



Lumec TunnelView tunnel/underpass luminaires feature a sleek design that provides seamless replacement of existing HID luminaires. This fixture is available in three sizes, offers multiple lumen packages, and a complete array of optical distributions, making it an outstanding solution for all types of tunnel and underpass applications. Includes Service Tag, Signify's innovative way to provide assistance throughout the life of the product.

Project: \_\_\_\_\_  
 Location: \_\_\_\_\_  
 Cat.No: \_\_\_\_\_  
 Type: \_\_\_\_\_  
 Lumens: \_\_\_\_\_ Qty: \_\_\_\_\_  
 Notes: \_\_\_\_\_

### Ordering guide

example: TULL-96L700-740-G1-R2M-UNV-DMG-OD-TLL-GY3

Prefix	LED module	Color Temperature	Generation	Distribution	Voltage	Dimming controls <sup>4</sup>
<b>TULL</b>						
TULL TunnelView large	96L350 96L530 96L700 96L1050 128L350 128L530 128L700 128L975 160L350 160L530 160L700 160L925	730 70CRI 3000K 740 70CRI 4000K 827 <sup>11</sup> 80CRI 2700K	G1 Generation 1	<b>Asymmetrical:</b> R2M Type II Medium TW2 <sup>12</sup> Type II Wall Mount DK Type II Short R3M Type III Medium R3W Type III Wide 4 Type IV <b>Symmetrical:</b> 5 Type V (SYMM) SN Narrow <b>Counter beam:</b> CBL <sup>8</sup> Ceiling	UNV 120-277V HVU 347-480V 120 <sup>2</sup> 120V 208 <sup>2</sup> 208V 240 <sup>2</sup> 240V 277 <sup>2</sup> 277V 347 <sup>2</sup> 347V 480 <sup>2</sup> 480V	DMG <sup>5</sup> 0-10V DALI <sup>1</sup> Digitally Addressable Lighting Interface SRD <sup>1</sup> Sensor Ready Driver standard configuration SRD1 <sup>1</sup> Sensor Ready Driver alternate configuration
Mounting Bracket	Other Options				Finish	
Od <sup>8</sup> Fix 0° N5d Fix -5° N10d Fix -10° N15d Fix -15° P5d Fix +5° P10d Fix +10° P15d Fix +15° SLF <sup>14</sup> Slip Fitter SV Swivel	API Factory Installed NEMA label, ANSI C136.15 compliant F1 <sup>2</sup> Single Fuse Holder F2 <sup>2,14</sup> Double Fuse Holder JB1 Junction Box, 1" NPT entries JB2 Junction Box, 3/4" NPT entries NER Nyx Hemera Ready RCM7 <sup>3</sup> Remote install Tool less orientable receptacle with 7 pins SP2 20kV / 10kA Surge Protector (optional) TLRD7 <sup>3,13</sup> Receptacle for Twist-lock photocell or shorting cap, 7 pin TLRSR <sup>6</sup> SR receptacle TLL Tool Less Entry Latches VPA Vandal Proof Access BAC <sup>15</sup> Meets the requirements of the Buy American Act of 1933 (BAA)				BK Black BR Bronze GY3 Gray	

**Accessories<sup>16</sup>** (ordered separately, field installed - mounting hardware included, uses dedicated mounting holes - do NOT remove lens)

BXK	Bird spike
PH8 <sup>1,10</sup>	Twist-lock Photoelectric Cell, UNV (120-277VAC)
PH8/347 <sup>10</sup>	Twist-lock Photoelectric Cell, (347VAC)
PH8/480 <sup>10</sup>	Twist-lock Photoelectric Cell, (480VAC)
PHXL <sup>1,10</sup>	Twist-lock Photoelectric Cell, extended life, UNV (120-277VAC)
PH9 <sup>10</sup>	Shorting cap

- Not available with HVU, 347V and 480V.
- Specific voltage (120, 208, 240, 277, 347 or 480) must be specified with fusing options (F1 or F2).
- Use of photoelectric cell or shorting cap is required to ensure proper illumination.
- Select either DALI or DMG or SRD or SRD1 mandatory option.
- Please note this integrated feature comes standard in this product.
- Only available with SRD or SRD1 Driver Options.
- Only available with DMG Driver Options
- Only recommended for Ceiling Mount applications
- Not available with SRD Driver Options.
- TLRD7 or RCM7 must be selected for this option.
- Extended lead-time may apply. Consult factory.
- Recommended for Wall Mounting.
- Available with SLF & SV mounting bracket only.
- Not available with JB1 or JB2 options.
- Failure to properly select the "BAC" suffix could result in you receiving product that is not BAA compliant

- product with no recourse for an RMA or refund. This BAC designation hereunder does not address (i) the applicability of, or availability of a waiver under, the Trade Agreements Act, or (ii) the "Buy America" domestic content requirements imposed on states, localities, and other non-federal entities as a condition of receiving funds administered by the Department of Transportation or other federal agencies.
- Consult Signify to confirm whether specific accessories are BAA-compliant.



# TULL TunnelView

## Tunnel/Underpass luminaire

### Predicted Lumen Depreciation Data

Performance derived from LED manufacturer's data and engineering design estimates, based on IESNA LM-80 methodology. Actual experience may vary due to field application conditions. L<sub>70</sub> is the predicted time when LED performance depreciates to 70% of initial lumen output. Calculated per IESNA TM21-11. Published L<sub>70</sub> hours limited to 6 times actual LED test hours

Ambient Temperature °C	Drive current	Calculated L70 Hours	L70 per TM-21	Lumen Maintenance % at 100,000 hrs
25°C	up to 1050mA	>100,000 hours	>36,000 hours	>96%

### LED Wattage Values

Ordering Code	Total LEDs	System Current (mA)	Average System Watts <sup>14</sup>	Wattage Label <sup>15</sup>
TULL-96L350	96	350	101	100
TULL-96L530	96	530	155	160
TULL-96L700	96	700	212	210
TULL-96L1050 <sup>16</sup>	96	1050	322	320
TULL-128L350	128	350	138	140
TULL-128L530	128	530	210	210

14. Typical values, rounded.

15. As per ANSI C136.15-2015. Consult factory for other labeling needs.

Ordering Code	Total LEDs	System Current (mA)	Average System Watts <sup>14</sup>	Wattage Label <sup>15</sup>
TULL-128L700	128	700	281	280
TULL-128L975 <sup>16</sup>	128	975	380	380
TULL-160L350	160	350	170	170
TULL-160L530	160	530	260	260
TULL-160L700	160	700	352	350
TULL-160L925 <sup>16</sup>	160	925	459	460

16. Rated for +40°C / +104°F.

### LED Lumen Values – 2700K

Ordering Code	DK		R2M		R3M		R3W		4		5		SN		CBL		TW2	
	Lumen Output	Efficacy (LPW)	Lumen Output	Efficacy (LPW)	Lumen Output	Efficacy (LPW)	Lumen Output	Efficacy (LPW)	Lumen Output	Efficacy (LPW)	Lumen Output	Efficacy (LPW)	Lumen Output	Efficacy (LPW)	Lumen Output	Efficacy (LPW)	Lumen Output	Efficacy (LPW)
TULL-96L350-827	10712	106	10491	104	10275	102	10209	101	10138	100	9968	99	10949	108	10798	107	10563	105
TULL-96L530-827	15551	100	15230	98	14918	96	14821	96	14720	95	14472	93	15895	103	15676	101	15336	99
TULL-96L700-827	19688	93	19281	91	18887	89	18764	89	18635	88	18322	86	20123	95	19845	94	19415	92
TULL-96L1050-827	27085	84	26525	82	25983	81	25814	80	25637	80	25205	78	27685	86	27303	85	26710	83
TULL-128L350-827	14296	104	14001	101	13715	99	13626	99	13532	98	13305	96	14613	106	14412	104	14098	102
TULL-128L530-827	20614	98	20189	96	19775	94	19647	94	19512	93	19184	91	21071	100	20780	99	20329	97
TULL-128L700-827	26074	93	25535	91	25013	89	24851	88	24680	88	24265	86	26652	95	26284	93	25713	91
TULL-128L975-827	34188	90	33482	88	32796	86	32583	86	32360	85	31815	84	34945	92	34463	91	33714	89
TULL-160L350-827	17801	105	17433	103	17077	101	16965	100	16849	99	16565	98	18195	107	17944	106	17554	103
TULL-160L530-827	25667	99	25137	97	24623	95	24462	94	24295	94	23886	92	26236	101	25874	100	25312	98
TULL-160L700-827	32361	92	31693	90	31044	88	30843	88	30631	87	30116	86	33078	94	32621	93	31913	91
TULL-160L925-827	39785	87	38963	85	38166	83	37918	83	37657	82	37024	81	40666	89	40105	87	39234	85

### LED Lumen Values – 3000K

Ordering Code	DK		R2M		R3M		R3W		4		5		SN		CBL		TW2	
	Lumen Output	Efficacy (LPW)	Lumen Output	Efficacy (LPW)	Lumen Output	Efficacy (LPW)	Lumen Output	Efficacy (LPW)	Lumen Output	Efficacy (LPW)	Lumen Output	Efficacy (LPW)	Lumen Output	Efficacy (LPW)	Lumen Output	Efficacy (LPW)	Lumen Output	Efficacy (LPW)
TULL-96L350-730	12984	129	12716	126	12455	123	12374	123	12289	122	12083	120	13271	131	13088	130	12804	127
TULL-96L530-730	18850	122	18460	119	18083	117	17965	116	17842	115	17542	113	19267	124	19001	123	18589	120
TULL-96L700-730	23864	113	23371	110	22893	108	22744	107	22588	107	22208	105	24392	115	24055	114	23533	111
TULL-96L1050-730	32830	102	32152	100	31495	98	31290	97	31075	97	30552	95	33558	104	33094	103	32376	101
TULL-128L350-730	17329	126	16971	123	16624	120	16516	120	16403	119	16127	117	17713	128	17469	127	17089	124
TULL-128L530-730	24987	119	24471	117	23970	114	23814	113	23651	113	23253	111	25540	122	25188	120	24641	117
TULL-128L700-730	31605	112	30952	110	30319	108	30122	107	29915	106	29412	105	32305	115	31859	113	31167	111
TULL-128L975-730	41440	109	40584	107	39753	105	39495	104	39224	103	38564	101	42357	111	41773	110	40866	108
TULL-160L350-730	21577	127	21131	124	20699	122	20564	121	20423	120	20079	118	22054	130	21750	128	21278	125
TULL-160L530-730	31112	120	30469	117	29846	115	29651	114	29448	113	28953	112	31801	123	31362	121	30681	118
TULL-160L700-730	39226	112	38416	109	37629	107	37385	106	37128	106	36504	104	40094	114	39541	112	38682	110
TULL-160L925-730	48224	105	47228	103	46262	101	45961	100	45645	99	44878	98	49292	107	48612	106	47556	104

### LED Lumen Values – 4000K

Ordering Code	DK		R2M		R3M		R3W		4		5		SN		CBL		TW2	
	Lumen Output	Efficacy (LPW)	Lumen Output	Efficacy (LPW)	Lumen Output	Efficacy (LPW)	Lumen Output	Efficacy (LPW)	Lumen Output	Efficacy (LPW)	Lumen Output	Efficacy (LPW)	Lumen Output	Efficacy (LPW)	Lumen Output	Efficacy (LPW)	Lumen Output	Efficacy (LPW)
TULL-96L350-740	14192	141	13899	138	13613	135	13525	134	13432	133	13207	131	14505	144	14305	142	13995	139
TULL-96L530-740	20603	133	20177	130	19765	128	19636	127	19501	126	19173	124	21059	136	20768	134	20318	131
TULL-96L700-740	26083	123	25545	121	25022	118	24859	117	24689	117	24273	115	26660	126	26292	124	25722	121
TULL-96L1050-740	35883	112	35142	109	34424	107	34200	106	33965	106	33393	104	36679	114	36172	112	35387	110
TULL-128L350-740	18941	137	18549	134	18170	132	18052	131	17928	130	17627	128	19360	140	19094	138	18678	135
TULL-128L530-740	27311	130	26747	127	26199	125	26029	124	25851	123	25416	121	27915	133	27530	131	26933	128
TULL-128L700-740	34544	123	33831	120	33139	118	32923	117	32697	116	32147	114	35309	126	34822	124	34066	121
TULL-128L975-740	45294	119	44358	117	43450	114	43168	114	42872	113	42150	111	46296	122	45658	120	44667	108
TULL-160L350-740	23584	139	23096	136	22624	133	22476	132	22322	131	21946	129	24105	142	23773	140	23257	137
TULL-160L530-740	34005	131	33303	128	32622	126	32409	125	32187	124	31646	122	34758	134	34279	132	33534	129
TULL-160L700-740	42874	122	41989	119	41128	117	40862	116	40581	115	39899	114	43823	125	43218	123	42279	120
TULL-160L925-740	52709	115	51620	112	50564	110	50235	109	49890	109	49052	107	53876	117	53133	116	51979	113

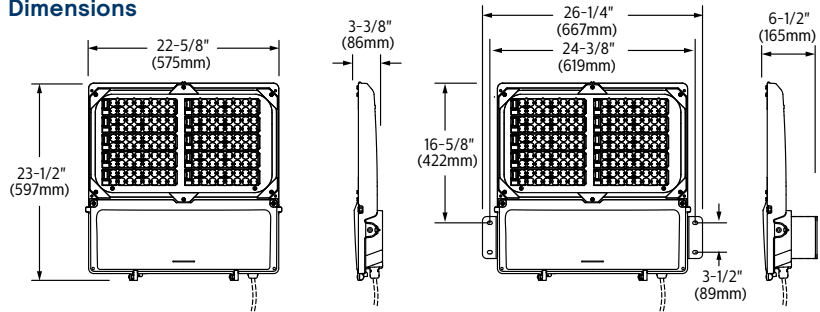
Actual performance may vary due to installation variables including optics, mounting/ceiling height, dirt depreciation, light loss factor, etc.; highly recommended to confirm performance with a layout - contact Applications at outdoorlighting.applications@signify.com. Consult DLC QPL to confirm your specific fixture selection is DLC approved.

Note: Some data may be scaled based on tests of similar but not identical luminaires.

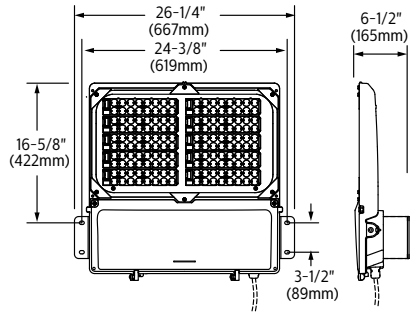
# TULL TunnelView

## Tunnel/Underpass luminaire

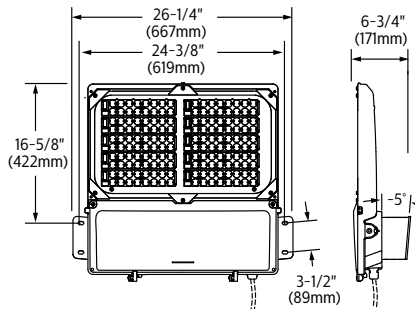
### Dimensions



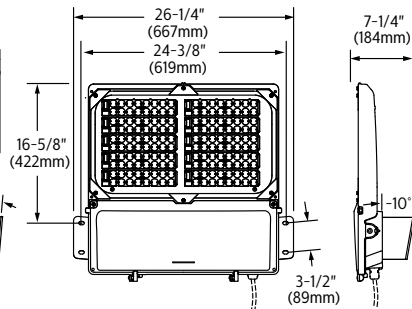
**TULL**



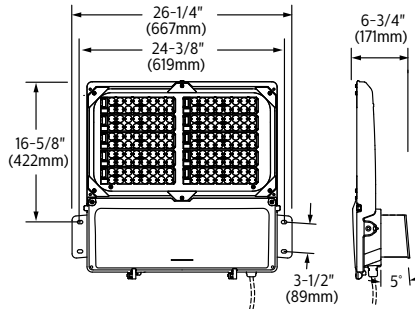
**TULL-0d (0°)**



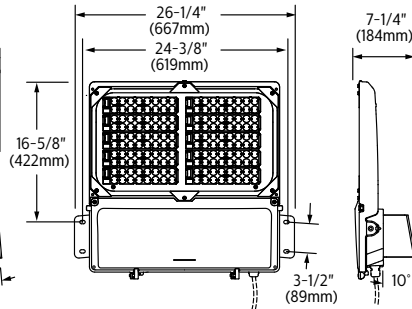
**TULL-N5d (-5°)**



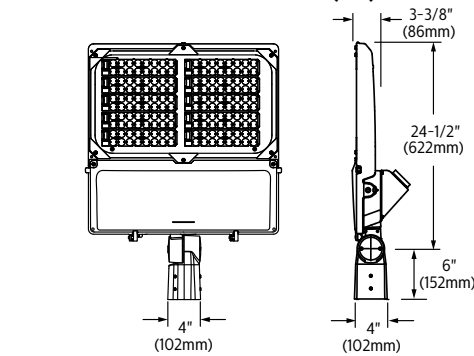
**TULL-N10d (-10°)**



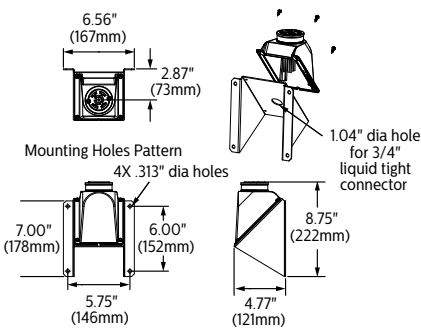
**TULL-P5d (+5°)**



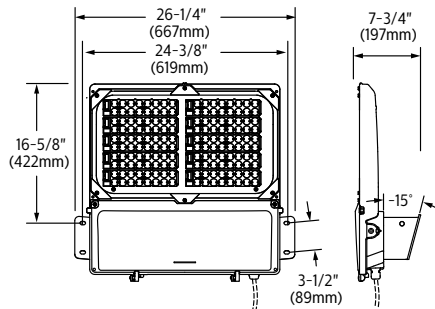
**TULL-P10d (+10°)**



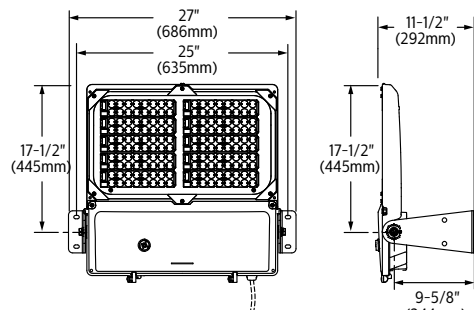
**TULL-SLF**  
(Shown with optional TLRD7)



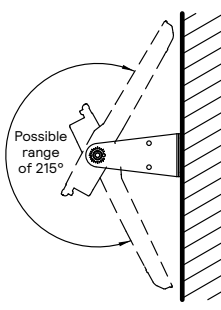
**RCM7**



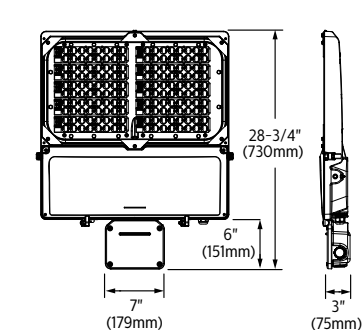
**TULL-N15d (-15°)**



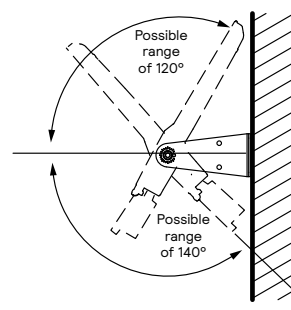
**TULL-SV**  
(Shown with optional TLRSR)



**TULL-SV**



**JB1 / JB2 option**



**TULL-SV with JB1 / JB2 options**

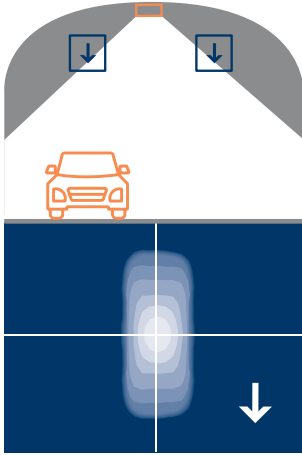
	Weight	EPA	
		Horizontal	Vertical
<b>TULL</b>	33lbs	0.67 sq. ft	4.64 sq. ft
<b>TULL-SV</b>	37lbs		
<b>TULL-SF</b>	36lbs		
<b>TULL 0-15°</b>	37lbs		
<b>+JB1/JB2 option</b>	+3.5lbs	+0.15 sq. ft	+0.35 sq. ft

# TULL TunnelView

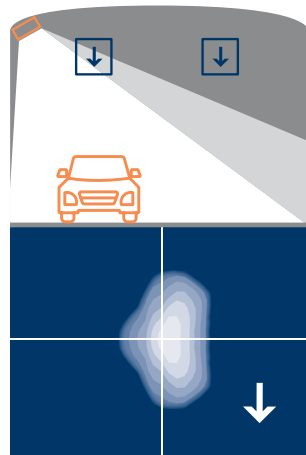
## Tunnel/Underpass luminaire

### Tunnel Distributions

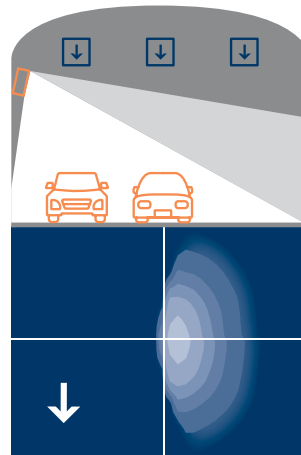
**SN**  
Narrow



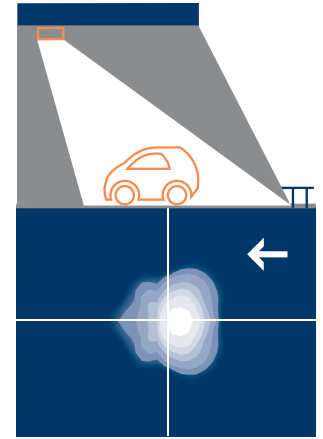
**DK**  
Type II Short



**TW2**  
Type II Wall Mount



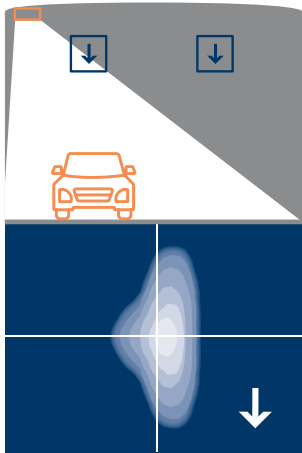
**CBL**  
Ceiling Counter Beam



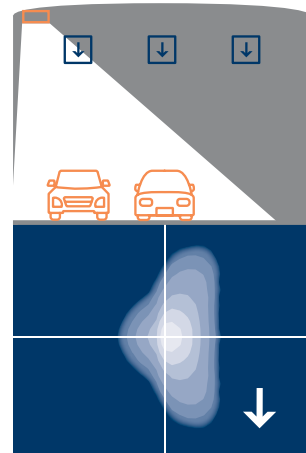
Arrows indicate traffic direction

### Underpass Distributions

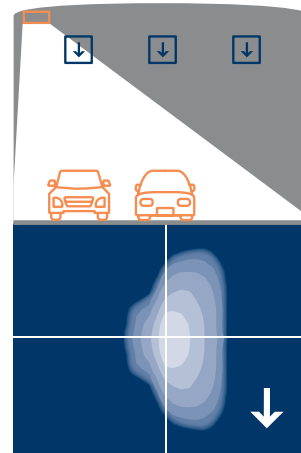
**R2M**  
Type II Medium



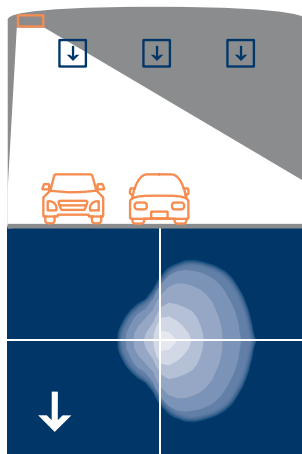
**R3M**  
Type III Medium



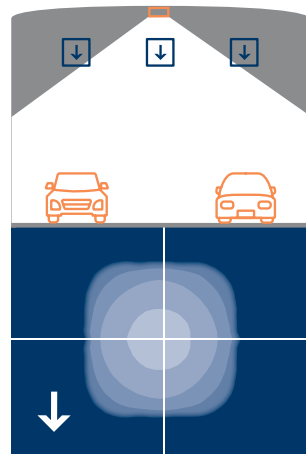
**R3W**  
Type III Wide



**4**  
Type IV



**5**  
Type V



Arrows indicate traffic direction

# TULL TunnelView

## Tunnel/Underpass luminaire

### Specifications

#### Housing

Made of a low copper die cast Aluminum alloy (A360). Door is complete with hinges and is secured with flanged hex head screws with slotted drive providing access to electronic components and to a terminal block. Door is removable and is secured to prevent accidental dropping or disengagement. Compatible with 1/4" flat blade screwdriver. Complete with ANSI label as per C136.15-2015 to identify wattage and source (included in box). Housing (including electrical compartment) rated IP66 per ANSI C136.37.

#### Light Engine

Composed of 5 main components: Heat Sink, Lens, LED Module, Optical System, Driver. Electrical components are RoHS compliant. LEDs tested by ISO 17025 2005 accredited lab in accordance with IESNA LM 80 guidelines in compliance with EPA ENERGY STAR, extrapolations in accordance with IESNA TM 21. Metal core board ensures greater heat transfer and longer lifespan.

**Lens:** Made of soda-lime clear tempered glass flat lens, mechanically assembled and sealed onto the lower part of the heat sink IK09.

**LED Module:** Composed of high performance white LEDs. Color temperature as per ANSI/NEMA bin 2700 Kelvin nominal (2725 ±145K) CRI 80 min, 3000 Kelvin nominal (3045K +/-175K) or 4000 Kelvin nominal (3985K +/- 275K), CRI 70 Min. 75 Typical. Other CCT/CRI also available, consult factory.

**Optical System:** Composed of high performance UV stabilized optical grade polymer refractor lenses to achieve desired distribution optimized to get maximum spacing, target lumens and a superior lighting uniformity. System is rated IP66. Performance shall be tested per LM-63, LM-79 and TM-15 (IESNA) certifying its photometric performance.

**Heat Sink:** Built in the housing, designed to ensure high efficacy and superior cooling by natural convection air flow pattern always close to LEDs and driver optimizing their efficiency and life. Product does not use any cooling device with moving parts (only passive cooling). Entire luminaire is rated for operation in ambient temperature of -40°C / -40°F up to +50°C / +122°F unless otherwise specified, refer to LED Wattages Values Table.

**Driver:** High power factor of 90% min. Electronic driver, operating range 50/60 Hz. Auto adjusting universal voltage input from 120 to 277 or 347 to 480 VAC rated for both application line to line or line to neutral, Class I, THD of 20% max. The current supplying the LEDs will be reduced by the driver if the driver experiences internal overheating as a protection to the LEDs and the electrical components. Output is protected from short circuits, voltage overload and current overload. Automatic recovery after correction. Standard built in driver surge protection of 2.5kV (min).

**Controls:** Fixture is compatible with most controls system and can integrate proprietary and third parties control modules directly within the electrical compartment.

#### Integrated Features

**DMG:** Dimmable driver 0-10V.

**SP1:** Surge protection device tested in accordance with ANSI/IEEE C62.45 per ANSI/IEEE C62.41.2 Scenario I Category C High Exposure 10kV/10kA waveforms for Line-Ground, Line-Neutral and Neutral-Ground, and in accordance with DOE MSSLC Model Specification for LED Roadway Luminaires Appendix D Electrical Immunity High test level 10kV/10kA.

Please note that these integrated features always come with Tunnel/Underpass luminaire.

#### Driver and Luminaire Options

**DALI:** Pre-set driver compatible with the DALI control system.

**SRD:** Sensor Ready Driver including SR communication (used for dimming and other functionalities), 24V auxiliary supply and a logical signal input (LSI) connected to the NEMA twist lock receptacle and bottom TLRSR receptacle, if these options included/chosen. This configuration is compatible with Interact City controllers.

**SRD1:** Sensor Ready Driver including SR communication (used for dimming and other functionalities) but with 24V auxiliary supply and a logical signal input (LSI) not connected to the NEMA twist lock if this option included/chosen. If TLRSR receptacle option included, standard SR communication, 24V auxiliary supply and LSI are connected to the TLRSR receptacle.

**SP2:** 20kV/10kA surge protection device that provides extra protection beyond the SP1 10kV/10kA level.

**TLRD7\*:** Tool Less orientable receptacle with 7 pins enabling dimming, can be used with a twist lock Interact City or photoelectric cell or a shorting cap. This add-on module is rated IP54.

**TLRSR:** SR Sensor connector, installed in fixture door. Shipped with protective cover.

**API:** Factory Installed NEMA label, ANSI C136.15-2015 compliant. Consult factory for other labeling needs.

**F1:** Fusing, single (120, 277 or 347VAC) installed in electrical compartment

**F2:** Fusing, double (208, 240 or 480VAC) installed in electrical compartment

**JB1:** Junction Box option, with 3 conduct entries, 1" NPT, suitable for through wire and continuous row mounting, complete with 2 aluminum hole plugs

**JB2:** Junction Box option, with 3 conduct entries, 3/4" NPT, suitable for through wire and continuous row mounting, complete with 2 aluminum hole plugs

**NER:** Fixture is set-up in factory to receive Nyx Hemera TLAC modules. (Modules can be factory installed as well. Consult factory for details)

**TLL:** Tool Free access 316 stainless steel latches.

**VPA:** Vandal Proof hardware to prevent access to internal components, 316 stainless steel, complete with Ceramic primer seal to reduce seizing of the parts, also offers a high resistance to corrosion.

**RCM7\*:** Remote install Tool less orientable receptacle with 7 pins enabling dimming and additional functionality (to be determined), can be used with a twist lock Interact City node or photoelectric cell or a shorting cap, Rated IP54. (wiring to fixture not included)

\* Use of photoelectric cell or shorting cap is required to ensure proper illumination.

#### Luminaire Useful Life

Refer to IES files for energy consumption and delivered lumens for each option. Based on ISTMT in situ thermal testing in accordance with UL1598 and UL8750, System Reliability Tool, Advance data and LED manufacturer LM-80/TM-21 data, expected to reach 100,000 + hours with >L70 lumen maintenance @ 25°C.

Luminaire Useful Life accounts for LED lumen maintenance AND all of these additional factors including: LED life, driver life, PCB substrate, solder joints, on/off cycles, burning hours and corrosion.

#### Wiring

The connection of the luminaire is done using a terminal block connector 600V, 85A for use with #2-14 AWG. wires from the primary circuit, located inside the housing electrical compartment. Due to the inrush current that occurs with electronic drivers, recommend using a 10Amp time delay fuse to avoid unwanted fuse blowing (false tripping) that can occur with normal or fast acting fuses. Housing is completed with a 7/8" (22mm) diameter unthreaded mounting hole to accept a 1/2 NPT liquid tight cord grips connector IP66 rated minimum. Wiring, connector, sealing washer and locknut supplied by others.

#### Mounting Options

All Brackets are 316 Stainless Steel unless otherwise specified.

Fixed brackets (refer to Dimension section for tilt orientation)

**SV:** Swivel Mount

**SLF:** Slip Fitter made of low copper Aluminum alloy (A360) for high resistance to corrosion, adjustable knuckle has 5 degree aiming increments with integral interlocking teeth and bolt to secure aiming in place, integral cast-in aiming marks. Fits on a 2-3/8" thru 3.0" O.D. by minimum 3-3/4" long tenon. AWG 16-3 wires exiting 4" through the Slip Fitter. Integral splice compartment for field wiring with cULus Wet Location rated access cover with seal around entire perimeter.

#### Hardware

All exposed screws shall be 316 stainless steel, complete with Ceramic primer seal to reduce seizing of the parts, also offers a high resistance to corrosion. All seals and sealing devices are made and/or lined with EPDM and/or silicone and/or rubber.

# TULL TunnelView

## Tunnel/Underpass luminaire

### Specifications (continued)

#### Finish

Color in accordance with the AAMA 2603 standard. Application of polyester powder coat paint (4 mils/100 microns) with  $\pm$  1 mils/24 microns of tolerance over anodized pre-finish. The Thermosetting resins provides a discoloration resistant finish in accordance with the ASTM D2244 standard, as well as luster retention in keeping with the ASTM D523 standard and humidity proof in accordance with the ASTM D2247 standard. The surface treatment achieves a minimum of 3000 hours for salt spray resistant finish in accordance with testing performed and per ASTM B117 standard.

#### LED products manufacturing standard

The electronic components sensitive to electrostatic discharge (ESD) such as light emitting diodes (LEDs) are assembled in compliance with IEC61340-5-1 and ANSI/ESD S20.20 standards so as to eliminate ESD events that could decrease the useful life of the product.

#### Vibration Resistance

The TULL luminaires with fixed and swivel mounting options meet the ANSI C136.31-2018 American National Standard for Roadway Luminaire Vibration specifications for Bridge/overpass applications. Slip Fitter option meet the Normal applications.

#### Certifications and Compliance

cULus Listed for Canada and USA. Luminaire meets DOE and MSSLC Model Specification for LED Roadway Luminaires. Most versions are DesignLights Consortium® qualified, consult DLC QPL to confirm your specific fixture selection is approved. Luminaire complies with or exceeds the following ANSI C136 standards: .2, .3, .10, .14, .15, .22, .25, .31, .37, .41.

#### Service Tag

Each individual luminaire is uniquely identifiable, thanks to the Signify Service tag application. With a simple scan of a QR code, placed on the inside of the mast door, you gain instant access to the luminaire configuration, making installation and maintenance operations faster and easier, no matter what stage of the luminaire's lifetime. Just download the APP and register your product right away. For more details visit: [philips.com/servicetag](https://philips.com/servicetag)

#### Limited Warranty

10-year limited warranty.

See [signify.com/warranties](https://signify.com/warranties) for details and restrictions.

