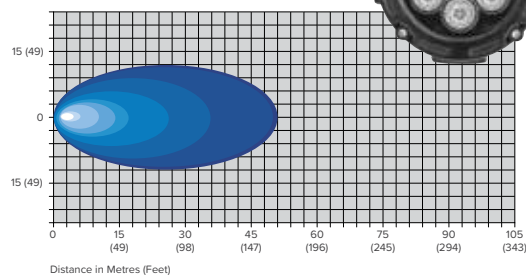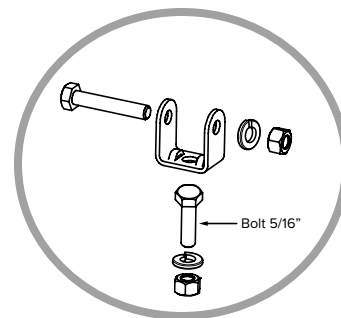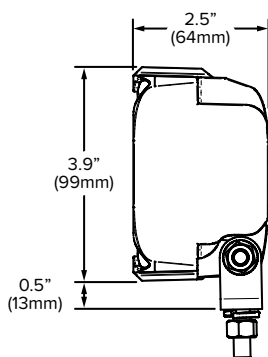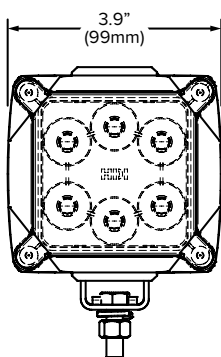- Die cast aluminum housing & polycarbonate lens - virtually unbreakable
- IP68 & IP69K - will withstand dust, dirt and sand, and is resistant to submersion up to a maximum depth of 1.5m underwater for up to thirty minutes
- Low current draw - energy efficient, save on fuel costs as it consumes less energy (33W)
- Constant current circuit draw - light does not dim even if voltage fluctuates
- 3 beam patterns - get light where it's needed for the job
- 50,000+ hours LED service life and 5 year warranty
- Electronic Thermal Management System - A built-in device that monitors and self-regulates the LED lamp case temperature, thereby reducing heat output which improves LED service life

3.9"
(99mm)

2.5"
(64mm)

3.9"
(99mm)

0.5"
(13mm)

Bolt 5/16"

U-Bracket

Connector Options

Tyco

Utilizes two quick-connect terminals protected with a rubber housing designed for applications on the engine, under the hood, on the chassis, or in the cab.

Deutsch

An environmentally-sealed 2-pin connector designed for applications on the engine, under the hood, on the chassis, or in the cab.

Grakon
A Methode Electronics Company

Hamsar
A Methode Electronics Company

BMAC
A Methode Electronics Company

1.800.567.5483

XWL-812 3000 Series
Work Light | 6 LED

Specifications

Operating Voltage:	12 - 24Vdc
Operating Current:	2.8A @ 12Vdc
	1.4A @ 24Vdc
Power Consumption:	33W
Temperature Range:	-40°C to +60°C
Ingress Protection:	IP68 & IP69K
Weight:	1.5lbs (0.7kg)
Housing:	Die Cast Aluminum - Black E-Coat
Lens:	Automotive Optical Grade
	Hard-Coated Polycarbonate
Connection:	Tyco or Deutsch
Polarity:	Reverse Voltage Protected
Vibration Resistance:	10-500Hz @ 5Grms
Mounting:	U-Bracket
EMC Rated:	EMC EN 13309: 2010

Beam Patterns

Spot Pattern
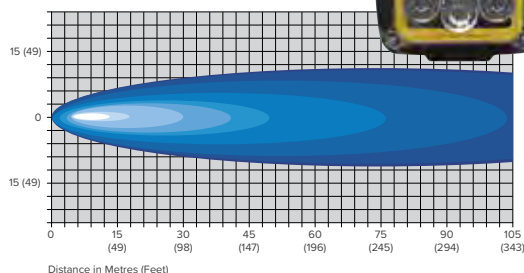
Distance in Metres (Feet)

Medium Flood Pattern

Distance in Metres (Feet)

Hybrid Pattern

Distance in Metres (Feet)
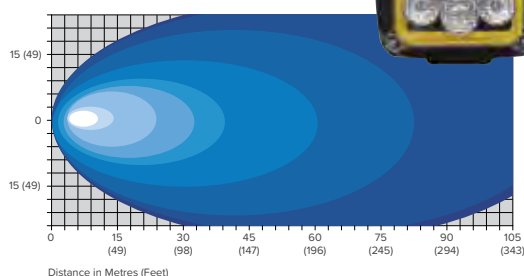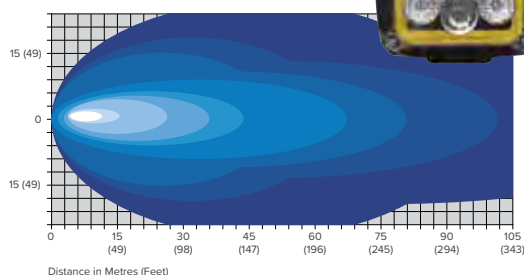
Part #	Beam Pattern	Lumens	Operating Voltage
Tyco Connector			
81282/B	Spot	3000	12 - 24Vdc
81283/B	Medium Flood	3000	12 - 24Vdc
81284/B	Hybrid	3000	12 - 24Vdc
Deutsch Connector			
81282/C	Spot	3000	12 - 24Vdc
81283/C	Medium Flood	3000	12 - 24Vdc
81284/C	Hybrid	3000	12 - 24Vdc
Accessories			
81291HW	Hardware Package - U-Bracket & Bolt		
98195	Easy Grip Handle - Black	Blue	Orange (see page 53)		

Grakon · Hamsar · BMAC
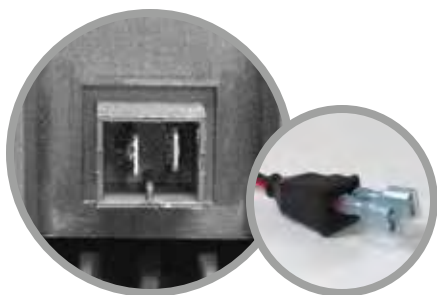
WORK LIGHTS | XWL-812 SERIES

- 2000 lumens
- Die cast aluminum housing & polycarbonate lens - virtually unbreakable
- IP68 & IP69K - will withstand dust, dirt and sand, and is resistant to submersion up to a maximum depth of 1.5m underwater for up to thirty minutes
- Low current draw - energy efficient, save on fuel costs as it consumes less energy (24W)
- Constant current circuit draw - light does not dim even if voltage fluctuates
- 3 beam patterns - get light where it's needed for the job
- 50,000+ hours LED service life and 5 year warranty
- Electronic Thermal Management System - A built-in device that monitors and self-regulates the LED lamp case temperature, thereby reducing heat output which improves LED service life

3.9"
(99mm)

2.5"
(64mm)

3.9"
(99mm)

0.5"
(13mm)

Bolt 5/16"

U-Bracket

Connector Options

Tyco

Utilizes two quick-connect terminals protected with a rubber housing designed for applications on the engine, under the hood, on the chassis, or in the cab.

Deutsch

An environmentally-sealed 2-pin connector designed for applications on the engine, under the hood, on the chassis, or in the cab.

Grakon
A Methode Electronics Company

Hamsar
A Methode Electronics Company

BMAC
A Methode Electronics Company

XWL-812 2000 Series
Work Light | 6 LED

Specifications

Operating Voltage:	12 - 24Vdc
Operating Current:	2.0A @ 12Vdc
	1.0A @ 24Vdc
Power Consumption:	24W
Temperature Range:	-40°C to +60°C
Ingress Protection:	IP68 & IP69K
Weight:	1.5lbs (0.7kg)
Housing:	Die Cast Aluminum - Black E-Coat
Lens:	Automotive Optical Grade
	Hard-Coated Polycarbonate
Connection:	Tyco or Deutsch
Polarity:	Reverse Voltage Protected
Vibration Resistance:	10-500Hz @ 5Grms
Mounting:	U-Bracket
EMC Rated:	EMC EN 13309: 2010

Part #	Beam Pattern	Lumens	Operating Voltage
Tyco Connector			
81635	Spot	2000	12 - 24Vdc
81636	Medium Flood	2000	12 - 24Vdc
81637	Hybrid	2000	12 - 24Vdc
Deutsch Connector			
81638	Spot	2000	12 - 24Vdc
81639	Medium Flood	2000	12 - 24Vdc
81640	Hybrid	2000	12 - 24Vdc
Accessories			
81291HW	Hardware Package - U-Bracket & Bolt		
98195	Easy Grip Handle - Black	Blue	Orange		
	(see page 53)		
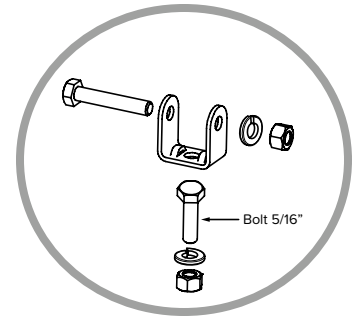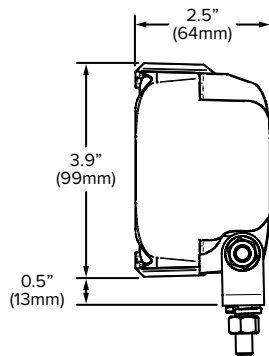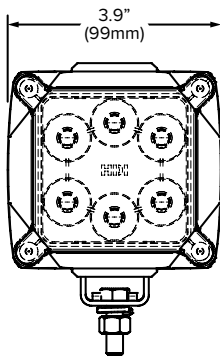
Beam Patterns

Spot Pattern

Distance in Metres (Feet)

Medium Flood Pattern

Distance in Metres (Feet)

Hybrid Pattern

Distance in Metres (Feet)

Grakon®
A Methode Electronics Company

Hamsar®
A Methode Electronics Company

BMAC
A Methode Electronics Company

WORK LIGHTS | XWL-812 SERIES
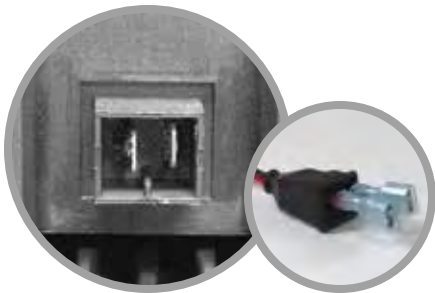
XWL-812 Select Series
Work Light | 6 LED

- 1500 lumens
- Die cast aluminum housing & polycarbonate lens - virtually unbreakable
- IP68 & IP69K - will withstand dust, dirt and sand, and is resistant to submersion up to a maximum depth of 1.5m underwater for up to thirty minutes
- Low current draw - energy efficient, save on fuel costs as it consumes less energy (15W)
- Constant current circuit draw - light does not dim even if voltage fluctuates
- 3 beam patterns - get light where it's needed for the job
- 50,000+ hours LED service life and 5 year warranty
- Electronic Thermal Management System - A built-in device that monitors and self-regulates the LED lamp case temperature, thereby reducing heat output which improves LED service life

3.9"
(99mm)

2.5"
(64mm)

3.9"
(99mm)

0.5"
(13mm)

Bolt 5/16"

U-Bracket

Connector Options

Tyco

Utilizes two quick-connect terminals protected with a rubber housing designed for applications on the engine, under the hood, on the chassis, or in the cab.

Deutsch

An environmentally-sealed 2-pin connector designed for applications on the engine, under the hood, on the chassis, or in the cab.

Grakon®
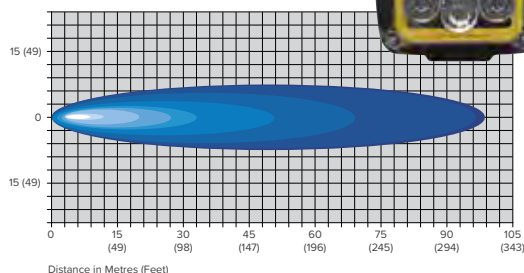A Methode Electronics Company

Hamsar®
A Methode Electronics Company

BMAC®
A Methode Electronics Company

1.800.567.5483

XWL-812 Select Series
Work Light | 6 LED

Specifications

Operating Voltage:	12 - 24Vdc
Operating Current:	1.3A @ 12Vdc
	0.6A @ 24Vdc
Power Consumption:	15W
Temperature Range:	-40°C to +60°C
Ingress Protection:	IP68 & IP69K
Weight:	1.5lbs (0.7kg)
Housing:	Die Cast Aluminum - Black E-Coat
Lens:	Automotive Optical Grade
	Hard-Coated Polycarbonate
Connection:	Tyco or Deutsch
Polarity:	Reverse Voltage Protected
Vibration Resistance:	10-500Hz @ 5Grms
Mounting:	U-Bracket
EMC Rated:	EMC EN 13309: 2010

Part #	Beam Pattern	Lumens	Operating Voltage
Tyco Connector			
81641/B	Spot	1500	12 - 24Vdc
81642/B	Medium Flood	1500	12 - 24Vdc
81643/B	Hybrid	1500	12 - 24Vdc
Deutsch Connector			
81641/C	Spot	1500	12 - 24Vdc
81642/C	Medium Flood	1500	12 - 24Vdc
81643/C	Hybrid	1500	12 - 24Vdc
Accessories			
81291HW	Hardware Package - U-Bracket & Bolt		
98195	Easy Grip Handle - Black	Blue	Orange		
	(see page 53)		

Beam Patterns

Spot Pattern

Distance in Metres (Feet)

Medium Flood Pattern

Distance in Metres (Feet)

Hybrid Pattern

Distance in Metres (Feet)

Grakon®
A Methode Electronics Company

Hamsar®
A Methode Electronics Company

BMAC®

WORK LIGHTS | XWL-812 SERIES

VOLTAGE
12 – 76V

12 - 76Vdc Operation - functions on a wide range of vehicles.

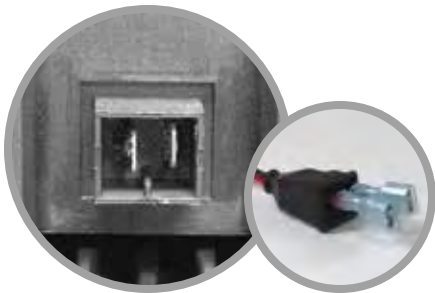- 12 - 76Vdc operation - functions on a wide range of vehicles
- 1380 lumens
- Die cast aluminum housing & polycarbonate lens - virtually unbreakable
- IP68 & IP69K - will withstand dust, dirt and sand, and is resistant to submersion up to a maximum depth of 1.5m underwater for up to thirty minutes
- Low current draw - energy efficient, save on fuel costs as it consumes less energy (14W)
- Constant current circuit draw - light does not dim even if voltage fluctuates
- 3 beam patterns - get light where it's needed for the job
- 50,000+ hours LED service life and 5 year warranty

3.9"
(99mm)

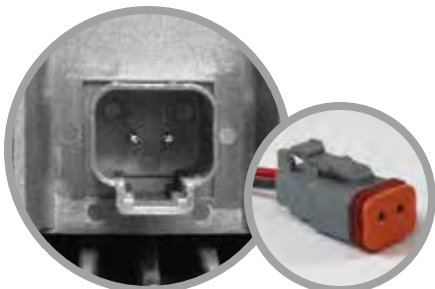2.5"
(64mm)

3.9"
(99mm)

0.5"
(13mm)

Bolt 5/16"

U-Bracket

Connector Options

Tyco

Utilizes two quick-connect terminals protected with a rubber housing designed for applications on the engine, under the hood, on the chassis, or in the cab.

Deutsch

An environmentally-sealed 2-pin connector designed for applications on the engine, under the hood, on the chassis, or in the cab.

Grakon®
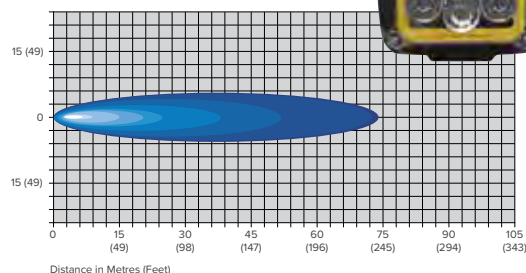A Methode Electronics Company

Hamsar®
A Methode Electronics Company

BMAC®
A Methode Electronics Company

1.800.567.5483

XWL-812 Premium Series
Work Light | 6 LED

Specifications

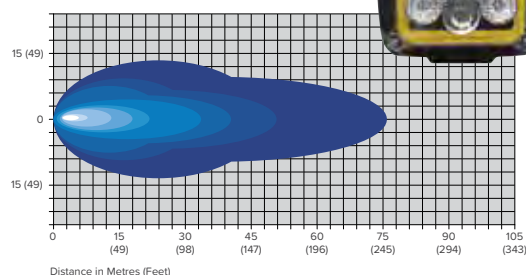|	
Operating Voltage:	12 - 76Vdc
Operating Current:	1.2A @ 12Vdc
	0.2A @ 76Vdc
Power Consumption:	14W
Temperature Range:	-40°C to +60°C
Ingress Protection:	IP68 & IP69K
Weight:	1.5lbs (0.7kg)
Housing:	Die Cast Aluminum - Black E-Coat
Lens:	Automotive Optical Grade
	Hard-Coated Polycarbonate
Connection:	Tyco or Deutsch
Polarity:	Reverse Voltage Protected
Vibration Resistance:	10-500Hz @ 5Grms
Mounting:	U-Bracket
EMC Rated:	EMC EN 13309: 2010

Part #	Beam Pattern	Lumens	Operating Voltage
Tyco Connector			
82291/B	Spot	1380	12 - 76Vdc
82293/B	Medium Flood	1380	12 - 76Vdc
82294/B	Hybrid	1380	12 - 76Vdc
Deutsch Connector			
82291/C	Spot	1380	12 - 76Vdc
82293/C	Medium Flood	1380	12 - 76Vdc
82294/C	Hybrid	1380	12 - 76Vdc
Accessories			
81291HW	Hardware Package - U-Bracket & Bolt		
98195	Easy Grip Handle - Black ǀ Blue ǀ Orange		
	(see page xx)		

Beam Patterns

Spot Pattern

Distance in Metres (Feet)

Medium Flood Pattern

Distance in Metres (Feet)

Hybrid Pattern

Distance in Metres (Feet)

WORK LIGHTS | XWL-812 SERIES

Dual Intensity Function - Easily switch from 1500 lumen output to 3000 lumen output.

- Dual light output - 1500 lumen bright base LED to 3000 lumen super bright LED - switch activated
- Die cast aluminum housing & polycarbonate lens - virtually unbreakable
- IP68 & IP69K - will withstand dust, dirt and sand, and is resistant to submersion up to a maximum depth of 1.5m underwater for up to thirty minutes
- Low current draw - energy efficient, save on fuel costs as it consumes less energy (normal power level: 11W | power burst: 35W)
- Constant current circuit draw - light does not dim even if voltage fluctuates
- 3 beam patterns - get light where it's needed for the job
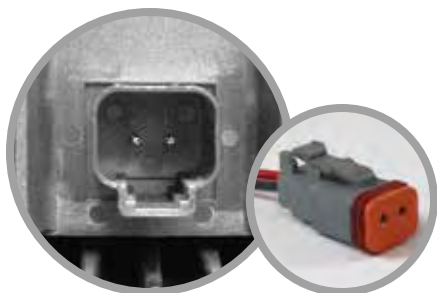- 50,000+ hours LED service life & 5 year warranty
- Electronic Thermal Management System - A built-in device that monitors and self-regulates the LED lamp case temperature, thereby reducing heat output which improves LED service life

3.9" (99mm)

2.5" (64mm)

3.9" (99mm)

0.5" (13mm)

Bolt 5/16"
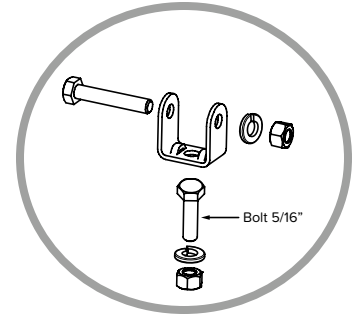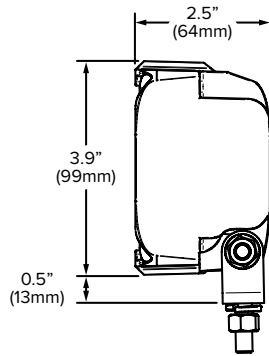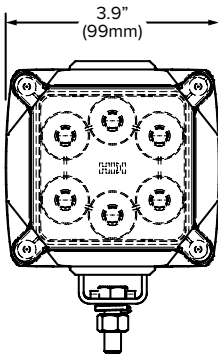
U-Bracket

Dual Light Output

1500 lumens or 3000 lumens
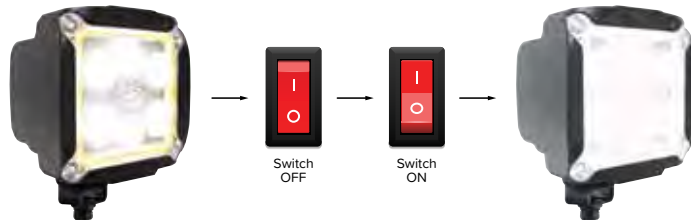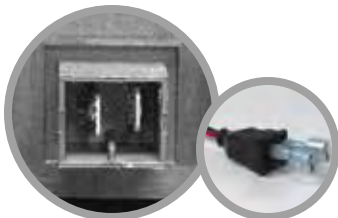
Switch OFF

Switch ON

Connector Options

Tyco

Utilizes two quick-connect terminals protected with a rubber housing designed for applications on the engine, under the hood, on the chassis, or in the cab.

Deutsch

An environmentally-sealed 2-pin connector designed for applications on the engine, under the hood, on the chassis, or in the cab.
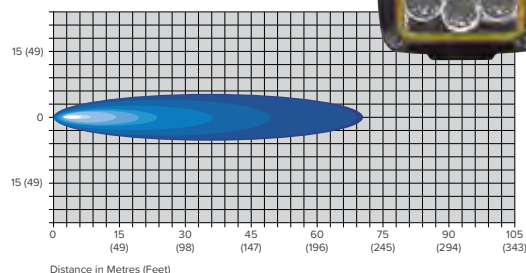
Grakon
A Methode Electronics Company

Hamsar
A Methode Electronics Company

BMAC
A Methode Electronics Company

1.800.567.5483

XWL-812 Series
Work Light | 6 LED | Dual Intensity

Specifications

Operating Voltage:	12 - 24Vdc	
Operating Current:	Normal Output:	0.9A @ 12Vdc
		0.5A @ 24Vdc
	High Output:	2.9A @ 12Vdc
		1.4A @ 24Vdc
Power Consumption:	Normal Output:	11W
	High Output:	35W
Temperature Range:	-40°C to +60°C	
Ingress Protection:	IP68 & IP69K	
Weight:	1.5lbs (0.7kg)	
Housing:	Die Cast Aluminum - Black E-Coat	
Lens:	Automotive Optical Grade	
	Hard-Coated Polycarbonate	
Connection:	Tyco or Deutsch	
Polarity:	Reverse Voltage Protected	
Vibration Resistance:	10-500Hz @ 5Grms	
Mounting:	U-Bracket	
EMC Rated:	EMC EN 13309: 2010	

Part #	Beam Pattern	Lumens	Operating Voltage
Tyco Connector			
81675	Spot	1500 or 3000	12 - 24Vdc
81676	Medium Flood	1500 or 3000	12 - 24Vdc
81677	Hybrid	1500 or 3000	12 - 24Vdc
Deutsch Connector			
81678	Spot	1500 or 3000	12 - 24Vdc
81679	Medium Flood	1500 or 3000	12 - 24Vdc
81680	Hybrid	1500 or 3000	12 - 24Vdc
Accessories			
81291HW	Hardware Package - U-Bracket & Bolt		
98195	Easy Grip Handle - Black | Blue | Orange		
	(see page 53)		

Beam Patterns

Spot Pattern

Medium Flood Pattern

Hybrid Pattern

Grakon® Hamsar® BMAC

WORK LIGHTS | XWL-812 SERIES

HEAVY DUTY MOUNT

Heavy Duty Mount - Super tough stainless steel mounting brackets and hardware.

- 5000 lumens
- Heavy duty mount
- Die cast aluminum housing & polycarbonate lens - virtually unbreakable
- IP68 & IP69K - will withstand dust, dirt and sand, and is resistant to submersion up to a maximum depth of 1.5m underwater for up to thirty minutes
- Low current draw - energy efficient, save on fuel costs as it consumes less energy (50W)
- Constant current circuit draw - light does not dim even if voltage fluctuates
- Built-in vibration dampeners - reduces the intensity of shock and vibration
- 3 beam patterns - get light where it's needed for the job
- 50,000+ hours LED service life & 5 year warranty

6.0"
(152mm)

3.1"
(79mm)

5.6"
(142mm)

1.2"
(30mm)

Bolt 1/2"
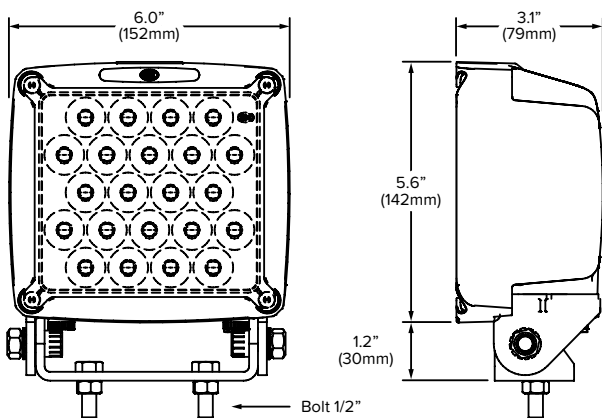
Heavy Duty Stainless Mounting Bracket

Allows 50° tilt forwards & backwards
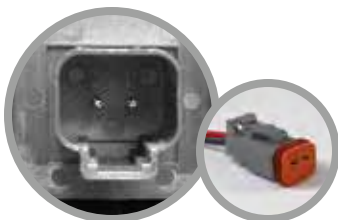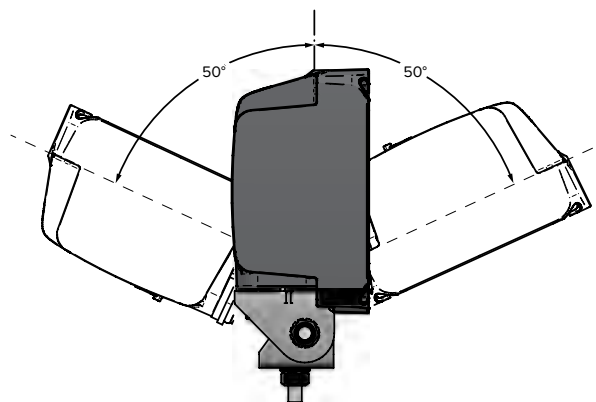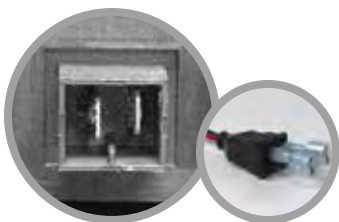
50°   50°

Connector Options

Tyco

Utilizes two quick-connect terminals protected with a rubber housing designed for applications on the engine, under the hood, on the chassis, or in the cab.

Deutsch

An environmentally-sealed 2-pin connector designed for applications on the engine, under the hood, on the chassis, or in the cab.

Grakon
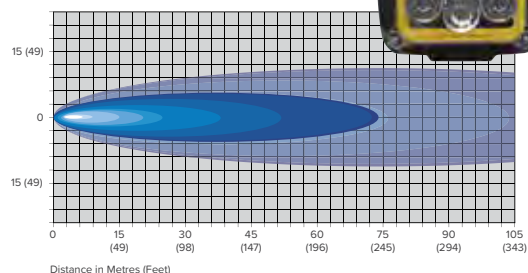A Methode Electronics Company

Hamsar
A Methode Electronics Company

BMAC
A Methode Electronics Company

1.800.567.5483
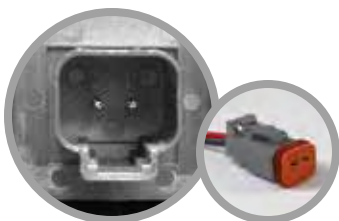
XWL-813 5000 Series
Work Light | 22 LED
HDM | Heavy Duty Mount

Specifications

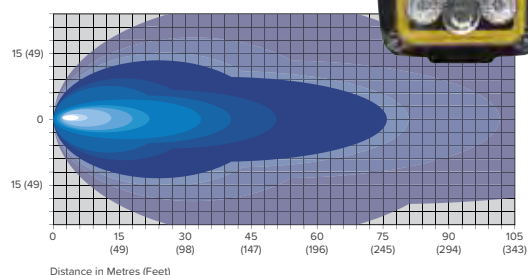|	
Operating Voltage:	12 - 24Vdc
Operating Current:	4.2A @ 12Vdc
	2.1A @ 24Vdc
Power Consumption:	50W
Temperature Range:	-40°C to +60°C
Ingress Protection:	IP68 & IP69K
Weight:	3.5lbs (1.6kg)
Housing:	Die Cast Aluminum - Black E-Coat
Lens:	Automotive Optical Grade
	Hard-Coated Polycarbonate
Connection:	Tyco or Deutsch
Polarity:	Reverse Voltage Protected
Vibration Resistance:	10-500Hz @ 5Grms
Mounting:	U-Bracket
EMC Rated:	EMC EN 13309: 2010

Part #	Beam Pattern	Lumens	Operating Voltage
Tyco Connector			
81665	Spot	5000	12 - 24Vdc
81666	Medium Flood	5000	12 - 24Vdc
81667	Hybrid	5000	12 - 24Vdc
Deutsch Connector			
81668	Spot	5000	12 - 24Vdc
81669	Medium Flood	5000	12 - 24Vdc
81670	Hybrid	5000	12 - 24Vdc
Accessories			
98195	Easy Grip Handle - Black	Blue	Orange		
	(see page 53)		

Beam Patterns

Spot Pattern

Medium Flood Pattern

Hybrid Pattern

Grakon® · Hamsar® · BMAC®

WORK LIGHTS | XWL-813 SERIES

LED Work Lights | Value Series

Model	Lumens	Operating Current @ 12Vdc
XWL-PAR 36	1400	1.8A
PAR 36 RD-1400	1400	0.7A
RD-1800	1800	1.6A
OL-1800	1800	1.4A
SQ-3000	3000	4.0A
MINI SQUARE LED	1080	1.3A
FLUSH MOUNT LED	1080	1.3A
BACK OF CAB LED	400	0.5A

Power Consumption	IP Rating	Key Features and Typical Uses
22W	IP67	Direct replacement LED for PAR 36. Heavy Duty Equipment, Truck Body & Trailer, Jeep, Light Duty Truck, Material Handling
8W	IP66	Direct replacement LED for PAR 36. Heavy Duty Equipment, Truck Body & Trailer, Jeep, Light Duty Truck, Material Handling
20W	IP68	Economical. Heavy Duty Equipment, Truck Body & Trailer, Jeep, Light Duty Truck, Material Handling
18W	IP68	Economical. Heavy Duty Equipment, Truck Body & Trailer, Jeep, Light Duty Truck, Material Handling
48W	IP68	Economical. Heavy Duty Equipment, Truck Body & Trailer, Jeep, Light Duty Truck, Material Handling
16W	IP67	Compact Size, Fits Anywhere. Heavy Duty Equipment, Truck Body & Trailer, Jeep, Light Duty Truck, Material Handling
16W	IP67	Flush Mount, Non-Intrusive. Heavy Duty Equipment, Truck Body & Trailer, Jeep, Light Duty Truck, Material Handling
6W	IP68	Direct replacement LED for Back of Cab Light. Heavy Duty Trailer

- 1400 lumens - 3 times brighter than standard halogen PAR 36
- 5700K cool white light - close to daylight illumination, reducing eye fatigue
- Die cast aluminum housing & polycarbonate lens - virtually unbreakable
- Fully sealed light - total circuit board protection against moisture and corrosion
- IP67 - waterproof and dust protected
- Constant current circuit draw - light does not dim even if voltage fluctuates
- 3 beam patterns - get light where it's needed for the job

Beam Patterns

Spot Pattern
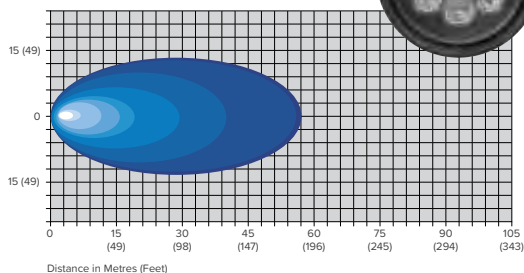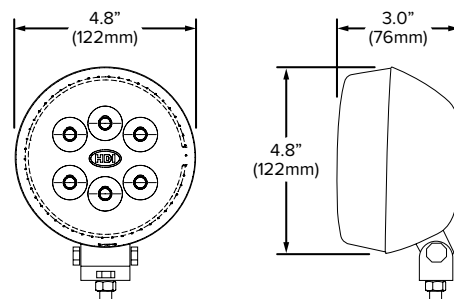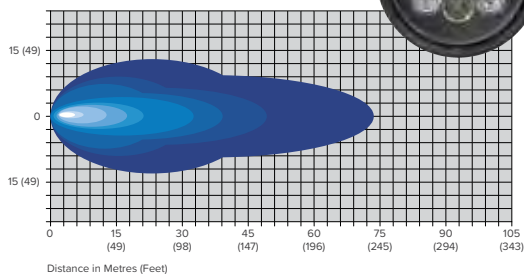
15 (49)
0
15 (49)

0   15 (49)   30 (98)   45 (147)   60 (196)   75 (245)   90 (294)   105 (343)

Distance in Metres (Feet)

Flood Pattern

15 (49)
0
15 (49)

0   15 (49)   30 (98)   45 (147)   60 (196)   75 (245)   90 (294)   105 (343)

Distance in Metres (Feet)

Hyrbid Pattern

15 (49)
0
15 (49)

0   15 (49)   30 (98)   45 (147)   60 (196)   75 (245)   90 (294)   105 (343)

Distance in Metres (Feet)

4.8" (122mm)

3.0" (76mm)

4.8" (122mm)

4.8" (122mm)

Specifications

Operating Voltage:	12 - 24Vdc
Operating Current:	1.8A @ 12Vdc
	0.9A @ 24Vdc
Power Consumption:	22W
Temperature Range:	-40°C to +85°C
Colour Temperature:	5700K
Ingress Protection:	IP67
Weight:	24.4oz (692g)
Housing:	Die-Cast Aluminum
External Housing:	EPDM Rubber
Lens:	Optical Grade Polycarbonate
Lens Coating:	UV Hardcoat Finish
Housing Coating:	Black E-Coat
Terminal Connection:	1/4" Male Disconnect
Mounting:	Stainless Steel U-Bracket and Hardware

Part #	Beam Pattern	Lumens	Operating Voltage
81447	Spot	1400	12 - 24Vdc
81448	Flood	1400	12 - 24Vdc
81449	Hybrid	1400	12 - 24Vdc

Grakon   Hamsar   BMAC

XWL-PAR 36 Series
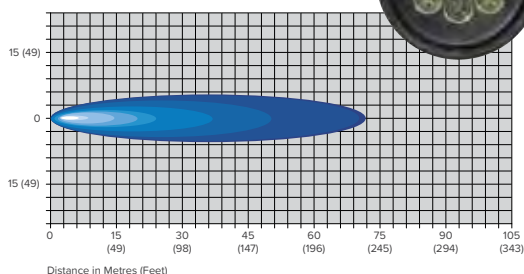## Work Light Module | 6 LED

- Direct replacement LED module - fits into existing PAR 36 housing
- 1400 lumens - 3 times brighter than standard halogen PAR 36
- 5700K cool white light - close to daylight illumination, reducing eye fatigue
- Die cast aluminum housing & polycarbonate lens - virtually unbreakable
- Fully sealed light - total circuit board protection against moisture and corrosion
- IP67 - waterproof and dust protected
- Constant current circuit draw - light does not dim even if voltage fluctuates
- 3 beam patterns - get light where it's needed for the job

Specifications

Operating Voltage:	12 - 24Vdc
Operating Current:	1.8A @ 12Vdc
	0.9A @ 24Vdc
Power Consumption:	22W
Temperature Range:	-40°C to +85°C
Colour Temperature:	5700K
Ingress Protection:	IP67
Weight:	11.1oz (316g)
Housing:	Die-Cast Aluminum
Lens:	Optical Grade Polycarbonate
Lens Coating:	UV Hardcoat Finish
Housing Coating:	Black E-Coat
Terminal Connection:	1/4" Male Disconnect

Part #	Beam Pattern	Lumens	Operating Voltage
81444	Spot	1400	12 - 24Vdc
81445	Flood	1400	12 - 24Vdc
81446	Hybrid	1400	12 - 24Vdc
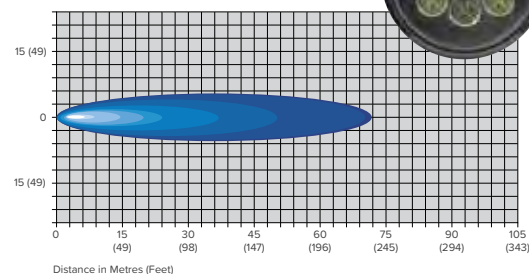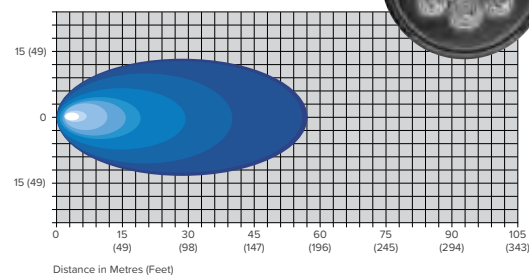
Beam Patterns

Spot Pattern

Distance in Metres (Feet)

Flood Pattern

Distance in Metres (Feet)

Hyrbid Pattern

Distance in Metres (Feet)

Grakon *A Methode Electronics Company*

Hamsar *A Methode Electronics Company*

BMAC *A Methode Electronics Company*

WORK LIGHTS | PAR 36 SERIES
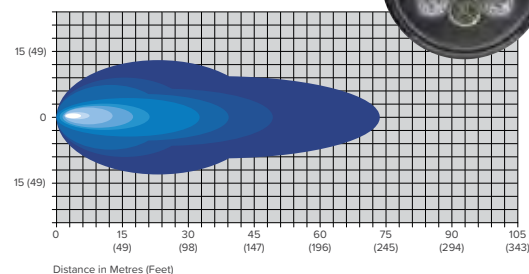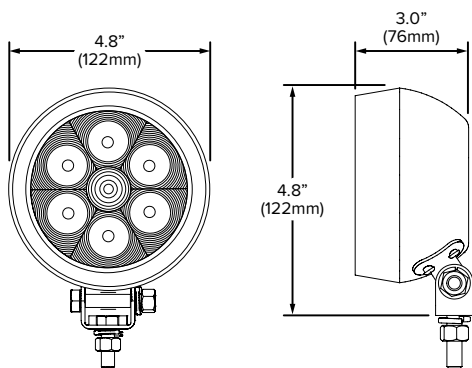
- 1400 lumens - 3 times brighter than standard halogen PAR 36
- 6 LEDs - energy efficient and long lasting
- Corrosion-proof rubber housing - durable and protective
- Direct replacement - LED fits into existing PAR 36 housing
- Stainless steel mounting hardware - 30° tilt range for mounting flexibilty

Specifications

Operating Voltage:	12 - 24Vdc
Operating Current:	0.7A @ 12Vdc
	0.3A @ 24Vdc
Power Consumption:	8W
Temperature Range:	-40°C to +85°C
Ingress Protection:	IP66
Weight:	2.0lbs (0.9kg)
External Housing:	EPDM Rubber
Lens:	Automotive Optical Grade
	Hard-Coated Polycarbonate
Connection:	Bullet
Polarity:	Reverse Voltage Protected
Vibration Resistance:	SAE J575
Mounting:	Stainless Steel U-Bracket and Hardware
EMC Rated:	EMC EN 13309:2010

Part #	Beam Pattern	Lumens	Operating Voltage
81256/1	Flood	1400	12 - 24Vdc

4.8" (122mm)

3.0" (76mm)

4.8" (122mm)

Beam Pattern

15 (49)

0

15 (49)

| 0 | 15 (49) | 30 (98) | 45 (147) | 60 (196) | 75 (245) | 90 (294) | 105 (343) |

Distance in Metres (Feet)

Grakon® A Methode Electronics Company
Hamsar® A Methode Electronics Company
BMAC A Methode Electronics Company

1.800.567.5483
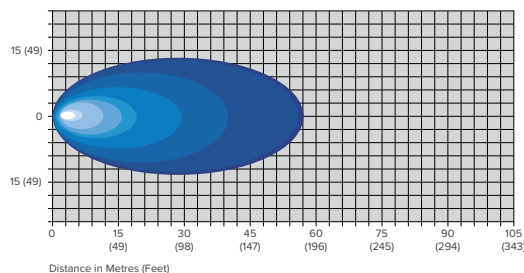
RD-1800
Work Light | 4 LED

- 1800 lumens
- CREE LED - superior lighting technology
- Die cast aluminum housing & polycarbonate lens - virtually unbreakable
- Stainless steel mounting hardware - 30° tilt range for mounting flexibilty
- Constant current circuit draw - light does not dim even if voltage fluctuates

Specifications

Operating Voltage:	12 - 24Vdc
Operating Current:	1.6A @ 12Vdc
	0.8A @ 24Vdc
Power Consumption:	20W
Temperature Range:	-40°C to +85°C
Ingress Protection:	IP68
Weight:	1.7lbs (0.8kg)
Housing:	Die Cast Aluminum - Black E-Coat
Lens:	Polycarbonate
Connection:	Terminal Wires
Polarity:	Reverse Voltage Protected
Mounting:	Stainless Steel U-Bracket and Hardware

Part #	Beam Pattern	Lumens	Operating Voltage
81256/2	Flood	1800	12 - 24Vdc

Beam Pattern

Distance in Metres (Feet)

Grakon® A Methode Electronics Company

Hamsar® A Methode Electronics Company

BMAC® A Methode Electronics Company

WORK LIGHTS | VALUE SERIES
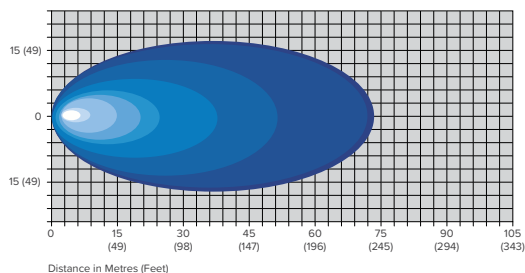
OL-1800
Work Light | 8 LED

- 1800 lumens
- CREE LED - superior lighting technology
- Die cast aluminum housing & polycarbonate lens - virtually unbreakable
- Stainless steel mounting hardware - 30° tilt range for mounting flexibilty
- Constant current circuit draw - light does not dim even if voltage fluctuates

5.6"
(142mm)

2.3"
(58mm)

5.6"
(142mm)
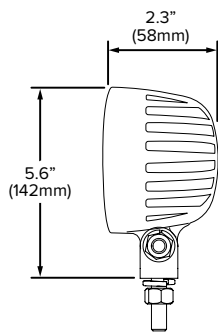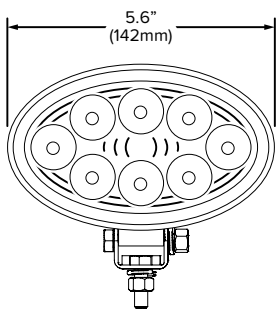
Specifications

Operating Voltage:	12 - 24Vdc
Operating Current:	1.4A @ 12Vdc
	0.7A @ 24Vdc
Power Consumption:	18W
Temperature Range:	-40°C to +85°C
Ingress Protection:	IP68
Weight:	1.4lbs (0.6kg)
Housing:	Die Cast Aluminum - Black E-Coat
Lens:	Polycarbonate
Connection:	Terminal Wires
Polarity:	Reverse Voltage Protected
Mounting:	Stainless Steel U-Bracket and Hardware

Part #	Beam Pattern	Lumens	Operating Voltage
81257	Flood	1800	12 - 24Vdc

Beam Pattern

15 (49)

0

15 (49)

| 0 | 15 (49) | 30 (98) | 45 (147) | 60 (196) | 75 (245) | 90 (294) | 105 (343) |

Distance in Metres (Feet)

Grakon® A Methode Electronics Company

Hamsar® A Methode Electronics Company

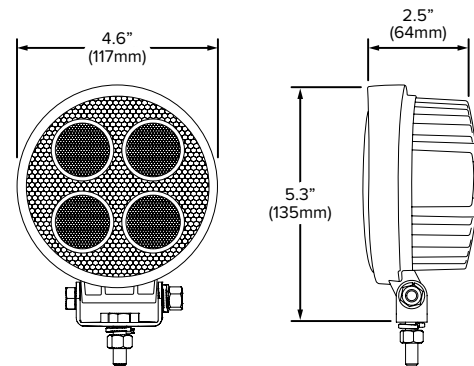BMAC A Methode Electronics Company

1.800.567.5483
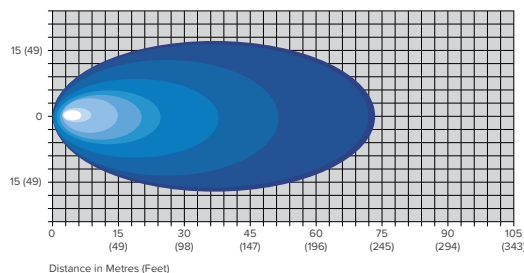
SQ-3000
Work Light | 16 LED

- 3000 lumens
- EPISTAR LED - superior lighting technology
- Die cast aluminum housing & polycarbonate lens - virtually unbreakable
- Stainless steel mounting hardware - 30° tilt range for mounting flexibilty
- Constant current circuit draw - light does not dim even if voltage fluctuates

Specifications

Operating Voltage:	12 - 24Vdc
Operating Current:	4.0A @ 12Vdc
	2.0A @ 24Vdc
Power Consumption:	48W
Temperature Range:	-40°C to +85°C
Ingress Protection:	IP68
Weight:	1.9lbs (0.9kg)
Housing:	Die Cast Aluminum - Black E-Coat
Lens:	Polycarbonate
Connection:	Terminal Wires
Polarity:	Reverse Voltage Protected
Mounting:	Stainless Steel U-Bracket and Hardware
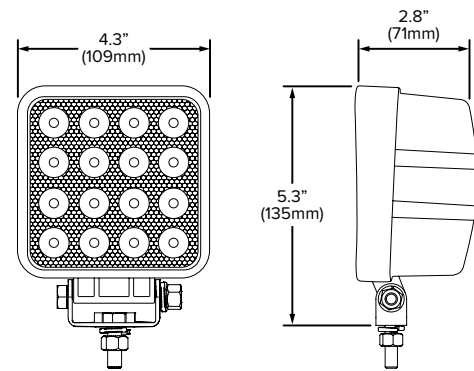
Part #	Beam Pattern	Lumens	Operating Voltage
81258	Flood	3000	12 - 24Vdc

Beam Pattern

Distance in Metres (Feet)

Grakon *A Methode Electronics Company*

Hamsar® *A Methode Electronics Company*

BMAC *A Methode Electronics Company*

WORK LIGHTS | VALUE SERIES
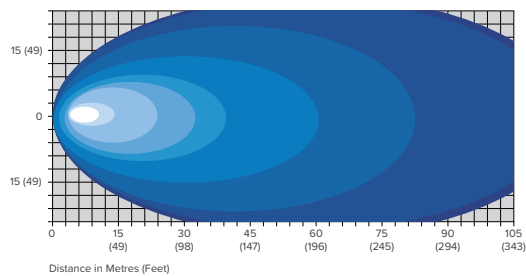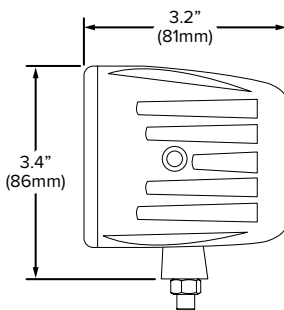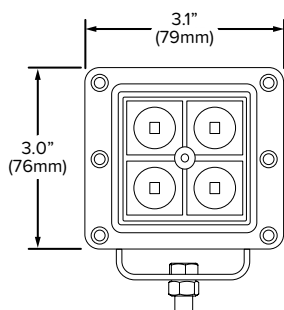
Mini Cube LED

- Use as an off-road driving light, fog light or added rear lighting
- 6000K LED illumination - bright, crisp white light for enhanced nighttime visibility
- Compact size and shape - fits almost anywhere, can be used for numerous lighting applications
- Sold as a kit - includes 2 lights, plug & play wire harness with switch, mounting brackets and hardware

Specifications

Operating Voltage:	12 - 24Vdc
Operating Current:	1.3A @ 12Vdc
	0.7A @ 24Vdc
Power Consumption:	16W
Temperature Range:	-55°C to +65°C
Ingress Protection:	IP67
Weight:	19.5oz (552g)
Housing:	Die Cast Aluminum
Lens:	Polycarbonate
Polarity:	Reverse Voltage Protected
Mounting:	U-Bracket

Part #	Beam Pattern	Lumens	Operating Voltage
81723	Spot	1080	12 - 24Vdc
81724	Flood	1080	12 - 24Vdc

3.1" (79mm)

3.0" (76mm)

3.2" (81mm)

3.4" (86mm)

Beam Patterns

Spot Pattern

15 (49)
0
15 (49)

| 0 | 15 (49) | 30 (98) | 45 (147) | 60 (196) | 75 (245) | 90 (294) | 105 (343) |

Distance in Metres (Feet)

Flood Pattern

15 (49)
0
15 (49)

| 0 | 15 (49) | 30 (98) | 45 (147) | 60 (196) | 75 (245) | 90 (294) | 105 (343) |

Distance in Metres (Feet)

Grakon® A Methode Electronics Company

Hamsar® A Methode Electronics Company

BMAC A Methode Electronics Company

Flush Mount LED

- Flush mounted compact LED auxiliary light, designed to be non-intrusive while delivering powerful illumination
- 6000K LED illumination - bright, crisp white light for enhanced nighttime visibility
- Compact size and shape - fits almost anywhere, can be used for numerous lighting applications
- Sold as a kit - includes 2 lights, plug & play wire harness with switch and hardware

Specifications

Operating Voltage:	12 - 24Vdc
Operating Current:	1.3A @ 12Vdc
	0.7A @ 24Vdc
Power Consumption:	16W
Temperature Range:	-55°C to +65°C
Ingress Protection:	IP67
Weight:	21.0oz (594g)
Housing:	Die Cast Aluminum
Lens:	Polycarbonate
Polarity:	Reverse Voltage Protected
Mounting:	4 Bolts

Part #	Beam Pattern	Lumens	Operating Voltage
81725	Spot	1080	12 - 24Vdc
81726	Flood	1080	12 - 24Vdc

Beam Patterns

Spot Pattern

Distance in Metres (Feet)

Flood Pattern

Distance in Metres (Feet)

4.8" (122mm)

4.1" (104mm)

1.2" (30mm)

3.2" (81mm)

3.6" (91mm)

www.hamsar.com

WORK LIGHTS | LED
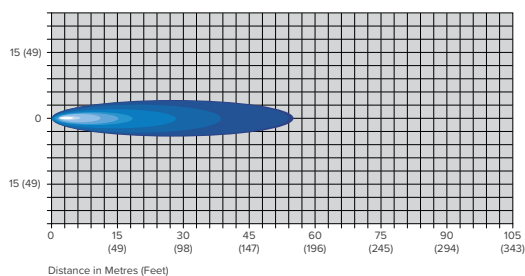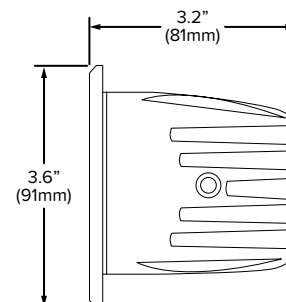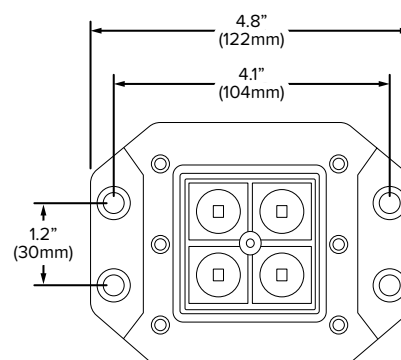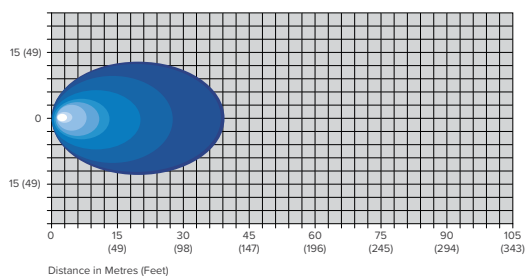
Grakon OEM Commercial Vehicle Back of Cab Light
4 LED

- OEM quality back of cab light - used throughout North America on commercial vehicles
- Long life - 60,000 hours of continuous operation
- Meets SAE back up requirements as a single light (system cost savings)
- Power 6W (12Vdc) - 80% improvement over incandescent equivalent light

Specifications

Operating Voltage:	12Vdc
Operating Current:	0.5A @ 12Vdc
Power Consumption:	6W
Light Source:	Long Lifespan Cool White LED	4 LED
Mounting:	Flush Mount Version: Direct Replacement to Incandescent BoC Lights
	Surface Mount Version: Minimize Required Cutout for Light Installation
Over Voltage:	Regulated Output to 16Vdc Protection to SAE J1455
Connection:	Integral Sealed Connector or OEM Specific Pigtail with Connector
Wire Harness:	6.5" (165mm)
Mating Connector:	Delphi #120662214

5.6"
(142mm)

4.0"
(102mm)
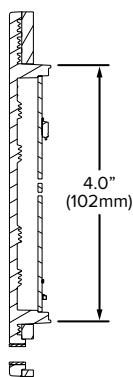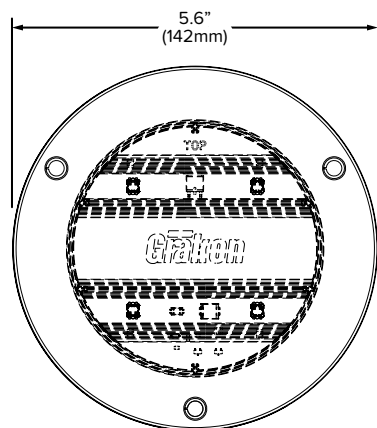
Part #	Beam Pattern	Lumens	Operating Voltage
81082	Flood	400	12Vdc

WORK LIGHTS | LED

Grakon®
A Methode Electronics Company

Hamsar®
A Methode Electronics Company

BMAC
A Methode Electronics Company

Easy-Grip Handles

- Easily installs on the following models:
  XWL-800
  XWL-810
  XWL-812
  XWL-813
- Allows for easy adjustment of light beam
- Allows for portability of work light
- Weather resistant

4.2"
(107mm)

2.3"
(58mm)

3.5"
(89mm)
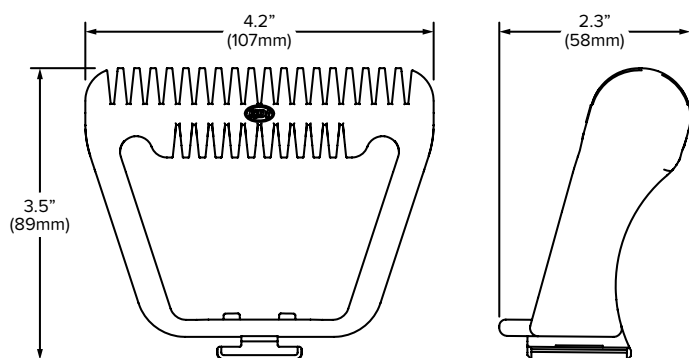
Part #	Description
98195	Easy-Grip Handle ǀ Black
98195/B	Easy-Grip Handle ǀ Blue
98195/O	Easy-Grip Handle ǀ Orange

Some custom ideas.

These are ideas only! They are not available for order.

Attach a Standard 12V Socket Connector

Convert to a portable work light

Attach a Battery Pack with Switch

Convert to a handheld lantern

Grakon®
A Methode Electronics Company

Hamsar®
A Methode Electronics Company

BMAC®
A Methode Electronics Company

WORK LIGHTS ǀ LED

Hamsar®
A Methode Electronics Company

Wherever you're going, no matter what you're doing, our LED light bars will give you the light you need.

Ranging from 3400 to 25920 lumens, our LED light bars are powerful, durable and super easy to mount anywhere on your off-road vehicle.

Contents

Light Bar | Double Row
10" | 20 LED

- 5400 lumens
- 3W LEDs - high intensity, low power consumption
- 6000K LED illumination - bright, crisp white light for enhanced nighttime visibility
- High lumen output - excellent for nighttime off-roading or in the darkest working environments
- Die-cast aluminum housing & polycarbonate lens - strong and durable for tough conditions
- IP67 - waterproof and dust protected
- Aluminum side brackets - easy to mount and install

11.5"
(292mm)

3.6"
(91mm)

4.8"
(122mm)

3.1"
(79mm)
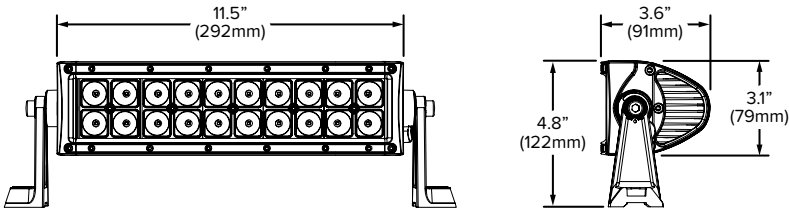
Specifications

Operating Voltage:	12 - 24Vdc
Operating Current:	5.0A @ 12Vdc
	2.5A @ 24Vdc
Power Consumption:	60W
Temperature Range:	-40°C to +80°C
Ingress Protection:	IP67
Weight:	6.4lbs (2.9kg)
Housing:	Die-Cast Aluminum
Lens:	Polycarbonate
Connection:	Deutsch with Plug and Play Harness
Polarity:	Reverse Voltage Protected

Part #	Beam Pattern	Lumens	Operating Voltage
81727	Hybrid	5400	12 - 24Vdc

Grakon
A Methode Electronics Company

Hamsar
A Methode Electronics Company

BMAC
A Methode Electronics Company

LIGHT BARS | DOUBLE ROW

QUALITY
TESTED

Quality Tested - this product has been put through countless hours of testing and validation for environmental extremes, vibration, function and lifespan.

- 16200 lumens
- 3W LEDs - high intensity, low power consumption
- 6000K LED illumination - bright, crisp white light for enhanced nighttime visibility
- High lumen output - excellent for nighttime off-roading or in the darkest working environments
- Die-cast aluminum housing & polycarbonate lens - strong and durable for tough conditions
- IP67 - waterproof and dust protected
- Aluminum side brackets - easy to mount and install

31.5"
(800mm)

3.6"
(91mm)

4.8"
(122mm)

3.1"
(79mm)

Specifications

Operating Voltage:	12 - 24Vdc
Operating Current:	15.0A @ 12Vdc
	7.5A @ 24Vdc
Power Consumption:	180W
Temperature Range:	-40°C to +80°C
Ingress Protection:	IP67
Weight:	11.0lbs (5.0kg)
Housing:	Die-Cast Aluminum
Lens:	Polycarbonate
Connection:	Deutsch with Plug and Play Harness
Polarity:	Reverse Voltage Protected

Part #	Beam Pattern	Lumens	Operating Voltage
81728	Hybrid	16200	12 - 24Vdc

LIGHT BARS | DOUBLE ROW

Grakon®   Hamsar®   BMAC

1.800.567.5483

Light Bar | Double Row
40" | 80 LED

QUALITY **TESTED**

Quality Tested - this product has been put through countless hours of testing and validation for environmental extremes, vibration, function and lifespan.

- 21600 lumens
- 3W LEDs - high intensity, low power consumption
- 6000K LED illumination - bright, crisp white light for enhanced nighttime visibility
- High lumen output - excellent for nighttime off-roading or in the darkest working environments
- Die-cast aluminum housing & polycarbonate lens - strong and durable for tough conditions
- IP67 - waterproof and dust protected
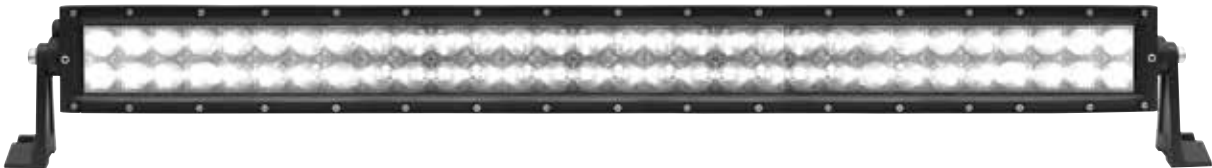- Aluminum side brackets - easy to mount and install

41.5" (1054mm)

3.6" (91mm)

4.8" (122mm)

3.1" (79mm)
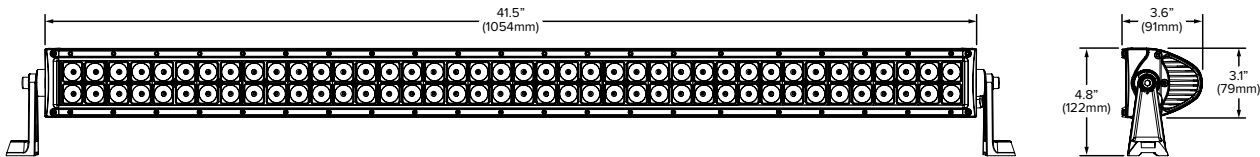
Specifications

Operating Voltage:	12 - 24Vdc
Operating Current:	20.0A @ 12Vdc
	10.0A @ 24Vdc
Power Consumption:	240W
Temperature Range:	-40°C to +80°C
Ingress Protection:	IP67
Weight:	13.5lbs (6.1kg)
Housing:	Die-Cast Aluminum
Lens:	Polycarbonate
Connection:	Deutsch with Plug and Play Harness
Polarity:	Reverse Voltage Protected

Part #	Beam Pattern	Lumens	Operating Voltage
81729	Hybrid	21600	12 - 24Vdc

Grakon
A Methode Electronics Company

Hamsar®
A Methode Electronics Company
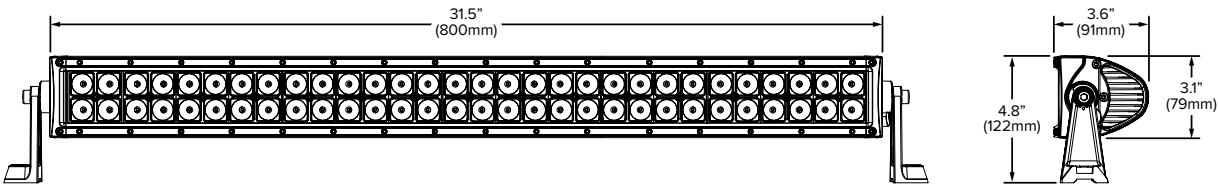
BMAC®
A Methode Electronics Company

LIGHT BARS | DOUBLE ROW

QUALITY TESTED

Quality Tested - this product has been put through countless hours of testing and validation for environmental extremes, vibration, function and lifespan.

- 25920 lumens
- 3W LEDs - high intensity, low power consumption
- 6000K LED illumination - bright, crisp white light for enhanced nighttime visibility
- High lumen output - excellent for nighttime off-roading or in the darkest working environments
- Die-cast aluminum housing & polycarbonate lens - strong and durable for tough conditions
- IP67 - waterproof and dust protected
- Aluminum side brackets - easy to mount and install

51.5"
(1308mm)

3.6"
(91mm)

4.8"
(122mm)

3.1"
(79mm)
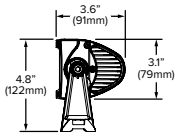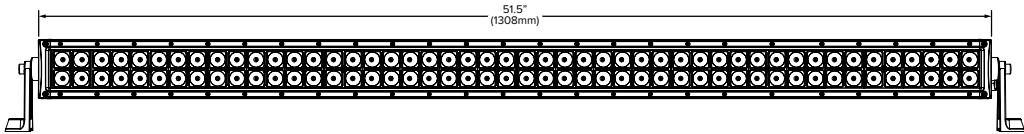
Specifications

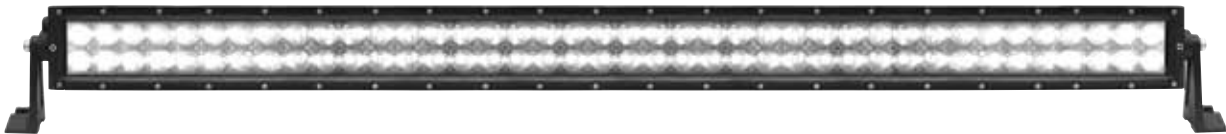|	
Operating Voltage:	12 - 24Vdc
Operating Current:	24.0A @ 12Vdc
	12.0A @ 24Vdc
Power Consumption:	288W
Temperature Range:	-40°C to +80°C
Ingress Protection:	IP67
Weight:	16.5lbs (7.5kg)
Housing:	Die-Cast Aluminum
Lens:	Polycarbonate
Connection:	Deutsch with Plug and Play Harness
Polarity:	Reverse Voltage Protected

Part #	Beam Pattern	Lumens	Operating Voltage
81730	Hybrid	25920	12 - 24Vdc

LIGHT BARS | DOUBLE ROW

Grakon® Hamsar® BMAC

1.800.567.5483

Light Bar | Single Row
8" | 4 LED

- 3400 lumens
- Extruded aluminum housing & polycarbonate lens
- Cross slider, multi-angle mounting bracket

8.4" (213mm)

3.9" (99mm)

2.8" (71mm)

Specifications

Operating Voltage:	12 - 24Vdc
Operating Current:	3.3A @ 12Vdc
	1.7A @ 24Vdc
Power Consumption:	40W
Temperature Range:	-40°C to +80°C
Ingress Protection:	IP67
Weight:	2.9lbs (1.3kg)
Housing:	Extruded Aluminum
Lens:	Polycarbonate
Connection:	Deutsch with Plug and Play Harness
Polarity:	Reverse Voltage Protected
Mounting:	Cross Slider, Multi-Angle Mounting Bracket (1 pc)

Part #	Beam Pattern	Lumens	Operating Voltage
81711	Spot	3400	12 - 24Vdc

Grakon
A Methode Electronics Company

Hamsar®
A Methode Electronics Company

BMAC®
A Methode Electronics Company

- 3400 lumens
- Extruded aluminum housing & polycarbonate lens
- Cross slider, multi-angle mounting bracket

8.4"
(213mm)

3.9"
(99mm)

2.8"
(71mm)

Specifications

Operating Voltage:	12 - 24Vdc
Operating Current:	3.3A @ 12Vdc
	1.7A @ 24Vdc
Power Consumption:	40W
Temperature Range:	-40°C to +80°C
Ingress Protection:	IP67
Weight:	2.9lbs (1.3kg)
Housing:	Extruded Aluminum
Lens:	Polycarbonate
Connection:	Deutsch with Plug and Play Harness
Polarity:	Reverse Voltage Protected
Mounting:	Cross Slider, Multi-Angle
	Mounting Bracket (1 pc)

Part #	Beam Pattern	Lumens	Operating Voltage
81712	Flood	3400	12 - 24Vdc

Grakon®   Hamsar®   BMAC

1.800.567.5483

Light Bar | Single Row
22" | 12 LED

- 10000 lumens
- Extruded aluminum housing & polycarbonate lens
- Cross slider, multi-angle mounting bracket

22.6"
(574mm)

3.9"
(99mm)

2.8"
(71mm)

Specifications

Operating Voltage:	12 - 24Vdc
Operating Current:	10.0A @ 12Vdc
	5.0A @ 24Vdc
Power Consumption:	120W
Temperature Range:	-40°C to +80°C
Ingress Protection:	IP67
Weight:	9.7lbs (4.4kg)
Housing:	Extruded Aluminum
Lens:	Polycarbonate
Connection:	Deutsch with Plug and Play Harness
Polarity:	Reverse Voltage Protected
Mounting:	Cross Slider, Multi-Angle Mounting Bracket (3 pcs)

Part #	Beam Pattern	Lumens	Operating Voltage
81714	Hybrid	10000	12 - 24Vdc

Grakon
A Methode Electronics Company

Hamsar®
A Methode Electronics Company

BMAC®
A Methode Electronics Company

LIGHT BARS | SINGLE ROW

- 12000 lumens
- Extruded aluminum housing & polycarbonate lens
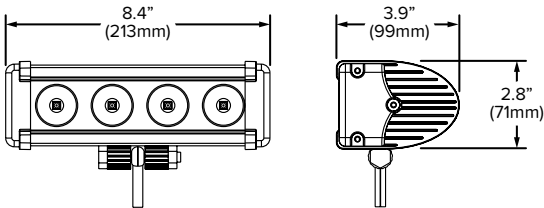- Cross slider, multi-angle mounting bracket

26.1"
(663mm)

3.9"
(99mm)

2.8"
(71mm)
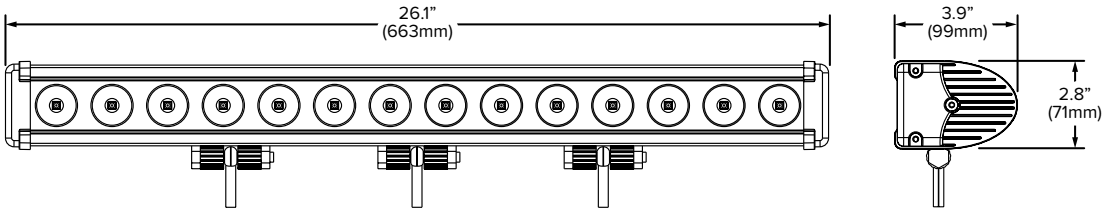
Specifications

Operating Voltage:	12 - 24Vdc
Operating Current:	11.6A @ 12Vdc
	5.8A @ 24Vdc
Power Consumption:	140W
Temperature Range:	-40°C to +80°C
Ingress Protection:	IP67
Weight:	11.5lbs (5.7kg)
Housing:	Extruded Aluminum
Lens:	Polycarbonate
Connection:	Deutsch with Plug and Play Harness
Polarity:	Reverse Voltage Protected
Mounting:	Cross Slider, Multi-Angle
	Mounting Bracket (3 pcs)

Part #	Beam Pattern	Lumens	Operating Voltage
81715	Hybrid	12000	12 - 24Vdc

Grakon®
A Methode Electronics Company

Hamsar®
A Methode Electronics Company

BMAC®
A Methode Electronics Company

1.800.567.5483

Light Bar | Single Row
33" | 18 LED

- 15000 lumens
- Extruded aluminum housing & polycarbonate lens
- Cross slider, multi-angle mounting bracket

33.2" (843mm)

3.9" (99mm)

2.8" (71mm)

Specifications

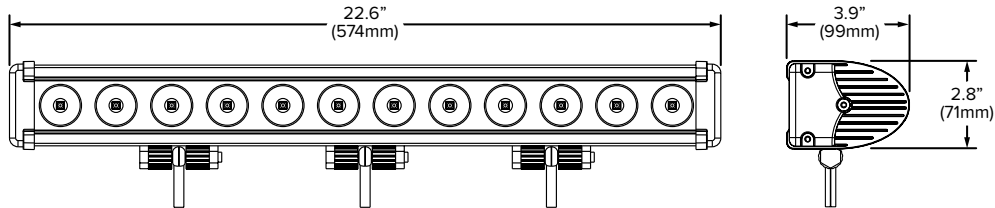|	
Operating Voltage:	12 - 24Vdc
Operating Current:	15.0A @ 12Vdc
	7.5A @ 24Vdc
Power Consumption:	180W
Temperature Range:	-40°C to +80°C
Ingress Protection:	IP67
Weight:	14.3lbs (6.5kg)
Housing:	Extruded Aluminum
Lens:	Polycarbonate
Connection:	Deutsch with Plug and Play Harness
Polarity:	Reverse Voltage Protected
Mounting:	Cross Slider, Multi-Angle Mounting Bracket (4 pcs)

Part #	Beam Pattern	Lumens	Operating Voltage
81716	Hybrid	15000	12 - 24Vdc

Grakon
A Methode Electronics Company

Hamsar®
A Methode Electronics Company

BMAC®
A Methode Electronics Company

LIGHT BARS | SINGLE ROW

- 18000 lumens
- Extruded aluminum housing & polycarbonate lens
- Cross slider, multi-angle mounting bracket

40.3" (1024mm) · 3.9" (99mm) · 2.8" (71mm)
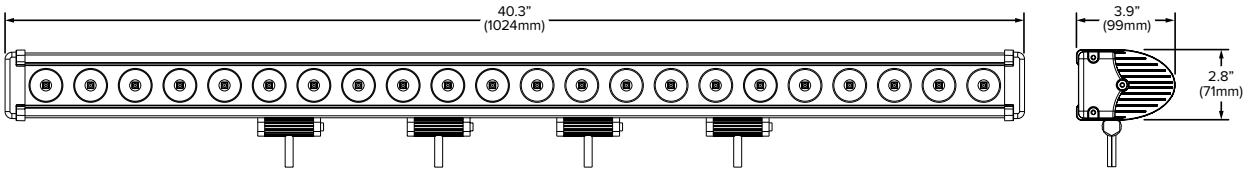
Specifications

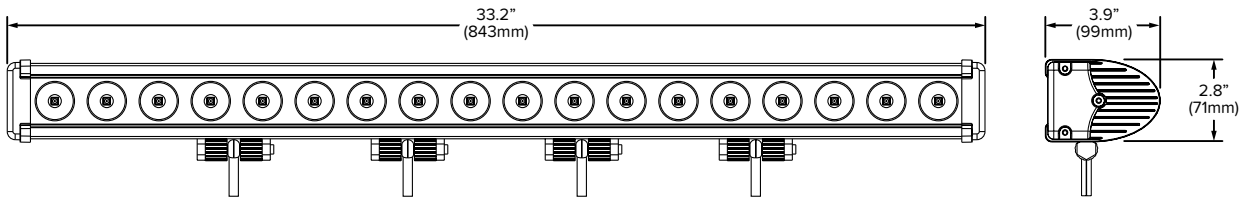|	
Operating Voltage:	12 - 24Vdc
Operating Current:	18.3A @ 12Vdc
	9.2A @ 24Vdc
Power Consumption:	220W
Temperature Range:	-40°C to +80°C
Ingress Protection:	IP67
Weight:	16.5lbs (7.5kg)
Housing:	Extruded Aluminum
Lens:	Polycarbonate
Connection:	Deutsch with Plug and Play Harness
Polarity:	Reverse Voltage Protected
Mounting:	Cross Slider, Multi-Angle Mounting Bracket (4 pcs)

Part #	Beam Pattern	Lumens	Operating Voltage
81717	Hybrid	18000	12 - 24Vdc

FORWARD LIGHTING

We carry a comprehensive line of LED and halogen forward lighting solutions for heavy duty trailers, buses, motor coaches, recreational vehicles, jeeps and snow plows.

Contents

90mm Low Beam
LED Headlight Module

- Plug-and-play legal compliance
- Placed in a custom bezel, a module can create a completely styled headlight
- Best-in-class output and performance
- OEM grade specifications
- Projector-style low beam
- Functional in both 12V & 24V environments
- ECE & SAE compliant variants
- ECE-R10 compliant
- Common LH and RH mounting features

PREMIUM QUALITY

3.4" (85mm)

4.4" (112mm)

6.7" (170mm)

4.2" (107mm)   3.2" (82mm)

1.5" (39mm)

Specifications

Operating Voltage:	12 - 24Vdc
Operating Current:	2600mA @ 12Vdc
	650mA @ 24Vdc
Power Consumption:	22W
Temperature Range:	-40°C to +80°C
Weight:	Low Beam: 35.1oz (996g)
Source Lumen Output:	1400lm to 1700lm
Transient Susceptibility:	-450V (negative transient)
	150V (positive transient)
Electrostatic Discharge:	± 15kV
	(on surfaces that are exposed during normal operation including service)
Electrostatic Discharge:	± 8kV (unpowered, all surfaces)
Compliance:	ECE and SAE

Part #	Description	Operating Voltage
76865	LED Low Beam | 90mm ECE LHD	12 - 24Vdc
76867	LED Low Beam | 90mm ECE RHD	12 - 24Vdc
76868	LED Low Beam | 90mm SAE	12 - 24Vdc
98142	Adjustment Bolts	

Grakon® A Methode Electronics Company
Hamsar® A Methode Electronics Company
BMAC A Methode Electronics Company

90mm High Beam
LED Headlight Module

- Plug-and-play legal compliance
- Placed in a custom bezel, a module can create a completely styled headlight
- Best-in-class output and performance
- OEM grade specifications
- Reflector-style high beam
- Functional in both 12V & 24V environments
- ECE & SAE compliant variants
- ECE-R10 compliant

Specifications

Operating Voltage:	12 - 24Vdc
Operating Current:	2600mA @ 12Vdc
	650mA @ 24Vdc
Power Consumption:	22W
Temperature Range:	-40°C to +80°C
Weight:	High Beam: 24.6oz (697g)
Source Lumen Output:	1400lm to 1700lm
Transient Susceptibility:	-450V (negative transient)
	150V (positive transient)
Electrostatic Discharge:	± 15kV
	(on surfaces that are exposed during normal operation including service)
Electrostatic Discharge:	± 8kV (unpowered, all surfaces)
Compliance:	ECE and SAE
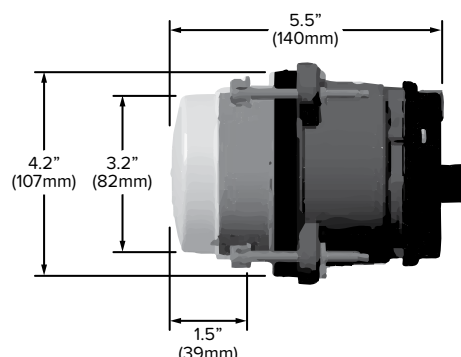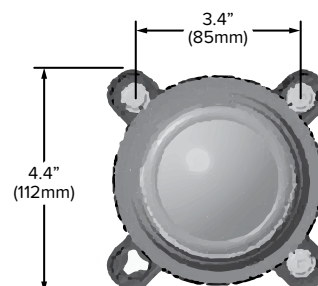
Part #	Description	Operating Voltage
76866	LED High Beam	90mm ECE SAE	12 - 24Vdc
98142	Adjustment Bolts	

3.4" (85mm)

4.4" (112mm)

5.5" (140mm)

4.2" (107mm)

3.2" (82mm)

1.5" (39mm)

PREMIUM QUALITY

Grakon® A Methode Electronics Company
Hamsar® A Methode Electronics Company
BMAC® A Methode Electronics Company

FORWARD LIGHTING | LED

90mm Low Beam LED Headlight Module

- Bright, white light - enhances illumination and reduces driver fatigue
- Total internal reflector - improves driver's visibility, enhancing safety
- IP68 & IP69K - will withstand dust, dirt and sand, and is resistant to submersion up to a maximum depth of 1.5m underwater for up to thirty minutes
- Extremely low current draw - energy efficient, save on fuel costs as it consumes less energy (13W)
- Constant current circuit draw - light does not dim even if voltage fluctuates
- Hassle-free installation - "drop-in" design easily replaces standard 90mm headlight systems without any need for retooling
- SAE / DOT compliant - compliant to US / CDN federal regulations
- 50,000+ hours LED service life & 3 year warranty

3.4" (85mm)

4.1" (104mm)

1.5" (37mm)

3.1" (79mm)

3.5" (90mm)

COMPACT SIZE

Specifications

Operating Voltage:	12 - 24Vdc
Operating Current:	1.1A @ 12Vdc
	0.5A @ 24Vdc
Power Consumption:	13W
Temperature Range:	-40°C to +65°C
Ingress Protection:	IP68 & IP69K
Weight:	2.0lbs (0.9kg)
Housing:	Die Cast Aluminum - Black E-Coat
	Black Polycarbonate
Lens:	Automotive Optical Grade
	Hard-Coated Polycarbonate
Connection:	3 Position Connector
Polarity:	Reverse Voltage Protected
Vibration Resistance:	10-500Hz @ 5Grms
Compliance:	FMVSS108 and CMVSS108
EMC Rated:	EMC EN 13309: 2010

Part #	Description	Operating Voltage
71075	LED Low Beam | 90mm	12 - 24Vdc
98135	Adjustment Bolts	

Grakon® A Methode Electronics Company   Hamsar® A Methode Electronics Company   BMAC® A Methode Electronics Company

90mm High Beam
LED Headlight Module

- Bright, white light - enhances illumination and reduces driver fatigue
- Total internal reflector - improves driver's visibility, enhancing safety
- IP68 & IP69K - will withstand dust, dirt and sand, and is resistant to submersion up to a maximum depth of 1.5m underwater for up to thirty minutes
- Extremely low current draw - energy efficient, save on fuel costs as it consumes less energy (14W)
- Constant current circuit draw - light does not dim even if voltage fluctuates
- Hassle-free installation - "drop-in" design easily replaces standard 90mm headlight systems without any need for retooling
- SAE / DOT compliant - compliant to US / CDN federal regulations
- 50,000+ hours LED service life & 3 year warranty

COMPACT
SIZE

Specifications

Operating Voltage:	12 - 24Vdc
Operating Current:	1.2A @ 12Vdc
	0.6A @ 24Vdc
Power Consumption:	14W
Temperature Range:	-40°C to +65°C
Ingress Protection:	IP68 & IP69K
Weight:	2.0lbs (0.9kg)
Housing:	Die Cast Aluminum - Black E-Coat
	Black Polycarbonate
Lens:	Automotive Optical Grade
	Hard-Coated Polycarbonate
Connection:	2 Position Connector
Polarity:	Reverse Voltage Protected
Vibration Resistance:	10-500Hz @ 5Grms
Compliance:	FMVSS108 and CMVSS108
EMC Rated:	EMC EN 13309: 2010

3.4" (85mm)

4.1" (104mm)

1.5" (37mm)

3.1" (79mm)

3.5" (90mm)

Part #	Description	Operating Voltage
71079	LED High Beam	90mm	12 - 24Vdc
98135	Adjustment Bolts	

Grakon®
A Methode Electronics Company

Hamsar
A Methode Electronics Company

BMAC
A Methode Electronics Company

FORWARD LIGHTING | LED
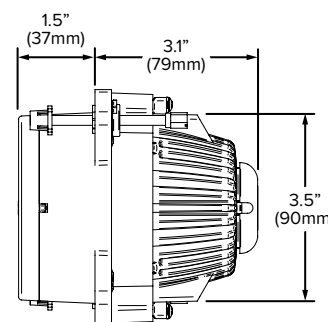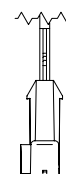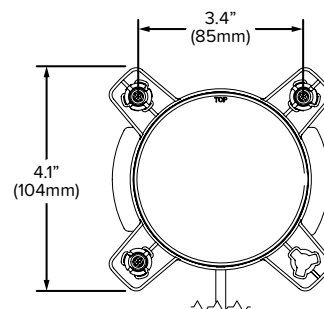
4" x 6" Low Beam
LED Headlight Module

- Bright, white light - enhances illumination and reduces driver fatigue
- Total internal reflector - improves driver's visibility, enhancing safety
- IP68 & IP69K - will withstand dust, dirt and sand, and is resistant to submersion up to a maximum depth of 1.5m underwater for up to thirty minutes
- Extremely low current draw - energy efficient, save on fuel costs as it consumes less energy (13W)
- Constant current circuit draw - light does not dim even if voltage fluctuates
- Hassle-free installation - "drop-in" design easily replaces standard 4" x 6" (165mm) headlight systems without any need for retooling
- SAE / DOT compliant - compliant to US / CDN federal regulations
- 50,000+ hours LED service life & 3 year warranty

6.6"
(168mm)

4.2"
(107mm)

6.6"
(168mm)

2.6"
(66mm)

3.5"
(90mm)

3.6"
(91mm)

Wire Harness Adapter

Each 165mm low beam headlight comes with a wire harness adapter that prevents vehicles with bulb outage warning indicators from engaging due to low current draw

98302 Wire Harness Adapter

Vehicle OE Headlight
3 Prong Connector

Specifications

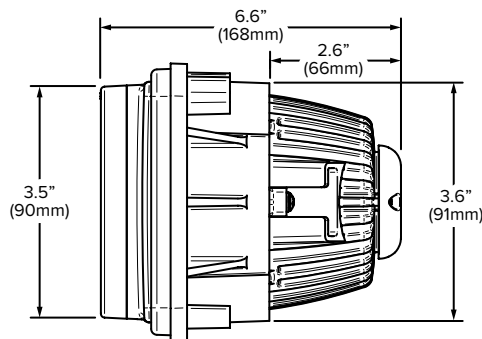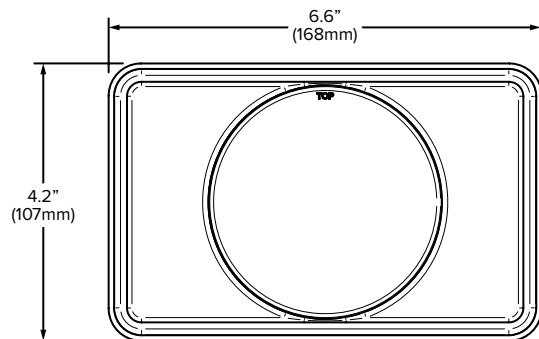|	
Operating Voltage:	12 - 24Vdc
Operating Current:	1.1A @ 12Vdc
	0.5A @ 24Vdc
Power Consumption:	13W
Temperature Range:	-40°C to +65°C
Ingress Protection:	IP68 & IP69K
Weight:	2.0lbs (0.9kg)
Housing:	Die Cast Aluminum - Black E-Coat
	Black Polycarbonate
Lens:	Automotive Optical Grade
	Hard-Coated Polycarbonate
Connection:	3 Position Connector
Polarity:	Reverse Voltage Protected
Vibration Resistance:	10-500Hz @ 5Grms
Compliance:	FMVSS108 and CMVSS108
EMC Rated:	EMC EN 13309: 2010

Part #	Description	Operating Voltage
71076/1	LED Low Beam | 4" x 6"	12 - 24Vdc

Grakon®
A Methode Electronics Company

Hamsar®
A Methode Electronics Company

BMAC
A Methode Electronics Company

1.800.567.5483

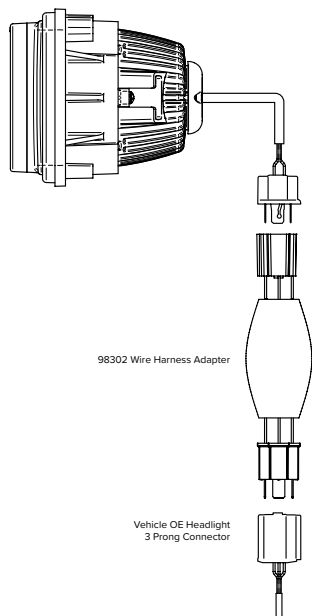# 4" x 6" High Beam
LED Headlight Module

- Bright, white light - enhances illumination and reduces driver fatigue
- Total internal reflector - improves driver's visibility, enhancing safety
- IP68 & IP69K - will withstand dust, dirt and sand, and is resistant to submersion up to a maximum depth of 1.5m underwater for up to thirty minutes
- Extremely low current draw - energy efficient, save on fuel costs as it consumes less energy (14W)
- Constant current circuit draw - light does not dim even if voltage fluctuates
- Hassle-free installation - "drop-in" design easily replaces standard 4" x 6" (165mm) headlight systems without any need for retooling
- SAE / DOT compliant - compliant to US / CDN federal regulations
- 50,000+ hours LED service life & 3 year warranty

6.6" (168mm)
4.2" (107mm)

6.6" (168mm)
2.6" (66mm)
3.5" (90mm)
3.6" (91mm)

Specifications

Operating Voltage:	12 - 24Vdc
Operating Current:	1.2A @ 12Vdc
	0.6A @ 24Vdc
Power Consumption:	14W
Temperature Range:	-40°C to +65°C
Ingress Protection:	IP68 & IP69K
Weight:	2.0lbs (0.9kg)
Housing:	Die Cast Aluminum - Black E-Coat
	Black Polycarbonate
Lens:	Automotive Optical Grade
	Hard-Coated Polycarbonate
Connection:	2 Position Connector
Polarity:	Reverse Voltage Protected
Vibration Resistance:	10-500Hz @ 5Grms
Compliance:	FMVSS108 and CMVSS108
EMC Rated:	EMC EN 13309: 2010

Wire Harness Adapter

Each 165mm high beam headlight comes with a wire harness adapter that prevents vehicles with bulb outage warning indicators from engaging due to low current draw
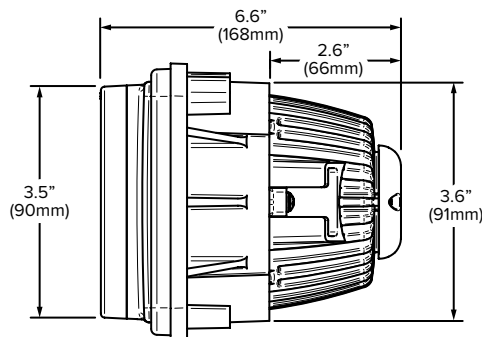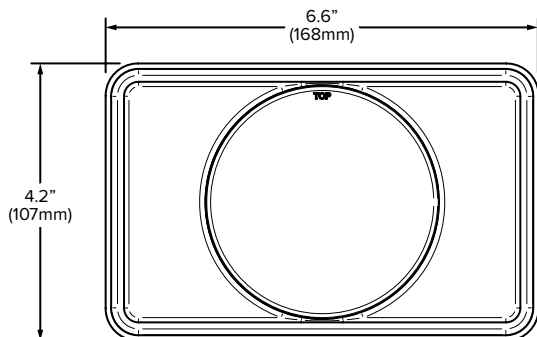
98302 Wire Harness Adapter

Vehicle OE Headlight 3 Prong Connector
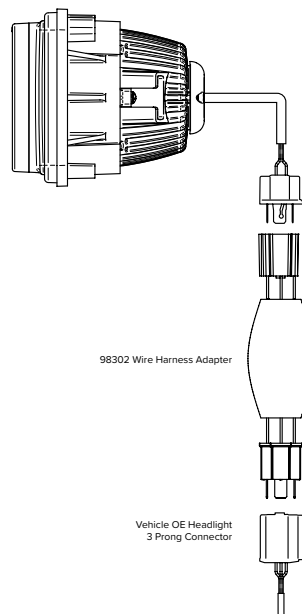
Part #	Description	Operating Voltage
71078/1	LED High Beam | 4" x 6"	12 - 24Vdc

Grakon® A Methode Electronics Company

Hamsar A Methode Electronics Company

BMAC A Methode Electronics Company

FORWARD LIGHTING | LED

90mm Bi-LED High and Low Beam Headlight Module
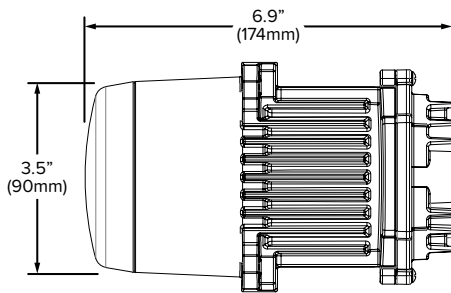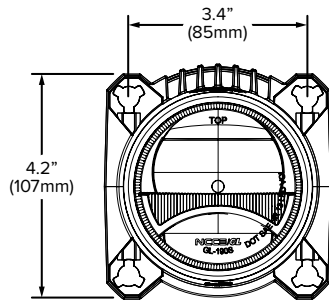
- Bi-LED high and low beam - one projector module with one light source for each side of the vehicle

3.4" (85mm)

4.2" (107mm)

6.9" (174mm)

3.5" (90mm)

Specifications

Operating Voltage:	12 - 24Vdc	
Operating Current:	Low Beam:	3.3A @ 12Vdc
		1.7A @ 24Vdc
	High Beam:	4.2A @ 12Vdc
		2.1A @ 24Vdc
Power Consumption:	Low Beam:	40W
	High Beam:	50W
Temperature Range:	-40°C to +80°C	
Ingress Protection:	IP68 & IP69K	
Weight:	2.9lbs (1.3kg)	
Housing:	Die Cast Aluminum - Black E-Coat	
Lens:	Hard-Coated Glass	
Connection:	Wire Harness with AMP Connector	
Compliance:	FMVSS108 and CMVSS108	ECE R10	

Part #	Description	Operating Voltage
71074	Bi-LED Low and High Beam 90mm	12 - 24Vdc
98143	Adjustment Bolts	

Grakon® A Methode Electronics Company

Hamsar® A Methode Electronics Company

BMAC A Methode Electronics Company

1.800.567.5483

100mm
LED Fog Light

- 5600K colour temperature - provides a crisp and cool white light output which enhances driver visibility, improving safety
- Advanced reflector technology - produces a uniform beam angle for wider field of vision, illuminating road markings more clearly
- Direct fit - designed for most modern fog lights, easy plug and play installation saves time
- Kit includes two lights, wire leads and mounting brackets

Specifications

Operating Voltage:	12 - 24Vdc
Operating Current:	0.6A @ 12Vdc
	0.3A @ 24Vdc
Power Consumption:	8W
Temperature Range:	-40°C to +80°C
Ingress Protection:	IP68
Weight:	0.6lbs (0.3kg)
Housing:	Die Cast Aluminum
Lens:	Polycarbonate
Connection:	Pigtail
Compliance:	SAE J583

3.9"
(99mm)

2.9"
(74mm)

4.6"
(117mm)
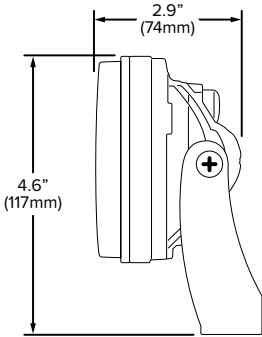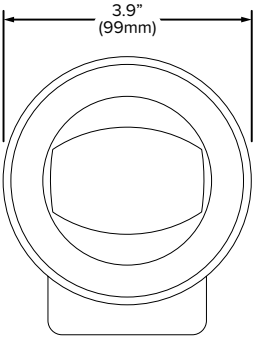
Part #	Description	Operating Voltage
83235	LED Fog Light Kit ǀ 100mm	12 - 24Vdc

Grakon® Hamsar® BMAC®
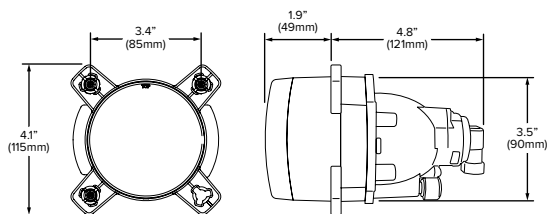
Low Beam Headlight | 90mm

- Chrome inner reflector design
- Three tab adjustment plus one mounting tab
- Includes an easy access / easy change H11 halogen bulb

Specifications

Operating Voltage:	12 - 24Vdc
Operating Current:	4.6A @ 12Vdc
	2.3A @ 24Vdc
Power Consumption:	55W
Bulb:	H11
Weight:	1.5lbs (0.7kg)
Housing:	Die Cast Aluminum - Black Alloy
Lens:	Hardened Glass
Compliance:	FMVSS108 and CMVSS108

Part #	Description	Operating Voltage
71057	Halogen Low Beam	90mm	12 - 24Vdc
85116	H11 Bulb	12V 55W	
98135	Adjustment Bolts	

Low Beam Headlight | 120mm

- Chrome inner reflector design
- Three tab adjustment plus one mounting tab
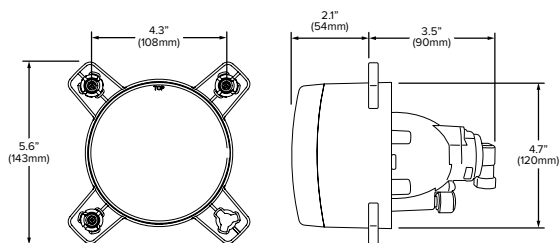- Includes an easy access / easy change H11 halogen bulb

Specifications

Operating Voltage:	12 - 24Vdc
Operating Current:	4.6A @ 12Vdc
	2.3A @ 24Vdc
Power Consumption:	55W
Bulb:	H11
Weight:	2.3lbs (1.0kg)
Housing:	Die Cast Aluminum - Black Alloy
Lens:	Hardened Glass
Compliance:	FMVSS108 and CMVSS108

Part #	Description	Operating Voltage
71058	Halogen Low Beam	120mm	12 - 24Vdc
85116	H11 Bulb	12V 55W	
98135	Adjustment Bolts	

Grakon
A Methode Electronics Company

Hamsar
A Methode Electronics Company

BMAC
A Methode Electronics Company

1.800.567.5483

High Beam Headlight | 90mm

- Chrome inner reflector design
- Three tab adjustment plus one mounting tab
- Includes an easy access / easy change H9 halogen bulb

Specifications

Operating Voltage:	12 - 24Vdc
Operating Current:	5.4A @ 12Vdc
	2.7A @ 24Vdc
Power Consumption:	65W
Bulb:	H9
Weight:	1.0lbs (0.4kg)
Housing:	Die Cast Aluminum - Black Alloy
Lens:	Hardened Glass
Compliance:	FMVSS108 and CMVSS108

Part #	Description	Operating Voltage
71051	Halogen High Beam	90mm	12 - 24Vdc
85115	H9 Bulb	12V 65W	
98135	Adjustment Bolts	

3.4" (85mm)
4.1" (115mm)
2.3" (59mm)
1.5" (38mm)
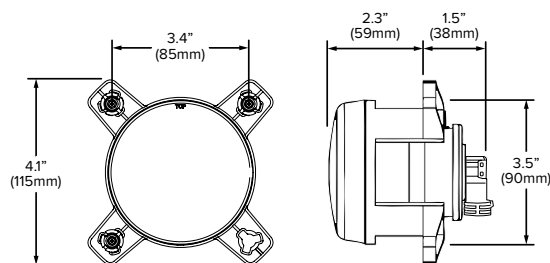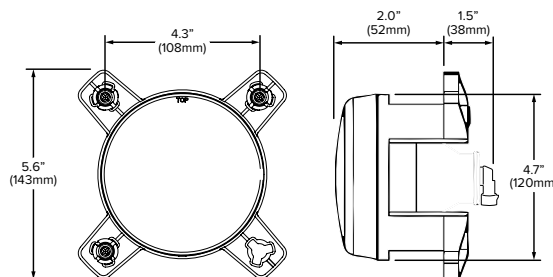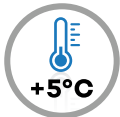3.5" (90mm)

High Beam Headlight | 120mm

- Chrome inner reflector design
- Three tab adjustment plus one mounting tab
- Includes an easy access / easy change H9 halogen bulb

Specifications

Operating Voltage:	12 - 24Vdc
Operating Current:	5.4A @ 12Vdc
	2.7A @ 24Vdc
Power Consumption:	65W
Bulb:	H9
Weight:	1.0lbs (0.4kg)
Housing:	Die Cast Aluminum - Black Alloy
Lens:	Hardened Glass
Compliance:	FMVSS108 and CMVSS108

Part #	Description	Operating Voltage
71055	Halogen High Beam	120mm	12 - 24Vdc
85115	H9 Bulb	12V 65W	
98135	Adjustment Bolts	

4.3" (108mm)
5.6" (143mm)
2.0" (52mm)
1.5" (38mm)
4.7" (120mm)

Grakon® A Methode Electronics Company
Hamsar A Methode Electronics Company
BMAC A Methode Electronics Company

+5°C

Smart Sensor - Heat grid activates automatically only at temperatures below +5°C.

12.5"
(318mm)

8.1"
(206mm)

4.9"
(124mm)

1.6"
(41mm)

Low
Common
High
Park
Ground
Turn
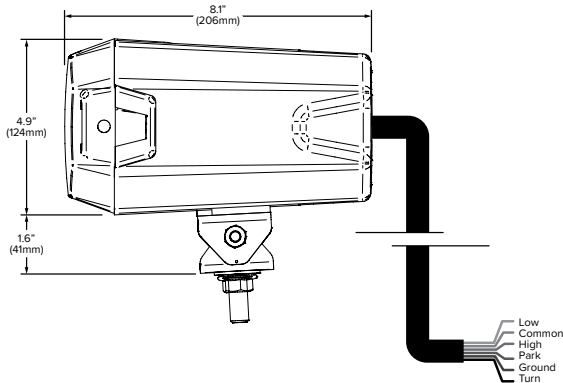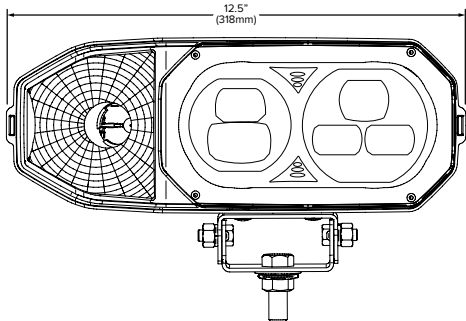
- Combination headlight - dedicated high and low beam LED
- Integrated heat grid - prevents snow and ice buildup
- LED technology - crisp and clear light output
- Strong and durable - built for tough conditions
- Combination headlight - increases road illumination
- Visible park / turn signal light - improves road safety
- Pre-wired - easy to install
- Kit includes two lights, wire harness and mounting brackets

Specifications

Operating Voltage:	12Vdc	
Operating Current:	Low Beam:	1.0A @ 12Vdc
	High Beam:	1.3A @ 12Vdc
	Heat Grid:	1.0A @ 12Vdc
Power Consumption:	Low Beam:	12W
	High Beam:	16W
	Heat Grid:	12W (Maximum 24W)
Heat Grid:	Activated with Low Beam and/or High Beam at Temperatures Below +5°C	
Temperature Range:	-40°C to +65°C	
Ingress Protection:	IP68 & IP69K	
Weight:	5.5lbs (2.5kg)	
Housing:	Polypropylene	
Lens:	Polycarbonate	
Connection:	Universal Wire Harness	
Polarity:	Reverse Voltage Protected	
Vibration Resistance:	10-500Hz @ 5Grms	
Mounting:	U-Bracket	
Compliance:	FMVSS108 and CMVSS108	

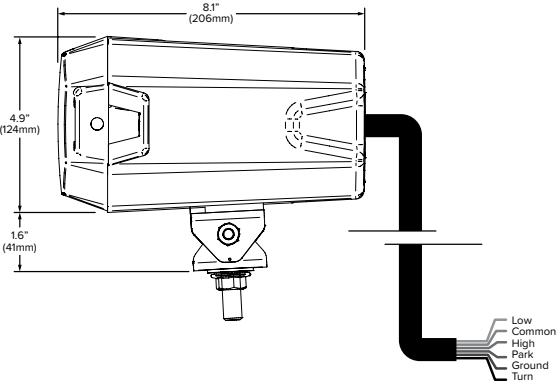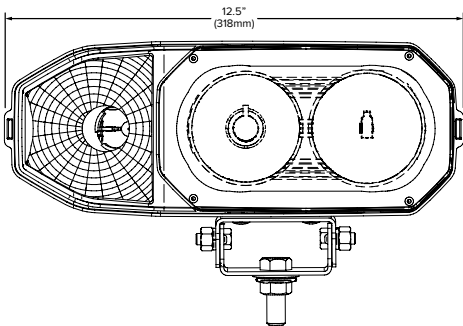| Part #	Description	Operating Voltage
81092	LED Snow Plow Headlight Kit	12Vdc
10-1157NA	1157NA Bulb | Amber	

Snow Plow Headlight

- Combination headlight - dedicated high and low beam bulb
- Strong and durable - built for tough conditions
- Combination headlight - increases road illumination
- Visible park / turn signal light - improves road safety
- Pre-wired - easy to install and easy bulb upgrade
- Kit includes two lights, wire harness and mounting brackets

Specifications

Operating Voltage:	12 - 24Vdc
Operating Current:	4.6A @ 12Vdc
	2.3A @ 24Vdc
Power Consumption:	55W
Temperature Range:	-40°C to +65°C
Ingress Protection:	IP68 & IP69K
Weight:	5.5lbs (2.5kg)
Housing:	Polypropylene
Lens:	Polycarbonate
Connection:	Universal Wire Harness
Polarity:	Reverse Voltage Protected
Vibration Resistance:	10-500Hz @ 5Grms
Mounting:	U-Bracket
Compliance:	FMVSS108 and CMVSS108

Part #	Description	Operating Voltage
81091/2	Snow Plow Headlight Kit	12Vdc
82091/2	Snow Plow Headlight Kit	24Vdc
85045	H1 Bulb	12V 55W	High Beam	
85101	H7 Bulb	12V 55W	Low Beam	
10-1157NA	1157NA Bulb	Amber	

Hamsar
A Methode Electronics Company

Designed with safety and awareness in mind.

Our warning and safety products are ideal for forklifts, utility vehicles or any equipment working in close proximity to pedestrians.
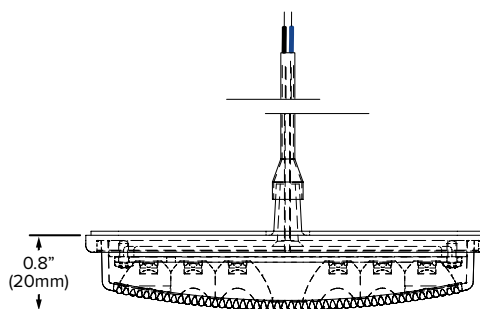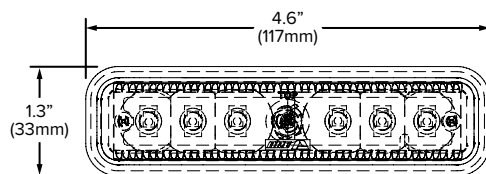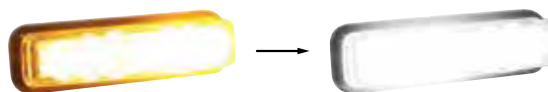
Contents

LED Slim Strobe

- 3M adhesive - easy peel & stick application
- 6" wire lead - simple connection
- Completely sealed unit - waterproof
- Alternating flash patterns - highly visible, multiple configurations with up to 360° of lighting
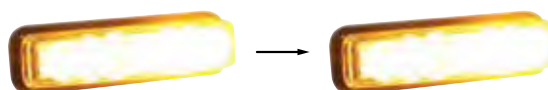- Multiple colours available

4.6"
(117mm)

1.3"
(33mm)

0.8"
(20mm)

Specifications

Operating Voltage:	12Vdc
Operating Current:	100mA @ 12Vdc (average, flashing)
Maximum Current:	200mA @ 12Vdc
Power Consumption:	1.2W
Maximum Power Consumption:	2.4W
Temperature Range:	-40°C to +85°C
Ingress Protection:	IP69K
Weight:	2.3oz (65g)
Housing:	Black ABS
Lens:	Polycarbonate
Connection:	Terminal Wires
Mounting:	3M Double-Sided VHB Tape

Part #	Description	Operating Voltage
81550	LED Slim Strobe Amber - White Flasher	12Vdc
81551	LED Slim Strobe Amber - Amber Flasher	12Vdc
81552	LED Slim Strobe Blue - Blue Flasher	12Vdc
81553	LED Slim Strobe Green - Green Flasher	12Vdc
81554	LED Slim Strobe Red - Red Flasher	12Vdc

Amber - White

Amber - Amber

Blue - Blue

Green - Green

Red - Red

Grakon®
A Methode Electronics Company

Hamsar®
A Methode Electronics Company

BMAC®
A Methode Electronics Company

WARNING AND SAFETY | SAFETY LIGHTS

XWL-812 | Blue LED Safety Light

- At 480nm, the blue LED forklift light is visible in warehouse environments, making it ideal for forklifts, load trucks, AGVs and other industrial vehicles used in close proximity to pedestrians
- Beam precedes vehicle by 16 feet (5 metres) - providing visual warning to alert pedestrians of approaching machinery before it is heard or seen
- Round beam pattern - blue round shape projected to the ground, alerts pedestrians of proximity to moving vehicle
- Versatile & compact design - only 4" x 4" and lightweight, mounts easily on the front or back of vehicle
- 12 - 48Vdc - can be used on heavy duty vehicles

3.9" (99mm)

2.5" (64mm)

3.9" (99mm)

0.5" (13mm)

Bolt 5/16"

U-Bracket

Specifications

Operating Voltage:	12 - 48Vdc
Operating Current:	0.8A @ 12Vdc
	0.2A @ 48Vdc
Power Consumption:	10W
Temperature Range:	-40°C to +85°C
Ingress Protection:	IP67 & IP69K
Weight:	1.5lbs (0.7kg)
Housing:	Die Cast Aluminum - Black E-Coat
Lens:	Automotive Optical Grade Hard-Coated Polycarbonate
Connection:	Tyco or Deutsch
Polarity:	Reverse Voltage Protected
Vibration Resistance:	10-500Hz @ 5Grms
Mounting:	U-Bracket
EMC Rated:	EMC EN 13309: 2010

Part #	Connector	Lumens	Operating Voltage
82295/B	Tyco	150	12 - 48Vdc
82295/C	Deutsch	150	12 - 48Vdc
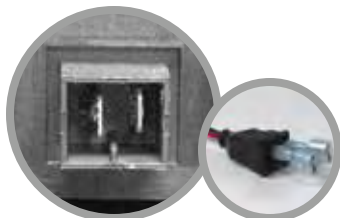
Connector Options

Tyco

Utilizes two quick-connect terminals protected with a rubber housing designed for applications on the engine, under the hood, on the chassis, or in the cab.

Deutsch

An environmentally-sealed 2-pin connector designed for applications on the engine, under the hood, on the chassis, or in the cab.

Grakon® A Methode Electronics Company   Hamsar® A Methode Electronics Company   BMAC® A Methode Electronics Company
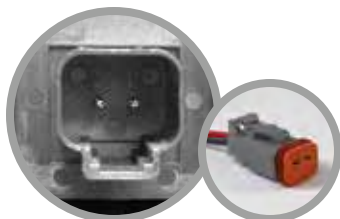
XWL-812 | Red LED Safety Light

- The red LED forklift light is visible in warehouse environments, making it ideal for forklifts, load trucks, AGVs and other industrial vehicles used in close proximity to pedestrians
- Beam precedes vehicle by 16 feet (5 metres) - providing visual warning to alert pedestrians of approaching machinery before it is heard or seen
- Round beam pattern - red round shape projected to the ground, alerts pedestrians of proximity to moving vehicle
- Versatile & compact design - only 4" x 4" and lightweight, mounts easily on the front or back of vehicle
- 12 - 48Vdc - can be used on heavy duty vehicles

Specifications

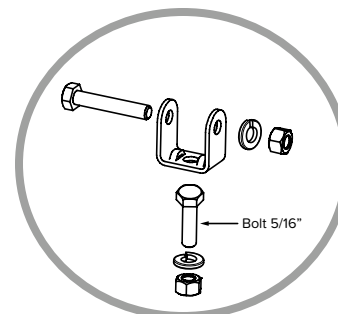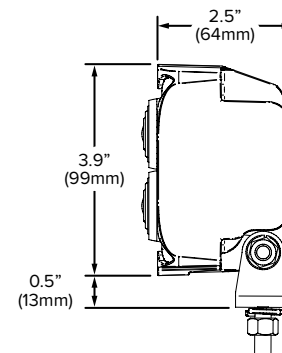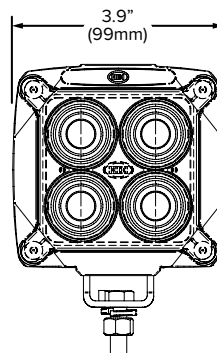|	
Operating Voltage:	12 - 48Vdc
Operating Current:	0.8A @ 12Vdc
	0.2A @ 48Vdc
Power Consumption:	10W
Temperature Range:	-40°C to +85°C
Ingress Protection:	IP67 & IP69K
Weight:	1.5lbs (0.7kg)
Housing:	Die Cast Aluminum - Black E-Coat
Lens:	Automotive Optical Grade
	Hard-Coated Polycarbonate
Connection:	Tyco or Deutsch
Polarity:	Reverse Voltage Protected
Vibration Resistance:	10-500Hz @ 5Grms
Mounting:	U-Bracket
EMC Rated:	EMC EN 13309: 2010

3.9" (99mm) 2.5" (64mm) 3.9" (99mm) 0.5" (13mm)

Bolt 5/16"

U-Bracket

Part #	Connector	Lumens	Operating Voltage
82296/B	Tyco	150	12 - 48Vdc
82296/C	Deutsch	150	12 - 48Vdc

Connector Options

Tyco

Utilizes two quick-connect terminals protected with a rubber housing designed for applications on the engine, under the hood, on the chassis, or in the cab.

Deutsch

An environmentally-sealed 2-pin connector designed for applications on the engine, under the hood, on the chassis, or in the cab.

Grakon® Hamsar® BMAC®

WARNING AND SAFETY | SAFETY LIGHTS

- 2500 lumens
- Dual function light - work light and flashing amber functions:
    1) Wired to two switches
    2) One switch controls the steady white work light function
    3) One switch controls the flashing amber function
       (the amber light does not function at steady, only flashing)
    4) They can operate separately or together
- Die cast aluminum housing & polycarbonate lens - virtually unbreakable
- IP68 & IP69K - will withstand dust, dirt and sand, and is resistant to submersion up to a maximum depth of 1.5m underwater for up to thirty minutes
- 4 attachment points - if one attachment point fails due to a collision, rotate to the next channel point and re-mount the light
- Low current draw - energy efficient, save on fuel costs as it consumes less energy (22W)
- Constant current circuit draw - light does not dim even if voltage fluctuates
- 4 work light beam patterns - get light where it's needed for the job
- 50,000+ hours LED service life & 5 year warranty

4.6"
(117mm)

2.6"
(66mm)

4.6"
(117mm)

1.8"
(46mm)

Bolt 1/2"

C-Bracket

Specifications

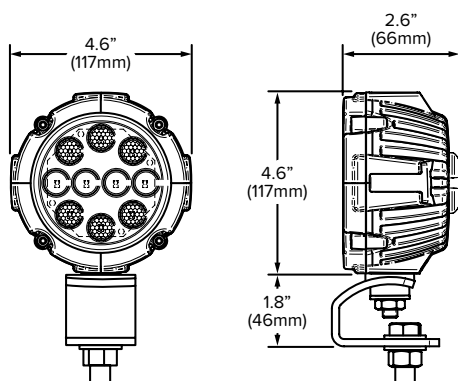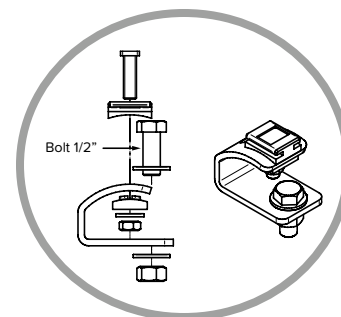|		
Operating Voltage:	12 - 24Vdc	
Operating Current:	Work:	1.8A @ 12Vdc	0.9A @ 24Vdc
	Amber:	0.8A @ 12Vdc	0.4A @ 24Vdc
	Both:	2.6A @ 12Vdc	1.3A @ 24Vdc
Power Consumption:	Work:	22W
	Amber:	10W
	Both:	32W
Temperature Range:	-40°C to +80°C	
Ingress Protection:	IP68 & IP69K	
Weight:	2.2lbs (1.0kg)	
Housing:	Die Cast Aluminum	
	Black E-Coat	
Lens:	Automotive Optical Grade	
	Hard-Coated Polycarbonate	
Connection:	6" Wire	
Polarity:	Reverse Voltage Protected	
Vibration Resistance:	10-500Hz @ 5Grms	
Mounting:	C-Bracket	
EMC Rated:	EMC EN 13309: 2010	

Part #	Beam Pattern	Lumens	Operating Voltage
81561	Spot	2500	12 - 24Vdc
81562	Wide Flood	2500	12 - 24Vdc
81563	Medium Flood	2500	12 - 24Vdc
81564	Hybrid	2500	12 - 24Vdc

Accessories

HW02A	Hardware Kit	C-Bracket
98195	Easy Grip Handle - Black	Blue	Orange
	(see page 53)	

Grakon® Hamsar® BMAC®

1.800.567.5483

LED Liftgate Flasher

- Smart sensor technology - automatically triggers LED illumination in non-vertical orientation
- Bright flashing LEDs - raise pedestrian awareness in close proximity to vehicle
- One-time activation switch - simplifies the installation process as there are no wires to cut
- 3 LEDs - bright warning lights
- 52 flashes / minute - distinct and noticeable flash rate
- Long life battery - 5 years life based on normal usage
- Fully submersible - can be used in wet environments
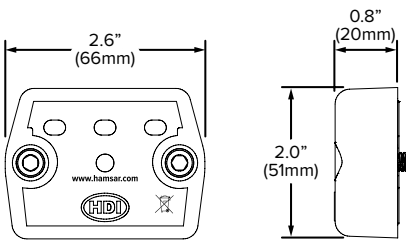
Specifications

LEDs:	3
LED Colour:	Amber
Activation:	Non-Vertical Orientation	Vertical OFF
Temperature Range:	-40°C to +85°C
Ingress Protection:	IP69K
Weight:	1.9oz (55g)
Housing:	Automotive Grade Clear Polycarbonate
Battery:	Non-Replaceable 3.6Vdc Lithium-Ion
Battery Life:	5 Years (based on normal usage)
Mounting:	2 x 1/4" Screw Holes 50mm Apart for #8 Screws

Part #	Description
44110	LED Liftgate Flasher	Battery Operated

90°

Grakon® A Methode Electronics Company   Hamsar® A Methode Electronics Company   BMAC® A Methode Electronics Company

WARNING AND SAFETY | SAFETY LIGHTS

LED Strobe Beacon | Oval

- 12 -24Vdc - use on pick-up trucks, cars or heavy duty vehicles
- 23 built-in flash patterns - highly visible, multiple configurations with up to 360° of lighting
- Multiple unit synchronization - enhance visibility further with coordinated flash patterns
- Low profile design - provides more stability, better weight distribution and saves fuel
- Permanent mount or magnetic mount - allows for options to leave on, or switch between fleet vehicles

9.8"
(249mm)

6.8"
(173mm)

1.5"
(38mm)

Specifications

Operating Voltage:	12 - 24Vdc
Operating Current:	2.1A @ 12Vdc (varies with flash pattern)
	1.0A @ 24Vdc (varies with flash pattern)
Max Current:	4.2A @ 12Vdc
	2.1A @ 24Vdc
Power Consumption:	25W
Max Power Consumption:	50W
Temperature Range:	-50°C to +60°C
Ingress Protection:	IP69K
Weight:	2.8lbs (1.3kg)
Housing:	Black ABS
Lens:	Polycarbonate
Connection:	Permanent Mount: Wire Leads
	Magnetic Mount: 12Vdc Plug
Mounting:	Permanent or Magnetic
LEDs:	30
Colour:	Amber
Fuse Recommended:	8A
Compliance:	SAE J845 Class 1	CA Title 13

Flash Pattern #	Flash Pattern
0	Random
1	Rotating
2	Single (Split)
3	Double (Split)
4	Quad (Split)
5	Quint (Split)
6	Mega (Split)
7	Ultra (Split)
8	Single - Quad (Split)
9	Single H / L (Split)
10	Single (All)
11	Double (All)
12	Quad (All)
13	Quint (All)
14	Mega (All)
15	Ultra (All)
16	Single - Quad (All)
17	Single H / L (All)
18	Steady 2 (California)
19	Single (2Hz)
20	Double (2Hz)
21	Triple (2Hz)
22	Quad (2Hz)

Part #	Description	Operating Voltage
81542	LED Strobe Beacon Permanent Mount	12 - 24Vdc
81543	LED Strobe Beacon Magnetic Mount with 2 Switch 12Vdc Plug	12Vdc

Split = left alternate right | All = all LEDs on

Grakon® Hamsar BMAC

1.800.567.5483

LED Strobe Beacon | Rectangular

- 19 built-in flash patterns - highly visible, multiple configurations with up to 360° of lighting
- Multiple unit synchronization - enhance visibility further with coordinated flash patterns
- Low profile design - provides more stability, better weight distribution and saves fuel
- Permanent mount or magnetic mount - allows for options to leave on, or switch between fleet vehicles

16.7"
(424mm)
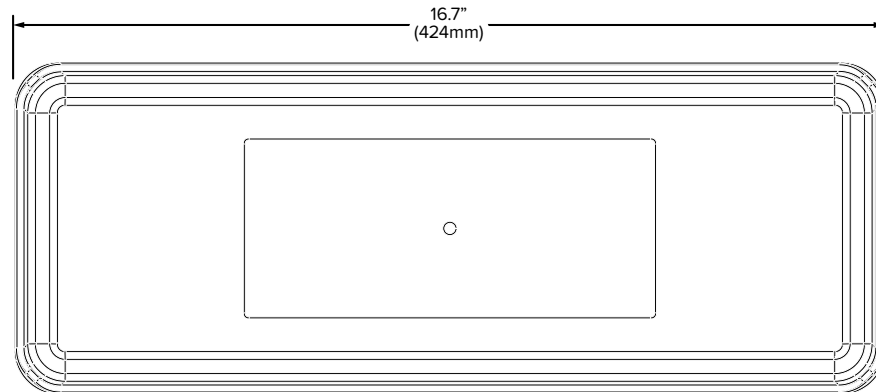
Specifications

Operating Voltage:	12Vdc
Operating Current:	1.6A @ 12Vdc (varies with flash pattern)
Max Current:	3.2A @ 12Vdc
Power Consumption:	19W
Max Power Consumption:	38W
Temperature Range:	-50°C to +60°C
Ingress Protection:	IP69K
Weight:	3.4lbs (1.5kg)
Housing:	Black ABS
Lens:	Polycarbonate
Connection:	Permanent Mount: Wire Leads
	Magnetic Mount: 12Vdc Plug
Mounting:	Permanent or Magnetic
LEDs:	18
Colour:	Amber
Fuse Recommended:	8A
Compliance:	SAE J845 Class 1	CA Title 13

6.3"
(160mm)

2.9"
(74mm)

Flash Pattern #	Flash Pattern
0	Random (All)
1	Single (Split)
2	Double (Split)
3	Quad (Split)
4	Quint (Split)
5	Mega (Split)
6	Ultra (Split)
7	Single - Quad (Split)
8	Single H / L (Split)
9	Single (All)
10	Double (All)
11	Quad (All)
12	Quint (All)
13	Mega (All)
14	Ultra (All)
15	Single - Quad (All)
16	Single H / L (All)
17	Steady 2 (California)
18	Steady 4 (All)

Split = left alternate right | All = all LEDs on

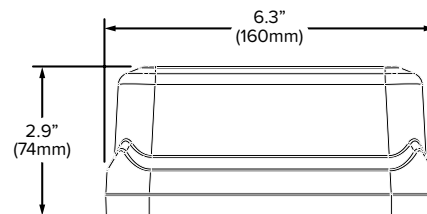| Part #	Description	Operating Voltage
81544	LED Strobe Beacon Permanent Mount	12Vdc
81545	LED Strobe Beacon Magnetic Mount with 2 Switch 12Vdc Plug	12Vdc

Grakon
A Methode Electronics Company

Hamsar
A Methode Electronics Company

BMAC
A Methode Electronics Company

**WARNING AND SAFETY | STROBE BEACONS**

Lumalarm
LED Back Up Alarm

- Multi-functional back up alarm with flashing amber LED warning lights
- Night silent - alarm can be disengaged when in sound sensitive areas. Flashing amber LED warning stays on warning pedestrians of vehicle presence
- 200 lumen amber LED - provides bright visual warning of vehicle backing up in addition to audible alarm
- Wraparound LED lens - flashing amber LED warning is visible beyond 180° on either side of back up alarm, providing added safety
- ABS plastic housing - robust construction for heavy duty applications
- Epoxy encapsulated electronics - electronic components are protected against environmental elements

4.0" (102mm)
3.2" (81mm)
1.7" (43mm)
4.0" (102mm)
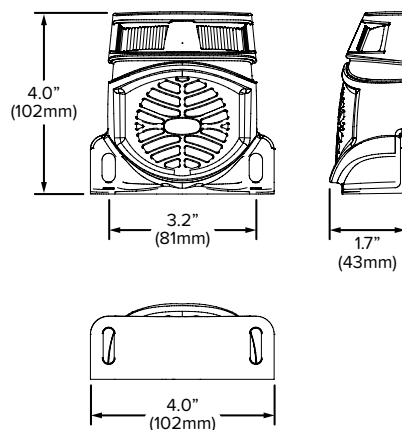
Specifications

Lumens:	200
Operating Voltage:	12 - 24Vdc
Operating Current:	500mA @ 12Vdc
	250mA @ 24Vdc
Temperature Range:	-57°C to +67°C
Weight:	7.0oz (200g)
Housing:	Black ABS
Lens:	PMMA Clear Optical Grade
Connection:	5 Wires
Compliance:	SAE J994

Part #	dB Rating	Operating Voltage
52050	87dB	12 - 24Vdc
52051	97dB	12 - 24Vdc
52052	107dB	12 - 24Vdc

Modes	Functions	● (red)	● (orange)	● (green)	○ (white)	● (black)	Alarm	LEDs
Normal Alarm	Vehicle Backing Up - Reverse	+				−	✓	✓
Night Silent	When Park Light ON	+	+			−		✓
Override Night Silent	When Fog Light ON with Park Light	+	+	+		−	✓	✓
Alarm Only	When Flashing Not Needed	+			+	−	✓	
Flashing Amber Only	When Dashboard Switch ON	+		+		−		✓

+ 12Vdc − Ground

Grakon
A Methode Electronics Company

Hamsar
A Methode Electronics Company

BMAC
A Methode Electronics Company

1.800.567.5483

Back Up Alarm | 97dB

- Self grounding
- Steam cleanable
- Epoxy encapsulated solid state electronics

Specifications

Operating Voltage:	12 - 24Vdc
Temperature Range:	-30°C to +55°C
Weight:	8.0oz (226g)
Housing:	Glass Filled Nylon
Connection:	Connect Positive Wire with #8 Ring Terminal to Top Stud Connect Ground Wire with #8 Ring Terminal to Bottom Stud
Polarity:	Reverse Voltage Protected
Mounting:	Horizontal or Vertical
Compliance:	SAE / DOT

Part #	dB Rating	Operating Voltage
51008	97dB	12 - 24Vdc
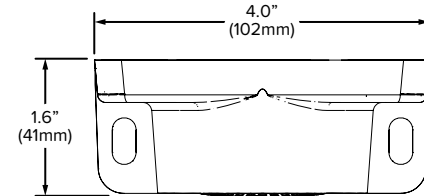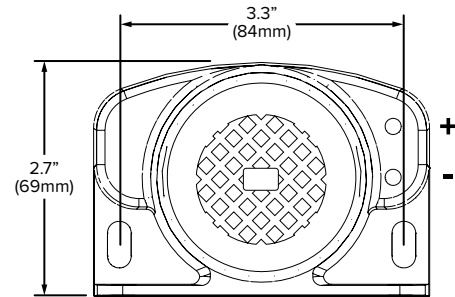
Back Up Alarm | 97dB

- Steam cleanable
- Epoxy encapsulated solid state electronics

Specifications

Operating Voltage:	12 - 24Vdc
Temperature Range:	-30°C to +55°C
Weight:	12.2oz (345g)
Housing:	Glass Filled Nylon
Connection:	Connect Black Wire to Positive Connect White Wire to Ground
Polarity:	Reverse Voltage Protected
Mounting:	Horizontal or Vertical
Compliance:	SAE / DOT

Part #	dB Rating	Operating Voltage
51030	97dB	12 - 24Vdc

Grakon®
A Methode Electronics Company

Hamsar®
A Methode Electronics Company

BMAC
A Methode Electronics Company

WARNING AND SAFETY | BACK UP ALARMS
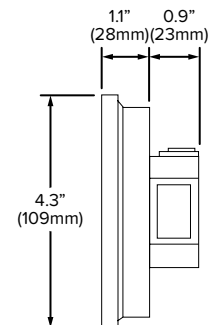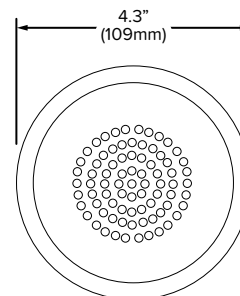
Back Up Alarm | 107dB

- Steam cleanable
- Epoxy encapsulated solid state electronics

Specifications

Operating Voltage:	12 - 24Vdc
Temperature Range:	-30°C to +55°C
Weight:	27.4oz (776g)
Housing:	Powder Coated Steel
Connection:	Connect Red Wire to Positive
	Connect Black Wire to Ground
Polarity:	Reverse Voltage Protected
Mounting:	Horizontal or Vertical
Compliance:	SAE / DOT
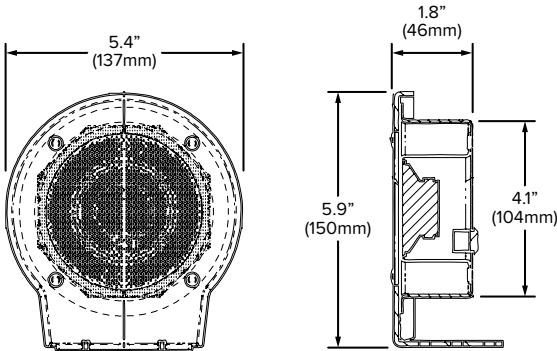
Part #	dB Rating	Operating Voltage
51045	107dB	12 - 24Vdc

5.4"
(137mm)

1.8"
(46mm)

5.9"
(150mm)

4.1"
(104mm)

WARNING AND SAFETY | BACK UP ALARMS

Grakon®
A Methode Electronics Company

Hamsar®
A Methode Electronics Company

BMAC®
A Methode Electronics Company

Back Up Alarm | 112dB
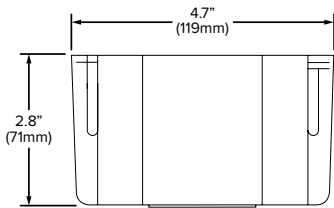

- Steam cleanable
- Epoxy encapsulated solid state electronics

Specifications

Operating Voltage:	12 - 24Vdc
Temperature Range:	-30°C to +55°C
Weight:	16.1oz (456g)
Housing:	Glass Filled Nylon
Connection:	Connect Red Wire to Positive
	Connect Black Wire to Ground
Polarity:	Reverse Voltage Protected
Mounting:	Horizontal or Vertical
Compliance:	SAE / DOT

Part #	dB Rating	Operating Voltage
51020	112dB	12 - 24Vdc
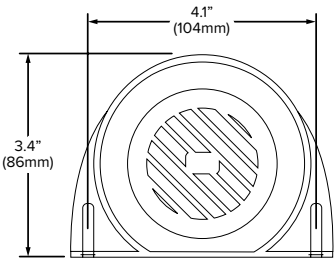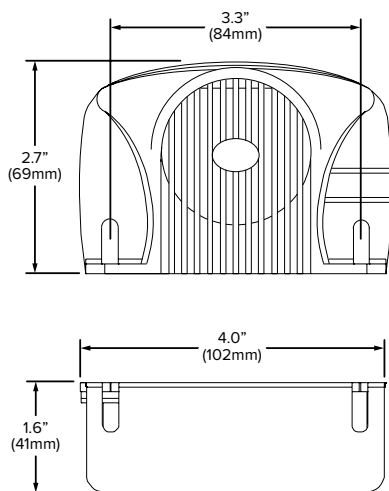
Grakon® | Hamsar® | BMAC®

WARNING AND SAFETY | BACK UP ALARMS

Back Up Alarm | 97dB

- Steam cleanable
- Epoxy encapsulated solid state electronics

3.3"
(84mm)

2.7"
(69mm)

4.0"
(102mm)

1.6"
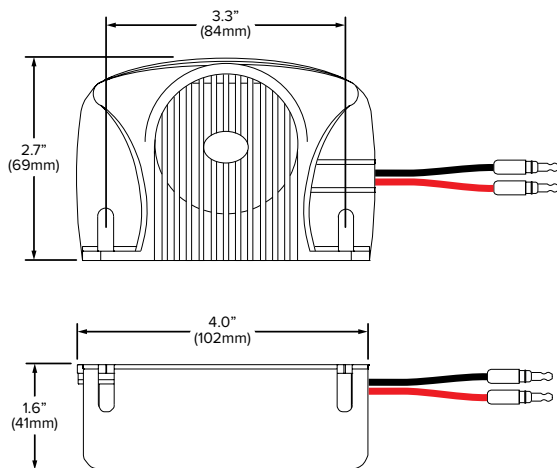(41mm)

Specifications

Operating Voltage:	12 - 24Vdc
Temperature Range:	-30°C to +55°C
Weight:	8.0oz (266g)
Housing:	Glass Filled Nylon
Connection:	Bulleted Wires
	Connect Red Wire to Positive
	Connect Black Wire to Ground
Polarity:	Reverse Voltage Protected
Mounting:	Horizontal or Vertical
Compliance:	SAE / DOT

Part #	dB Rating	Operating Voltage
51006	97dB	12 - 24Vdc

Back Up Alarm
87dB | 97dB | 107dB

- Steam cleanable
- Epoxy encapsulated solid state electronics

3.3"
(84mm)

2.7"
(69mm)

4.0"
(102mm)

1.6"
(41mm)

Specifications

Operating Voltage:	12 - 24Vdc
Temperature Range:	-30°C to +55°C
Weight:	8.0oz (266g)
Housing:	Glass Filled Nylon
Connection:	Connect Red Wire to Positive
	Connect Black Wire to Ground
Polarity:	Reverse Voltage Protected
Mounting:	Horizontal or Vertical
Compliance:	SAE / DOT

Part #	dB Rating	Operating Voltage
51010	87dB	12 - 24Vdc
51011	97dB	12 - 24Vdc
51012	107dB	12 - 24Vdc

Grakon®
A Methode Electronics Company

Hamsar®
A Methode Electronics Company

BMAC
A Methode Electronics Company

1.800.567.5483

Back Up Alarm | 97dB

- Steam cleanable
- Epoxy encapsulated solid state electronics

Specifications

Operating Voltage:	24 - 48Vdc
Temperature Range:	-30°C to +55°C
Weight:	8.0oz (266g)
Housing:	Glass Filled Nylon
Connection:	Connect Red Wire to Positive
	Connect Black Wire to Ground
Polarity:	Reverse Voltage Protected
Mounting:	Horizontal or Vertical
Compliance:	SAE / DOT

Part #	dB Rating	Operating Voltage
51015	97dB	24 - 48Vdc

3.3" (84mm)

2.7" (69mm)

4.0" (102mm)

1.6" (41mm)

Grakon® *A Methode Electronics Company*

Hamsar® *A Methode Electronics Company*

BMAC® *A Methode Electronics Company*
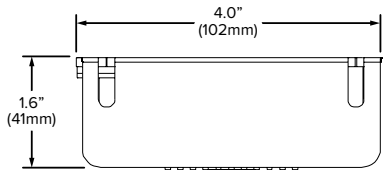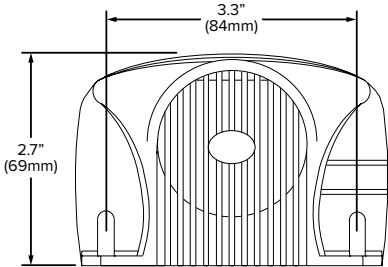
Innovative and stylish design.

Our rear lighting products are ideal for buses, motor coaches, recreational vehicles, truck caps, utility vehicles, cargo vans and light duty trucks.

Contents

LED Tail / Stop Light
Red

- 16 LEDs - crisp, clear and high output illumination for increased visibility
- Metallized reflector - increased light output, better light control and reduced glare
- Built-in side reflex - enhanced visibility to oncoming traffic
- Sleek & stylish design - enhances the look of the vehicle with modern styling
- UV resistant polycarbonate lens - helps withstand the damaging effects of the sun and environmental elements

5.2"
(133mm)

10.3"
(261mm)
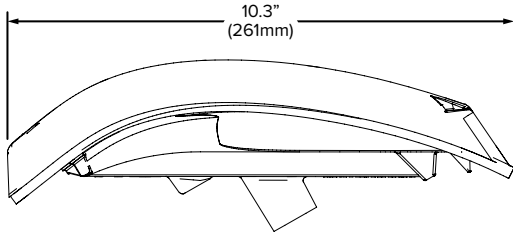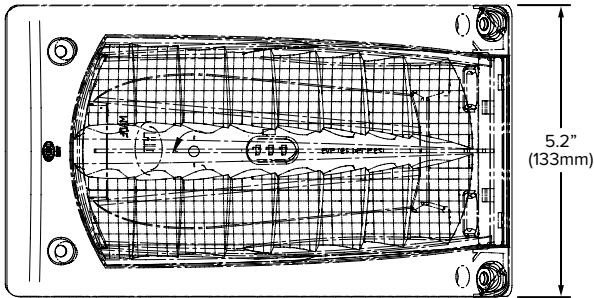
Specifications

LEDs:	16
Operating Voltage:	12 - 24Vdc
Operating Current:	Stop Light: 0.7A @ 12Vdc
	0.4A @ 24Vdc
	Park Light: 50mA @ 12Vdc
	25mA @ 24Vdc
Power Consumption:	Stop Light: 8W
	Park Light: 0.6W
Lens:	Automotive Grade Polycarbonate
Lens Colour:	Red
Compliance:	SAE / DOT

Part #	Description	Operating Voltage
84030	LED Tail / Stop Light Red	12 - 24Vdc

Grakon®
A Methode Electronics Company

Hamsar®
A Methode Electronics Company

BMAC®
A Methode Electronics Company

REAR LIGHTING | TAIL LIGHTS

LED Tail / Turn Light
Amber

- 16 LEDs - crisp, clear and high output illumination for increased visibility
- Metallized reflector - increased light output, better light control and reduced glare
- Built-in side reflex - enhanced visibility to oncoming traffic
- Sleek & stylish design - enhances the look of the vehicle with modern styling
- UV resistant polycarbonate lens - helps withstand the damaging effects of the sun and environmental elements

10.3"
(261mm)
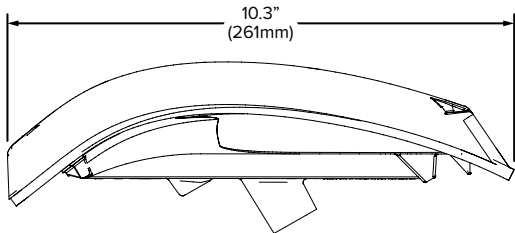
5.2"
(133mm)
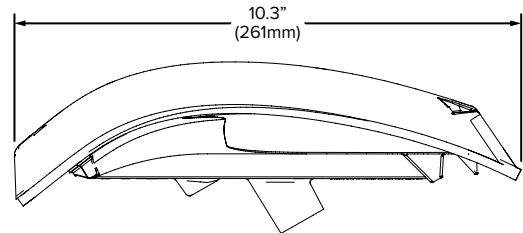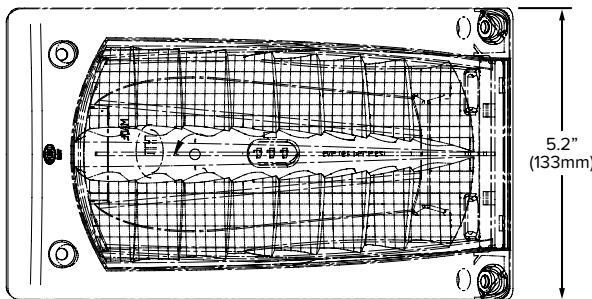
Specifications

LEDs:	16	
Operating Voltage:	12 - 24Vdc	
Operating Current:	Turn Light:	0.7A @ 12Vdc
		0.4A @ 24Vdc
	Park Light:	50mA @ 12Vdc
		25mA @ 24Vdc
Power Consumption:	Turn Light:	8W
	Park Light:	0.6W
Lens:	Automotive Grade Polycarbonate	
Lens Colour:	Amber	
Compliance:	SAE / DOT	

Part #	Description	Operating Voltage
84031	LED Tail / Turn Light Amber	12 - 24Vdc

Grakon®
A Methode Electronics Company

Hamsar®
A Methode Electronics Company

BMAC®
A Methode Electronics Company

1.800.567.5483

LED Tail / Reverse Light White

- 16 LEDs - crisp, clear and high output illumination for increased visibility
- Metallized reflector - increased light output, better light control and reduced glare
- Built-in side reflex - enhanced visibility to oncoming traffic
- Sleek & stylish design - enhances the look of the vehicle with modern styling
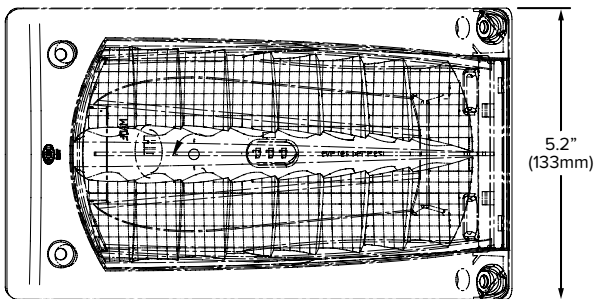- UV resistant polycarbonate lens - helps withstand the damaging effects of the sun and environmental elements

10.3"
(261mm)

5.2"
(133mm)

Specifications

LEDs:	16
Operating Voltage:	12 - 24Vdc
Operating Current:	Reverse Light: 0.7A @ 12Vdc
	0.4A @ 24Vdc
	Park Light: 50mA @ 12Vdc
	25mA @ 24Vdc
Power Consumption:	Reverse Light: 8W
	Park Light: 0.6W
Lens:	Automotive Grade Polycarbonate
Lens Colour:	Clear
Compliance:	SAE / DOT

Part #	Description	Operating Voltage
84032	LED Tail / Reverse Light White	12 - 24Vdc

Grakon® · A Methode Electronics Company
Hamsar® · A Methode Electronics Company
BMAC® · A Methode Electronics Company

REAR LIGHTING | TAIL LIGHTS

LED Tail / Stop Light Red

- 10 LEDs
- Includes grommet
- Corrosion proof, shock proof and watertight
- UV resistant polycarbonate lens - helps withstand the damaging effects of the sun and environmental elements

3.0"
(76mm)

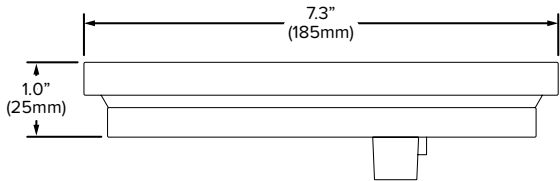7.3"
(185mm)

1.0"
(25mm)
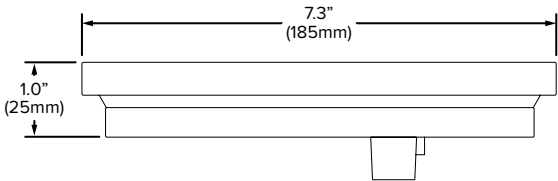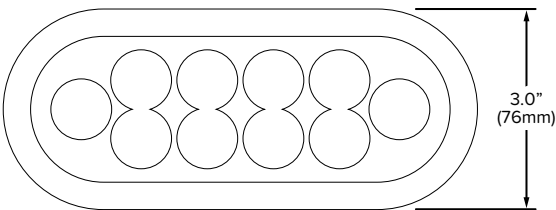
Specifications

LEDs:	10
Operating Voltage:	12Vdc
Operating Current:	0.3A @ 12Vdc
Power Consumption:	3W
Lens:	Automotive Grade Polycarbonate
Lens Colour:	Red
Compliance:	SAE / DOT

Part #	Description	Operating Voltage
84045	LED Tail / Stop Light Red	12Vdc

Grakon®
A Methode Electronics Company

Hamsar®
A Methode Electronics Company

BMAC®
A Methode Electronics Company

1.800.567.5483

LED Tail / Turn Light
Amber

- 10 LEDs
- Includes grommet
- Corrosion proof, shock proof and watertight
- UV resistant polycarbonate lens - helps withstand the damaging effects of the sun and environmental elements
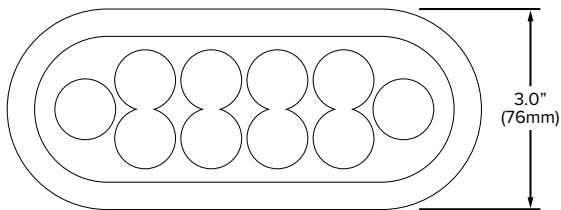

3.0"
(76mm)

7.3"
(185mm)

1.0"
(25mm)

Specifications

LEDs:	10
Operating Voltage:	12Vdc
Operating Current:	0.3A @ 12Vdc
Power Consumption:	3W
Lens:	Automotive Grade Polycarbonate
Lens Colour:	Amber
Compliance:	SAE / DOT

Part #	Description	Operating Voltage
84046	LED Tail / Turn Light Amber	12Vdc

Grakon®
A Methode Electronics Company

Hamsar®
A Methode Electronics Company

BMAC®
A Methode Electronics Company

REAR LIGHTING | TAIL LIGHTS

LED Tail / Reverse Light White

- 10 LEDs
- Includes grommet
- Corrosion proof, shock proof and watertight
- UV resistant polycarbonate lens - helps withstand the damaging effects of the sun and environmental elements

7.3"
(185mm)

3.0"
(76mm)

1.0"
(25mm)

Specifications

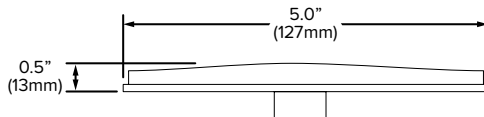|	
LEDs:	10
Operating Voltage:	12Vdc
Operating Current:	0.3A @ 12Vdc
Power Consumption:	3W
Lens:	Automotive Grade Polycarbonate
Lens Colour:	Clear
Compliance:	SAE / DOT
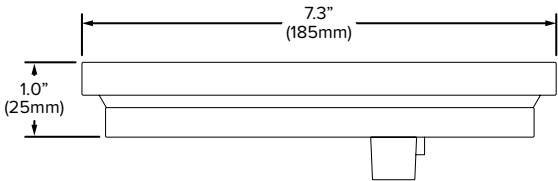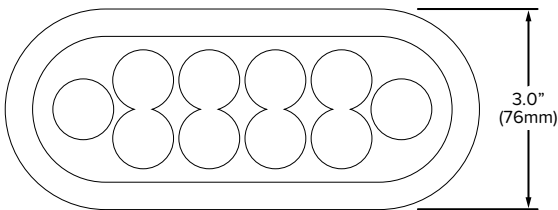
Part #	Description	Operating Voltage
84049	LED Tail / Reverse Light White	12Vdc

Grakon®
A Methode Electronics Company

Hamsar®
A Methode Electronics Company

BMAC®
A Methode Electronics Company

1.800.567.5483

LED Marker Light

- 2 LEDs
- Acrylic lens with reflex
- 2 screw, recessed mount

1.5"
(38mm)

5.0"
(127mm)

0.5"
(13mm)

Specifications

LEDs:	2
Operating Voltage:	12Vdc
Operating Current:	80mA @ 12Vdc
Power Consumption:	1W
Lens:	Acrylic
Compliance:	SAE / DOT

Part #	Description	Operating Voltage
99062	LED Marker Light Amber	12Vdc
99063	LED Marker Light Red	12Vdc

Grakon®
A Methode Electronics Company

Hamsar®
A Methode Electronics Company

BMAC®
A Methode Electronics Company

REAR LIGHTING | MARKER LIGHTS

LED License Plate Light

- Conveniently mounts above license plate providing the necessary white illumination required by law
- Can be installed with or without black bezel (included)

3.5"
(90mm)

2.8"
(70mm)

0.6"
(14mm)

0.8"
(21mm)

3.9"
(98mm)

2.8"
(70mm)

0.6"
(14mm)

1.1"
(28mm)
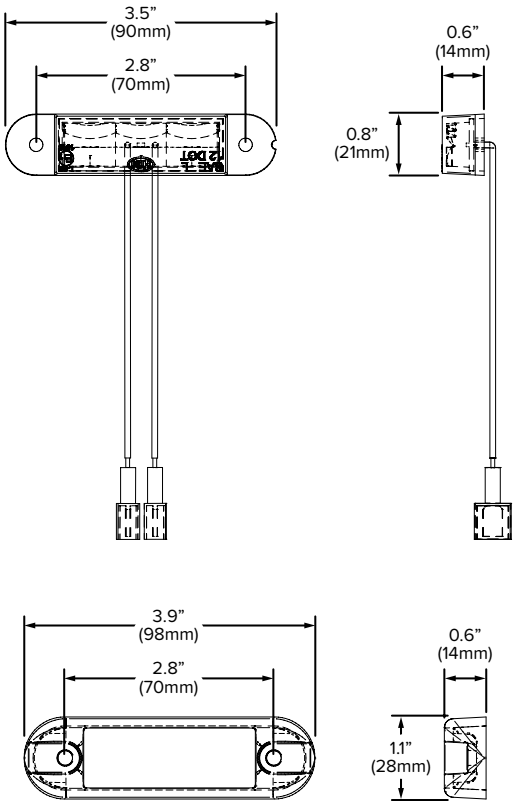
Specifications

Operating Voltage:	12Vdc
Operating Current:	100mA @ 12Vdc
Power Consumption:	1.2W
Temperature Range:	-40°C to +85°C
Ingress Protection:	IP68
Weight:	1.3oz (36g)
Bezel:	ABS
Lens:	Polycarbonate
Connection:	Terminal Wires
Mounting:	2 Screws
Compliance:	SAE / DOT	ECE

Part #	Description	Operating Voltage
82132	LED License Plate Light Black Bezel	12Vdc

Black Bezel Included

Can be installed with or without black bezel

Grakon®
A Methode Electronics Company

Hamsar®
A Methode Electronics Company

BMAC®
A Methode Electronics Company

1.800.567.5483

LED Third Brake Light

- UV resistant for many years of outdoor use
- Flat adhesive back design makes for a tight seal

9.8"
(249mm)

1.0"
(25mm)

1.0"
(25mm)

Double Sided Tape
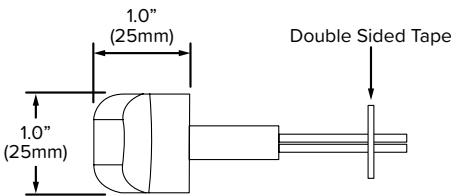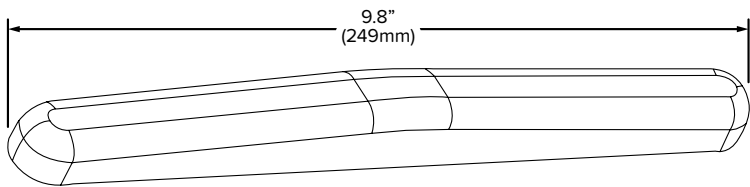
Specifications

LEDs:	9
Operating Voltage:	12Vdc
Operating Current:	0.2A @ 12Vdc
Power Consumption:	2W
Lens:	Automotive Grade Polycarbonate
Lens Colour:	Red
Connection:	60" Wire Lead
Compliance:	SAE / DOT

Part #	Description	Operating Voltage
84005	LED Third Brake Light	12Vdc

Grakon®
A Methode Electronics Company

Hamsar®
A Methode Electronics Company

BMAC®
A Methode Electronics Company

REAR LIGHTING | THIRD BRAKE LIGHTS

- High quality automotive grade camera delivers superior picture quality and a 170° viewing angle (50' wide by 20' deep), surpassing FMVSS111 requirements
- LEDs illuminate 200ms faster than incandescent bulbs, meaning faster braking distance response time
- Guideline enabled camera (red, blue, green and yellow lines) enhances driver rearview assistance and safety
- Night vision equipped for nighttime visibility and safety
- Waterproof camera with IP68 environmental rating
- Weatherproof CHMSL (IP65) with flat back is constructed with high quality automotive grade lens that will not fade, and meets FMVSS108 standard
- CHMSL #84198 includes both a back up camera and built-in exterior courtesy lights, for added safety and nighttime visibility when unloading or working outside the vehicle

Courtesy Lights

11.5"
(292mm)

10.2"
(259mm)

1.7"
(43mm)

2.1"
(53mm)

REAR LIGHTING | THIRD BRAKE LIGHTS

Grakon®
A Methode Electronics Company

Hamsar®
A Methode Electronics Company

BMAC®
A Methode Electronics Company

1.800.567.5483
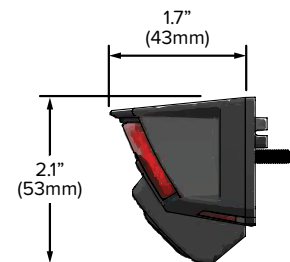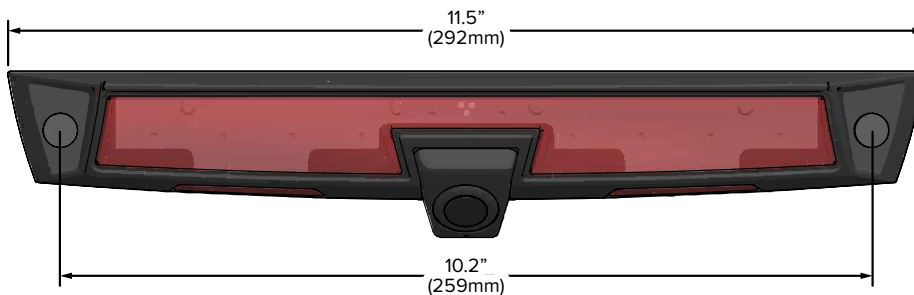
LED Third Brake Light | Back Up Camera

CHMSL Specifications

Operating Voltage:	12Vdc
Operating Current:	0.2A @ 12Vdc
Power Consumption:	2W
Temperature Range:	-40°C to +85°C
Ingress Protection:	IP65
Lens:	Automotive Optical Grade Hard-Coated Polycarbonate
Compliance:	FMVSS108

Camera Specifications

View Angle:	170°
Night Vision:	Yes
Operating Voltage:	12Vdc
Operating Current:	110mA
Temperature Range:	-40°C to +85°C
Ingress Protection:	IP68
Guidelines Enabled:	Yes

Monitor Specifications

Operating Voltage:	12Vdc
Screen Size:	7" with TFT Panel
Aspect Ratio:	16:9 Image
System:	PAL and NTSC Auto Switching
Overall Dimensions:	7.5" x 5.25" x 2.25"
Resolution:	800 x 480 (RGB)
Brightness:	450cd/m2
Guidelines:	Red, Blue, Green & Yellow
Speaker:	Built-In
Video Output:	Colour
Video Input:	2-Way Video Input with 2-Way Reversing Cable
Temperature Range:	-20°C to +70°C
Storage Temperature:	-30°C to +80°C
Mounting:	Includes Bracket Hardware
Extension Cable:	30' Industrial Grade PVC Jacketed Video Cable w/ Steel Shell Swivel Locking Connectors
Connector Cables:	Yes

Part #	Description
84191	**Kit**	LED Third Brake Light with Back Up Camera	Red Lens	Monitor Kit
84192	**Kit**	LED Third Brake Light with Back Up Camera	Clear Lens	Courtesy Lights	Monitor Kit
84195	LED Third Brake Light with Back Up Camera	Red Lens
84198	LED Third Brake Light with Back Up Camera	Clear Lens	Courtesy Lights
84194	**Monitor Kit**	7" TFT Monitor	30' Extension Cable	Connector Cables	Mounting Hardware

Grakon® Hamsar® BMAC

REAR LIGHTING | THIRD BRAKE LIGHTS

Hamsar
A Methode Electronics Company

Our accessory lighting solutions include storage compartment lighting, general cabin lighting, ambient lighting, accent lighting, task lighting, footwell lighting and warning lighting.
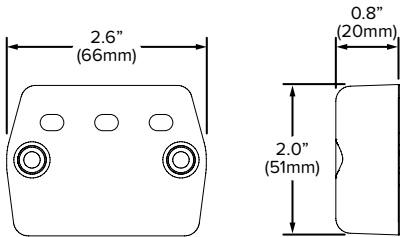
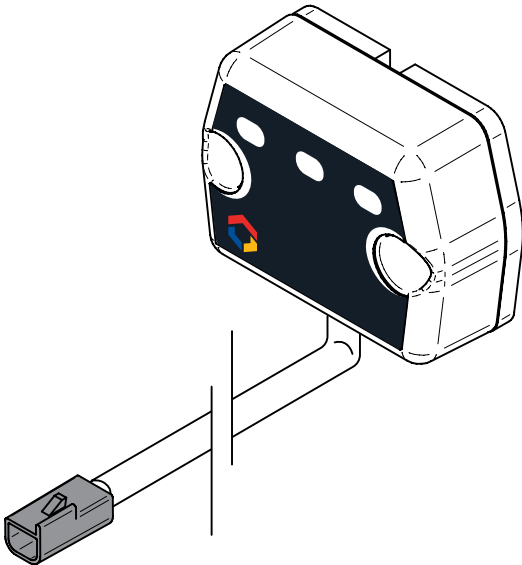## Contents

LED Auxiliary Light
Front Facing

- Illuminates the work area of a back door, side door or compartment, providing light where you need it
- 275 lumens
- 3M adhesive - easy peel & stick application
- 6" wire lead with delphi connector - 12Vdc operation and simple connection
- White, front facing LEDs - enhanced illumination
- Low profile design - fits anywhere
- Low power consumption - energy efficient while providing superior illumination
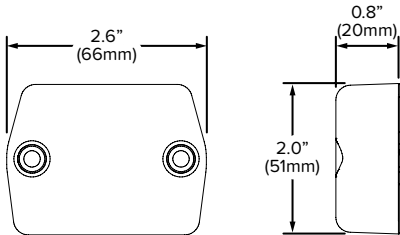- 50,000+ hours LED service life

Specifications

Operating Voltage:	12Vdc
Operating Current:	0.2A @ 12Vdc
Power Consumption:	2.5W
Temperature Range:	-40°C to +85°C
Ingress Protection:	IP69K
Weight:	1.9oz (55g)
Housing:	Automotive Grade Clear Polycarbonate
Connection:	Delphi 2-Way (1204 7762)
Mounting:	3M Double-Sided VHB Tape

2.6"
(66mm)

0.8"
(20mm)

2.0"
(51mm)

Part #	Description	Operating Voltage
80160	LED Auxiliary Light Front Facing LEDs	12Vdc

Grakon®
A Methode Electronics Company

Hamsar®
A Methode Electronics Company

BMAC®
A Methode Electronics Company

ACCESSORY LIGHTING | COURTESY UTILITY LIGHTS
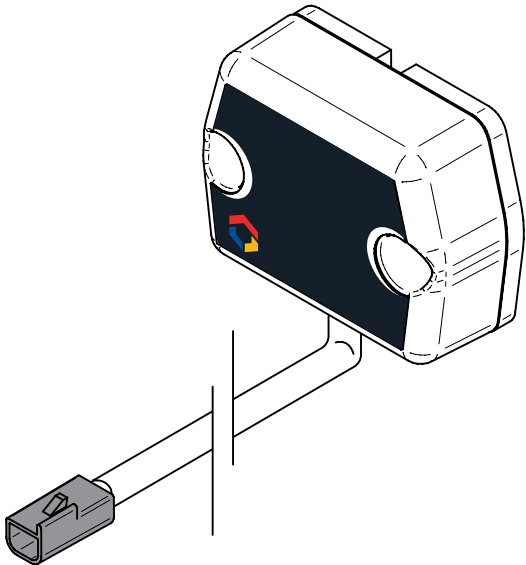
LED Auxiliary Light
Down Facing

- Illuminates the work area of a back door, side door or compartment, providing light where you need it
- With the downward facing LEDs, the light is not shining in workers' eyes
- 375 lumens
- 3M adhesive - easy peel & stick application
- 6" wire lead with delphi connector - 12Vdc operation and simple connection
- White, down facing LEDs - enhanced illumination
- Low profile design - fits anywhere
- Low power consumption - energy efficient while providing superior illumination
- 50,000+ hours LED service life

2.6"
(66mm)

0.8"
(20mm)

2.0"
(51mm)

Specifications

Operating Voltage:	12Vdc
Operating Current:	0.2A @ 12Vdc
Power Consumption:	2.5W
Temperature Range:	-40°C to +85°C
Ingress Protection:	IP69K
Weight:	1.9oz (55g)
Housing:	Automotive Grade Clear Polycarbonate
Connection:	Delphi 2-Way (1204 7762)
Mounting:	3M Double-Sided VHB Tape

Part #	Description	Operating Voltage
80161	LED Auxiliary Light Down Facing LEDs	12Vdc

Grakon®
A Methode Electronics Company

Hamsar®
A Methode Electronics Company

BMAC
A Methode Electronics Company

1.800.567.5483

LED Tilt Light

- Battery operation - push button ON/OFF
- Automatically illuminates the work area of a compartment or tool box when the lid is opened
- 275 lumens
- 3M adhesive - easy peel & stick application
- Internal battery, non-rechargeable - no hard-wired connection
- White, front facing LEDs - enhanced illumination
- Low profile design - fits anywhere
- Low power consumption - energy efficient while providing superior illumination
- Long life battery - 5 years life based on normal usage

Battery Operation - non-replaceable 3.6Vdc lithium-ion.

Specifications

Activation:	Vertical Orientation | Vertical ON
Temperature Range:	-40°C to +85°C
Ingress Protection:	IP69K
Weight:	1.9oz (55g)
Housing:	Automotive Grade Clear Polycarbonate
Battery:	Non-Replaceable 3.6Vdc Lithium-Ion
Battery Life:	5 Years (based on normal usage)
Mounting:	3M Double-Sided VHB Tape
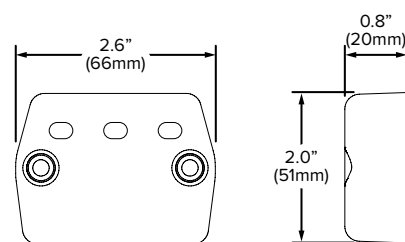
Part #	Description
80152	LED Tilt Light | Battery Operated
	Front Facing LEDs

ON

OFF

Grakon *A Methode Electronics Company*

Hamsar *A Methode Electronics Company*

BMAC *A Methode Electronics Company*

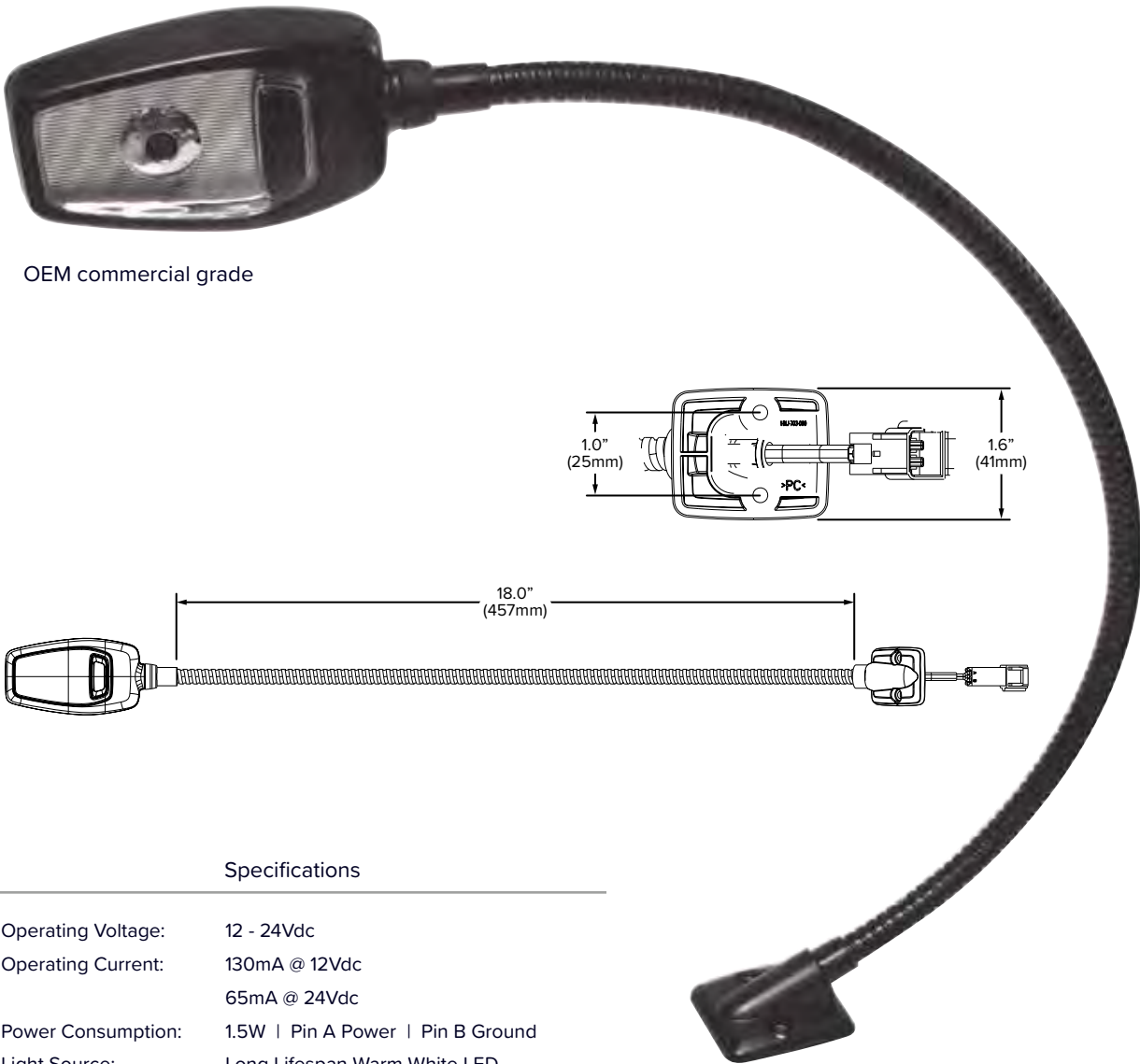ACCESSORY LIGHTING | COURTESY UTILITY LIGHTS
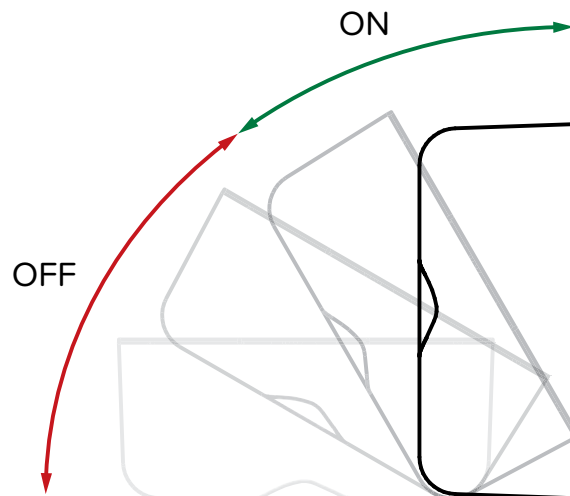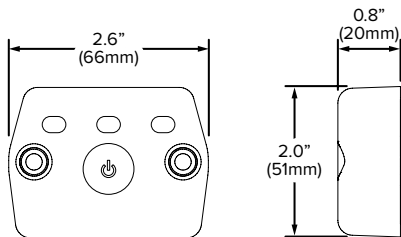
LED Touch Light

- Touch activation - simple touch ON / touch OFF function
- Illuminates the work area of a back door, side door or compartment, providing light where you need it
- 275 lumens
- Velcro mount
- Internal battery, non-rechargeable - no hard-wired connection
- Glove touch - will activate while wearing gloves
- Auto shut off - light will automatically shut off after 5 minutes
- White, front facing LEDs - enhanced illumination
- Low profile design - fits anywhere
- Low power consumption - energy efficient while providing superior illumination
- Long life battery - 700+ ON / OFF cycles of 5 minutes

Battery Operation - non-replaceable 3.6Vdc lithium-ion.

2.6" (66mm)

0.8" (20mm)

2.0" (51mm)

Specifications

Activation:	Touch ON ∣ Touch OFF
Temperature Range:	-40°C to +85°C
Ingress Protection:	IP69K
Weight:	1.9oz (55g)
Housing:	Automotive Grade Clear Polycarbonate
Battery:	Non-Replaceable 3.6Vdc Lithium-Ion
Battery Life:	700+ ON / OFF Cycles of 5 Minutes
Mounting:	Velcro (Included)

Part #	Description
80155	LED Touch Light ∣ Battery Operated Front Facing LEDs

Grakon®
A Methode Electronics Company

Hamsar
A Methode Electronics Company

BMAC
A Methode Electronics Company

1.800.567.5483

LED Snake Light

- OEM commercial grade

1.0" (25mm)

1.6" (41mm)

18.0" (457mm)

Specifications

Operating Voltage:	12 - 24Vdc
Operating Current:	130mA @ 12Vdc
	65mA @ 24Vdc
Power Consumption:	1.5W	Pin A Power	Pin B Ground
Light Source:	Long Lifespan Warm White LED
Mounting:	Screw-In Surface Mount
Wire Harness:	5.9" (150mm)
Switch:	Push Button
Mating Connector:	Delphi #12129081	2-Way
Optional:	Mounting Clip for Parking the Neck

Part #	Description	Operating Voltage
80116	LED Snake Light	12 - 24Vdc

Grakon® · A Methode Electronics Company

Hamsar® · A Methode Electronics Company

BMAC® · A Methode Electronics Company

ACCESSORY LIGHTING | COURTESY UTILITY LIGHTS

LED Dome Light

Specifications

Operating Voltage:	12Vdc
Operating Current:	833mA @ 12Vdc
Power Consumption:	10W
	Pin A Ground	Pin B Power	Pin C Empty
Light Source:	Long Lifespan 16x LED High Output
Lens:	Milky White
Mounting:	Screw-In Flush Mount
	Cutout 20.2" (512mm) x 5.3" (134mm)
Wire Harness:	9.1" (230mm)
Mating Connector:	Delphi #1202397	3-Way

20.6"
(524mm)

6.6"
(168mm)

2.0"
(50mm)
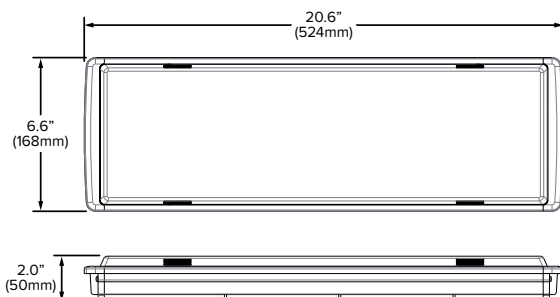
Part #	Description	Operating Voltage
80118	LED Dome Light	12Vdc

Courtesy Light

Specifications

Operating Voltage:	12Vdc
Operating Current:	417mA @ 12Vdc
Power Consumption:	5W	Pin A Power	Pin B Ground
Light Source:	Wedge Base Bulb	Type #193
Lens:	Milky White
Mounting:	Screw-In Surface Mount
Wire Harness:	17.7" (450mm)
Switch:	ON / OFF Rocker
Mating Connector:	Delphi #12034344	2-Way

2.1"
(53mm)

1.8"
(46mm)

0.9"
(22mm)
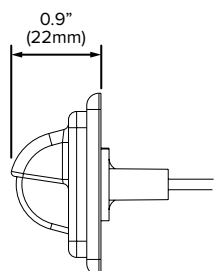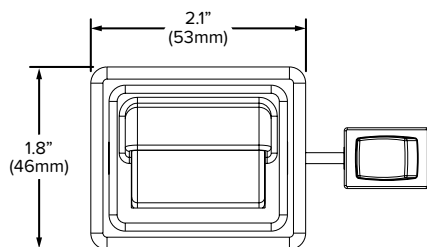
Part #	Description	Operating Voltage
80119	Courtesy Light	12Vdc

Grakon®
A Methode Electronics Company

Hamsar®
A Methode Electronics Company

BMAC®
A Methode Electronics Company

LED Footwell Light

Specifications

Operating Voltage:	12Vdc
Operating Current:	83mA @ 12Vdc
Power Consumption:	1W	Pin A Ground	Pin B Power
Light Source:	Long Lifespan LED
Mounting:	Flush Mount with Integrated Clip Feature
	Optional Screw Mount Bezel
Clip Tolerance:	3.2mm ± 0.5mm for 3.2mm Thick Panel
Mating Connector:	Delphi #12047662	2-Way

Part #	Description	Operating Voltage
80123	LED Footwell Light	12Vdc
	Clear Lens	White LED	

3.1" (80mm)
1.2" (30mm)
1.1" (28mm)

LED Footwell Light

Specifications

Operating Voltage:	12Vdc
Operating Current:	83mA @ 12Vdc
Power Consumption:	1W	Pin A Ground	Pin B Power
Light Source:	Long Lifespan LED
Mounting:	Flush Mount with Integrated Clip Feature
	Optional Screw Mount Bezel
Clip Tolerance:	3.2mm ± 0.5mm for 3.2mm Thick Panel
Mating Connector:	Delphi #12047662	2-Way

Part #	Description	Operating Voltage
80124	LED Footwell Light	12Vdc
	Red Lens	Red LED	

3.1" (80mm)
1.2" (30mm)
1.1" (28mm)

Grakon® Hamsar® BMAC
A Methode Electronics Company
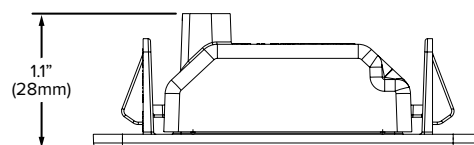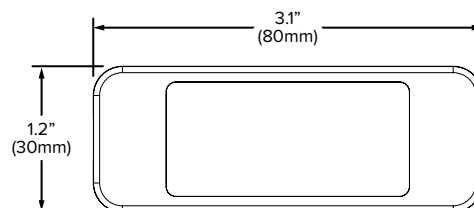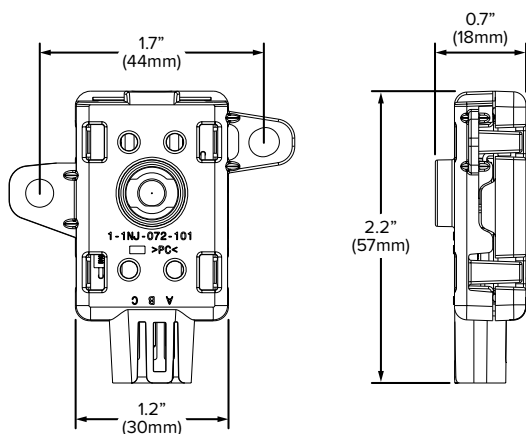
LED Ambient Light

Specifications

Operating Voltage:	12Vdc
Operating Current:	3mA @ 12Vdc
Power Consumption:	0.04W
	Pin A Ground ∣ Pin B Empty ∣ Pin C Power
Light Source:	Long Lifespan LED ∣ Low Level Output
Mounting:	Screw-In Back Mount
	Cutout 0.5" (13mm) x 0.2" (4mm)
Mating Connector:	Delphi #12047781 ∣ 3-Way

Part #	Description	Operating Voltage
80128	LED Ambient Light Red LED	12Vdc

1.7" (44mm)
0.7" (18mm)
2.2" (57mm)
1.2" (30mm)
1-1NJ-072-101
>PC<
A B C
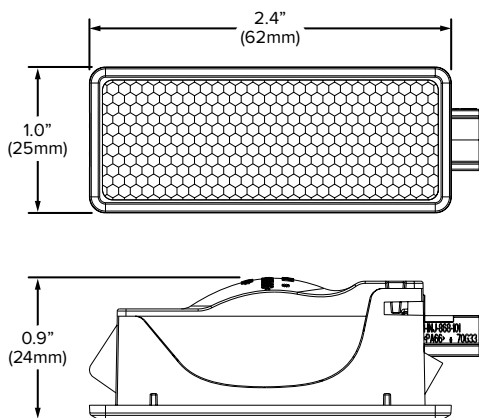
Storage / General Purpose Light

Specifications

Operating Voltage:	24Vdc
Operating Current:	125mA @ 24Vdc
Power Consumption:	3W
Light Source:	Wedge Base Bulb ∣ Type W3W
Mounting:	Flush Mount with Integrated Clip Feature
Clip Tolerance:	4.0mm ± 0.5mm for 4.0mm Thick Panel
Mating Connector:	Tyco #1-17183333-1

Part #	Description	Operating Voltage
80129	Storage / General Purpose Light Clear Lens	24Vdc

2.4" (62mm)
1.0" (25mm)
0.9" (24mm)

Grakon® Hamsar® BMAC®

1.800.567.5483

Compartment Light

Specifications

Operating Voltage:	12Vdc
Operating Current:	1.0A @ 12Vdc
Power Consumption:	12W | Pin A Power | Pin B Ground
Light Source:	Standard T3 Miniature bulb, type #211-2
Mounting:	Screw-In Surface Mount
Wire Harness:	6.5" (165mm)
Switch:	ON / OFF Rocker
Mating Connector:	Packard #12034343 | 2-Way

Part #	Description	Operating Voltage
80117	Compartment Light	12Vdc

4.1" (105mm)

4.1" (105mm)

1.6" (41mm)
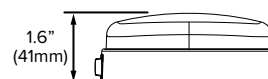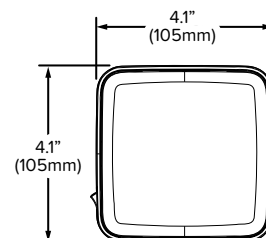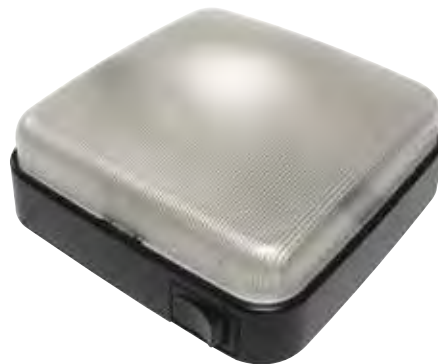
Swivel Reading Light

Specifications

Operating Voltage:	12Vdc
Operating Current:	1.0A @ 12Vdc
Power Consumption:	12W
Light Source:	Wedge Base Bulb | Type #922
Mounting:	Screw-In Flush Mount
Wire Harness:	4.3" (110mm)
Switch:	ON / OFF Rocker
Mating Connector:	Delphi #02977045 | 3-Way

Part #	Description	Operating Voltage
80130	Swivel Reading Light	12Vdc

3.3" (83mm)

3.9" (99mm)

4.6" (118mm)

Grakon® Hamsar® BMAC
A Methode Electronics Company

ACCESSORY LIGHTING | COURTESY UTILITY LIGHTS
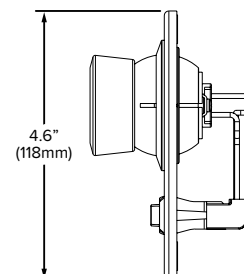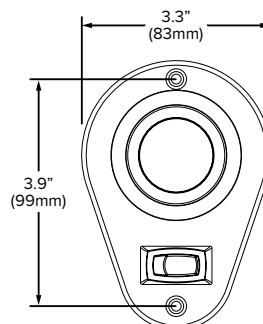
Dome / Reading Light

Specifications

Operating Voltage:	12Vdc
Operating Current:	1.0A @ 12Vdc
Power Consumption:	Dome ⏐ 12W
	Reading ⏐ 10W
Light Source:	Dome ⏐ Bulb Type #211-2
	Spot ⏐ Bulb Type R10W
Mounting:	Recess with Integrated Clip Features for
	Panel Thickness Range 2 - 6mm
	Cutout 7.9" (201mm) x 2.4" (62mm)
Switch:	Push Button
Mating Connector:	Packard #12020397 ⏐ 3-Way

8.3"
(210mm)

3.1"
(78mm)

1.9"
(47mm)

Part #	Description	Operating Voltage
80131	Dome / Reading Light Clear Lens	12Vdc

Double Dome Light

Specifications

Operating Voltage:	12Vdc
Operating Current:	1.0A @ 12Vdc
Power Consumption:	12W
Light Source:	Dome ⏐ Bulb Type #211-2
Mounting:	Recess with Integrated Clip Features for
	Panel Thickness Range 2 - 6mm
	Cutout 7.9" (201mm) x 2.4" (62mm)
Switch:	Push Lens
Mating Connector:	Packard #12020397 ⏐ 3-Way

8.3"
(210mm)

3.1"
(78mm)

1.4"
(35mm)

Part #	Description	Operating Voltage
80132	Double Dome Light Clear Lens	12Vdc

Grakon® A Methode Electronics Company

Hamsar® A Methode Electronics Company

BMAC® A Methode Electronics Company

1.800.567.5483

Single Dome Light

Specifications

Operating Voltage:	12Vdc
Operating Current:	1.0A @ 12Vdc
Power Consumption:	12W
Light Source:	Dome ⏐ Bulb Type #211-2
Mounting:	Recess with Integrated Clip Features for Panel Thickness Range 2 - 6mm Cutout 3.1" (78mm) x 2.4" (62mm)
Switch:	Push Lens
Mating Connector:	Packard #12020397 ⏐ 3-Way

Part #	Description	Operating Voltage
80133	Single Dome Light Red Lens	12Vdc

3.7" (93mm)

3.1" (79mm)

1.3" (34mm)

Single Reading Light

Specifications

Operating Voltage:	12Vdc
Operating Current:	833mA @ 12Vdc
Power Consumption:	10W
Light Source:	Spot ⏐ Bulb Type R10W
Mounting:	Recess with Integrated Clip Features for Panel Thickness Range 2 - 6mm Cutout 3.1" (78mm) x 2.4" (62mm)
Switch:	Push Button
Mating Connector:	Packard #12020397 ⏐ 3-Way

Part #	Description	Operating Voltage
80134	Single Reading Light Clear Lens	12Vdc
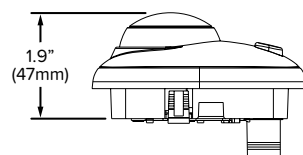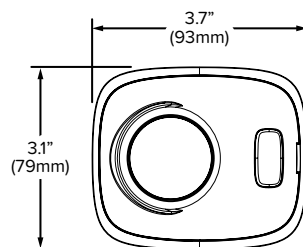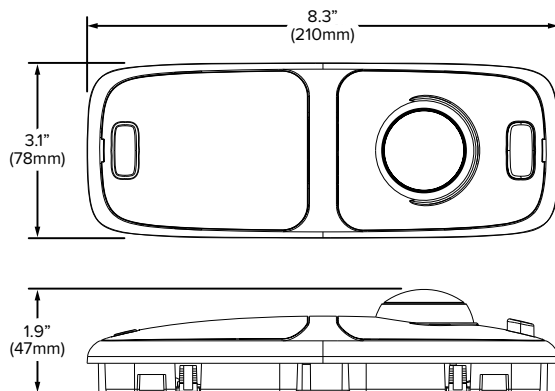
3.7" (93mm)

3.1" (79mm)

1.9" (47mm)

Grakon®
A Methode Electronics Company

Hamsar®
A Methode Electronics Company

BMAC®
A Methode Electronics Company

ACCESSORY LIGHTING ⏐ COURTESY UTILITY LIGHTS

Dome / Reading Light

8.3" (210mm)

3.1" (78mm)

1.9" (47mm)

Specifications

Operating Voltage:	24Vdc
Operating Current:	625mA @ 24Vdc
Power Consumption:	Dome ∣ 15W
	Reading ∣ 10W
Light Source:	Dome ∣ Bulb Type T15X43
	Spot ∣ Bulb Type R10W
Mounting:	Recess with Integrated Clip Features for
	Panel Thickness Range 2 - 6mm
	Cutout 7.9" (201mm) x 2.4" (62mm)
Switch:	Push Lens ∣ Push Button
Mating Connector:	AMP #8-968971-1 ∣ 9-Way

Part #	Description	Operating Voltage
80135	Dome / Reading Light Clear Lens	24Vdc

Double Dome Light

8.3" (210mm)

3.1" (78mm)

1.4" (35mm)

Specifications

Operating Voltage:	24Vdc
Operating Current:	625mA @ 24Vdc
Power Consumption:	15W
Light Source:	Dome ∣ Bulb Type T15X43
Mounting:	Recess with Integrated Clip Features for
	Panel Thickness Range 2 - 6mm
	Cutout 7.9" (201mm) x 2.4" (62mm)
Switch:	Push Lens
Mating Connector:	AMP #8-968971-1 ∣ 9-Way

Part #	Description	Operating Voltage
80136	Double Dome Light Clear Lens	24Vdc

Grakon® Hamsar® BMAC
A Methode Electronics Company   A Methode Electronics Company   A Methode Electronics Company

1.800.567.5483

Single Dome Light

Specifications

Operating Voltage:	24Vdc
Operating Current:	417mA @ 24Vdc
Power Consumption:	10W
Light Source:	Dome ⏐ Bulb Type T15X43
Mounting:	Recess with Integrated Clip Features for Panel Thickness Range 2 - 6mm Cutout 3.1" (78mm) x 2.4" (62mm)
Switch:	Push Lens
Mating Connector:	AMP #8-968971-1 ⏐ 9-Way

Part #	Description	Operating Voltage
80137	Single Dome Light Clear Lens	24Vdc

Single Dome Light

Specifications

Operating Voltage:	24Vdc
Operating Current:	417mA @ 24Vdc
Power Consumption:	10W
Light Source:	Dome ⏐ Bulb Type T15X43
Mounting:	Recess with Integrated Clip Features for Panel Thickness Range 2 - 6mm Cutout 3.1" (78mm) x 2.4" (62mm)
Switch:	Push Lens
Mating Connector:	AMP #8-968971-1 ⏐ 9-Way

Part #	Description	Operating Voltage
80138	Single Dome Light Red Lens	24Vdc

Grakon® Hamsar® BMAC®

ACCESSORY LIGHTING ⏐ COURTESY UTILITY LIGHTS
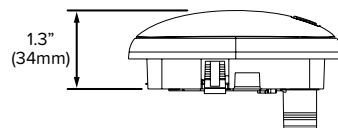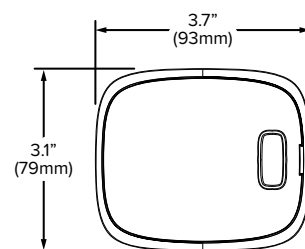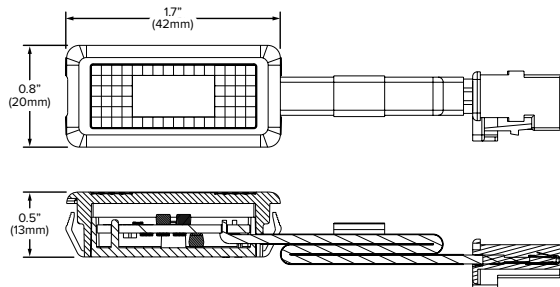
LED Ambient Light

Specifications

Operating Voltage:	12Vdc
Operating Current:	167mA @ 12Vdc
Power Consumption:	2W
Light Source:	Long Lifespan LED
Mounting:	Flush Mount with Integrated Clip Feature
Clip Tolerance:	38.5mm ± 0.5mm
Wire Harness:	3.9" (100mm)
Mating Connector:	Delphi #12047663	2-Way

Part #	Description	Operating Voltage
80139	LED Ambient Light White LED	12Vdc
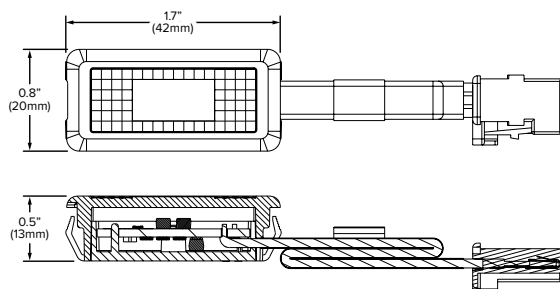
1.7" (42mm)
0.8" (20mm)
0.5" (13mm)

LED Ambient Light

Specifications

Operating Voltage:	24Vdc
Operating Current:	42mA @ 24Vdc
Power Consumption:	1W
Light Source:	Long Lifespan LED
Mounting:	Flush Mount with Integrated Clip Feature
Clip Tolerance:	38.5mm ± 0.5mm
Wire Harness:	6.3" (160mm)
Mating Connector:	Tyco AMP #953697-1	3-Way

Part #	Description	Operating Voltage
80140	LED Ambient Light White and Red LED	24Vdc

1.7" (42mm)
0.8" (20mm)
0.5" (13mm)

Grakon
A Methode Electronics Company

Hamsar
A Methode Electronics Company

BMAC
A Methode Electronics Company

LED Ambient Light

Specifications

Operating Voltage:	24Vdc
Operating Current:	42mA @ 24Vdc
Power Consumption:	1W
Light Source:	Long Lifespan LED
Mounting:	Flush Mount with Integrated Clip Feature
Clip Tolerance:	38.5mm ± 0.5mm
Wire Harness:	13.0" (330mm)
Mating Connector:	Tyco AMP #953697-1	3-Way
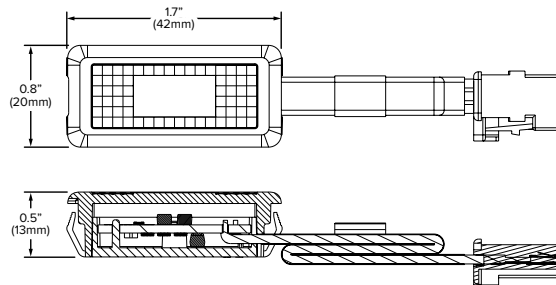
Part #	Description	Operating Voltage
80141	LED Ambient Light White LED	24Vdc

Cabinet Light

Specifications

Operating Voltage:	12Vdc
Operating Current:	417mA @ 12Vdc
Power Consumption:	5W
Light Source:	Festoon	Bulb Type #7575
Mounting:	Screw-In Surface Mount
Switch:	Plunger
Mating Connector:	Delphi #12047662	2-Way
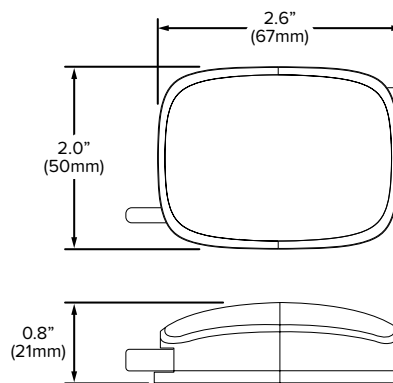
Part #	Description	Operating Voltage
80146	Cabinet Light	12Vdc
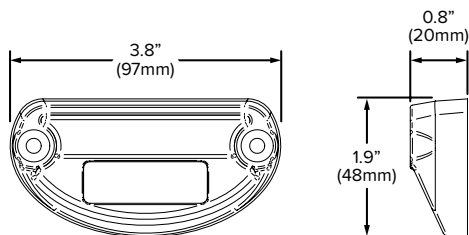
LED Courtesy Utility Light

- 60 lumens
- Compact size
- Rugged design for exterior or interior applications

3.8"
(97mm)

0.8"
(20mm)

1.9"
(48mm)

Specifications

Operating Voltage:	12Vdc
Operating Current:	0.1A @ 12Vdc
Power Consumption:	1.2W
Temperature Range:	-40°C to +50°C
Weight:	1.4oz (40g)
Housing:	ABS
Lens:	Polycarbonate
Connection:	Terminal Wires
Mounting:	2 Screws

Part #	Description	Operating Voltage
81196	LED Courtesy Utility Light Black Bezel	12Vdc
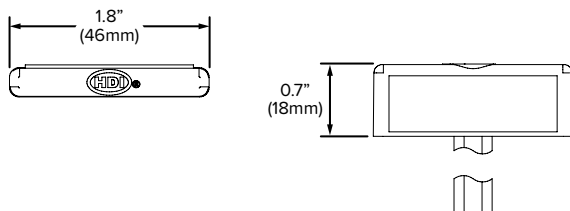
LED Courtesy Utility Light

- Very slim and compact
- Strong adhesive mounts to most surfaces

1.8"
(46mm)

0.7"
(18mm)

Specifications

Operating Voltage:	12Vdc
Operating Current:	27mA @ 12Vdc
Power Consumption:	0.3W
Temperature Range:	-40°C to +50°C
Weight:	0.8oz (23g)
Lens:	Polycarbonate
Connection:	Terminal Wires
Mounting:	3M Double-Sided VHB Tape

Part #	Description	Operating Voltage
81103	LED Courtesy Utility Light	12Vdc

Grakon®
A Methode Electronics Company

Hamsar®
A Methode Electronics Company

BMAC®
A Methode Electronics Company

1.800.567.5483

LED Courtesy Utility Light

- Multiple applications - use for step lighting, under dashboard, dome light and cargo areas
- Rugged polymer housing - exterior or interior applications
- Polycarbonate lens - virtually unbreakable
- 3 screw mount - simple installation
- Low power consumption - energy efficient while providing superior illumination

Specifications

|	
Operating Voltage:	12 - 24Vdc
Operating Current:	0.2A @ 12Vdc
	0.1A @ 24Vdc
Power Consumption:	2.4W
Temperature Range:	-40°C to +65°C
Ingress Protection:	IP69K
Weight:	4.2oz (119g)
Housing:	Polymer
Lens:	Polycarbonate
Connection:	Terminal Wires
Mounting:	3 Screws

Part #	Description	Operating Voltage
81145	LED Courtesy Utility Light Black Housing	12 - 24Vdc
81146	LED Courtesy Utility Light White Housing	12 - 24Vdc
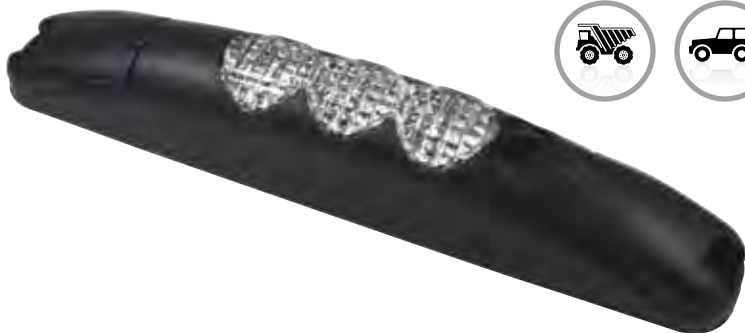
4.5" (114mm)

1.5" (38mm)

3.0" (76mm)

Grakon® *A Methode Electronics Company*   Hamsar® *A Methode Electronics Company*   BMAC® *A Methode Electronics Company*

ACCESSORY LIGHTING | COURTESY UTILITY LIGHTS

LED Dome Light

- Illuminates the work area of a back door, side door or compartment, providing light where you need it
- 90 lumens
- 12Vdc operation
- 3 position switch
- Low profile design - fits anywhere
- 2 screw mount - simple installation
- Low power consumption - energy efficient while providing superior illumination

6.8"
(173mm)

1.0"
(25mm)

1.1"
(28mm)

6.1"
(155mm)
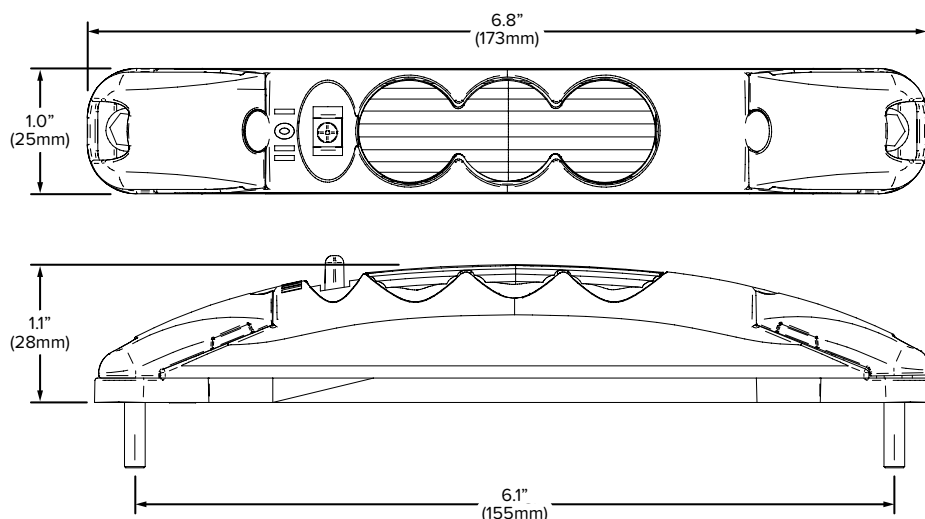
Specifications

Operating Voltage:	12Vdc
Operating Current:	0.2A @ 12Vdc
Power Consumption:	2.5W
Temperature Range:	-40°C to +65°C
Ingress Protection:	IP69K
Weight:	2.0oz (57g)
Housing:	Polymer
Lens:	PMMA
Connection:	Delphi 2-Way (1204 7762)
Mounting:	2 Screws

Part #	Description	Operating Voltage
80115	LED Dome Light	12Vdc

Grakon®
A Methode Electronics Company

Hamsar®
A Methode Electronics Company

BMAC®
A Methode Electronics Company

1.800.567.5483

LED Flex-Strip Light

- 420 lumens per metre
- Low power consumption - energy efficient while providing superior illumination
- 6500K - cool white light output
- Clear cut lines 2" apart - easily cut to any length required
- 3M adhesive - easy peel & stick application

11.8" (30cm) ·or· 35.4" (90cm) ·or· 196.9" (5m Reel)

0.1" (3mm)

0.3" (8mm)
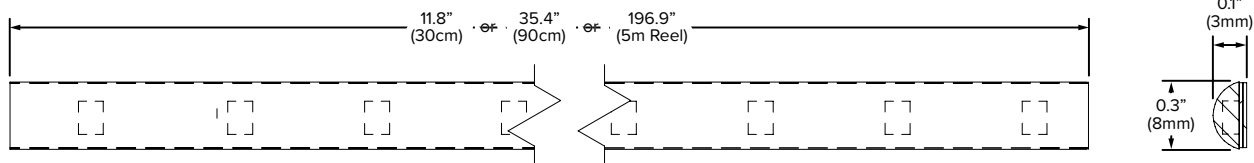
Specifications (per 5m Reel)

Operating Voltage:	12Vdc
Operating Current:	2.0A @ 12Vdc
Power Consumption:	24W
Temperature Range:	-25°C to +60°C
Ingress Protection:	IP65
Weight:	6.0oz (170g)
Connection:	Terminal Wires
Polarity:	Reverse Voltage Protected
LEDs:	60 per Metre
Mounting:	3M Adhesive

Part #	Mount Type	Ingress Protection	LED Colour	PCB Colour	Length
81214	Adhesive	IP65	White	White	5m Reel
81216	Adhesive	IP65	White	Black	5m Reel
81217	Adhesive	IP65	White	Black	30cm
81218	Adhesive	IP65	White	Black	90cm

Cut to Any Length Required

Need a custom solution?

Our in-house design and manufacturing team can custom tailor a flex-strip lighting solution to meet your needs. Our flex-strip lights can be customized for length requirements, mounting methods, connector needs... and more!

Just contact our sales team at **1.800.567.5483** to discuss your custom LED flex-strip solution.

Grakon®
A Methode Electronics Company

Hamsar®
A Methode Electronics Company

BMAC®
A Methode Electronics Company

ACCESSORY LIGHTING | FLEX-STRIP LIGHTS

High Output
LED Flex-Strip Light

- 1200 lumens per metre
- Low power consumption - energy efficient while providing superior illumination
- 6500K - cool white light output
- Clear cut lines 2" apart - easily cut to any length required
- 3M adhesive - easy peel & stick application

196.9"
(5m Reel)

0.1"
(3mm)

0.4"
(10mm)
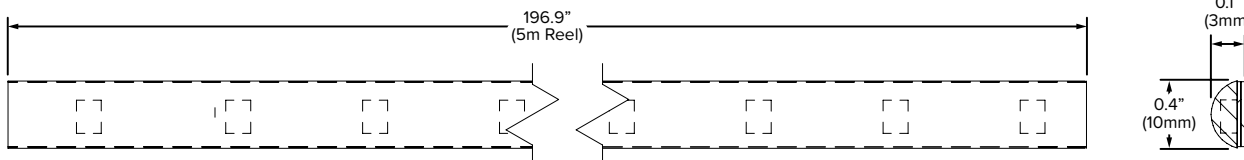
Specifications (per 5m Reel)

Operating Voltage:	12Vdc
Operating Current:	5.0A @ 12Vdc
Power Consumption:	60W
Temperature Range:	-25°C to +60°C
Ingress Protection:	IP65
Weight:	7.9oz (223g)
Connection:	Terminal Wires
Polarity:	Reverse Voltage Protected
LEDs:	60 per Metre
Mounting:	3M Adhesive

Part #	Mount Type	Ingress Protection	LED Colour	PCB Colour	Length
81221	Adhesive	IP65	White	White	5m Reel

Cut to Any Length Required

? Need a custom solution?

Our in-house design and manufacturing team can custom tailor a flex-strip lighting solution to meet your needs. Our flex-strip lights can be customized for length requirements, mounting methods, connector needs... and more!

Just contact our sales team at **1.800.567.5483** to discuss your custom LED flex-strip solution.

Grakon®
A Methode Electronics Company

Hamsar®
A Methode Electronics Company

BMAC
A Methode Electronics Company

1.800.567.5483

LED Strip Light

- Available in 13", 25", 38" & 50" lengths with 9 LEDs per 13" section
- PCB is protected with extruded polycarbonate sleeve
- 3M adhesive - easy peel & stick application

12.6" (320mm) or 25.2" (640mm) or 37.8" (960mm) or 50.4" (1280mm)

0.2" (5mm)

0.4" (10mm)
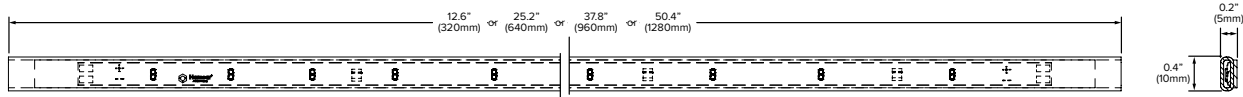
Specifications (per 13" Section)

Operating Voltage:	12Vdc
Operating Current:	150mA @ 12Vdc
Power Consumption:	2W
Temperature Range:	-40°C to +65°C
Ingress Protection:	IP68
Weight:	0.6oz (16g)
Connection:	Terminal Wires
Polarity:	Reverse Voltage Protected
LEDs:	9 per 13" Section
Mounting:	3M Adhesive

17.5" (445mm) or 30.1" (765mm) or 42.7" (1085mm) or 55.3" (1405mm)
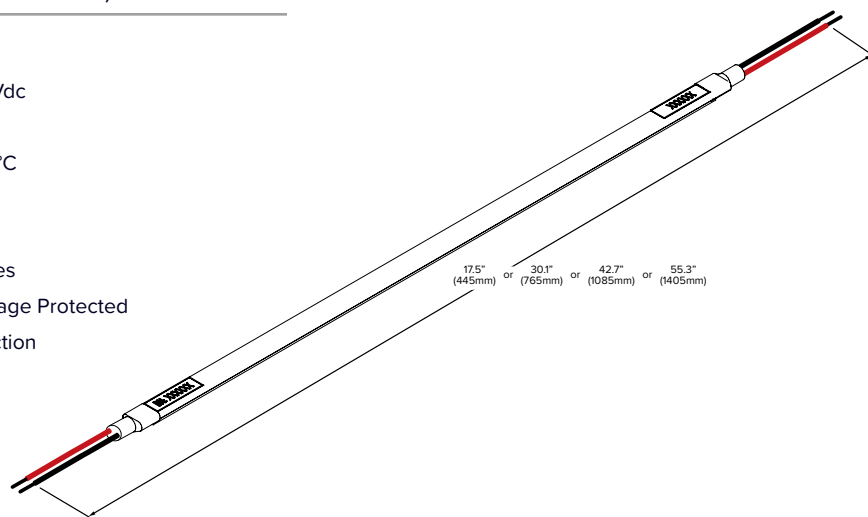
Part #	Mount Type	Ingress Protection	LED Colour	PCB Colour	Length
81226	Adhesive	IP68	White	White	13"
81227	Adhesive	IP68	White	White	25"
81228	Adhesive	IP68	White	White	38"
81229	Adhesive	IP68	White	White	50"

? Need a custom solution?

Our in-house design and manufacturing team can custom tailor a flex-strip lighting solution to meet your needs. Our flex-strip lights can be customized for length requirements, mounting methods, connector needs... and more!

Just contact our sales team at **1.800.567.5483** to discuss your custom LED flex-strip solution.

Grakon®
A Methode Electronics Company

Hamsar®
A Methode Electronics Company

BMAC®
A Methode Electronics Company

ACCESSORY LIGHTING | STRIP LIGHTS

Intelligent designs and user-friendly solutions for the passenger transport industy.

Our bus and rail products are supplied to specialized transport vehicle sectors including passenger rail, freight rail, bus, coach, light rail and tram.

Contents

Wireless Bell Push

? Concept.

The 2.4Ghz wireless bell push uses radio transmission to communicate between a passenger bell push and the vehicle mounted receiver.
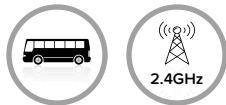
Conventionally, this would have been done by running cables around the vehicle, and connecting the passenger bell pushes to a central control unit. This process requires expensive labour and adds additional weight to the vehicle, and therefore additional running cost.

To overcome these disadvantages, the system uses a small radio transmitter mounted in each bell push and a single receiver to interface with the vehicle electrical system, thus eliminating the need for cables.

NO WIRES. NO BATTERIES.

This system features the latest technology operating within a globally accepted wireless transmission frequency.

The wireless bell push unit is designed to be mounted vertically or horizontally on the handrail of the vehicle.

The seatback wireless bell push unit can be mounted on the internal surface of a seat or the side panel of the vehice, has a compact design and a 'universal' fit for various seatbacks. The simple screw fixing design extends the installation opportunities to the vehicle manufacturer.

? Functionality.

When the bell push is pressed, the energy conversion device is triggered which generates a short pulse of electrical energy. This is sufficient for the radio transmitter to transmit a short telegram of information to the receiver.

On installation in the vehicle, each bell push is assigned to a specific channel on the receiver (wireless receiver modules are available in a standard 30 channel or a 100 channel receiver). When the receiver detects a bell push has been pressed, it sends a signal to the vehicle's electrical system giving details of the operation of a button being pressed and its location on the vehicle.

Each channel can be allocated to a specific zone on the vehicle, allowing the vehicle to be partitioned into separate areas. Typically, this would be upper deck, lower deck and wheelchair request.

Grakon® Hamsar® BMAC®

Wireless Bell Push

2.4GHz

The wireless and battery-less bell push uses radio transmission to communicate between a passenger bell push and the vehicle mounted receiver.

- Safety and rider experience disruptor
- Wireless and battery-less bell push - energy conversion technology
- 2.4GHz - a global ready frequency
- Eliminates the need for cables - no additional weight
- OEM benefit - no wiring installation in each bus, saving time and expense
- Eliminates long "vehicle off road" time in finding chaffed wire failures
- Single receiver to interface with vehicle electrical system - easily and quickly programmable (no software downloads)
- Unique 32-bit module identification code - no vehicle cross-talk
- Exclusive design - stylish slimline appearance

Part #	Description
30000	2.4GHz Wireless Bell Push Receiver Module 30 Channel
30004	2.4GHz Wireless Bell Push Receiver Module 100 Channel

Part #	Description	Button
30001	Wireless Bell Push Grey Housing | Red Button	STOP
30002	Wireless Bell Push Gold Housing | Red Button	STOP
30003	Wireless Bell Push Yellow Housing | Blue Button	WHEELCHAIR

1.5" (39mm)

3.8" (97mm)

STOP

4.3" (110mm)

Grakon® A Methode Electronics Company   Hamsar® A Methode Electronics Company   BMAC® A Methode Electronics Company

1.800.567.5483

Seatback Wireless Bell Push

The wireless and battery-less bell push uses radio transmission to communicate between a passenger bell push and the vehicle mounted receiver.

- Safety and rider experience disruptor
- Wireless and battery-less bell push - energy conversion technology
- 2.4GHz - a global ready frequency
- Can be mounted on the internal surface of a seat panel
- Compact design with screw fixing offers flexibility for installation locations
- Eliminates the need for cables - no additional weight
- OEM benefit - no wiring installation in each bus, saving time and expense
- Eliminates long "vehicle off road" time in finding chaffed wire failures
- Single receiver to interface with vehicle electrical system - easily and quickly programmable (no software downloads)
- Unique 32-bit module identification code - no vehicle cross-talk

Part #	Description
30000	2.4GHz Wireless Bell Push Receiver Module 30 Channel
30004	2.4GHz Wireless Bell Push Receiver Module 100 Channel

Part #	Description	Button
30005	Wireless Seatback and Panel Mount Assembly	
30006	Cover Push Button	Red	STOP
30007	Cover Push Button	Blue	WHEELCHAIR
30008	Cover Push Button	Aqua	STOP

Seatback Configuration

Grakon® Hamsar® BMAC

BULBS

Improve your night driving or off-road experience with our assortment of LED mini bulbs and halogen bulbs.

Contents

LED Mini Bulb

- Off-road use

Part #	Description	Colour
84175	1156 Base	White
84175R	1156 Base	Red
84176	1157 Base	White
84176A	1157 Base	Amber
84176R	1157 Base	Red

1156 Base   1157 Base

LED Mini Bulb

- Off-road use

Part #	Description	Colour
84177	3156 Base	White
84177A	3156 Base	Amber
84178	3157 Base	White
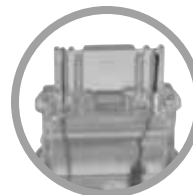
3156 Base   3157 Base
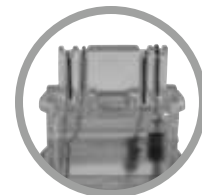
LED Mini Bulb

- Off-road use

Part #	Description	Colour
84184	194 Base	White
84184A	194 Base	Amber
84184R	194 Base	Red

194 Base

Grakon®   Hamsar®   BMAC

BULBS | LED

LED Mini Bulb

- Off-road use
- 360°

Part #	Description	Colour
84180	1156 Base	White
84180A	1156 Base	Amber
84180R	1156 Base	Red
84181	1157 Base	White
84181A	1157 Base	Amber
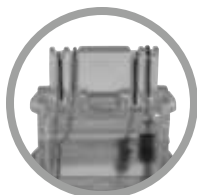
1156 Base   1157 Base

LED Mini Bulb

- Off-road use
- 360°

Part #	Description	Colour
84182	3156 Base	White
84183	3157 Base	White

3156 Base   3157 Base
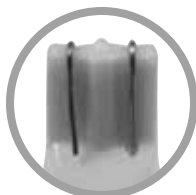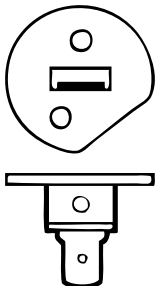
LED Mini Bulb

- Off-road use
- 360°
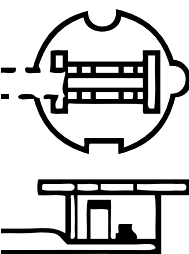
Part #	Description	Colour
84185	921 Base	White
84185A	921 Base	Amber
84185R	921 Base	Red

921 Base

Grakon® Hamsar® BMAC®
A Methode Electronics Company

BULBS | LED

Halogen Bulb | H1

Part #	Description	Compliance
85045	H1 | P14.5s Base | 12V 55W	SAE / DOT
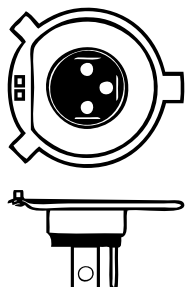
P14.5s Base

Halogen Bulb | H3

Part #	Description	Compliance
85065	H3 | PK22s Base | 12V 35W	SAE / DOT
85066	H3 | PK22s Base | 12V 55W	SAE / DOT
85067	H3 | PK22s Base | 12V 100W	Off-Road Only
85068	H3 | PK22s Base | 24V 130W	Off-Road Only
85069	H3 | PK22s Base | 24V 65W	SAE / DOT
85070	H3 | PK22s Base | 24V 70W	SAE / DOT
85071	H3 | PK22s Base | 24V 100W	Off-Road Only
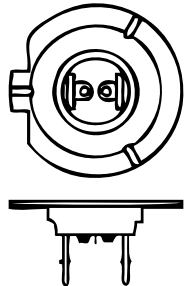
PK22s Base

Halogen Bulb | H4

Part #	Description	Compliance
85085	H4 | P45t Base | 12V 45/40W	Off-Road Only
85086	H4 | P43t Base | 12V 60/55W	Off-Road Only
85089	H4 | P43t Base | 12V 100/55W	Off-Road Only
85090	H4 | P43t Base | 12V 100/80W	Off-Road Only
85091	H4 | P45t Base | 12V 100/80W	Off-Road Only
85094	H4 | P43t Base | 24V 75/70W	Off-Road Only
85095	H4 | P43t Base | 24V 75/70W | HD	Off-Road Only

P43t Base

Halogen Bulb | H7

Part #	Description	Compliance
85100	H7 | PX26d Base | 24V 70W	SAE / DOT
85101	H7 | PX26d Base | 12V 55W	SAE / DOT

PX26d Base

Grakon®
A Methode Electronics Company

Hamsar®
A Methode Electronics Company

BMAC
A Methode Electronics Company

BULBS | HALOGEN

Halogen Bulb | H9

Part #	Description	Compliance
85115	H9	PGJ19-5 Base	12V 65W	SAE / DOT
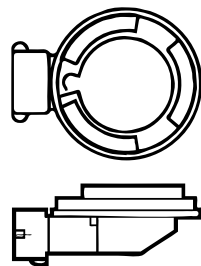
PGJ19-5 Base

Halogen Bulb | H11

Part #	Description	Compliance
85116	H11	PGJ19-2 Base	12V 55W	SAE / DOT
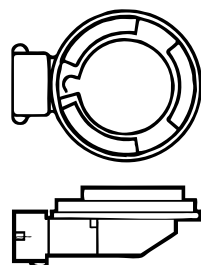
PGJ19-2 Base

Halogen Bulb | H11B

Part #	Description	Compliance
85120	H11B	PGJY19-2 Base	12V 55W	SAE / DOT
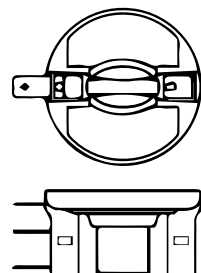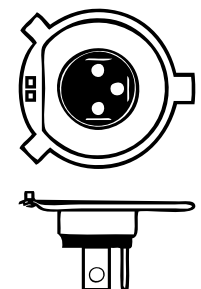
PGJY19-2 Base

Halogen Bulb | HB2

Part #	Description	Compliance
85128	HB2	P43t Base	12V 60/55W	SAE / DOT

P43t Base

Grakon® *A Methode Electronics Company*   Hamsar® *A Methode Electronics Company*   BMAC® *A Methode Electronics Company*

1.800.567.5483

ELECTRONICS

Hamsar®
A Methode Electronics Company

We design and manufacture a range of electronic products for multiple industries. This range includes relays, timers & delay modules, custom wire harnesses, terminals and switches.

Contents

A relay is an electrically activated switch that shortens the distance current has to travel from the battery to whatever device is being powered. This ensures that the optimum amount of current is efficiently delivered to lights, horns, or any other accessory.

Consult the formula to determine what size relay you require:

$$\text{Total Watts} \div \text{Voltage} = \text{Required Amperage}$$

Step up one level from the indicated amperage load.

Eg. 2 x 55 Watts = 110 Watts ÷ 12 Volts = 9.17 Amps

Use a 20 Amp relay

- Solid state construction provides reliable long term operation
- Compact size fits into conventional ISO 5 pin socket
- Low power enable operation
- Fast turn on / shut off
- Water and dust protected
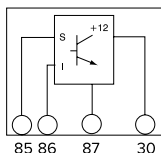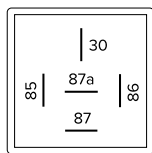
Part #	Description
41040	Solid State	12V 6A
41045	Solid State	12V 12A
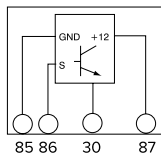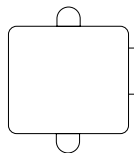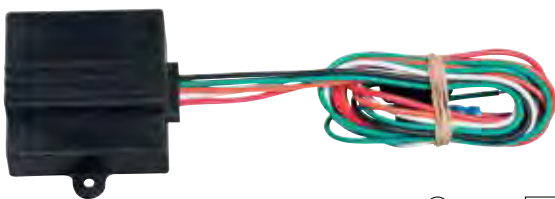
Part #	Description
41055	Solid State	12V 20A
41060	Solid State	12V 40A
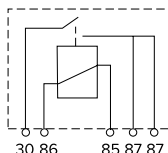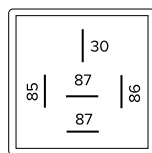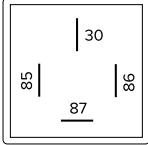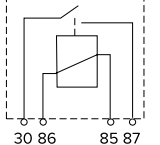
Part #	Description
41020	SPST	12V 40A
	Dual Output with Tab	Bulk 10

Grakon® A Methode Electronics Company   Hamsar® A Methode Electronics Company   BMAC® A Methode Electronics Company

1.800.567.5483

Electromechanical Relays

Part #	Description
41025	SPDT ǀ 12V 40A Bulk 10
41030	SPDT ǀ 12V 40A Dual Output with Tab ǀ Bulk 10

Part #	Description
41065	SPST ǀ 12V 70A Heavy Duty with Tab
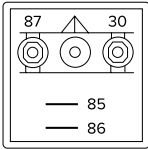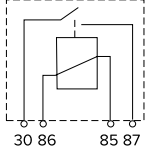
Part #	Description
42005	SPDT ǀ 24V 40A Bulk 10

Part #	Description
41080	SPDT ǀ 12V 40A with Resistor

Part #	Description
41050	SPST ǀ 12V 80A Screw Terminals with Tab
42050	SPST ǀ 24V 60A Screw Terminals with Tab

Part #	Description
41201	Solenoid Relay Switch ǀ 12V 80A Heavy Duty with Grounding Lug

Timer Module
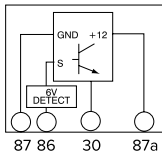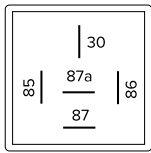
Part #	Description
41105	30 Second Light Timer with Relay 12V

Magnet and Detection Switch Assembly

- Heavy duty, high vibration applications
- 500mA switch output
- N/C (normally closed) switch arrangement
- Easy installation requires 13mm drill hole
- Accepts a wide range of sheet metal thickness
- Fully sealed construction for humid locations
- Applications include: automatic light on / off, alarm detection, sensor distance detection

0.7" (17mm)

1.0" (25mm)

0.5" (13mm)
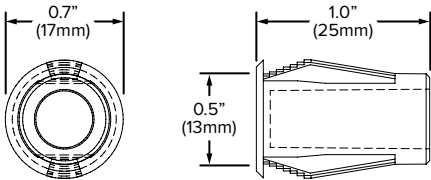
Specifications

Maximum Rated Voltage:	100Vdc
Maximum Rated Current:	500mA
Housing:	Black ABS
Wire Length:	12" (305mm)
Detection Range:	3/4" to 1"

Part #	Description
41094	Magnet and Detection Switch Assembly

Wiring Harness

- Can be used with any fog or driving light system
- Includes 40A relay, fuse and switch
- Wire length 96"

Part #	Description
98045	Heavy Duty Wiring Harness

Grakon
A Methode Electronics Company

Hamsar
A Methode Electronics Company

BMAC
A Methode Electronics Company

1.800.567.5483
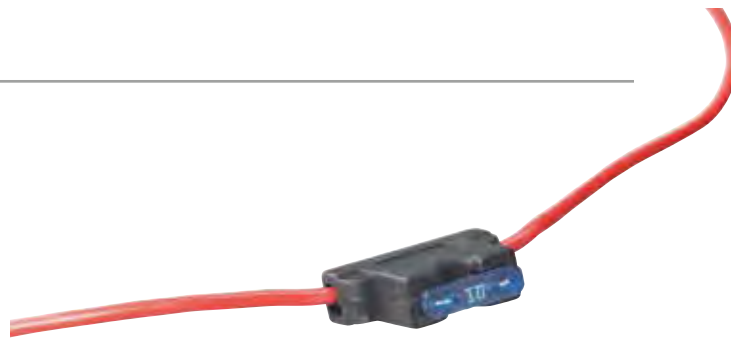
In-Line Fuse Holder

Part #	Description
98030	In-Line Fuse Holder	10A	14 Gauge
98032	In-Line Fuse Holder	20A	14 Gauge

1.3"
(33mm)

1.1"
(28mm)

0.4"
(10mm)
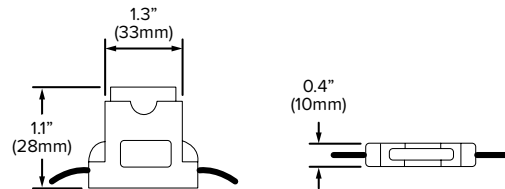
Terminal Block

• Works with any 5-pin relay

Part #	Description
98035	5 Wire	12 Gauge Pigtail	12"
98036	5 Wire	14 Gauge Pigtail	12"
98037	5 Wire	16 Gauge Pigtail	12"

Grakon® A Methode Electronics Company

Hamsar® A Methode Electronics Company

BMAC® A Methode Electronics Company

ELECTRONICS | ACCESSORIES

Hamsar
A Methode Electronics Company

Contents

12V Triple Multisocket

- Expands the number of power ports on your vehicle, allowing more equipment to be powered off its port adapters
- Hardwire installation - 36" wire leads with 15A in-line fuse
- Mounting accessories included - 2 screw mount
- Heavy duty construction - durable housing and individual socket dust caps

6.0"
(152mm)

4.9"
(124mm)

1.6"
(41mm)

2.0"
(51mm)
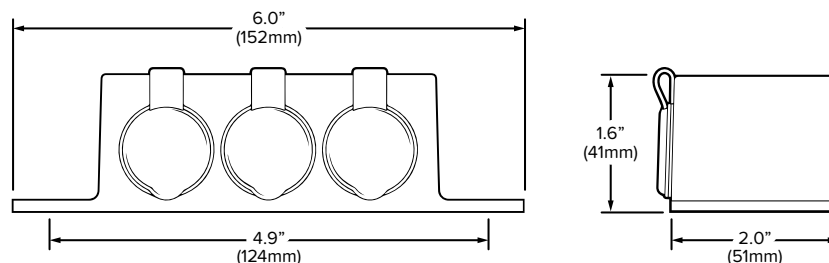
Specifications

Operating Voltage:	12 - 24Vdc
Connection:	36" Pigtail
Fuse:	15A In-Line Replaceable
Mounting Hardware:	2 Screws Provided

Part #	Description
98229	12V Triple Multisocket	Permanent Mount

Grakon® A Methode Electronics Company   **Hamsar®** A Methode Electronics Company   **BMAC®** A Methode Electronics Company

VEHICLE ACCESSORIES

Index

Index

Grakon® *A Methode Electronics Company*   Hamsar® *A Methode Electronics Company*   BMAC® *A Methode Electronics Company*

1.800.567.5483

Index

INDEX

Hamsar®

A Methode Electronics Company

Limited One (1) Year Warranty

Hamsar products have been manufactured under the highest standards of quality and workmanship. The following warranty is exclusive and in lieu of all other warranties, whether expressed, implied or statutory with respect to or relating to any product shipped hereunder (the "Product"). Hamsar warrants that the Product is, at the time of shipment to the Purchaser, free of material and workmanship defects provided that there shall be no warranty with respect to any Product which has been repaired or altered in any way, which has been subject to negligence, accident, improper storage or damaged in shipment without the fault of Hamsar or has not been installed, used or maintained in accordance with normal practice and in conformity with the recommendations or the published specifications of Hamsar.

Hamsar shall, at its option, repair or replace any defective Product or refund the purchase price of a Product provided a warranty claim is made within one (1) year of the date of shipment of the Product and this shall be the full extent of Hamsar's liability for breach of warranty. Exclusions to this Policy are all bulbs fitted with all lamps and all replacement bulbs, which are not covered under this policy.

NON-DEFECTIVE PRODUCT RETURNS
Product returns (non-defective) must have been purchased in the current year from the current product catalogue and non-custom product. They must be in saleable condition (unopened cases). Returns are subject to a minimum restocking fee of 20%. More details are available on our current price list. Please contact hamsar.sales@grakon.com for further details.

Additional Exclusions to this Policy include the following:
- XWL-800, XTL-800, XWL-810, XTL-810, XWL-812, XWL-813 Series of Products – Limited Five (5) Year Warranty
- LED Headlights – Limited Three (3) Year Warranty
- All Bulbs – Limited Ninety (90) Day Warranty After Shipment Date

Proof of purchase (original sales receipt) must accompany all warranty claims. If you have any questions regarding technical support, installation or concerns regarding our warranty policy, please contact our customer service team at 1.800.567.5483 or e-mail us at hamsar.sales@grakon.com.

Fusing Statement

Hamsar lighting and electronic products must be fused appropriately in all instances. If you are in doubt, consult with a Hamsar service representative at 1.800.567.5483 or email hamsar.sales@grakon.com.

NOTE: Improperly fused / installed product will invalidate the warranty.

Call your local distributor
for more information.

For a distributor near you,
visit www.hamsar.com.

Grakon®
A Methode Electronics Company

1911 South 218th Street
Des Moines, Washington
USA 98198
T 206.824.6000
www.grakon.com

Hamsar®
A Methode Electronics Company

5320 Downey Street
Burlington, Ontario
Canada L7L 6M2
T 905.332.4094
www.hamsar.com

BMAC®
A Methode Electronics Company

Shepley Industrial Estate South
Units 13 & 14
Shepley Road, Audenshaw
UK M34 5DW
T 44(0)161 337 3070
www.bmac.ltd.uk