



Koehler **BrightStar**™

SEE IT ALL.

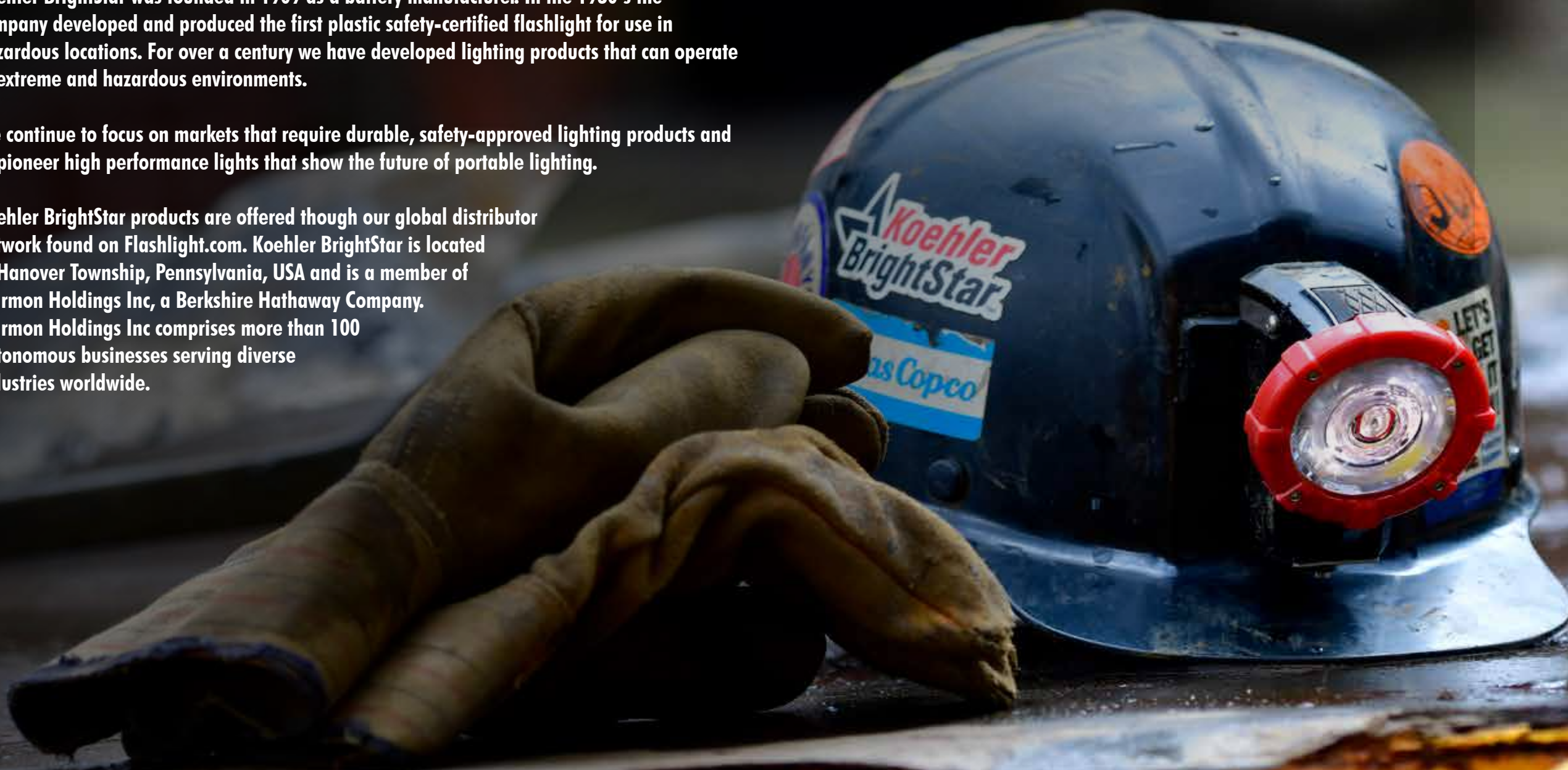
GLOBAL LEADER

Innovative safety products that erase darkness.

Koehler BrightStar was founded in 1909 as a battery manufacturer. In the 1930's the company developed and produced the first plastic safety-certified flashlight for use in hazardous locations. For over a century we have developed lighting products that can operate in extreme and hazardous environments.

We continue to focus on markets that require durable, safety-approved lighting products and to pioneer high performance lights that show the future of portable lighting.

Koehler BrightStar products are offered through our global distributor network found on Flashlight.com. Koehler BrightStar is located in Hanover Township, Pennsylvania, USA and is a member of Marmon Holdings Inc, a Berkshire Hathaway Company. Marmon Holdings Inc comprises more than 100 autonomous businesses serving diverse industries worldwide.



Manufacturer of the SAFEST FLASHLIGHTS IN THE WORLD

UNDERSTANDING INTRINSIC SAFETY RATINGS

Intrinsic safety is a protection technique for the safe operation of electrical equipment by limiting electrical and thermal energy available for ignition in hazardous areas.

UNDERSTANDING CLASSES:

The National Electric Code (NEC) defines hazardous locations by "Class" & "Division." There are 3 classes:

CLASS 1

locations are made hazardous by the presence of flammable gases, liquids, or vapors.

CLASS 2

locations are made hazardous because combustible dusts are present.

CLASS 3

locations contain easily ignitable fibers or flyings.

UNDERSTANDING GROUPS:

Hazardous classes are further defined by "groups" based on the physical properties of their combustible materials. There groups include:

Group A Acetylene

Group B Hydrogen

Group C Ethylene, and carbon monoxide

Group D Propane, gasoline, naphtha, benzene, butane, ethyl alcohol, acetone, and methane

Group E Metals including aluminum, and magnesium (Div. 1 only)

Group F Carbonaceous dusts including coal, carbon black, and coke

Group G Dusts not included in E and F including wood, plastics, flour, starch, and grain dusts

UNDERSTANDING DIVISIONS:

The "division" designation refers to the likelihood that ignitable concentrations of flammable materials are present. There are two divisions:

DIVISION 1

designates an environment where ignitable concentrations of flammable gases, liquids, vapors, or dust can exist some of the time or all of the time under normal operating conditions, or where easily ignitable fibers and flyings are manufactured, handled, or used.

DIVISION 2

locations are where ignitable concentrations are not likely to exist under normal operating conditions or where Class 3 materials are stored or handled.

What's in a RATING?

DEFINITION OF ZONE OR DIVISION

ZONE 0:

An area in which an explosive mixture is continuously present or present for long periods

ZONE I / DIVISION I:

An area in which an explosive mixture is likely to occur in normal operation.

ZONE II / DIVISION II:

An area in which an explosive mixture is not likely to occur in normal operation and if it occurs it will exist only for a short time.

North American Classifications

European & IEC Classifications

Class I Division I (gases)

Zone 0 (gases)

Class II Division I (dusts)

Zone 20 (dusts)

Class I Division I (gases)

Zone 1 (gases)

Class II Division I (dusts)

Zone 21 (dusts)

Class I Division II (gases)

Zone 2 (gases)

Class II Division II (dusts)

Zone 22 (dusts)

If you may be working in a hazardous location, choose a flashlight designed to meet global protection methods, both UL and ATEX/IECEx for use under the type of conditions you could encounter there.

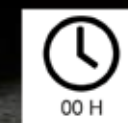
Understanding FL1 STANDARDS:



Light Output is the total luminous flux. It is the overall quantity of emitted overall light energy as measured by integrating the entire angular output of the portable light source. Light output in this standard is expressed in units of lumens.



Waterproof up to at least an IPX7 rating which means the sample is submerged to a minimum of 1 meter depth for 30 minutes. If this test is performed it must be done after impact resistance is completed to ensure water resistance under real-life conditions.



Run Time is defined as the duration of time from the initial light output value - defined as 30 seconds after the point the device is first turned on - using fresh batteries, until the light output reaches 10% of the initial value.



Impact Resistance is the height, measured in meters, from which the light can be dropped onto cured concrete and still work properly. Dropped samples cannot have any visible cracks or breaks and must remain fully functional to receive rating.



Beam Distance is defined as the distance from the device to which the light beam is 0.25 lux (0.25 lux is approximately the equivalent of the light emitted from the full moon "on a clear night in an open field").



Peak Beam Intensity is the brightest point in the beam measured in candela. Candela is the modern unit of measurement for light intensity replacing the now obsolete unit know as candlepower.

Worksafe LED Series

The Highest Global Safety Approvals At The Most Affordable Price

These lights have a bright, long-running beam, and they're safe to use in even the most hazardous environments.

SAFETY RATINGS:

- Intrinsically Safe
- UL Protection Methods
- Class I, II, III, Division 1, Groups A – G
- Class I, II, III, Division 2, Groups A – G
- Operating Temp T5

2217 LED
Model #15460
 2 D-Cell Batteries
 (not included)

SPECIFICATIONS:

- 80 Lumens
- 2,450 Candela
- 200 hr. run time
- Beam Distance reaches 100 Meters
- Waterproof, IP67 Rating
- WEIGHT: 5 oz. without batteries
- DIMENSIONS: 8.1" X 2.3"
- Colors: Safety Orange, Black Lens Rim

2224 LED
Model #15720
 3 D-Cell Batteries
 (not included)

SPECIFICATIONS:

- 60 Lumens
- 1,930 Candela
- 250 hr. run time
- Waterproof, IP67 Rating
- Beam Distance reaches 88 Meters
- WEIGHT: 6 oz. without batteries
- DIMENSIONS: 10.2" X 2.3"
- Colors: Safety Orange, Black Lens Rim

2206 LED
Model #08050
 4 D-Cell Batteries
 (not included)
 Battery tray included

SPECIFICATIONS:

- 90 Lumens
- 7,000 Candela
- 150 hr. run time
- Beam Distance reaches 165 Meters
- Waterproof, IP67 Rating
- WEIGHT: 14.66 oz. without batteries
- DIMENSIONS: 8.2" X 4.9" X 5.6"
- Colors: Safety Orange, Black Lens Rim

ACCESSORIES:

- #23853: 6½" Red Snap-In Wand
- #23860: 6½" Yellow Snap-In Wand



2224

FL1 STANDARDS	
60 LUMENS	250 h
1,930 cd	1m
88m	1m

2206

FL1 STANDARDS	
90 LUMENS	150 h
7,000 cd	1m
165m	1m

2217

FL1 STANDARDS	
80 LUMENS	200 h
2,450 cd	1m
100m	1m