

Project:	Catalogue #:	Type:
Notes:		

### Product Description

The LRK-TRH is a BIOS-enabled commercial-grade low profile LED retrofit Kit for renovating standard 1x4, 2x2 and 2x4 fluorescent troffers and parabolic luminaires. The TRH provides instant energy savings and increased aesthetic appeal with a single shallow semi-round lens. It's clean design and simple installation process makes the LRK-TRH an ideal solution for use with indoor applications where low glare, high-quality and ease of installation are required.

This fixture is equipped with BIOS SkyBlue® circadian LED technology, specifically for increased melanopic lux and circadian stimulus for daytime applications. This luminaire can be configured with either BIOS Static for applications where a constant level SkyBlue® content is desired, or BIOS Dynamic for applications requiring variable SkyBlue® content based on time of day. Provides minimum melanopic (M/P) ratio of >0.7 at 3000K, CRI 80+, R9>90; and cyanosis observation index (COI) less than or equal to 5.4.



### Applications

Office Areas, Retail Stores, Classrooms, Hospitals, Nursing Homes

### Features

- Shallow design
- Enhanced, uniform lighting delivers a balanced amount of light to walls, cubicles, work surfaces and people
- Extruded acrylic lens
- Standard low voltage dimming (0-10v)
- Standard in 1x4, 2x2 and 2x4 configurations
- Available in metric and custom size (consult factory)

### Optical System

Round linear ribbed frosted acrylic diffuser, offers high levels of efficiency and visual comfort. Indirect reflectors are precision formed and contoured to provide soft, lowglare, indirect illumination, while maintaining high-efficiency and a wide, uniform light distribution.

### Mounting

This luminaire features two steel brackets which are secured to the existing fixture with self-tapping screws. It has been specifically designed for retrofitting recessed T-Bar applications.

### Construction

Precision-formed steel doorframe and brackets. The driver and light engine are integral to the TRH's door frame for quick and easy installation.

### Finish

White, polyester powder painted door frame.

### Electrical

Long life LEDs coupled with high efficiency drivers provide quality illumination. Rated to deliver L80 performance > 50,000 hours.

### Warranty

5 year limited warranty. For complete warranty, click here: 

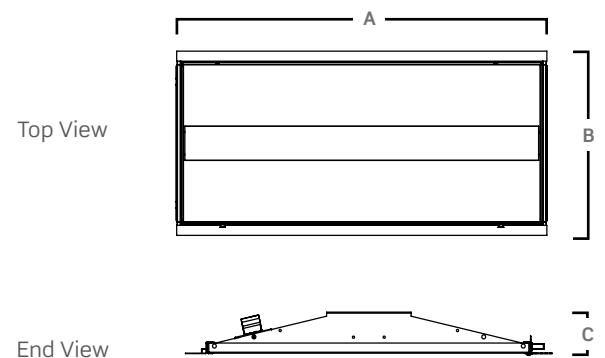
### Approvals

- Approved to CSA/UL standards. UL listed for insulated ceilings.
- Tested in accordance to IESNA LM-79.
- Suitable for damp locations.
- DesignLights Consortium® Qualified.

All configurations may not be DLC qualified. Check [www.designlights.org/QPL](http://www.designlights.org/QPL) for qualified configurations.



### Dimensions



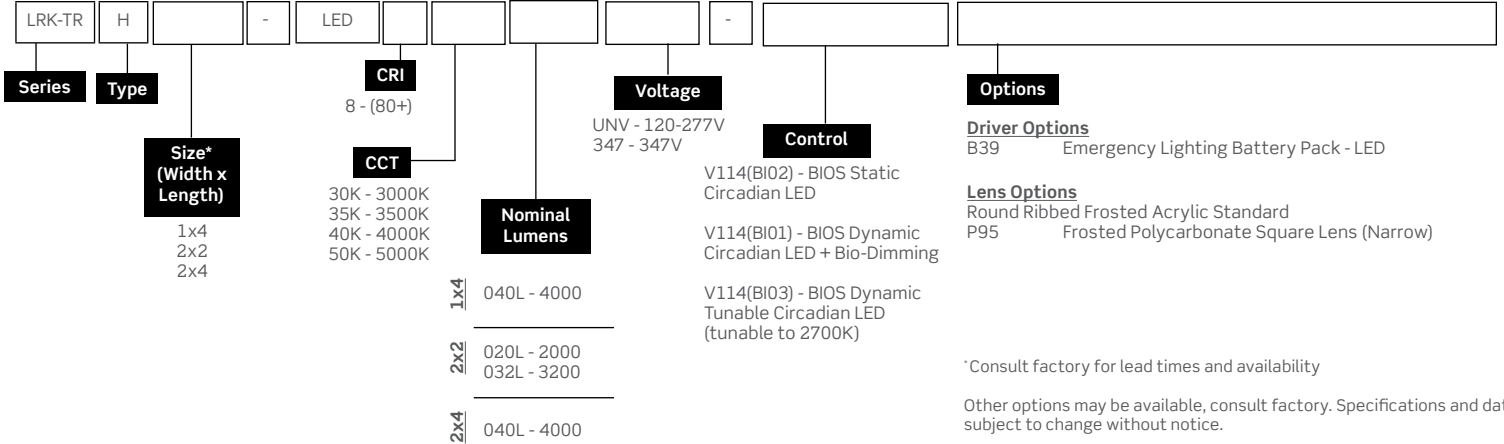
Size	A	B	C
1x4	47 7/8"	11 7/8"	2 1/2"
2x2	23 7/8"	23 7/8"	2 1/2"
2x4	47 7/8"	23 7/8"	2 1/2"

Consult installation guide for exact dimensions.

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### Order Key

#### EXAMPLE: LRK-TRH2x4-LED840K050LUNV



### Performance Data

LED Performance Data				
Size	Nominal Lumens	Delivered Lumens	Watts	Lumens Per Watt
1x4	4000	3968	27.8	142.8
2x2	2000	2047	13.2	155.6
	3200	3250	21.7	149.9
2x4	4000	4135	27.8	148.8

Values based on 840K with standard lens at 25C

### Performance Scaling Factor

	50K	40K	35K	30K
80CRI	1.000	1.000	0.960	0.946
90CRI	0.875	0.875	0.836	0.809

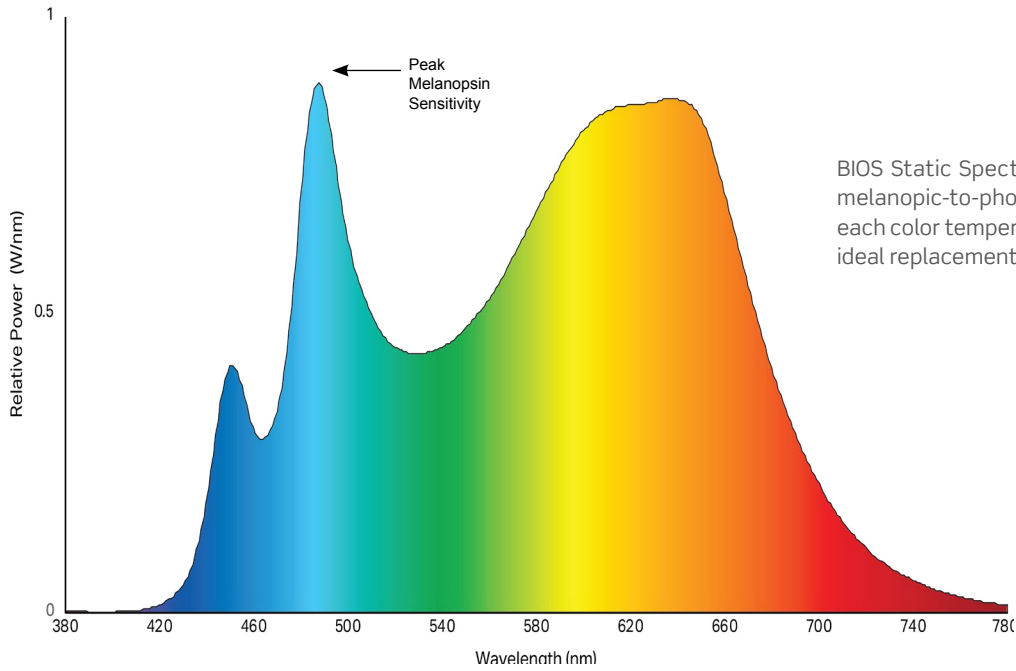
### Ordering Key Example

LRK-TRH2x2-LED840K032LUNV-V114(BI02)	<ul style="list-style-type: none"> <li>Static CCT (4000K) fixture, output dimmable to 1%</li> <li>SkyBlue™ is always present</li> </ul>
LRK-TRH2x2-LED840K032LUNV-V114(BI03)	<ul style="list-style-type: none"> <li>2-Channel Tunable (4000K - 2700K) fixture dimmable to 1%</li> <li>SkyBlue™ is always present from 4000k-3000k</li> </ul>
LRK-TRH2x2-LED840K032LUNV-V114(BI01)	<ul style="list-style-type: none"> <li>Single-Channel Bio-Dimming from 4000K with SkyBlue™ to &gt;2700K</li> <li>At 2700K, dim total output to 1%</li> <li>At 2700K, SkyBlue™ no longer present</li> </ul>

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**BIOS Static Circadian LED Solution - V114 (BI02)**

BIOS SkyBlue® Spectrum lighting solutions support proper daytime circadian stimulus, communicating directly with human circadian biology through a non-visual photo receptor in the eye.



BIOS Static Spectrum Light Engine delivers the industry's best melanopic-to-photopic (M/P) ratio, with R9 greater than 90 at each color temperature. BIOS Static Spectrum Light Engine is the ideal replacement for static color light fixtures.

Static Engine Spectral Power Distribution (3500K)

**Nominal Performance**

CCT	Melanopic Ratio (M/P) <sup>1</sup>	CRI	R9	COI <sup>2</sup>
3000K	0.74	81	90	5.4
3500K	0.83	84	96	3.3
4000K	0.92	84	95	1.5

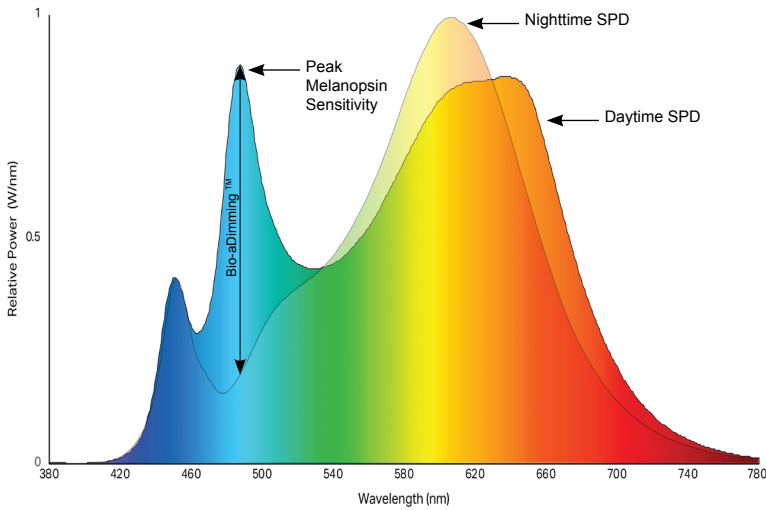
<sup>1</sup> M/P is a ratio that describes the relative melanopic lux (M) versus the photopic lux (P)  
<sup>2</sup> COI - Cyanosis Observation Index

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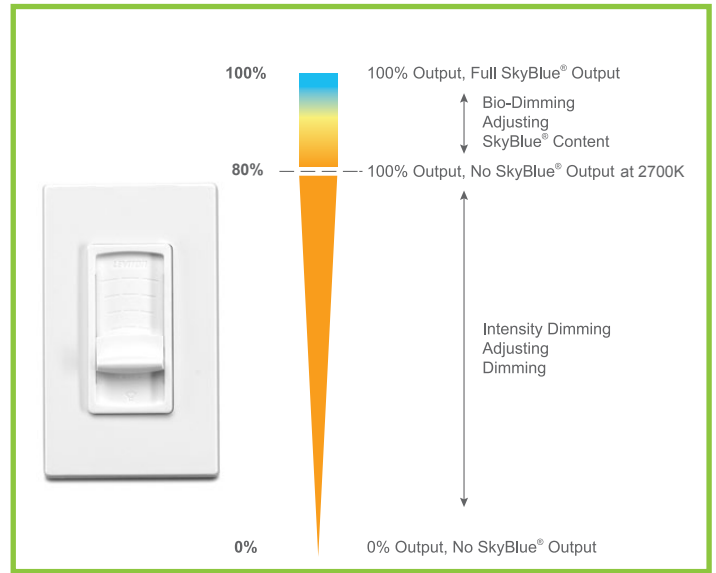
**BIOS Dynamic Circadian LED Solution - V114 (BI01)**

BIOS SkyBlue® Dynamic Light Engine provides full daytime circadian stimulus and can be dynamically adjusted via the Bio-Dimming™ module. Using a standard single channel 0-10V dimmer reducing melanopic lux while keeping light and CCT constant<sup>3</sup>. When the SkyBlue® content has been removed (at 2700K), the light level can be adjusted. The Bio-Dimming™ module also detects the preferred light levels over time and will adjust the high end trim of the system to those preferences.

**BIOS Dynamic Circadian LED + Bio-Dimming™**



**Dynamic Engine Spectral Power Distribution (3500K)**



**Nominal Performance**

CCT		Melanopic Ratio (M/P) <sup>1</sup>		CRI	R9	COI <sup>2</sup>
Daytime	Night-time	Daytime	Nitght-time			
3000K	2700K	0.74	0.47	81	90	5.4
3500K	2700K	0.83	0.47	84	96	3.3
4000K	2700K	0.92	0.47	84	95	1.5

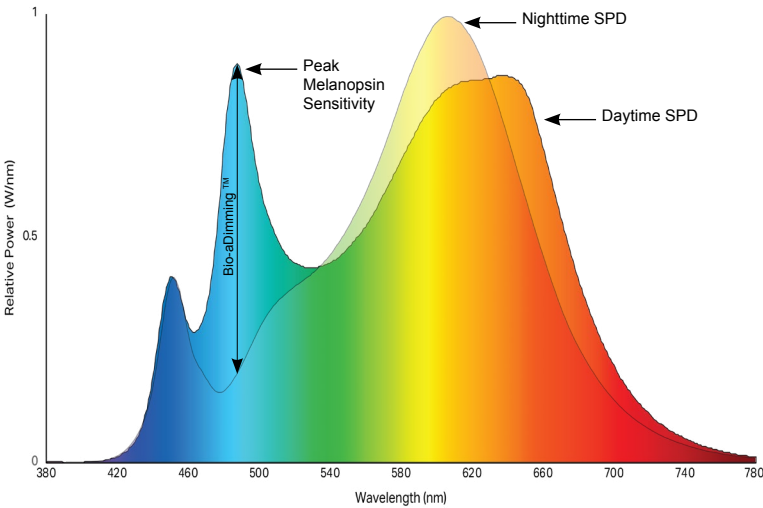
<sup>3</sup>CCT may vary by up to 500K

<sup>4</sup>Value as shown represents COI provided by daytime LED Spectrum.

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**BIOS Dynamic Circadian LED Solution - V114 (BI03)**

BIOS SkyBlue® Dynamic Light Engine provides full daytime circadian stimulus and can be dynamically adjusted via tunable circadian LED module. Using a standard two channel 0-10V dimmer reducing melanopic lux and adjusting the output light level while keep CCT constant<sup>3</sup>. The SkyBlue® below 3000K no longer present. The tunable module also detects the preferred light levels over time and will adjust the high end trim of the system to those preferences.



**Dynamic Engine Spectral Power Distribution (3500K)**

**BIOS Dynamic Tunable Circadian LED (tunable to 2700K)**

**Nominal Performance**

CCT		Melanopic Ratio (M/P) <sup>1</sup>		CRI	R9	COI <sup>2</sup>
Daytime	Night-time	Daytime	Nitght-time			
3000K	2700K	0.74	0.47	81	90	5.4
3500K	2700K	0.83	0.47	84	96	3.3
4000K	2700K	0.92	0.47	84	95	1.5

<sup>3</sup> CCT may vary by up to 500K

<sup>4</sup> Value as shown represents COI provided by daytime LED Spectrum.