

April 5, 2017

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Smart Streetlights RFI

Thoryn,

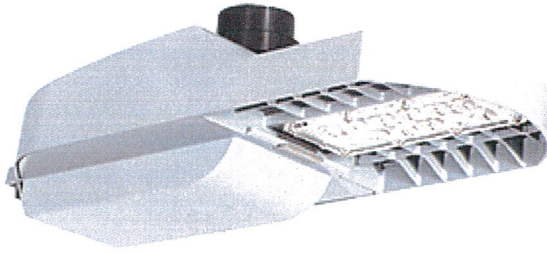
This submittal package is made up of RAB Lighting Roadway Fixtures and Controls. RAB is a US manufacturer of LED lighting fixtures and is located in Northvale, New Jersey, established in 1947. RAB Lighting would be available to supply samples of any product with controls as needed for consideration of this project.

Sincerely,

A handwritten signature in black ink, appearing to read 'John Lype', with a stylized flourish at the end.

John Lype
President, Gemco Sales
JLype@Gemcosales.net

TBLED3T48RG/480/D10/7PRS



Project:

Type:

Prepared By:

Date:

Driver Info

Type:	Constant Current
120V:	N/A
208V:	N/A
240V:	N/A
277V:	N/A
Input Watts:	51W
Efficiency:	94%

LED Info

Watts:	48W
Color Temp:	5000K
Color Accuracy:	71 CRI
L70 Lifespan:	100000
Lumens:	5,658
Efficacy:	111 LPW

LED roadway lighting that replaces up to 250W MH or 150W HPS. Optics are factory installed and meet IES Distribution Type III.

Color: Gray

Weight: 9.2 lbs

Technical Specifications

Listings

UL Listing:

Suitable for wet locations. Minimum of 75° supply conductors.

IESNA LM-79 & IESNA LM-80 Testing:

RAB LED fixtures have been tested by an independent laboratory in accordance with IESNA LM-79 and 80, and have received the Department of Energy "Lighting Facts" label.

Construction**IES Classification:**

The Type III distribution is ideal for roadway, general parking and other area lighting applications where a larger pool of lighting is required. It has greater streetside (transverse) throw, allowing the light to project outward and fill the area.

IP Rating:

Ingress Protection rating of IP66 for dust and water

Vibration Rating:

Industry-leading 5G vibration rating per ANSI C136.31.

Ambient Temperature:

Suitable for use in 104° F (40° C) ambient temperatures.

Cold Weather Starting:

The minimum starting temperature is -22° F (-30° C).

Thermal Management:

Superior thermal management design with external Air-Flow fins provides maximum operational life, even in high ambient temperature environments.

Housing:

Die cast aluminum housing with polycarbonate driver cover.

Lens:

Clear acrylic lens with integrated optics

Mounting:

Fits most standard roadway upsweep arms. Adaptor brackets supplied fit 1", 1 1/4", 1 1/2" and 2" pipe arms. Fixture can be tilted at the following angles -5°, -2.5°, 0°, +2.5°, +5°.

Gaskets:

High temperature silicone gaskets

Effective Projected Area:

EPA = 0.7

Finish:

Formulated for high-durability and long lasting color.

Green Technology:

Mercury and UV free. RoHS compliant components. Polyester powder coat finish formulated without the use of VOC or toxic heavy metals.

LED Characteristics**LEDs:**

Multi-chip, high-output, long-life LEDs

Color Uniformity:

RAB's range of CCT (Correlated Color Temperature) follows the guidelines of the American National Standard for Specifications for the Chromaticity of Solid State Lighting (SSL) Products, ANSI C78.377-2015.

Electrical**Drivers:**

Constant Current, Class 2, 480V, 50-60Hz, 480V: 0.07A

Dimming Driver:

Driver includes dimming control wiring for 0-10V dimming systems. Requires separate 0-10V DC dimming circuit. Dims as low as 10%.

7-Pin Receptacle with Shorting Cap:

ANSI C136.41 7-pin receptacle, compatible with wireless control systems

Surge Protection:

10KV

Optical**BUG Rating:**

B1 U0 G1

Other**Equivalency:**

Replaces 100W Metal Halide or 70W HPS.

Country of Origin:

Designed by RAB in New Jersey and assembled in the USA by RAB's IBEW Local 3 workers.

Buy American Act Compliant:

This product is a COTS item manufactured in the United States, and is compliant with the Buy American Act.

Recovery Act (ARRA) Compliant:

This product complies with the 52.225-21 "Required Use of American Iron, Steel, and Manufactured Goods-- Buy American Act-- Construction Materials (October 2010).

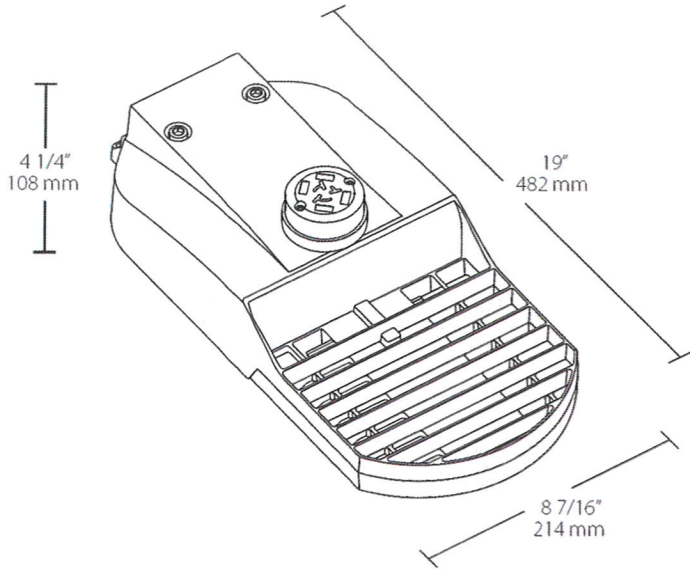
GSA Schedule:

Suitable in accordance with FAR Subpart 25.4.

TBLED3T48RG/480/D10/7PRS



Dimensions



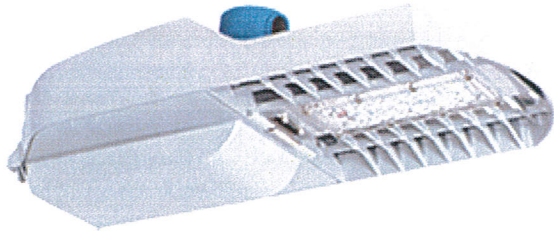
Features

- IP66 Rated
- Industry-leading 5G vibration rating per ANSI C136.31
- ANSI C136.41 7-pin receptacle, compatible with wireless control systems
- 100,000-Hour LED lifespan
- 10-Year limited warranty

Ordering Matrix

Family	IES Type	Wattage	Color Temp	Color	Driver Options	Sensor Options
TBLED	3T	48		RG	/480/D10	/7PRS
	3T = Type III	95 = 95W 64 = 64W 48 = 48W 32 = 32W	Blank = 5000K (Cool) N = 4000K (Neutral) Y = 3000K (Warm) AY = 2000K (HPS Warm)	RG = Roadway Gray	/D10 = 0-10V Dimming (standard) /480/D10 = 480V 0-10V Dimming	/7PR = 7-Pin Receptacle (standard) /7PRS = 7-Pin Receptacle w/ Shorting Cap /PCT = 120-277V Twistlock Photocell w/ 7-Pin Receptacle /PCT4 = 480V Twistlock Photocell w/ 7-Pin Receptacle

TBLED3T95AYRG/D10/PCT



Project:

Type:

Prepared By:

Date:

Driver Info

Type:	Constant Current
120V:	0.78A
208V:	0.46A
240V:	0.40A
277V:	0.34A
Input Watts:	93W
Efficiency:	N/A

LED Info

Watts:	95W
Color Temp:	2000K
Color Accuracy:	70 CRI
L70 Lifespan:	100000
Lumens:	7,022
Efficacy:	76 LPW

LED roadway lighting that replaces up to 250W MH or 150W HPS. Optics are factory installed and meet IES Distribution Type III.

Color: Gray

Weight: 10.8 lbs

Technical Specifications

Listings

UL Listing:

Suitable for wet locations. Minimum of 75° supply conductors.

IESNA LM-79 & IESNA LM-80 Testing:

RAB LED fixtures have been tested by an independent laboratory in accordance with IESNA LM-79 and 80, and have received the Department of Energy "Lighting Facts" label.

Construction**IES Classification:**

The Type III distribution is ideal for roadway, general parking and other area lighting applications where a larger pool of lighting is required. It has greater streetside (transverse) throw, allowing the light to project outward and fill the area.

IP Rating:

Ingress Protection rating of IP66 for dust and water

Vibration Rating:

Industry-leading 5G vibration rating per ANSI C136.31.

Ambient Temperature:

Suitable for use in 104° F (40° C) ambient temperatures.

Cold Weather Starting:

The minimum starting temperature is -22° F (-30° C).

Thermal Management:

Superior thermal management design with external Air-Flow fins provides maximum operational life, even in high ambient temperature environments.

Housing:

Die cast aluminum housing with polycarbonate driver cover.

Lens:

Clear acrylic lens with integrated optics

Mounting:

Fits most standard roadway upsweep arms. Adaptor brackets supplied fit 1", 1 1/4", 1 1/2" and 2" pipe arms. Fixture can be tilted at the following angles -5°, -2.5°, 0°, +2.5°, +5°.

Gaskets:

High temperature silicone gaskets

Effective Projected Area:

EPA = 0.8

Finish:

Formulated for high-durability and long lasting color.

Green Technology:

Mercury and UV free. RoHS compliant components. Polyester powder coat finish formulated without the use of VOC or toxic heavy metals.

LED Characteristics**LEDs:**

Multi-chip, high-output, long-life LEDs

Color Uniformity:

RAB's range of CCT (Correlated Color Temperature) follows the guidelines of the American National Standard for Specifications for the Chromaticity of Solid State Lighting (SSL) Products, ANSI C78.377-2015.

Electrical**Drivers:**

Constant Current, Class 2, 120-277V, 50-60Hz, 120V: 0.27A, 208A: 0.17A, 240A: 0.15A, 277V: 0.13A

Dimming Driver:

Driver includes dimming control wiring for 0-10V dimming systems. Requires separate 0-10V DC dimming circuit. Dims as low as 10%.

7-Pin Receptacle:

ANSI C136.41 7-pin receptacle, compatible with wireless control systems

Surge Protection:

10KV

Optical**BUG Rating:**

B1 U0 G1

Cut Off:

Full cutoff optics comply with dark sky requirements.

Other**Equivalency:**

Replaces 250W Metal Halide or 150W HPS.

Photocell:

120-277V Twistlock Photocell Included. Photocell is compatible with 120V-277V.

Accessory:

Shorting Cap for 7-Pin Receptacle

Country of Origin:

Designed by RAB in New Jersey and assembled in the USA by RAB's IBEW Local 3 workers.

Buy American Act Compliant:

This product is a COTS item manufactured in the United States, and is compliant with the Buy American Act.

Recovery Act (ARRA) Compliant:

This product complies with the 52.225-21 "Required Use of American Iron, Steel, and Manufactured Goods-- Buy American Act-- Construction Materials (October 2010).

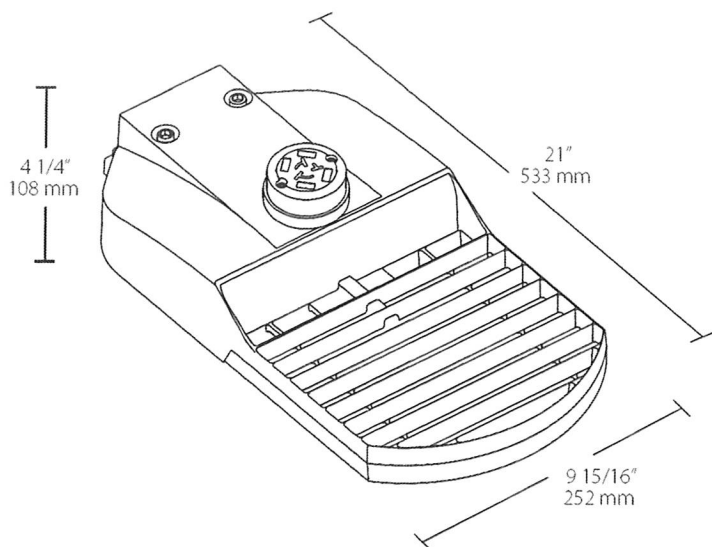
GSA Schedule:

Suitable in accordance with FAR Subpart 25.4.

TBLED3T95AYRG/D10/PCT



Dimensions



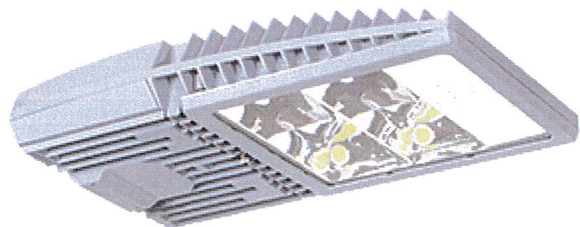
Features

- IP66 Rated
- Industry-leading 5G vibration rating per ANSI C136.31
- ANSI C136.41 7-pin receptacle, compatible with wireless control systems
- 100,000-Hour LED lifespan
- 10-Year limited warranty

Ordering Matrix

Family	IES Type	Wattage	Color Temp	Color	Driver Options	Sensor Options
TBLED	3T	95	AY	RG	/D10	/PCT
	3T = Type III	95 = 95W 64 = 64W 48 = 48W 32 = 32W	Blank = 5000K (Cool) N = 4000K (Neutral) Y = 3000K (Warm) AY = 2000K (HPS Warm)	RG = Roadway Gray	/D10 = 0-10V Dimming (standard) /480/D10 = 480V 0-10V Dimming	/7PR = 7-Pin Receptacle (standard) /7PRS = 7-Pin Receptacle w/ Shorting Cap /PCT = 120-277V Twistlock Photocell w/ 7-Pin Receptacle /PCT4 = 480V Twistlock Photocell w/ 7-Pin Receptacle

TBLED2T150NRG



Project:

Type:

Prepared By:

Date:

Driver Info

Type:	Constant Current
120V:	1.20A
208V:	0.88A
240V:	0.76A
277V:	0.66A
Input Watts:	161W
Efficiency:	93%

LED Info

Watts:	150W
Color Temp:	4000K
Color Accuracy:	82 CRI
L70 Lifespan:	100000
Lumens:	16,693
Efficacy:	103 LPW

LED roadway lighting that replaces up to 400W Metal Halide. Optics are factory installed and meet IES Distribution Type II.

Color: Gray

Weight: 36.6 lbs

Technical Specifications

Listings

UL Listing:

Suitable for wet locations as a downlight.

IESNA LM-79 & IESNA LM-80 Testing:

RAB LED fixtures have been tested by an independent laboratory in accordance with IESNA LM-79 and 80, and have received the Department of Energy "Lighting Facts" label.

Dark Sky Approved:

The International Dark Sky Association has approved this product as a full cutoff, fully shielded luminaire.

Electrical

Driver:

One Driver, Class 2 Constant Current, 100-277VAC, 50-60Hz, 1050mA, <20% TH, 90% pF

Surge Protection:

10KV

Optical

BUG Rating:

B2 U0 G2

Construction

IES Classification:

The Type II distribution is ideal for entrance roadways, collector roads and other long, single-sided and narrow lighting applications. This type of lighting is commonly found on smaller local streets.

IP Rating:

Ingress Protection rating of IP66 for dust and water

Vibration Rating:

Industry-leading 5G vibration rating per ANSI C136.31.

Ambient Temperature:

Suitable for use in 104° F (40° C) ambient temperatures.

Cold Weather Starting:

Minimum starting temperature is -40° F (-40° C)

Thermal Management:

Superior thermal management design with external Air-Flow fins provides maximum operational life, even in high ambient temperature environments.

Housing:

Die cast aluminum housing, lens frame and mounting arm.

Mounting:

Fits most standard roadway upsweep arms. Adaptor brackets supplied fit 1", 1 1/4", 1 1/2" and 2" pole mounting clamps.

Recommended Mounting Height:

Up to 35 ft.

Effective Projected Area:

EPA = 1.7

Reflector:

Specular vacuum-metallized polycarbonate

Gaskets:

High temperature silicone gaskets

Finish:

Formulated for high-durability and long lasting color.

Green Technology:

Mercury and UV free. RoHS compliant components. Polyester powder coat finish formulated without the use of VOC or toxic heavy metals.

LED Characteristics

Lifespan:

100,000-hour LED lifespan based on IES LM-80 results and TM-21 calculations.

LEDs:

Multi-chip, high-output, long-life LEDs

Color Uniformity:

RAB's range of CCT (Correlated Color Temperature) follows the guidelines of the American National Standard for Specifications for the Chromaticity of Solid State Lighting (SSL) Products, ANSI C78.377-2015.

Other

Country of Origin:

Designed by RAB in New Jersey and assembled in the USA by RAB's IBEW Local 3 workers.

Buy American Act Compliant:

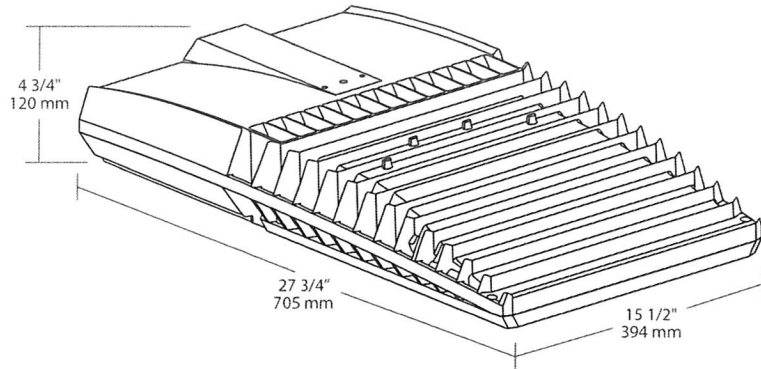
This product is a COTS item manufactured in the United States, and is compliant with the Buy American Act.

GSA Schedule:

Suitable in accordance with FAR Subpart 25.4.

TBLED2T150NRG

Dimensions



Features

- IP66 Rated
- Industry-leading 5G vibration rating per ANSI C136.31
- 100,000-Hour LED lifespan
- 10-Year limited warranty

LCGATEWAY



Project:

Type:

Prepared By:

Date:



The Gateway is the brain of Lightcloud. It communicates with RAB's servers via private 3G cellular connection, so no internet access is required. Plus, it features an uninterruptible power supply for added peace of mind.

Color: Black

Weight: 0.9 lbs

Technical Specifications

Listings

UL Listing:

Indoor use only.

DLC Listed:

This product is on the Design Lights Consortium (DLC) Qualified Products List and is eligible for rebates from DLC Member Utilities.

Electrical

Input Voltage:

120-277 VAC

Frequencies:

50/60 Hz

Current Draw:

70 mA @ 120VAC

43 mA @ 277VAC

Battery Backup:

Rechargeable Lithium Ion

Construction

Operating Temperature Range:

0°C to 40°C

Storage Temperature Range:

-20°C to 60°C

Maximum Relative Humidity:

85%

Wire Gauge:

18 AWG, stranded

Junction Box:

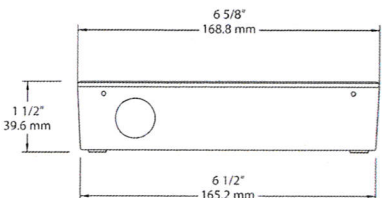
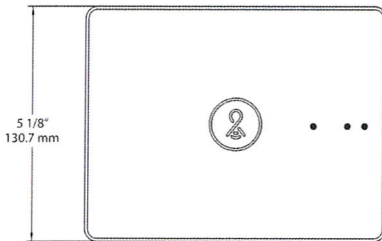
Contains integral junction box for hard-wired installation by a qualified electrician.

Other

Warranty:

10-year full hardware warranty with 100% repair/replacement coverage for all properly installed devices.

Dimensions



Features

The central hub of a Lightcloud network

Manages up to 200 Lightcloud devices, including controllers, sensors and switches

Does not require internet access or installation of any software

Connects site to monitoring servers via encrypted 3G cellular service (included)

Built-in uninterruptible power supply with battery backup

Integrated junction box for easy installation

Need help? Tech help line: (888) RAB-1000 Email: sales@rabweb.com Website: www.rabweb.com

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LCCONTROL20/D10

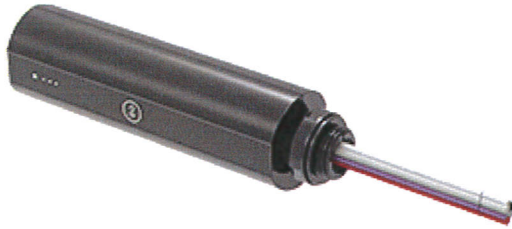


Project:

Type:

Prepared By:

Date:



The Controller is the basic building block of the Lightcloud system. Use it for switching and 0-10V dimming. Deploy it for power management. Or simply use it to extend the range of your Lightcloud mesh network.

Color: Black

Weight: 0.2 lbs

Technical Specifications

Listings

UL Listing:

Suitable for indoor and outdoor use.

DLC Listed:

This product is on the Design Lights Consortium (DLC) Qualified Products List and is eligible for rebates from DLC Member Utilities.

Electrical

Input Voltage:

120-277 VAC

Frequencies:

50/60 Hz

Current Draw:

30 mA @ 120VAC

20 mA @ 277VAC

Load Switching Capacity:

120VAC/15A Tungsten, Magnetic, Electronic
277VAC/20A Tungsten, Magnetic, Electronic
120VAC/1HP, 240VAC/2HP

Construction

IP Rating:

Ingress Protection rating of IP66 for dust and water

Operating Temperature Range:

-20°C to 40°C

Storage Temperature Range:

-40°C to 80°C

Maximum Relative Humidity:

85%

Mounting:

Junction box for both indoor or outdoor. Lighting Panel or Trough.

Wire Gauge:

4x6 in 12AWG High-voltage pigtails, stripped
2x12 in 22AWG Low-voltage pigtails, 300V insulation, stripped

Wireless Range

Obstructions:

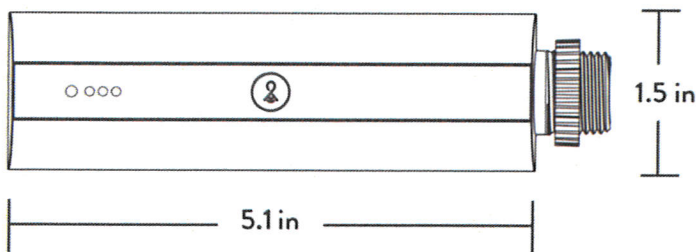
100 feet

Other

Warranty:

10-year full hardware warranty with 100% repair/replacement coverage for all properly installed devices.

Dimensions



Features

- Switching for a fixture or entire zone, hard-wired or remote
- Optional 0-10V dimming for LED and fluorescent fixtures
- Easily set up schedules and scenes
- Power measurement and energy reporting
- Remote control from Lightcloud web application
- Communicates over secure wireless mesh network - no internet required
- Cloud-based management with no software to install or maintain
- Cylindrical design for easy installation at threaded junction boxes