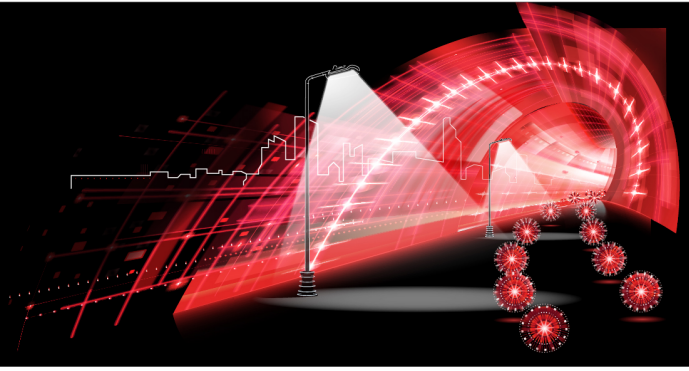
GATEWAY International 360

Innovation Design, Solutions Manufacturing



GW-180 Cellular Intelligent Communication Wireless Node

DESCRIPTION

The GW-180 wireless node controllers are designed for roadway and area lighting. Basic functions include on/off and dimming, while advanced functions include ambient-light-level detection, current and voltage monitoring, positioning by internal GPS, and seven built-in intelligent systems.

KEY FEATURES

- Cellular Intelligent Communication Wireless Node
- Wide input voltage: 105-305VAC
- Security: AES128 encryption
- Built-in GPS
- Built-in Wi-Fi
- Built-in camera interface
- Built-in emergency alarm interface
- Built-in motion sensor interface
- Built-in gunshot sensor
- Built-in electricity-leak detection
- Built-in water-depth detection
- Dimming by time schedule or ambient light
- ZigBee® communication, auto-mesh
- Standard NEMA 5 lines interface
- Voltage, current, power, power factor, temperature and operating time reading
- Remote switch on/off, maximum internal 16A relay outputs
- Dimming interface: 0-10V (PWM could be customized)
- LED luminaire failure detection
- Lightning protection
- IP Rating: IP65 (SGS certified), optional IP67 available
- 7-pin configuration

5/13/2018

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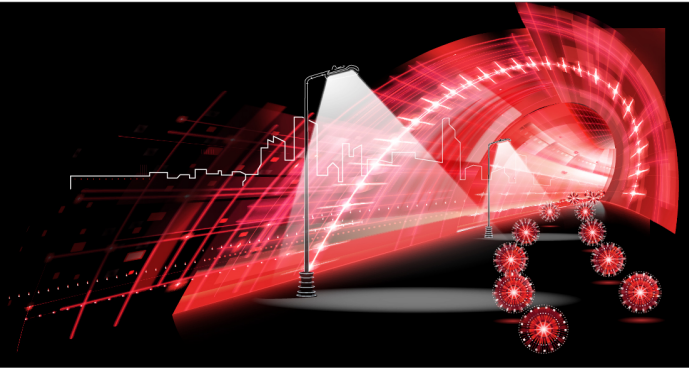
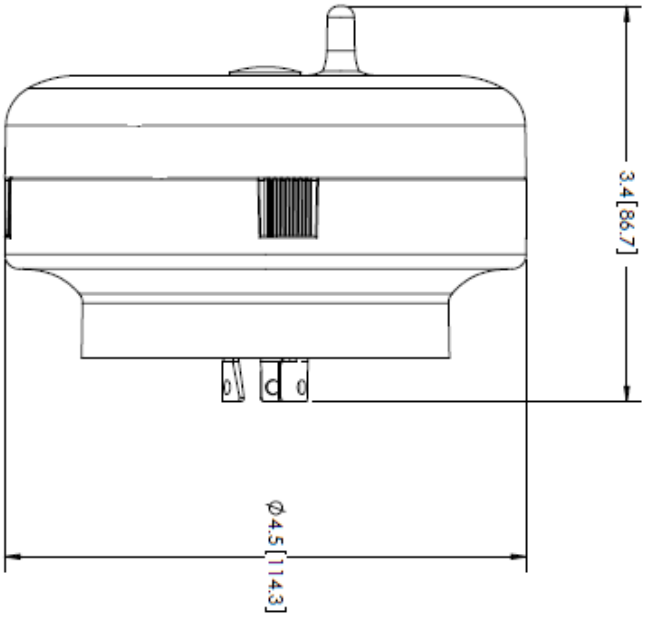


BASIC SPECIFICATIONS

- Luminaire load: up to 1100W LED
- Maximum load in rush current: 100A.
- Surge protection: 10KV, 5KA additional protection available in 10KV increments up to 60KV.
- Operating temperature: -40 to 85C
- Static power consumption: <2W
- Power consumption with luminaire off: <0.4W(120V) -- <0.5W(230V)
- Radio frequency: 2.4GHz ISM Band. Meet IEEE802.15.4 standard.
- Security: AES128 encryption
- GPS: Accuracy ± 6 meters
- Failure mode: Fail OFF (Optional Fail ON)
- Complies with ANSI C136.10, C136.41 and C136.2
- Complies with FCC Part 15 and UL773
- Warranty: 5-years standard

Cover



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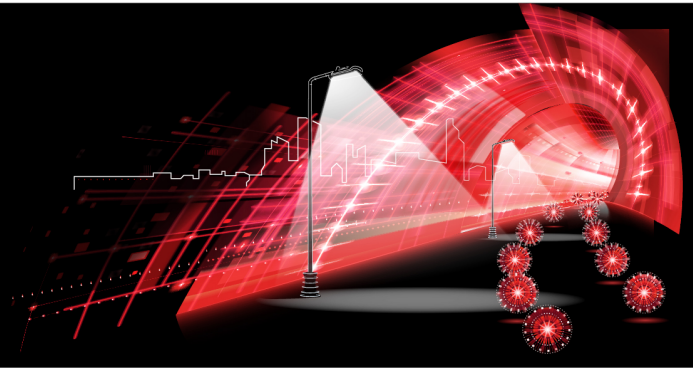

CHARACTERISTICS

PARAMETER	TEST CONDITIONS	MIN	TYP	MAX	UNIT
AC input voltage		105	/	305	VAC
Frequency range		50		60	Hertz
Power consumption		0.4	/	2	W
Dimming voltage		0	/	11	V
Dimming current	10V output	0	1	5	mA
Dimming accuracy		-1	/	+1	%
Metering voltage range		105	/	305	VAC
Metering current range*		0	/	5	A
Metering voltage accuracy		-2	/	+2	%
Metering current accuracy		-2	/	+2	%
RF transmission distance	Internal antenna	500	/	/	m
RF transmission rate		/	250	/	Kbps
RF band		2400	/	2483	MHz
RF receiver sensitivity		98.8	/	/	dBm
RF transmitter		/	/	20	dBm
GPS Sensitivity		/	-160	/	dBm

*At load currents above 5 amps, metering accuracy may be reduced. Consult factory for details.

PARAMETER	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Operating temperature		-40	/	85	C
Storage temperature	Indoor dry, well-ventilated place	-40	/	85	C
Relative humidity	Non-condensing	/	/	98	%
Vibration	C136.31	/	/	1.5	G
Warranty			5		years
Ingress	Not installed	/	IP53	/	
Ingress	Protection while mounted to luminaire		IP64		
Impact	Drop to concrete floor	/	1	/	meters
Flammability		UL94-V0			

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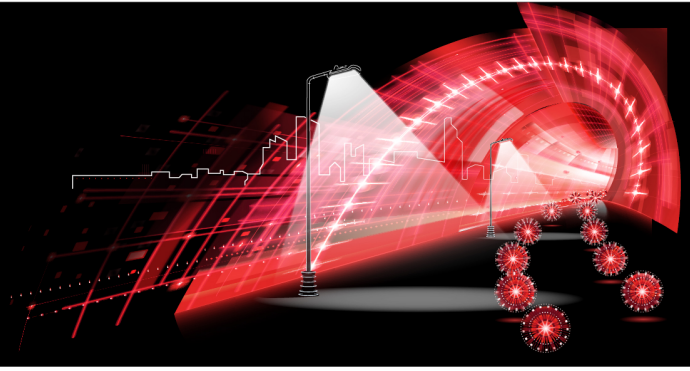

SAFETY

TYPE	Test level	
Isolation voltage	AC to dimming terminals	3kVac,10mA,1min
Certification	UL773/EN61010-1/EN61347	

ELECTROMAGNETIC CAPABILITY

TYPE	Standard	Test level
Electrostatic-discharge immunity	IEC61000-4-2	Level 4
RFEMS	IEC61000-4-3	Level 2
Electrical fast-transient burst immunity	IEC61000-4-4	Level 4
Surge Immunity	IEC61000-4-5 ANSI C136.2	Level X 10KV,5KA
Conducted disturbances induced by RF field immunity	IEC61000-4-6	Level 2
Power-frequency, magnetic-field immunity	IEC61000-4-8	
Electromagnetic-disturbance characteristics	FCC PART15 Class B / EN55015	
Electromagnetic compatibility and Radio spectrum Matters (ERM)	EN300328/EN301489-1/EN301489-17/EN300440-2/ EN62479/EN61326-2-1	

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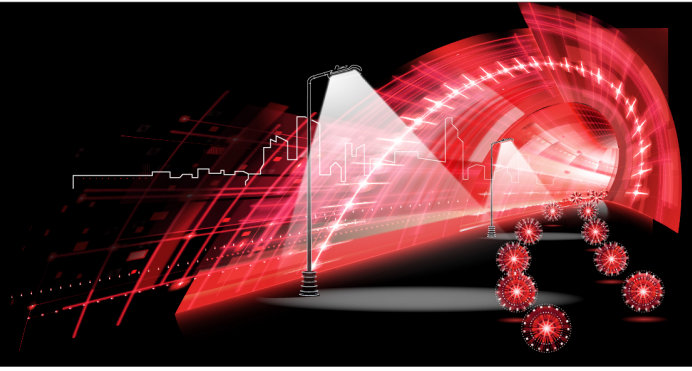
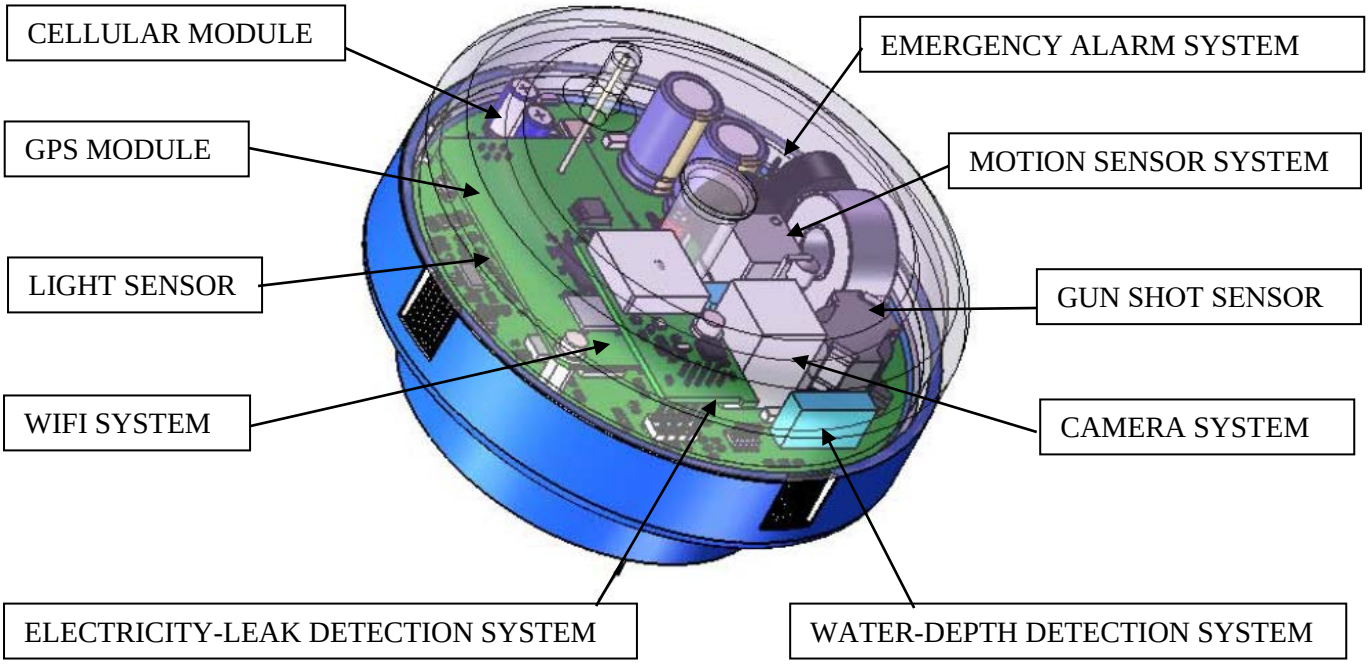


PARTS DESCRIPTION



CELLULAR MODULE

The cellular module communicates directly with the internet without a gateway, receiving commands for on/off switching and dimming, while transmitting power data, temperature, operating hours and GPS location back to the internet server. Gemalto and other brand modules will be used to work with different carriers like Verizon or Orange.

GPS MODULE

The GPS module automatically obtains its own location and time.

LIGHT SENSOR

The light sensor is a silicon phototransistor, with a spectral range of sensitivity: 350-970nm. The GW-180 wireless photocontrol functions as a stand-alone photocontrol without network presence, turning the luminaire on at 16 (±6) lux, and off at 50 (±6) lux (default).
When the GW-180 wireless photocontrol works with a 2.4G network, information will be transmitted between the node and gateway.

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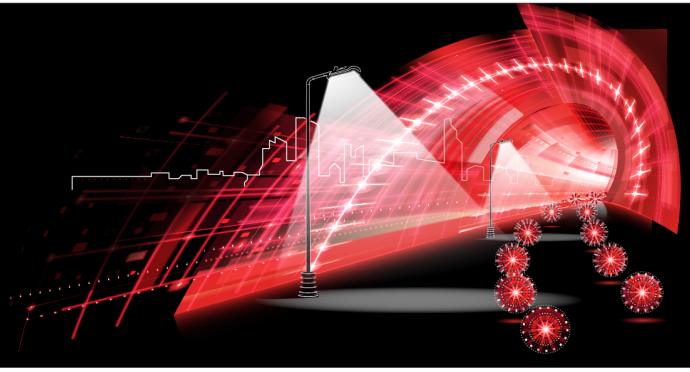

WIFI

The GW-180 offers an interface for Wi-Fi to offer connections to various devices. This allows the photocontrol to communicate information back to the intended users.

CAMERA

The GW-180 houses a camera interface, as well as control, monitoring, records and communicating parts. All data will be uploaded to a cloud server and backed up. When installed, personnel can operate the directions and angles of the camera, as well as zoom. Recorded pictures can be processed based on different requirements.

EMERGENCY ALARM

The alarm system covers all pedestrians and vehicles within 200 meters. Anyone can press the emergency button in the event of an emergency. The siren will be turned on and the police can be reached through the camera system where the person can be located through the GPS in the photocontrol.

MOTION SENSOR

A complete sensor consists of a motion detector, an electronic control unit and a controllable switch/relay. The detector uses motion to indentify if there are occupants in the space. It also has a timer that signals the electronic control unit after a set period of inactivity. The control unit uses this signal to activate the switch/ relay to turn the equipment on or off. We employ three main sensor types: passive infrared, ultrasonic and hybrid.

GUNSHOT DETECTION/ACOUSTIC SENSOR

The gunshot detection system detects and conveys the location of gunfire or other weapon fire using acoustic and optical sensors, as well as a combination of both. These systems are used by law enforcement, security, military and businesses to identify the source and, in some cases, the direction of gunfire. Most systems possess three main components: an array of microphones or sensors either co-located or geographically dispersed; a processing unit; and a user-interface that displays gunshot alerts. Our system integrates a geographic information system (GIS) to allow the display to include a map and address location for each incident.

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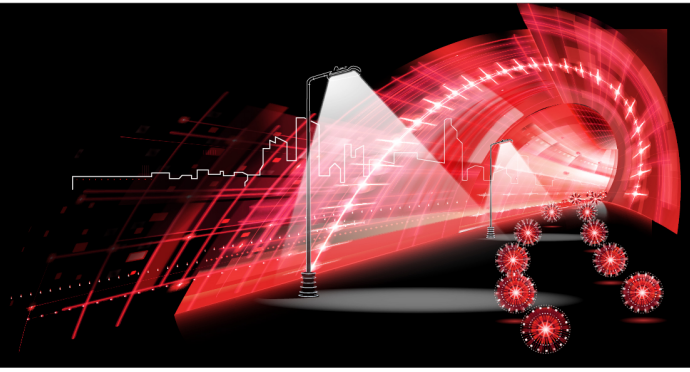

ELECTRICITY-LEAK DETECTION

Electricity leakage from street light poles can be caused by multiple factors including aging of cables and breakage from construction. Our system can detect the circuit and automatically turn the power on/ off. It can also inspect and test the circuit first and an alarm will be sent if there is a permanent failure.

WATER-DEPTH DETECTION

The system consists of an underground monitoring sensor, communication networks, and on-site detection devices. Data will be monitored on the roadside and transferred through a capture device to a cloud server and client desktop software. Through real-time data, our control center can review the water depth.

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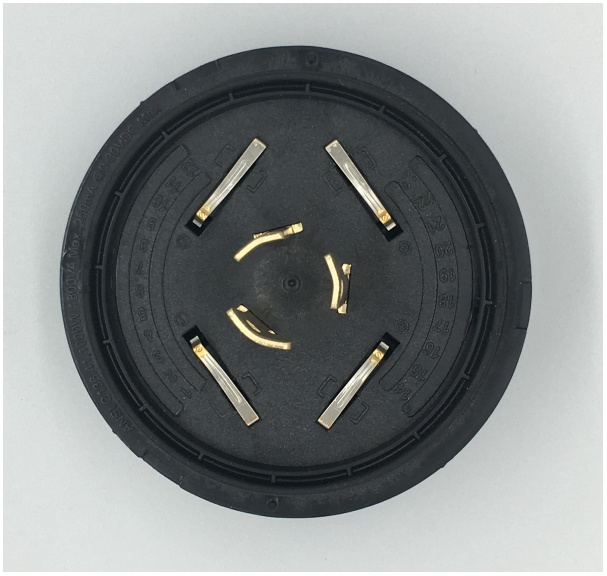
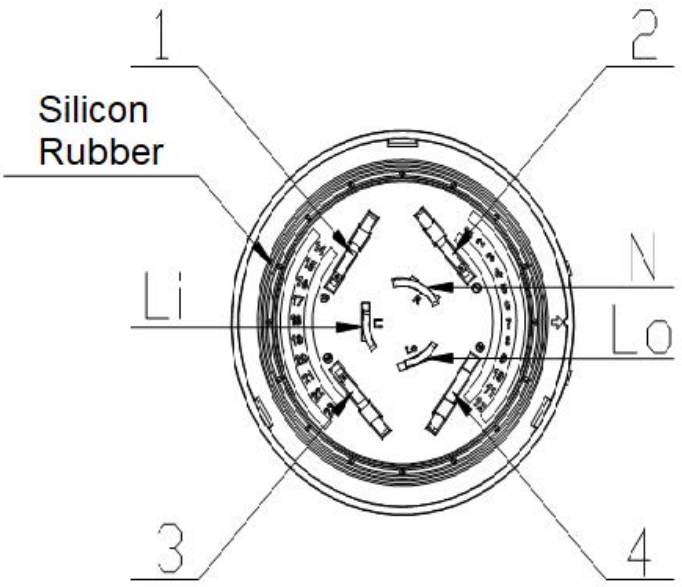
INTERFACE





PIN Li: AC line input
PIN Lo: AC line output (to luminaire) PIN N: Neutral line
PIN 1: CH1 Dim+
PIN 2: CH1 Dim-
PIN 3: open
PIN 4: open

- **A rubber seal ensures IP65 ingress protection**
- **Complies with ANSI C136.41-2013**

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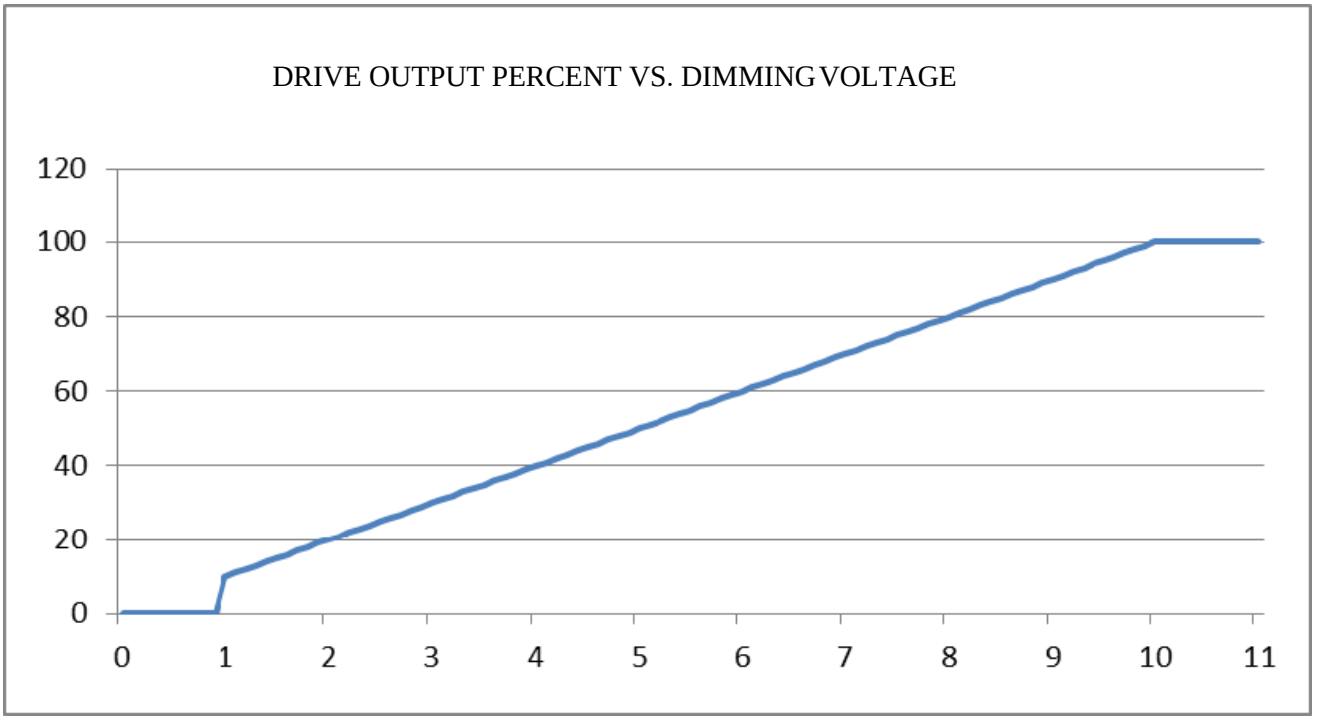
DIMMING

DEFAULT DIMMING CURVE as shown below.



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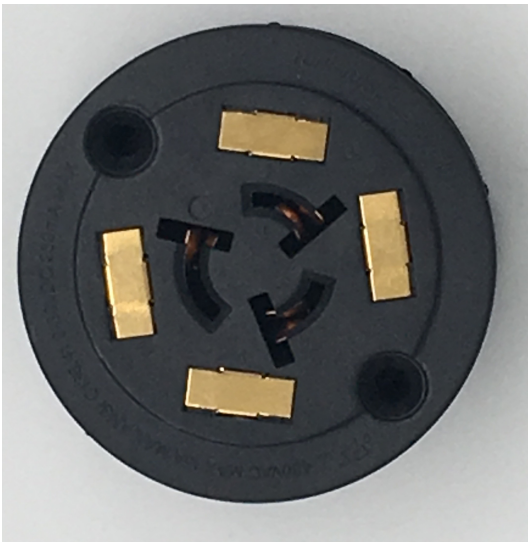
RECEPTACLE



Use with TWIST-LOCK PHOTOCONTROL RECEPTACLE. (Conforms to ANSI C136.41)

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