



INDUSTRIAL SAFETY LIGHTING GUIDE

**J.W. SPEAKER PRODUCTS
HELP YOUR CUSTOMERS IMPROVE...**

SAFETY

- Decrease Accidents & Close Calls
- Decreased Lost Time
- Decrease Workers Compensation Costs
- Decrease Lawsuits
- Decrease Insurance Costs



PRODUCTIVITY

- Increase Output
- Decrease Downtime
- Decrease Maintenance Costs
- Decrease Replacement Costs
- Decrease Energy Costs



INCREASED PROFITS



**LED lighting solutions from J.W. Speaker:
Enhancing safety and productivity for customers.**

J.W. SPEAKER PRODUCTS HELPS YOU TO...

BE A TRUSTED ADVISOR

- Consultative Selling
- Prescribing Solutions
- Adding Value
- Relationship Building

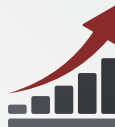


LEVERAGE OUR PARTNERSHIP

- Complimentary Business
- Cultural Fit
- System-Based Solutions
- Mutual Benefits



SALES GROWTH



J.W. Speaker has four categories of



industrial safety lighting solutions.





Model 60

8



Model 516

15



Model 217

9



Model 523

16-19



Model 281

10



Model 526

20-21



Model 283

11



Model 527

22-23



Model 406

12



Model 623

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Model 407

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Model 660

25



Model 515

14



Model 670 XD 26-27



Model 735 28-29



Model 4415 40



Model 770 XD 30-31



Model 7150 41



Model 770 32-33



Power
Transformers 42



Model 771 XD 34-35



Technical
Information 43-46



Model 783 XD 36



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J.W. Speaker 47



Model 832 37



Model 840 XD 38-39

MODEL 60



PORTABLE LED SCENE LIGHT

3,600

Raw Lumens

1,700

Effective Lumens



Xenon Housing

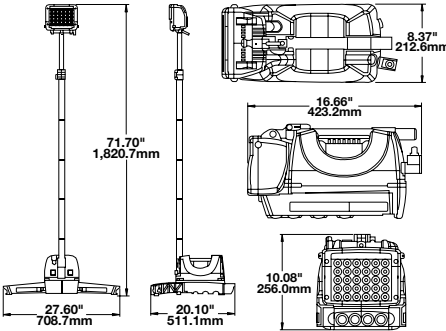
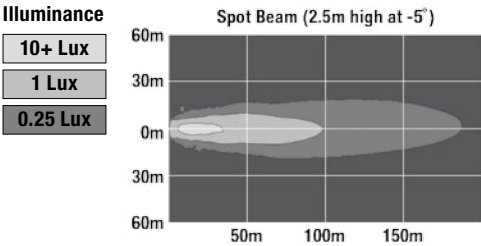
Part No.	Voltage	Description
0547141	12V DC	LED Portable Work Light System with Vehicle Charger
0547171	12V DC	LED Portable Work Light System with Vehicle Charger & Remote

STANDARDS: IP54, CE Recognized.

ACCESSORIES

Part No.	Description
6600651	Optional Wall Charger for Model 60
3000671	Optional NATO Tripod for use with Model 60

Beam Pattern Diagrams





VEHICLE
CONSPICUITY

MODEL 217

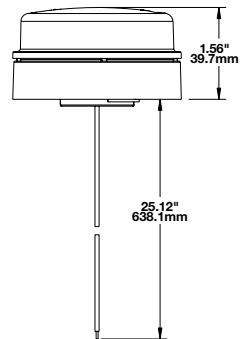
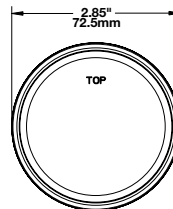
LED SIGNAL LIGHTS



Polycarbonate Housing

Part No.	Voltage	Description
0345411	12–24V DC	ECE LED Stop & Tail Light without 90mm Mounting Assembly Adapter
0345421	12–24V DC	ECE LED Backup Light without 90mm Mounting Assembly Adapter
0345521	12–24V DC	ECE LED Turn Signal with 90mm Mounting Assembly Adapter
0345431	12–24V DC	ECE LED Rear Fog Light (Red) without 90mm Mounting Assembly Adapter
0345441	12–24V DC	ECE LED Turn Signal without 90mm Mounting Assembly Adapter
0345511	12–24V DC	ECE LED Rear Fog Light (Clear) without 90mm Mounting Assembly Adapter
0345461	12–24V DC	ECE LED DRL & Front Position Light without 90mm Mounting Assembly Adapter
0345451	12–24V DC	ECE LED DRL & Front Position Light with 90mm Mounting Assembly Adapter

STANDARDS: IP67, ECE Reg 6, ECE Reg 7, ECE Reg 23 (part no. 0345421), ECE Reg 38 (part no. 0345431), ECE Reg 38 (part no. 0345451).



MODEL 281



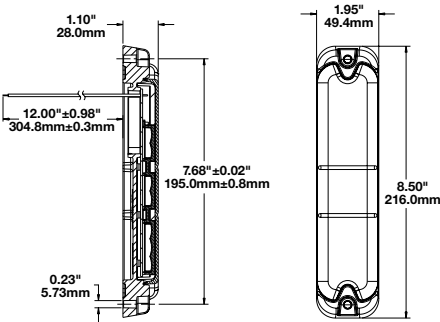
LED SIGNAL LIGHT

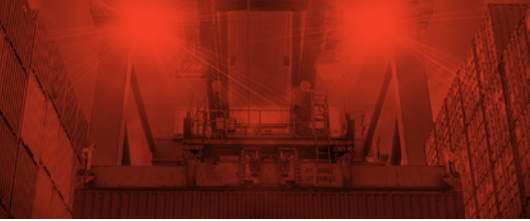


Polycarbonate Housing

Part No.	Voltage	Description
0338061	12V DC	LED Stop, Tail, Turn Signal & Backup Light without Flasher
0338091	24-36V DC	LED Stop, Tail, Turn Signal & Backup Light without Flasher
0339011	48V DC	LED Stop, Tail, Turn Signal & Backup Light without Flasher
0339021	48V DC	LED Stop, Tail, Turn Signal & Backup Light Kit (2 Lights with 2 Amp Flasher)

STANDARDS: IP67, UL Recognized.





VEHICLE
CONSPICUITY

MODEL 283

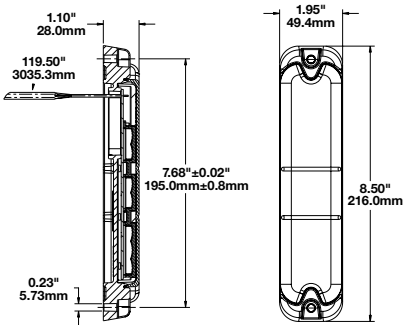
LED SIGNAL LIGHT



Polycarbonate Housing

Part No.	Voltage	Description
0339741	12V DC	ECE LED Stop, Tail & Turn Signal Light

STANDARDS: ECE Reg. 6, ECE Reg. 7, and IP67.



MODEL 406



LED STROBE LIGHTS



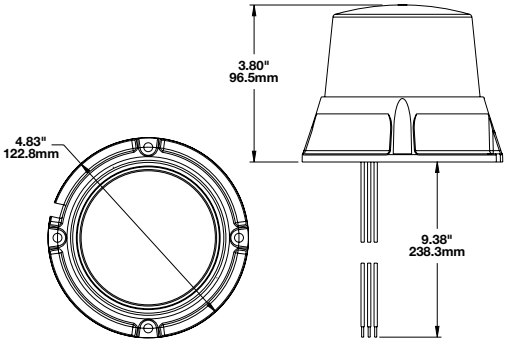
Polycarbonate Housing

Part No.	Voltage	Description
0646501	12-80V DC	LED Amber Class II Strobe Light

STANDARDS: CE Recognized, ECE Reg 10, SAE J845, UL Recognized.

ACCESSORIES

Part No.	Description
8200213	Optional DIN Mount Kit for Model 406





VEHICLE
CONSPICUITY

MODEL 407

LED STROBE LIGHTS



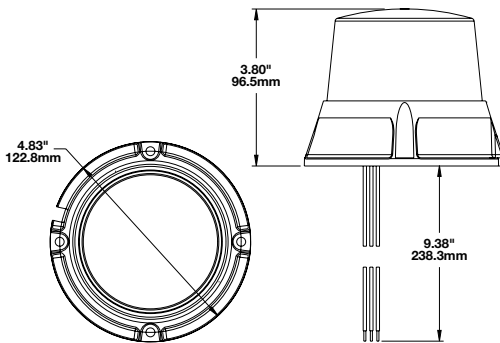
Die-Cast Aluminium

Part No.	Voltage	Description
0646491	12-80V DC	LED Amber Class I Strobe Light

STANDARDS: CE Recognized, ECE Reg 10, ECE Reg 65, SAE J845, UL Recognized.

ACCESSORIES

Part No.	Description
8200213	Optional DIN Mount Kit for Model 407



MODEL 515 LED



LED LIFT TRUCK HEADLIGHT

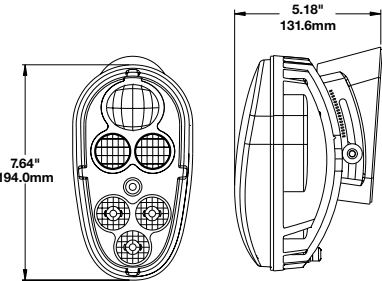
540
Raw Lumens

420
Effective Lumens

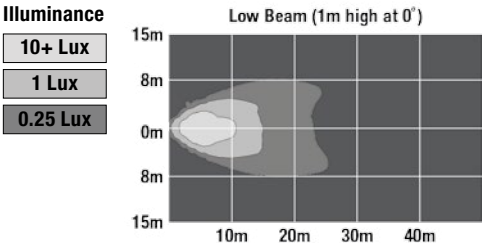
Die-Cast Aluminium

Part No.	Voltage	Description
0548901	12-48V DC	ECE LED Material Handling Headlight with Black Inner Bezel
0549201	12-48V DC	ECE LED Material Handling Headlight with Chrome Inner Bezel

STANDARDS: IP67, ECE Reg 6, ECE Reg 7, ECE Reg 113.



Beam Pattern Diagrams



The color temperature of lighting is important!

J.W. Speaker's lights not only provide the highest LED output possible but they also produce a color "temperature" of 5,000-5,700K, a range that replicates mid-day sunlight for improved visibility and recognition. **Do YOUR lights deliver on this critical need?**

SAFETY TIP



VEHICLE
VISIBILITY

MODEL 516

LED HEADLIGHT

765

Raw Lumens

380

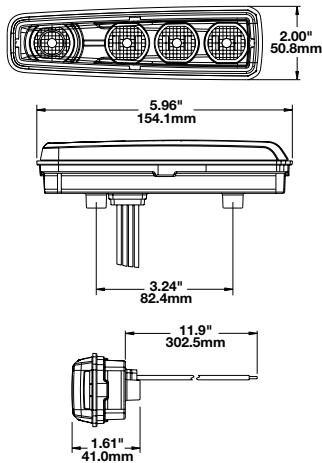
Effective Lumens



Polycarbonate Housing

Part No.	Voltage	Description
0549482	12-24V DC	LED Material Handling Headlight with Turn Signal & Front Position

STANDARDS: IP67.



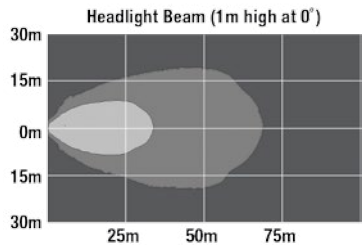
Beam Pattern Diagrams

Illuminance

10+ Lux

1 Lux

0.25 Lux



Around 30% of accidents occur at night.



Good nighttime lighting, whether outside the factory, at a port or on the road, is essential to ensuring operator safety in regards to visibility, both for the vehicle or machine operator and the people near the vehicle or machine. As such, the ability of people on the ground or in vehicles to see the vehicle or machine coming, i.e. "conspicuity", can be just as important to safe operation!

SAFETY TIP

MODEL 523



LED SCENE LIGHT

8,100

Raw Lumens

3,900

Effective Lumens



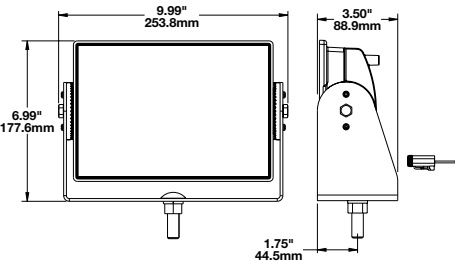
Die-Cast Aluminium

Part No.	Voltage	Description
0551441	12-24V DC	LED Scene Light with Narrow Flood Beam Pattern
0551431	12-24V DC	LED Scene Light with Medium Flood Beam Pattern
0551451	12-24V DC	LED Scene Light with Wide Flood Beam Pattern
0544671	120V AC	LED Scene Light with Medium Flood Beam Pattern

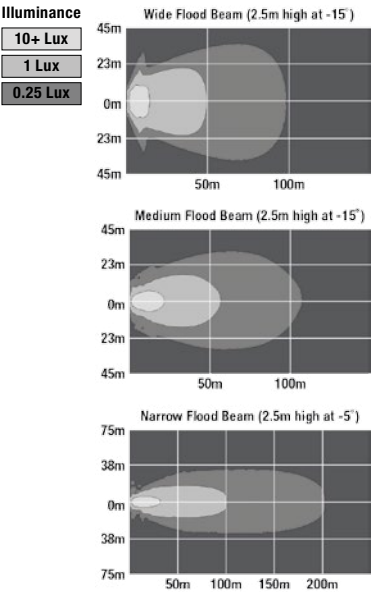
STANDARDS: IP67.

ACCESSORIES

Part No.	Description
3000671	Optional NATO Tripod for use with Model 523



Beam Pattern Diagrams





JOBSITE
VISIBILITY

MODEL 523

PORTABLE LED SCENE LIGHT

8,100

Raw Lumens

3,900

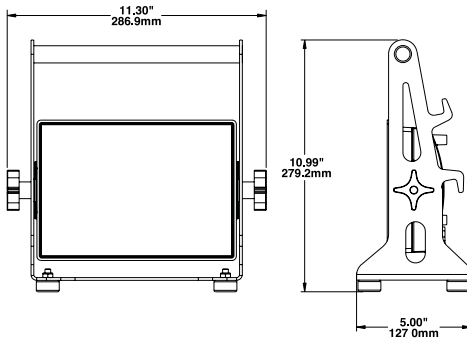
Effective Lumens



Die-Cast Aluminium

Part No.	Voltage	Description
0545451	120V AC	Portable LED Scene Light with Wide Flood Beam Pattern
0545531	120V AC	Portable LED Scene Light with Medium Flood Beam Pattern
0546251	12V DC	Portable LED Scene Light with Wide Flood Beam, Magnetic Mount & Carrying Case

STANDARDS: IP67.



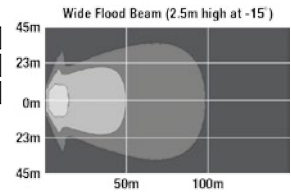
Beam Pattern Diagrams

Illuminance

10+ Lux

1 Lux

0.25 Lux



MODEL 523



LED SCENE LIGHT TRIPOD KIT

8,100

Raw Lumens

3,900

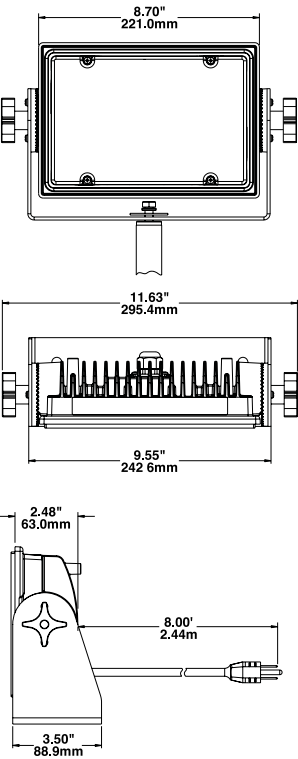
Effective Lumens



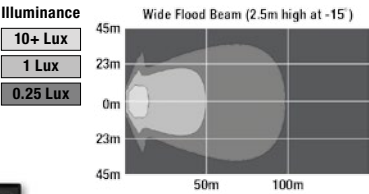
Die-Cast Aluminium

Part No.	Voltage	Description
0544021	120V AC	LED Scene Light Kit with Wide Flood Beam Pattern & Tripod

STANDARDS: IP67.



Beam Pattern Diagrams



50% of accidents are the result of shortcomings in visual perception.

J.W. Speaker's high-powered LED lights, whether mounted on vehicles or overhead cranes, have been statistically shown by OEM customers to REDUCE the likelihood of an accident.

SAFETY TIP



JOBSITE
CONSPICUITY

MODEL 523 BLU

BLUE SAFETY SPOT LIGHT

1,675

Raw Lumens

864

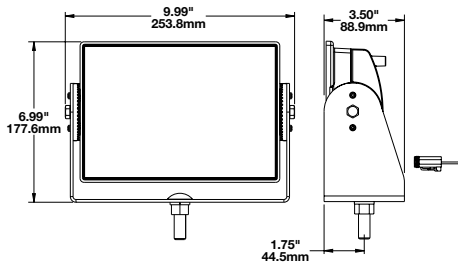
Effective Lumens



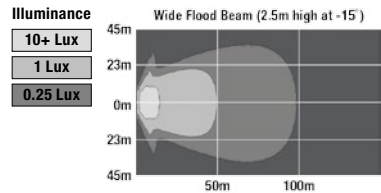
Die-Cast Aluminium

Part No.	Voltage	Description
0551231	24V DC	LED Blue Safety Spot Light

STANDARDS: IP67.



Beam Pattern Diagrams



Human Factors safety experts point out there are 6 Laws of "Attention".

Law #5 suggests that tasks require some degree of attention, although the amount may be small. Over time, people change their "attentional allocation strategy" to more of a sampling plan, wherein other "bits" of information are used to monitor automatic behaviors, to check whether everything is OK. In this case, J.V. Speaker's engineered task and special-purpose lights, such as the Model 770 BLU for a lift truck or Model 523 BLU, can augment this sampling plan, providing additional "bits" that increase attention, resulting in a safer environment for the operator.

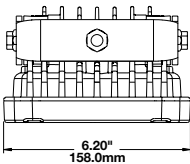
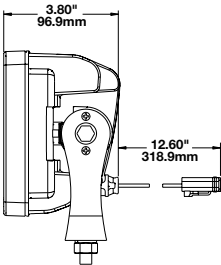
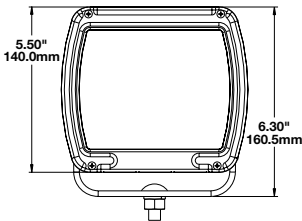


MODEL 526



J.W. SPEAKER
Engineered. Lighting. Solutions.

LED WORK LIGHT



9,000

Raw Lumens

5,500

Effective Lumens



Die-Cast Aluminium

Beam Pattern Diagrams

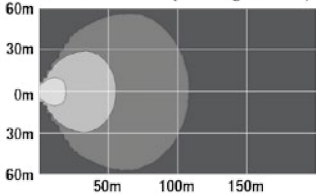
Illuminance

10+ Lux

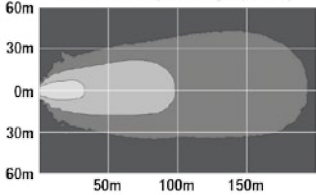
1 Lux

0.25 Lux

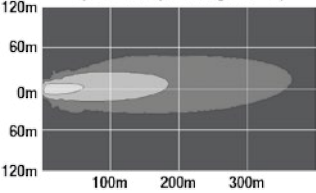
Anti-Glare Beam (1.5m high at -20°)



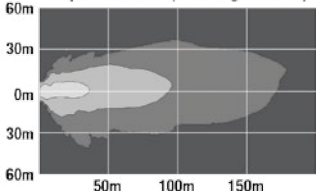
Flood Beam (2.5m high at -15°)



Spot Beam (2.5m high at -5°)



Trapezoid Beam (2.5m high at -15°)





VEHICLE
VISIBILITY

MODEL 526

Part No.	Voltage	Description
1300061	12-24V DC	LED Work Light with Yellow Housing, Glass Lens & Flood Beam Pattern
1300201	12-24V DC	LED Work Light with Yellow Housing, Polycarbonate Lens & Flood Beam Pattern
1300051	12-24V DC	LED Work Light with Yellow Housing, Glass Lens & Anti-Glare Beam Pattern
1300191	12-24V DC	LED Work Light with Yellow Housing, Polycarbonate Lens & Anti-Glare Beam Pattern
1300081	12-24V DC	LED Work Light with Yellow Housing, Glass Lens & Spot Beam Pattern
1300221	12-24V DC	LED Work Light with Yellow Housing, Polycarbonate Lens & Spot Beam Pattern
1300071	12-24V DC	LED Work Light with Yellow Housing, Glass Lens & Trapezoid Beam Pattern
1300211	12-24V DC	LED Work Light with Yellow Housing, Polycarbonate Lens & Trapezoid Beam Pattern

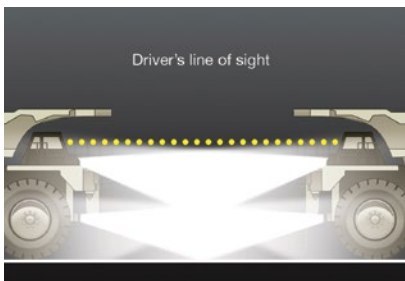
STANDARDS: IP69K.

ACCESSORIES

Part No.	Description
3268191	Optional 15 Meter DT06-2S Connection Wire Assembly for the Model 526

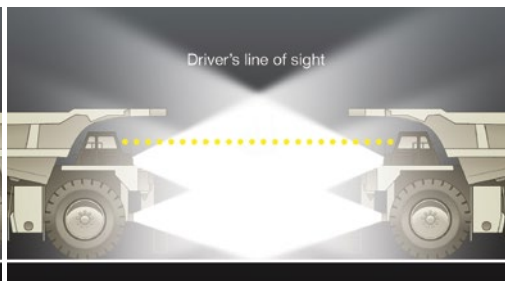
With Model 526

The **Model 526 Anti-Glare** beam eliminates glare.



Without Model 526

Using lights with traditional beam patterns can create unsafe glare.



MODEL 527



JOBSITE
CONSPICUITY



LED “KEEP OUT” ZONE LIGHT

720

Raw Lumens

670

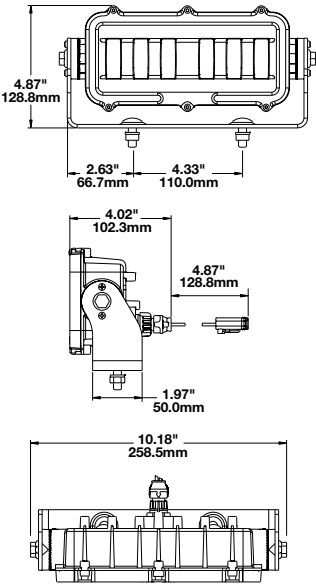
Effective Lumens



Xenon Housing

Part No.	Voltage	Description
0551281	12-24V DC	LED Amber “Keep Out” Zone Light
0551271	12-24V DC	LED Green “Keep Out” Zone Light
0549271	12-24V DC	LED Red “Keep Out” Zone Light
0551261	12-24V DC	LED White “Keep Out” Zone Light

STANDARDS: IP69K.

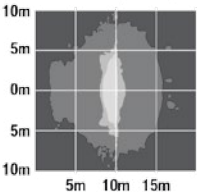


Beam Pattern Diagrams

Illuminance

10+ Lux
1 Lux
0.25 Lux

“Keep Out” Pattern (6m high at 0°)





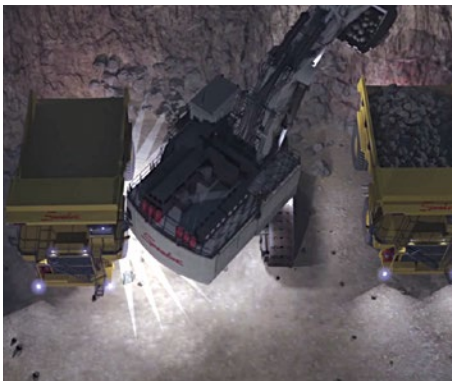
JOBSITE
CONSPIQUITY

MODEL 527

LED “KEEP OUT” ZONE LIGHTS

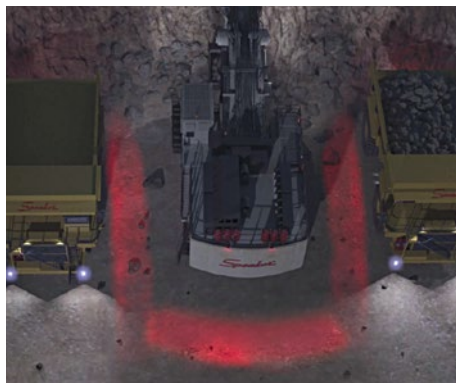
WITHOUT MODEL 527

Misjudging distance in hazardous work areas is a common and costly mistake.



WITH MODEL 527

The **Model 527 Red Zone** light projects a red “keep out” zone to warn drivers of hazardous work areas.



MODEL 623



VEHICLE
VISIBILITY



JOBSITE
VISIBILITY



LED SCENE LIGHT

40,000

Raw Lumens

20,000

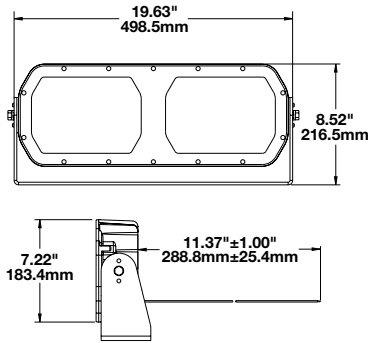
Effective Lumens



Die-Cast Aluminium

Part No.	Voltage	Description
0546681	16-60V DC	LED Work Light with Medium Flood Beam Pattern
0546671	16-60V DC	LED Work Light with Narrow Flood Beam Pattern
0546691	16-60V DC	LED Work Light with Wide Flood Beam Pattern
0549301	16-60V DC	LED Work Light with Frosted Lens & Super Wide Flood Beam Pattern

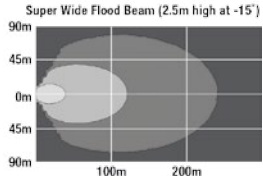
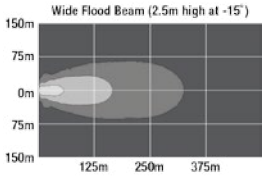
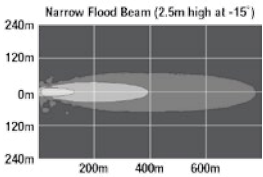
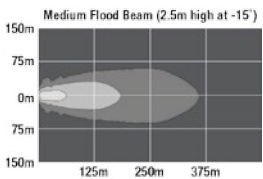
STANDARDS: UL Recognized, IP67.



Beam Pattern Diagrams

Illuminance

10+ Lux
1 Lux
0.25 Lux





VEHICLE
VISIBILITY

MODEL 660

LED WORK LIGHT

2,750

Raw Lumens

2,200

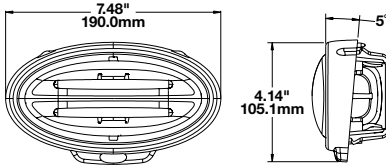
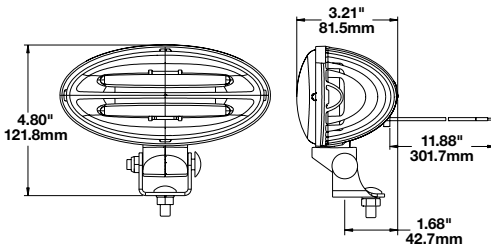
Effective Lumens



Die-Cast Aluminium

Part No.	Voltage	Description
0548511	12-24V DC	LED Work Light with Flood Beam Pattern & Pedestal Mount
0548521	12-24V DC	LED Work Light with Flood Beam Pattern & Panel Mount

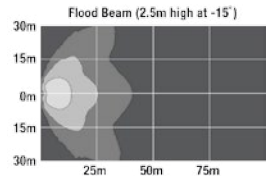
STANDARDS: IP67.



Beam Pattern Diagrams

Illuminance

10+ Lux
1 Lux
0.25 Lux



The human brain absorbs 90% of all information through the eyes.

Therefore, it makes sense to provide the BEST lighting possible, whether it's in the factory or outside, in order to maximize everyone's safety!

SAFETY TIP

MODEL 670 XD



LED WORK LIGHT

1,080

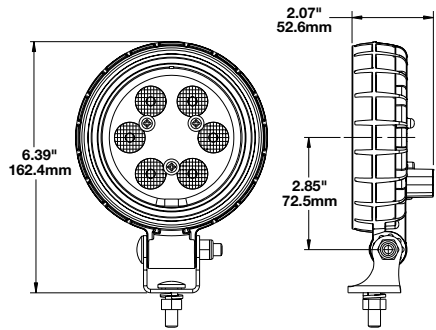
Raw Lumens

780

Effective Lumens



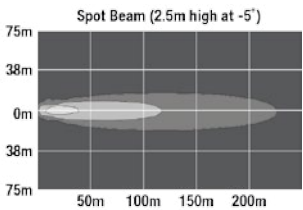
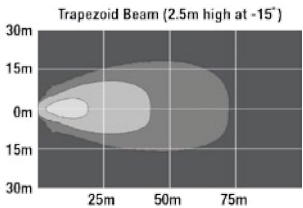
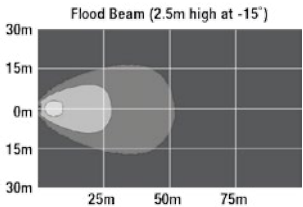
Polycarbonate Housing



Beam Pattern Diagrams

Illuminance

10+ Lux
1 Lux
0.25 Lux





VEHICLE
VISIBILITY

MODEL 670 XD

Part No.	Voltage	Description
1403241	12-24V DC	LED Work Light with Flood Beam Pattern
1403261	12-24V DC	LED Work Light with Spot Beam Pattern
1403251	12-24V DC	LED Work Light with Trapezoid Beam Pattern
1403291	12-110V DC	LED Work Light with Flood Beam Pattern
1403281	12-110V DC	LED Work Light with Spot Beam Pattern
1403271	12-110V DC	LED Work Light with Trapezoid Beam Pattern

STANDARDS: IP69K, SAE J1113-13, ECE Reg 10, UL Listed, CE CISPR 12, CE CISPR 22

ACCESSORIES

Part No.	Description
8200101	Optional Mounting Kit with Stainless Steel Hardware
8200121	Optional Mounting Kit with Black Powder Coated Hardware
8200011	Optional Magnet Mount Kit



OLDER WORKERS

As we age, the amount of light we require to see clearly increases dramatically. So what seems adequate for a young worker can be dangerous for an older one.



MODEL 735



LED WORK LIGHT

3,900

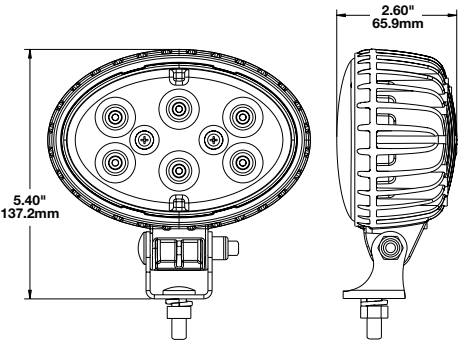
Raw Lumens

2,600

Effective Lumens



Die-Cast Aluminium



Beam Pattern Diagrams

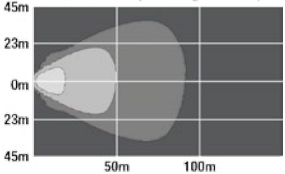
Illuminance

10+ Lux

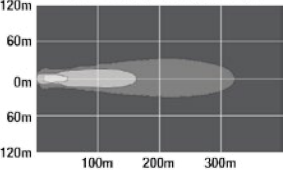
1 Lux

0.25 Lux

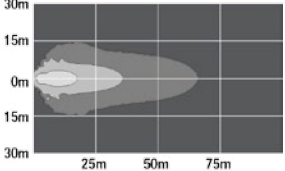
Flood Beam (2.5m high at -15°)



Spot Beam (2.5m high at -5°)



Trap Beam (2.5m high at -15°)





VEHICLE
VISIBILITY

MODEL 735

Part No.	Voltage	Description
1706591	12-24V DC	LED Work Light with Flood Beam Pattern
1706571	12-24V DC	LED Work Light with Spot Beam Pattern
1706581	12-24V DC	LED Work Light with Trapezoid Beam Pattern
1706781	12-24V DC	LED Work Light with Flood Beam Pattern & PE12015792 Connector
1706821	12-24V DC	LED Work Light with Spot Beam Pattern & PE12015792 Connector
1706811	12-24V DC	LED Work Light with Trapezoid Beam Pattern & PE12015792 Connector

STANDARDS: IP69K.



Reaction times slow when there is poor visibility.

It is well documented that bright lighting at night improves reaction time, especially when it's dark as would be the case outside of a city, where there is better contrast. However, lighting's effect on reaction times during daytime or for inside a factory is different. Traditional halogen lighting used on a lift truck, for example, simply can't deliver enough contrast to overcome the ambient light inside a factory. Therefore, lighting needs to be "engineered" for the desired outcome, whether as a bright white LED light that achieves adequate contrast or as a concentration of light such as the blue spot on the ground created by J.W. Speaker's Model 770 BLU.

SAFETY TIP

MODEL 770 XD



LED WORK LIGHT

900

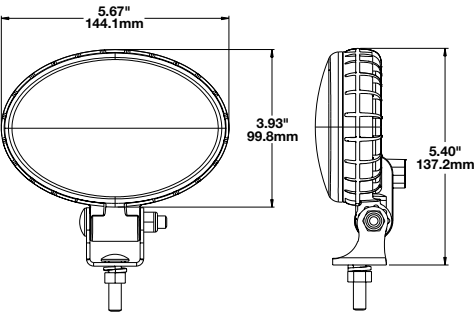
Raw Lumens

700

Effective Lumens



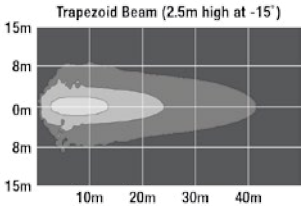
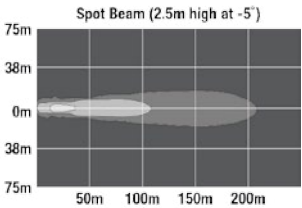
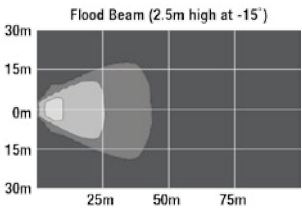
Polycarbonate Housing



Beam Pattern Diagrams

Illuminance

10+ Lux
1 Lux
0.25 Lux





VEHICLE
VISIBILITY

MODEL 770 XD

Part No.	Voltage	Description
1706041	12V DC	LED Work Light with Flood Beam Pattern & DT04-2P Connector
1706321	12V DC	LED Work Light with Spot Beam Pattern & DT04-2P Connector
1706051	12V DC	LED Work Light with Trapezoid Beam Pattern & DT04-2P Connector
1706241	12-48V DC	LED Work Light with Flood Beam Pattern & DT04-2P Connector
1706261	12-48V DC	LED Work Light with Spot Beam Pattern & DT04-2P Connector
1706251	12-48V DC	LED Work Light with Trapezoid Beam Pattern & DT04-2P Connector
1706461	12-48V DC	LED Work Light with Flood Beam Pattern & PE12015792 Connector

STANDARDS: IP67, SAE J1113-13, CE CISPR 12, CE CISPR 22

ACCESSORIES

Part No.	Description
8200101	Optional Mounting Kit with Stainless Steel Hardware
8200121	Optional Mounting Kit with Black Powder Coated Hardware
8200011	Optional Magnet Mount Kit

MODEL 770 BLU
& MODEL 770 RED



VEHICLE
CONSPICUITY

J.W. SPEAKER
Engineered. Lighting. Solutions.

LED SIGNAL LIGHTS



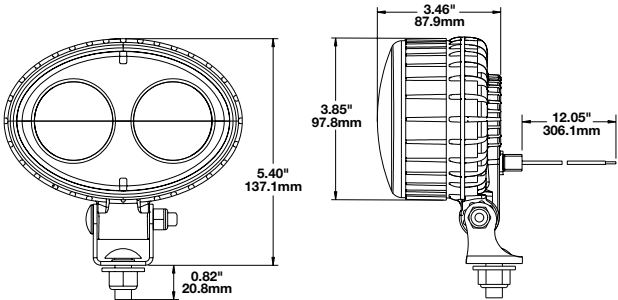
Intense Spot Pattern



IP69K Rating



Polycarbonate Housing



It takes time for human brains to process information.



When a person first notices something like an oncoming lift truck, it takes more time when the object is farther away and even more time if there is a distraction. For example, while the beeping noise on a lift truck may initially serve its purpose, namely to alert persons, over time people tend to block out this sound, thus slowing reaction time. J.W. Speaker's innovative Model 770 BLU LED light that projects a bright blue spot onto the ground serves to counter such a distraction, thereby enhancing awareness.

SAFETY TIP



VEHICLE
CONSPICUITY

MODEL 770 BLU & MODEL 770 RED

Part No.	Voltage	Description
1706311	12-110V DC	LED Blue Material Handling Safety Light
1706441	12-110V DC	LED Red Safety Spot Light

STANDARDS: IP69K, SAE J1113, SAE J1455, ECE Reg 10, UL Recognized.

ACCESSORIES

Part No.	Description
3267041	12" Wire Assembly for Material Handling Safety Lights
8200101	Optional Mounting Kit with Stainless Steel Hardware
8200121	Optional Mounting Kit with Black Powder Coated Hardware
8200011	Optional Magnet Mount Kit

MODEL 770 BLU



MODEL 770 RED



Why did J.W. Speaker use blue LEDs for its groundbreaking Model 770 BLU spot light adopted by leading OEMs such as Linde, Jungheinrich and Crown?

In fact, within the visible wavelength spectrum, violet and blue wavelengths are scattered more efficiently than other wavelengths. Case in point: The sky looks blue because our eyes are more sensitive to blue light. Therefore, it made sense to select blue for the Model 770 BLU—it promotes better visibility and more safety!

SAFETY TIP

MODEL 771 XD



LED WORK LIGHT

900

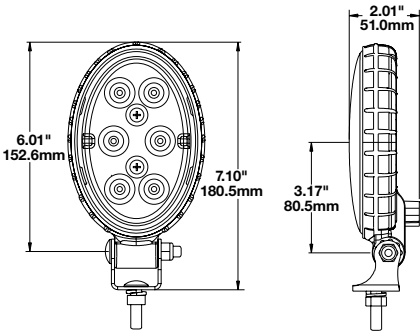
Raw Lumens

700

Effective Lumens



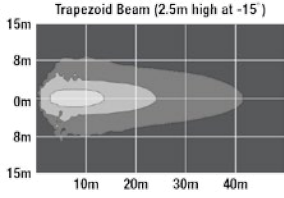
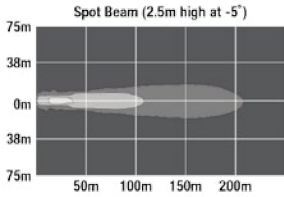
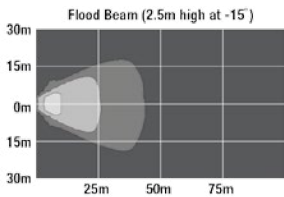
Polycarbonate Housing



Beam Pattern Diagrams

Illuminance

- 10+ Lux
- 1 Lux
- 0.25 Lux





VEHICLE
VISIBILITY

MODEL 771 XD

WHITE WORK LIGHT



Part No.	Voltage	Description
1705911	12-48V DC	LED Work Light with Flood Beam Pattern
1706191	12-48V DC	LED Work Light with Spot Beam Pattern
1706171	12-48V DC	LED Work Light with Vertical Flood Beam Pattern

STANDARDS: IP67, ECE Reg. 10 (Radiated Emissions only), CE CISPR 12, CE CISPR 22.

AMBER WORK LIGHT



Part No.	Voltage	Description
1706221	12-24V DC	12-24V LED Amber Work Light

STANDARDS: IP67, SAE J974, ECE Reg. 10 (Radiated Emissions only), CE CISPR 12, CE CISPR 22.

ACCESSORIES

Part No.	Description
8200101	Optional Mounting Kit with Stainless Steel Hardware
8200121	Optional Mounting Kit with Black Powder Coated Hardware
8200011	Optional Magnet Mount Kit

MODEL 783 XD



LED WORK LIGHT

675

Raw Lumens

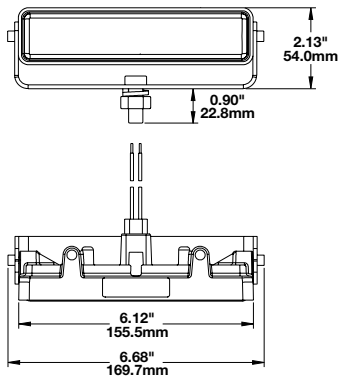
485

Effective Lumens

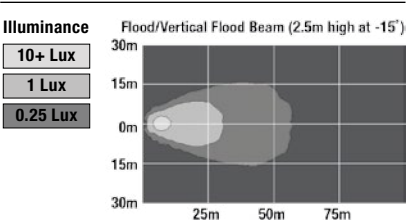
Polycarbonate Housing

Part No.	Voltage	Description
1603391	12-48V DC	LED Work Light with Flood Beam Pattern & Mounting Bracket
1603451	12-48V DC	LED Work Light with Vertical Flood Beam Pattern & Mounting Bracket

STANDARDS: IP67, UL Listed, CE CISPR 12 (part no. 1603391).



Beam Pattern Diagrams



Safety experts use “PRT” (Perception-Reaction Time) when reconstructing accidents, often times setting a ceiling of 1.5 seconds to calculate the stack-up of components that go into it such as mental processing, movement and device response times. To the extent that good lighting delivers the appropriate brightness and color temperature, this can result in reducing PRT which in turn improves safety.

SAFETY TIP



VEHICLE
VISIBILITY

MODEL 832

LED WORK LIGHT

3,900

Raw Lumens

2,400

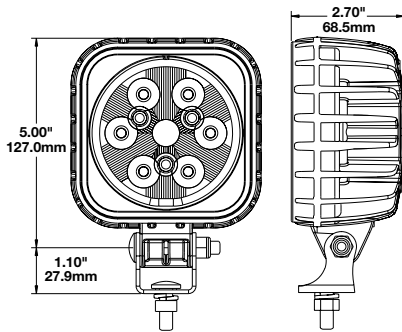
Effective Lumens



Die-Cast Aluminium

Part No.	Voltage	Description
1300181	12-24V DC	LED Work Light with Flood Beam Pattern
1300161	12-24V DC	LED Work Light with Spot Beam Pattern
1300171	12-24V DC	LED Work Light with Trapezoid Beam Pattern

STANDARDS: IP69K



Beam Pattern Diagrams

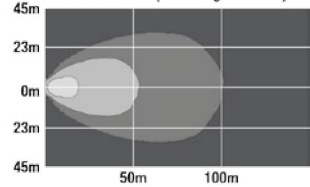
Illuminance

10+ Lux

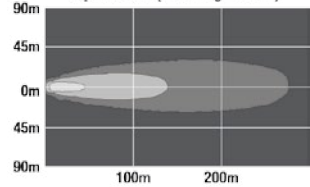
1 Lux

0.25 Lux

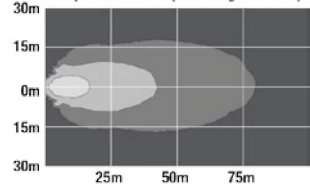
Flood Beam (2.5m high at -15°)



Spot Beam (2.5m high at -5°)



Trapezoid Beam (2.5m high at -15°)



MODEL 840 XD



LED WORK LIGHT

1,080

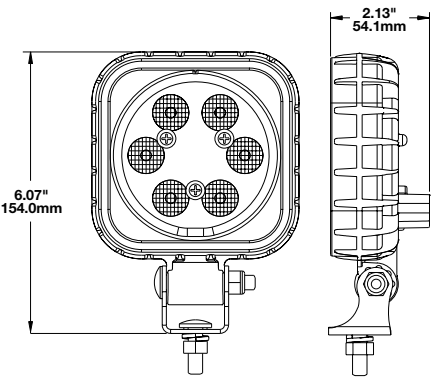
Raw Lumens

780

Effective Lumens



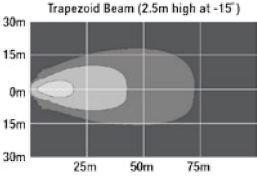
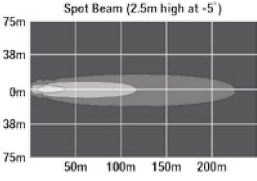
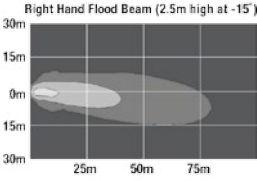
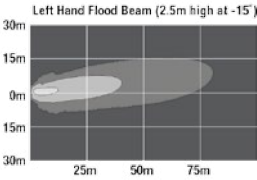
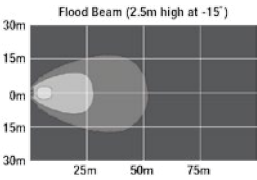
Polycarbonate Housing



Beam Pattern Diagrams

Illuminance

10+ Lux
1 Lux
0.25 Lux





VEHICLE
VISIBILITY

MODEL 840 XD

Part No.	Voltage	Description
1300001	12-24V DC	LED Work Light with Flood Beam Pattern & Integrated 2-Pin Deutsch Connector
1300021	12-24V DC	LED Work Light with Spot Beam Pattern
1300011	12-24V DC	LED Work Light with Trapezoid Beam Pattern
1300301	12-24V DC	LED Work Light with Left Hand Vertical Flood Beam Pattern
1300311	12-24V DC	LED Work Light with Right Hand Vertical Flood Beam Pattern
1300091	12-110V DC	LED Work Light with Flood Beam Pattern & Integrated 2-Pin Deutsch Connector
1300101	12-110V DC	LED Work Light with Spot Beam Pattern & Integrated 2-Pin Deutsch Connector
1300031	12-110V DC	LED Work Light with Trapezoid Beam Pattern & Integrated 2-Pin Deutsch Connector

STANDARDS: IP69K, SAE J1113, ECE Reg 10, UL Listed, CE CISPR 12, CE CISPER 22.

ACCESSORIES

Part No.	Description
8200101	Optional Mounting Kit with Stainless Steel Hardware
8200121	Optional Mounting Kit with Black Powder Coated Hardware
8200011	Optional Magnet Mount Kit



According to Human Factors experts, “Seeing” is a function of two processes: sensation and perception.

“Sensation” refers to the issue of whether the light from the object was sufficient to reach the physiological level needed for detection. “Visibility” is a measure of the sensation level caused by a target. The most important single visual attribute of an object’s visibility is its contrast—the difference in brightness (or sometimes color or texture) between an object and its background. In fact, J.W. Speaker engineers the “seeing” part of its lighting vis-a-vis attention to light output color temperature to achieve optimal contrast, which in turn enhances safe operation!

SAFETY TIP

MODEL 4415



LED WORK LIGHT

2,450

Raw Lumens

1,350

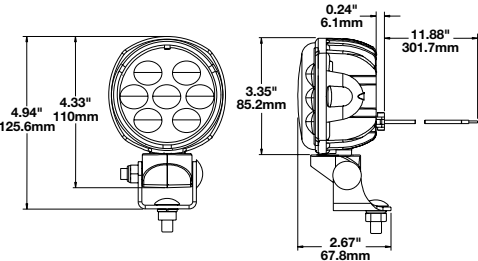
Effective Lumens



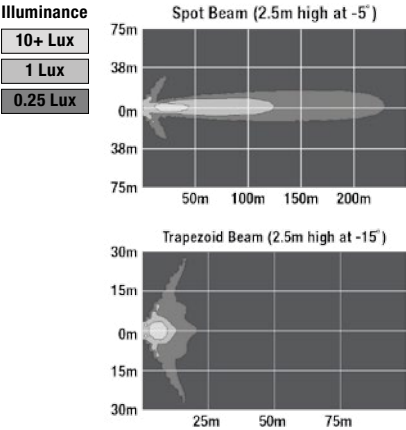
Die-Cast Aluminium

Part No.	Voltage	Description
0549841	12-24V DC	LED Work Light with Trapezoid Pattern
0551001	12-24V DC	LED Work Light with Spot Pattern
0551753	12-24V DC	LED Work Lights with Spot Pattern & Side View Mirror Mount Kit

STANDARDS: IP67.



Beam Pattern Diagrams





VEHICLE
VISIBILITY

MODEL 7150

LED WORK LIGHT

5,250

Raw Lumens

3,300

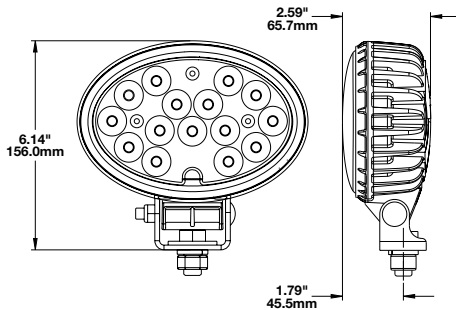
Effective Lumens



Die-Cast Aluminium

Part No.	Voltage	Description
1801581	12-24V DC	LED Work Light with Flood Beam Pattern
1801621	12-24V DC	LED Work Light with Spot Beam Pattern
1801571	12-24V DC	LED Work Light with Trapezoid Beam Pattern

STANDARDS: IP69K.



Beam Pattern Diagrams

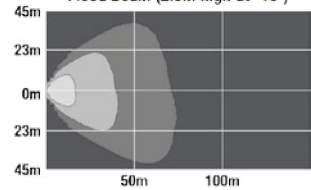
Illuminance

10+ Lux

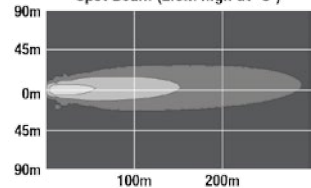
1 Lux

0.25 Lux

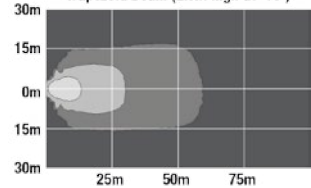
Flood Beam (2.5m high at -15°)



Spot Beam (2.5m high at -5°)



Trapezoid Beam (2.5m high at -15°)



POWER TRANSFORMERS

SMALL POWER TRANSFORMER

Part No.	Description
6600701	Small Power Transformer HLG-40 H-24



LARGE POWER TRANSFORMER

Part No.	Description
6600711	Large Power Transformer HLG-240 H-24



J.W. Speaker meets various regulations for lighting products for our customers on a global market. The following are some of the standards and regulations which J.W. Speaker meets from design to development and to the end product.

ASAE Standards

Agricultural Society of American Engineers regulations for agricultural equipment.



SAE Standards

SAE International (SAE), formerly the Society of Automotive Engineers, is a professional organization for mobility engineering professionals in the aerospace, automotive, and commercial vehicle industries. The Society is a standards development organization for the engineering of powered vehicles of all kinds, including cars, trucks, boats, aircraft, and others. The SAE standards is mainly used in the US and Canada and does not recognise ECE approvals.



ECE Standards

UNECE United Nations Economic Commission for Europe (UNECE) Transport Division has been providing secretariat services to the World Forum for Harmonization of Vehicle Regulations for more than 50 years. The World Forum has incorporated into its regulatory framework the technological innovations of vehicles to make them safer and more environmentally sound. Most countries, even if not formally participating in the 1958 agreement, recognise the ECE Regulations and either mirror the ECE Regulations' content in their own national requirements (Australian Design Rules:- ADR's), or permit the use and importation of ECE-approved vehicles, or both.



UL Recognized

Underwriters Laboratories Inc. (UL) is an independent product safety certification organization. Based in Northbrook, Illinois, UL develops standards and test procedures for products, materials, components, assemblies, tools and equipment, chiefly dealing with product safety. UL also evaluates and certifies the efficiency of a company's business processes through its management system registration programs. Additionally, UL analyzes drinking and other clean water samples through its drinking water laboratory in South Bend, Indiana and evaluates products for environmental sustainability through its subsidiary, UL Environment. UL is one of several companies approved for such testing by the U.S. federal agency OSHA. OSHA maintains a list of approved testing laboratories, known as Nationally Recognized Testing Laboratories.



CE Recognized

The CE marking (also known as CE mark) is a mandatory conformity mark on many products placed on the single market in the European Economic Area (EEA). The CE marking certifies that a product has met EU consumer safety, health or environmental requirements.



Whether you're an engineer at an original equipment manufacturer (OEM) looking to specify lights for a new vehicle, or an end-user looking to replace some lights on your vehicle, electromagnetic interference (EMI) is something you should know about.

If you're not familiar with "EMI," the term refers to a disturbance that affects an electrical circuit. If you've ever experienced reception issues with your AM/FM radio when your cell phone rings (or vice versa), that's a perfect example of a problem caused by EMI. Lights can both cause and be the victim of EMI issues in your vehicle. For this reason, it is important to have a basic understanding of EMI and look for lights that have been adequately tested.

The Four Types of EMI

There are Four main types of EMI that you should be aware of:

Radiated Emissions

Electromagnetic noise emitted by a light through the air that can interfere with other electronics (ex. cell phones, radios, etc.).

Conducted Emissions

Electromagnetic noise conducted down a power line in a vehicle which can interfere with other electronic components on the vehicle.

Radiated Immunity

The tolerance of a light to inbound electromagnetic noise in the atmosphere. Any broadcast signal (cell phone, radio tower, non-compliant electronics, etc.) can interfere with a light if it is not properly designed.

Conducted Immunity

The tolerance of a light to inbound electromagnetic noise conducted on vehicle power lines.

Component Level vs. Vehicle Level

For OEM applications, lighting manufacturers focus on testing their products at a component (light) level.

This is done to make sure that the lights will not cause a vehicle level EMI failure or interfere with other electronics on the vehicle. OEMs then test at a vehicle level to ensure that it meets regulatory requirements.

Standard vs. Custom Products

At J.W. Speaker Corporation, we design and manufacture both standard and custom products. For our standard products, we've established a set of high standards by which we design and test our products for electromagnetic compliance. For custom products, we design, test, and manufacture to meet your exact specifications. In the event that you do not have EMI specifications, we'll provide you with our EMI standards to review and approve before we start on the design.

The IP (Ingress Protection) Code outlines a system of classification for the protection of electrical enclosures against the intrusion of foreign bodies (i.e. tools, fingers, dust, etc.) and moisture. The system of classification was specified by the International Electrotechnical Commission and is officially designated as IEC 60529. The rating is specified by the letters IP followed by two digits i.e. IP25, IP68, etc.

IP ratings (International Protection Ratings) are covered in Australian Standard AS1939.

- This system uses a two digit code to specify the degree of particle and water resistance of a luminaire.
- The first digit indicates the degree of protection of the interior from the ingress of solid foreign objects.
- The second digit indicates the degree of protection of the interior from the ingress of water.

FIRST NUMBER

Degree of ingress protection

The first number of the IP code indicates the degree of protection against contact with moving parts and the degree that the equipment is protected against solid foreign bodies intruding into an enclosure.

- 0** - No protection provided.
- 1** - Protection against entry of objects larger than 50 square mm.
- 2** - Protection against entry of objects larger than 12 square mm.
- 3** - Protection against entry of objects larger than 2.5 square mm.
- 4** - Protection against entry of objects larger than 1.0 square mm.
- 5** - Protection against entry of dust in sufficient quantity to prevent satisfactory operation.
- 6** - Complete protection against entry of dust.

First Number example

IP65

Complete protection
against entry of dust

SECOND NUMBER

Degree of moisture protection

The second number indicates the degree of protection for the equipment inside the enclosure against the harmful entry of various forms of moisture (e.g. dripping, spraying, submersion, etc.)

- 0** - No protection provided.
- 1** - Protection against drops of water falling vertically.
- 2** - Protection against drops of water falling vertically when the luminaire is tilted up to 15 degrees from its normal position.
- 3** - Protection from entry of water spray from angle of up to 60 degrees from vertical.
- 4** - Protection from entry of water splashes or spray from any direction.
- 5** - Protection from a low pressure jet of water in any direction.

Second Number example

IP65

Protection from a low pressure
jet of water in any direction

LED lamp output values (Lumens) can vary dramatically depending on which values are being quoted. There are inherent losses associated with any lamp (LED, Halogen, HID or Incandescent).

The main losses are related to 3 items: Thermal Losses, Optical Losses and Assembly variation.

Thermal Losses:

The greatest challenge is Thermal management of LED's. LED Manufacturers typically measure the light produced by their LEDs after 25 milliseconds (ms). That is equivalent to a flash bulb. It gives a lumen number that is the absolute maximum value. However, LEDs produce less light as they get hotter. LEDs generate a tremendous amount of power in a relatively smaller area. As the LEDs are powered for longer and longer periods of time, they typically get hotter and hotter depending on the thermal management system. It's not unusual for LEDs to get over 100°C. For vehicle applications, most specifications require that the lamp be measured at 10 minutes and 30 minutes to make sure that the LEDs temperature has stabilized. This will result in the LED producing 10 - 20% less light than it's advertised value.

Optical & Assembly Losses:

As light travels through an object (Lens), it loses intensity depending on the clarity of the lens material. This is due to inherent losses internal to the material and to losses at the boundary of the part as the light travels from air through the lens and back to air. These losses are present whether the light source is an LED or bulb. The losses associated with the lens material and optics again can vary from 10 - 20%. There are also losses associated with assembly and manufacturing variation. The LEDs output varies as the assembly tolerances may diminish the overall performance from the lamp from theoretically LED maximums. Simply adding the expected values of the LED light sources together will never result in a lamp that shines that amount of light on the ground.

Raw Lumens

Raw Lumen output is calculated by multiplying by the theoretical rated output of the LEDs by the number of LEDs in the lamp.

Example:

8 LEDs rated at 100 Lumens per watt

8 x 100 = 800 Raw Lumens

Effective Lumens

Effective Lumen output is a measured number that takes into account real world losses (ex. thermal, optical, and assembly).

Example:

Raw Lumens of 800 and Thermal, Optical & Assembly Losses of 40% (320)

800 - 320 = 480 Effective Lumens

ABOUT J.W. SPEAKER

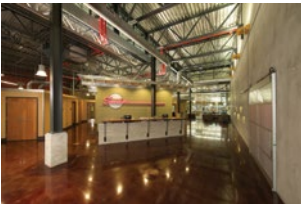


We specialize in LED and other emerging lighting technologies and proudly design, manufacture and assemble our products in Germantown, Wisconsin.

80 years ago, John W. Speaker founded the J.W. Speaker Corporation in Milwaukee, Wisconsin as a manufacturer of automotive repair parts. The company offered radiator fronts, car mirrors, repair kits and automotive lighting.

The automotive market has changed dramatically over the past 80 years. Today, J.W. Speaker Corporation is still a family-run business and is led by John's grandsons, Tim and Jamie Speaker. We have evolved into a major lighting manufacturer specializing in quality lighting products for OEMs and aftermarket customers around the world. The company now serves a variety of industries including: agriculture, construction, off-road, mining, motorcycle, recreation, and aviation markets.

We recognize that in order to be the best, we must remain focused on developing innovative and high quality vehicle lighting solutions that are second to none. We understand the need to constantly explore new and emerging technologies with the goal of providing better performance for our OEM and aftermarket customers. We are **Driven. To See More.**





CONTACT US:

Call us at 262.251.6660
or visit www.jwspeaker.com