



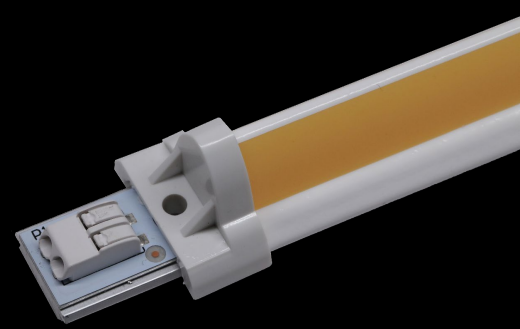
# Bridgelux® IB Series™

Product Data Sheet DS340



# Introduction

IB Series™



The Bridgelux IB Series™ is a simple plug and play solution that enables highly uniform glare free lighting. The unique 240 degree bat wing beam pattern allows for the use of fewer light engines to create excellent uniformity and fill in a wide variety of functional, decorative, and architectural lighting applications. The remote phosphor system architecture eliminates the pixelation that is often present with white LED linear lighting systems and remains clean and consistent even under deep dimming conditions.

The robust polycarbonate lens fully encloses the LEDs, eliminating risk of damage. These modules deliver color rendering of up to 98 CRI with high R1-R15 values, including an R9 of 97 for accurate red color rendering and an R13 of 98 for skin tones. Color consistency of 3 SDCM is maintained over angle, over length, part to part, and over time; completely eliminating any concerns of color uniformity. Length options of 9.5, 12, 20, 21.8 and 43 inches reduce wiring, mounting steps, and components to further reduce system costs. Relevant application areas include retail, hospitality, museum, healthcare, and high end office and residential lighting.

## Features

- Integrated modular solution
- Wide angle 240° FWHM beam pattern
- High CRI with high color fidelity
- Diffuse and uniform emission pattern
- Impact resistant polycarbonate cover
- 3 SDCM Color consistency
- Multiple product length options
- 5 Year limited warranty

## Benefits

- Accelerates time to market
- Excellent uniformity and fill
- Accurate color rendering
- Glare free non-pixelated lighting
- Protects LEDs from risk of damage
- Uniform consistent lighting
- Reduced wiring and mounting costs
- Design with confidence

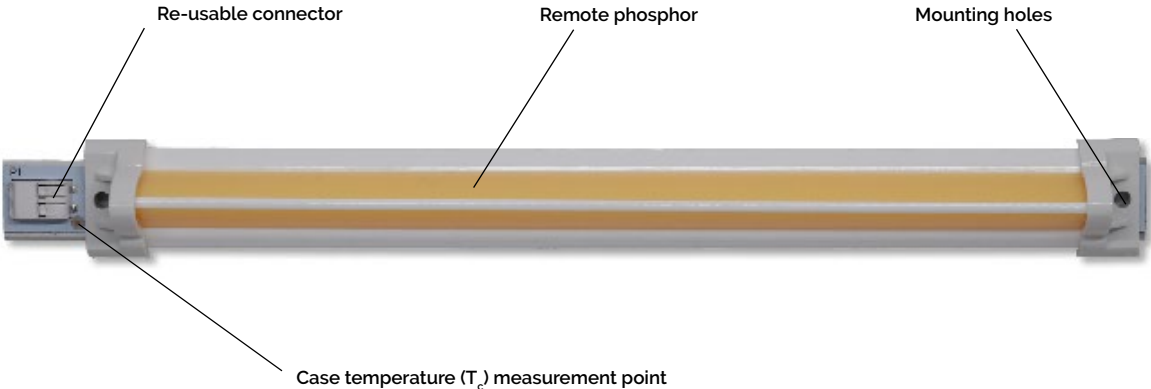


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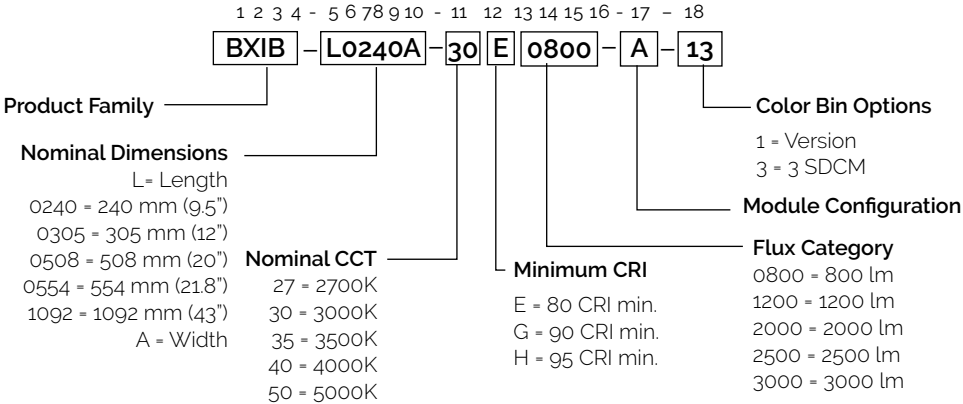
# Product Feature Map

Bridgelux IB Series are fully engineered devices that provide consistent thermal and optical performance on an engineered mechanical platform. The linear products incorporate several features to simplify design integration and assembly. Please visit [www.bridgelux.com](http://www.bridgelux.com) for more information on the IB Series family of products.



## Product Nomenclature

The part number designation for Bridgelux IB Series is explained as follows:



# Product Selection Guide

The following product configurations are available:

**Table 1:** Selection Guide, Measurement Data ( $T_c = 40^\circ \text{C}$ )

Part Number	Nominal CCT (K)	CRI <sup>2</sup>	Nominal Drive Current (mA)	Typical Flux <sup>3</sup> (lm)	Typical $V_f$ (V)	Typical Power (W)	Typical Efficacy (lm/W)
BXIB-L0240A-27G0800-A-13	2700	90	350	660	17.2	6.0	110
BXIB-L0240A-30E0800-A-13	3000	80	350	805	17.2	6.0	134
BXIB-L0240A-30G0800-A-13	3000	90	350	705	17.2	6.0	117
BXIB-L0240A-30H0800-A-13	3000	95	350	610	17.2	6.0	101
BXIB-L0240A-35E0800-A-13	3500	80	350	830	17.2	6.0	138
BXIB-L0240A-35G0800-A-13	3500	90	350	725	17.2	6.0	120
BXIB-L0240A-40E0800-A-13	4000	80	350	865	17.2	6.0	144
BXIB-L0240A-40G0800-A-13	4000	90	350	750	17.2	6.0	125
BXIB-L0240A-40H0800-A-13	4000	95	350	675	17.2	6.0	112
BXIB-L0240A-50E0800-A-13	5000	80	350	865	17.2	6.0	144
BXIB-L0305A-27G1200-A-13	2700	90	350	890	22.9	8.0	111
BXIB-L0305A-30E1200-A-13	3000	80	350	1090	22.9	8.0	136
BXIB-L0305A-30G1200-A-13	3000	90	350	950	22.9	8.0	119
BXIB-L0305A-30H1200-A-13	3000	95	350	830	22.9	8.0	104
BXIB-L0305A-35E1200-A-13	3500	80	350	1120	22.9	8.0	140
BXIB-L0305A-35G1200-A-13	3500	90	350	975	22.9	8.0	122
BXIB-L0305A-40E1200-A-13	4000	80	350	1160	22.9	8.0	145
BXIB-L0305A-40G1200-A-13	4000	90	350	1000	22.9	8.0	125
BXIB-L0305A-40H1200-A-13	4000	95	350	915	22.9	8.0	114
BXIB-L0305A-50E1200-A-13	5000	80	350	1160	22.9	8.0	145
BXIB-L0508A-27G2000-A-13	2700	90	500	1570	28.6	14.3	110
BXIB-L0508A-30E2000-A-13	3000	80	500	1920	28.6	14.3	134
BXIB-L0508A-30G2000-A-13	3000	90	500	1680	28.6	14.3	117
BXIB-L0508A-30H2000-A-13	3000	95	500	1490	28.6	14.3	104
BXIB-L0508A-35E2000-A-13	3500	80	500	2000	28.6	14.3	140
BXIB-L0508A-35G2000-A-13	3500	90	500	1720	28.6	14.3	120
BXIB-L0508A-40E2000-A-13	4000	80	500	2070	28.6	14.3	145
BXIB-L0508A-40G2000-A-13	4000	90	500	1800	28.6	14.3	126
BXIB-L0508A-40H2000-A-13	4000	95	500	1620	28.6	14.3	113
BXIB-L0508A-50E2000-A-13	5000	80	500	2070	28.6	14.3	145

Notes for Table 1:

1. All values included in the table above are hot stabilized performance with a case temperature ( $T_c$ ) of  $40^\circ\text{C}$  after 60 minutes of operation.
2. CRI values are minimums. The minimum R<sub>g</sub> values for 80 CRI products is 0, for 90 CRI products is 50 and for 95 CRI products, (Decor Series Ultra) is 95.
3. Bridgelux maintains a  $\pm 7\%$  tolerance on flux measurements.

# Product Selection Guide

The following product configurations are available:

**Table 1:** Selection Guide, Measurement Data ( $T_c = 40^\circ \text{C}$ ) (continued)

Part Number	Nominal CCT (K)	CRI <sup>2</sup>	Nominal Drive Current (mA)	Typical Flux <sup>3</sup> (lm)	Typical $V_f$ (V)	Typical Power (W)	Typical Efficacy (lm/W)
BXIB-L0554A-27G2500-A-13	2700	90	500	1750	31.5	15.8	111
BXIB-L0554A-30E2500-A-13	3000	80	500	2200	31.5	15.8	140
BXIB-L0554A-30G2500-A-13	3000	90	500	1860	31.5	15.8	118
BXIB-L0554A-30H2500-A-13	3000	95	500	1640	31.5	15.8	104
BXIB-L0554A-35E2500-A-13	3500	80	500	2250	31.5	15.8	143
BXIB-L0554A-35G2500-A-13	3500	90	500	1915	31.5	15.8	122
BXIB-L0554A-40E2500-A-13	4000	80	500	2300	31.5	15.8	146
BXIB-L0554A-40G2500-A-13	4000	90	500	1990	31.5	15.8	126
BXIB-L0554A-40H2500-A-13	4000	95	500	1790	31.5	15.8	114
BXIB-L0554A-50E2500-A-13	5000	80	500	2300	31.5	15.8	146
BXIB-L1092A-27G3000-A-13	2700	90	500	2450	42.9	21.5	114
BXIB-L1092A-30E3000-A-13	3000	80	500	3000	42.9	21.5	140
BXIB-L1092A-30G3000-A-13	3000	90	500	2580	42.9	21.5	120
BXIB-L1092A-30H3000-A-13	3000	95	500	2260	42.9	21.5	105
BXIB-L1092A-35E3000-A-13	3500	80	500	3100	42.9	21.5	145
BXIB-L1092A-35G3000-A-13	3500	90	500	2660	42.9	21.5	124
BXIB-L1092A-40E3000-A-13	4000	80	500	3160	42.9	21.5	147
BXIB-L1092A-40G3000-A-13	4000	90	500	2770	42.9	21.5	129
BXIB-L1092A-40H3000-A-13	4000	95	500	2495	42.9	21.5	116
BXIB-L1092A-50E3000-A-13	5000	80	500	3160	42.9	21.5	147

Notes for Table 1:

1. All values included in the table above are hot stabilized performance with a case temperature ( $T_c$ ) of  $40^\circ \text{C}$  after 60 minutes of operation.
2. CRI values are minimums. The minimum Rg values for 80 CRI products is 0, for 90 CRI products is 50 and for 95 CRI products, (Decor Series Ultra) is 95.
3. Bridgelux maintains a  $\pm 7\%$  tolerance on flux measurements.

# Electrical Characteristics

**Table 2:** Nominal Electrical Characteristics

Part Number <sup>1</sup>	Nominal Drive Current (mA)	Forward Voltage $T_c = 40^\circ\text{C}$ (V) <sup>2,3</sup>		
		Minimum	Typical	Maximum
BXIB-L0240A-xxx0800-A-13	350	15.6	17.2	18.3
BXIB-L0305A-xxx1200-A-13	350	20.8	22.9	24.4
BXIB-L0508A-xxx2000-A-13	500	26.0	28.6	30.5
BXIB-L0554A-xxx2500-A-13	500	28.6	31.5	33.6
BXIB-L1092A-xxx3000-A-13	500	39.0	42.9	45.8

**Table 3:** Maximum Electrical Characteristics

Part Number <sup>1</sup>	Maximum Drive Current (mA)	Forward Voltage $T_c = 40^\circ\text{C}$ (V) <sup>2,3</sup>		
		Minimum	Typical	Maximum
BXIB-L0240A-xxx0800-A-13	500	16.1	17.7	18.8
BXIB-L0305A-xxx1200-A-13	500	21.5	23.6	25.1
BXIB-L0508A-xxx2000-A-13	700	26.9	29.5	31.4
BXIB-L0554A-xxx2500-A-13	700	29.6	32.5	34.5
BXIB-L1092A-xxx3000-A-13	700	40.4	44.3	47.2

Notes for Tables 2 and 3:

1. The designation of xxx in the part number indicates that the values in the table represent all CCT and CRI combinations within the part number family.
2. All values included in the table above are hot stabilized performance with a case temperature ( $T_c$ ) of  $40^\circ\text{C}$  after 60 minutes of operation.
3. Bridgelux maintains a tolerance of  $\pm 0.10\text{V}$  on forward voltage measurements.

# Absolute Maximum Ratings

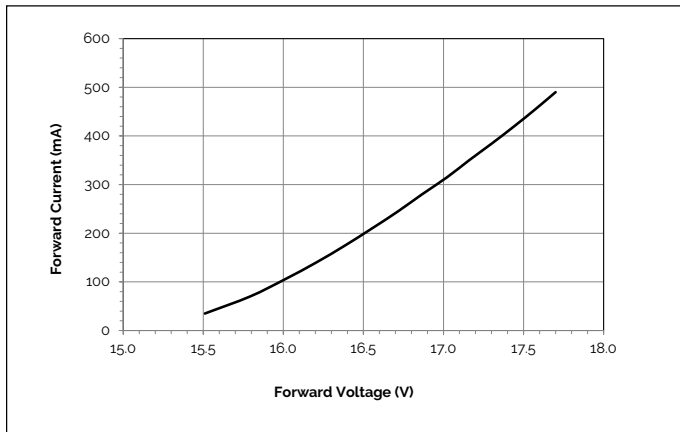
**Table 4:** Maximum Ratings

Parameter	Maximum Rating
Operating Case Temperature (Tc)	-20°C to + 65°C
Storage Case Temperature (Tc)	-20°C to + 80°C

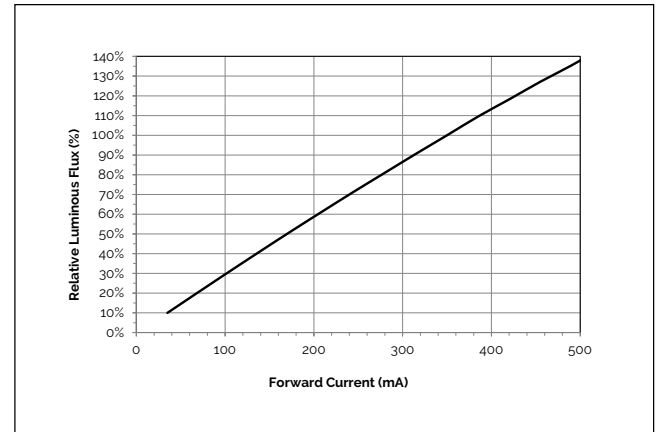


# Performance Curves

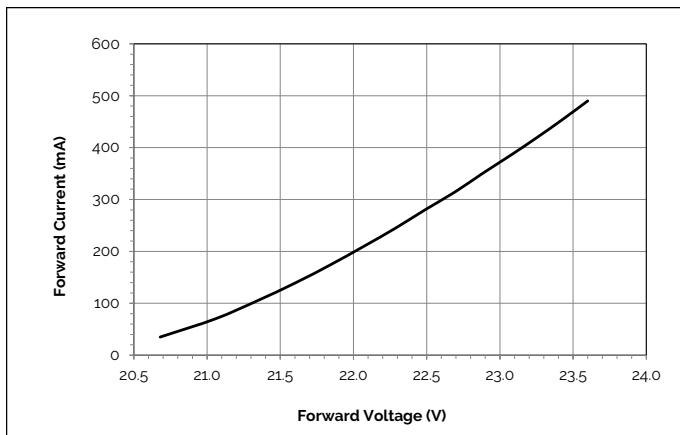
**Figure 1: 9.5" Module Current vs. Forward Voltage,  $T_c=40^\circ\text{C}$**



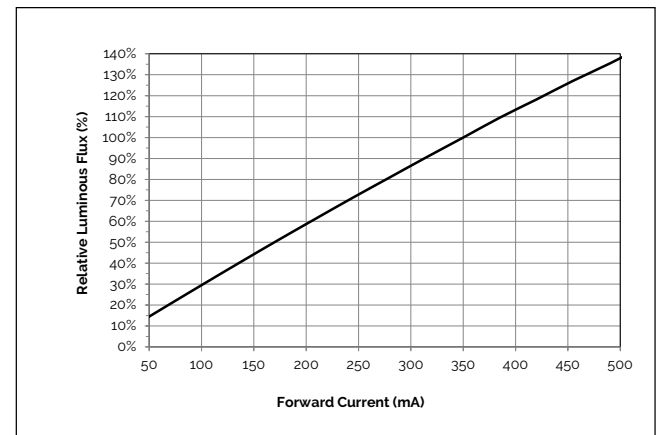
**Figure 2: 9.5" Module Relative Flux vs. Current,  $T_c=40^\circ\text{C}$**



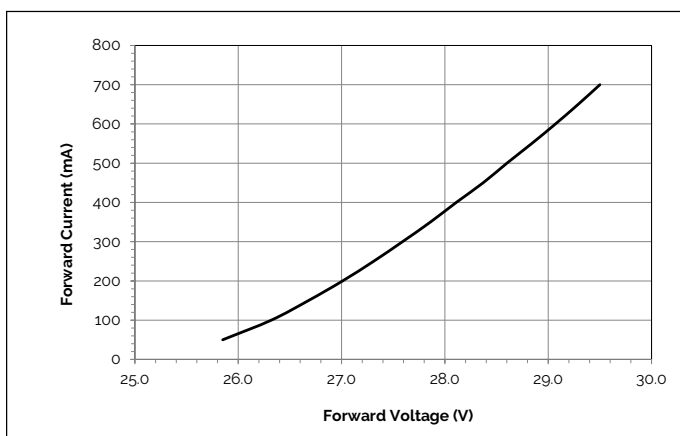
**Figure 3: 12" Module Current vs. Forward Voltage,  $T_c=40^\circ\text{C}$**



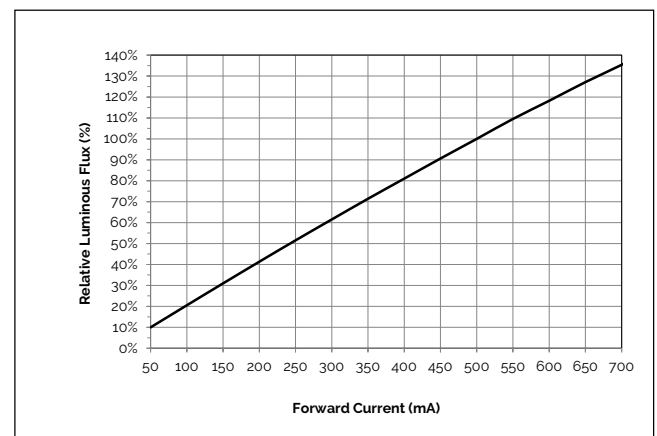
**Figure 4: 12" Module Relative Flux vs. Current,  $T_c=40^\circ\text{C}$**



**Figure 5: 20" Module Current vs. Forward Voltage,  $T_c=40^\circ\text{C}$**

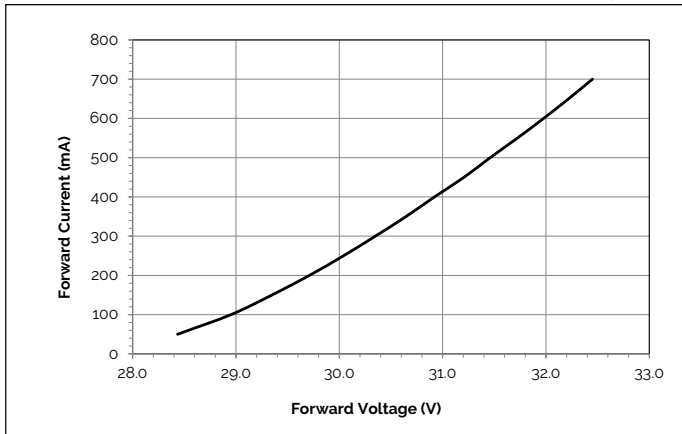


**Figure 6: 20" Module Relative Flux vs. Current,  $T_c=40^\circ\text{C}$**

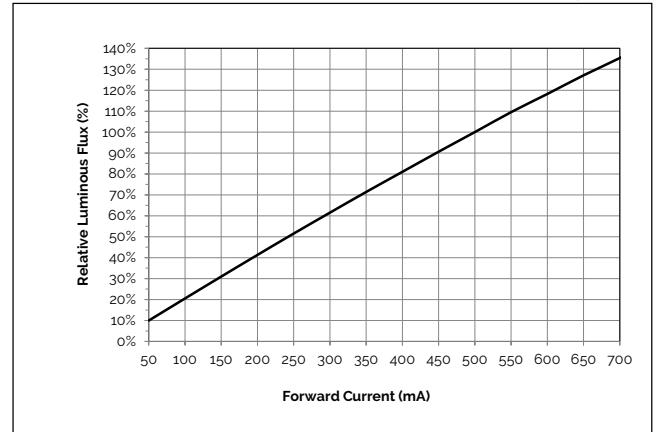


# Performance Curves

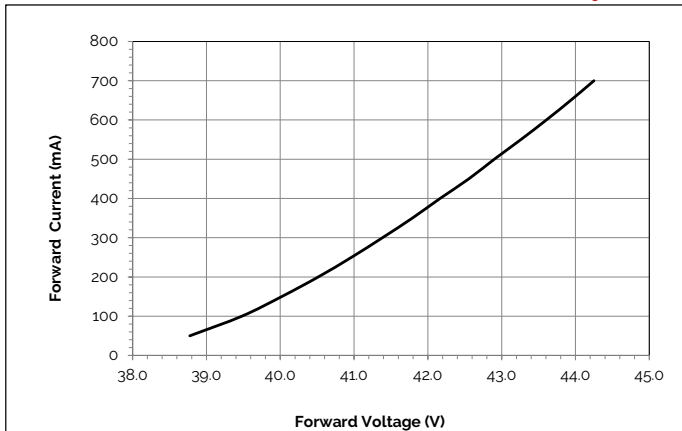
**Figure 7: 21.8" Module Current vs. Forward Voltage,  $T_c=40^\circ\text{C}$**



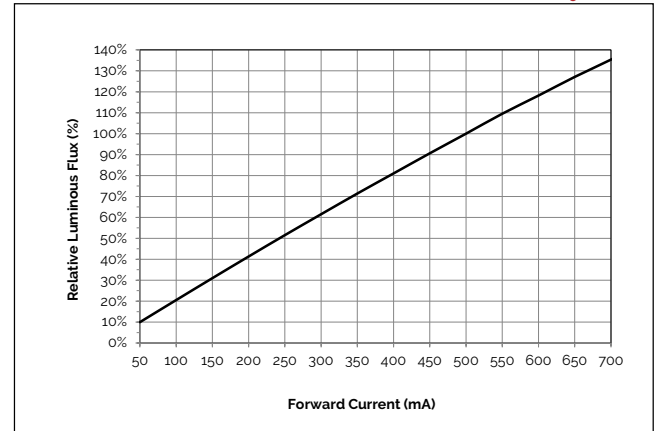
**Figure 8: 21.8" Module Relative Flux vs. Current,  $T_c=40^\circ\text{C}$**



**Figure 9: 43" Module Current vs. Forward Voltage,  $T_c=40^\circ\text{C}$**

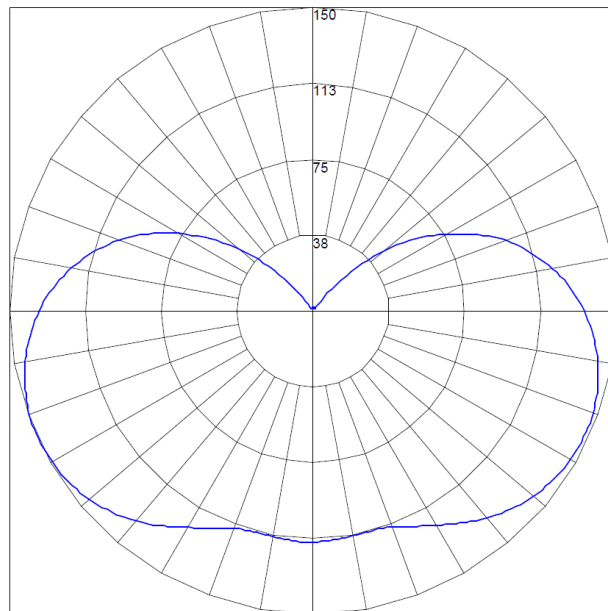


**Figure 10: 43" Module Relative Flux vs. Current,  $T_c=40^\circ\text{C}$**



# Typical Radiation Pattern

**Figure 11: Intensity Distribution**



Notes for Figure 11:

1. The typical cross sectional FWHM beam angle is  $240^\circ$  (i.e. viewed from either end of the module).

# Typical Color Spectrum

Figure 12: Typical Color Spectrum (80 CRI)

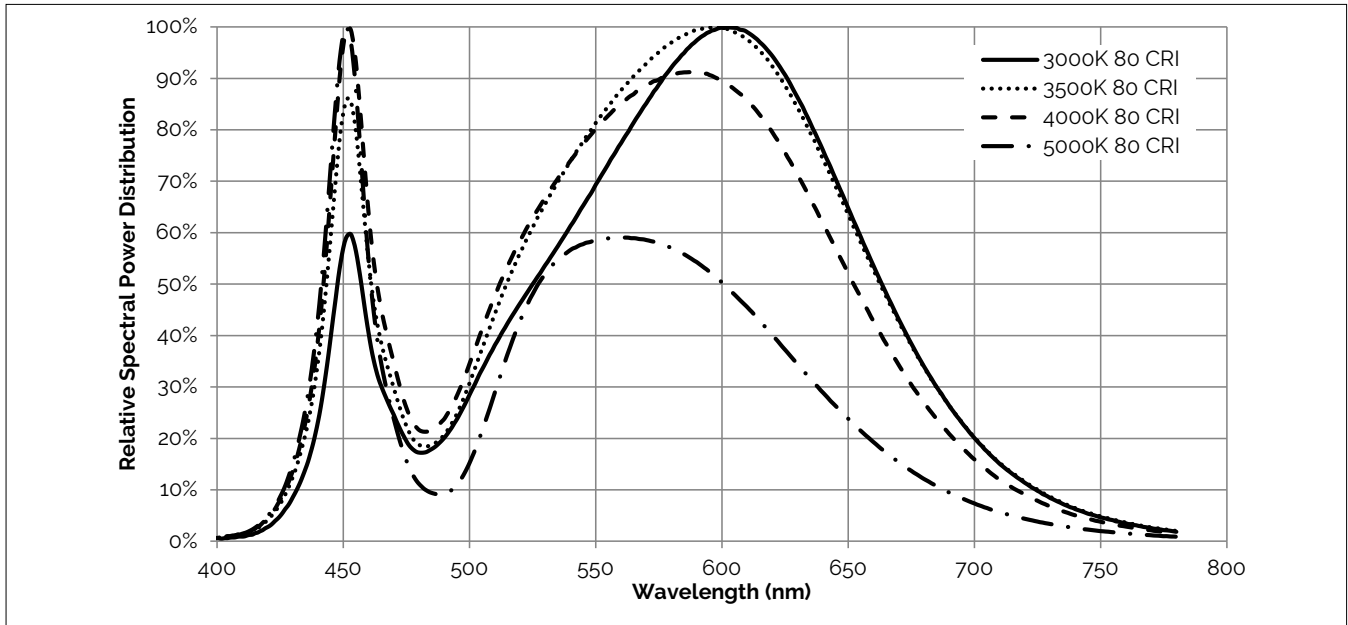
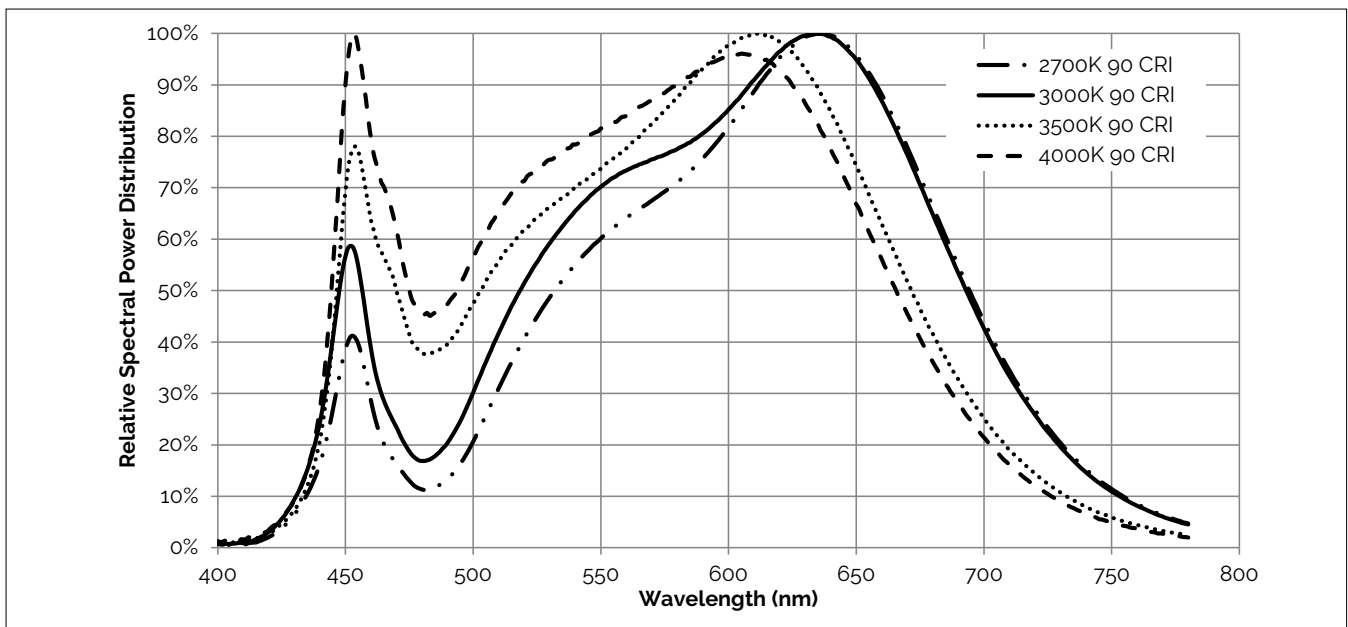


Figure 13: Typical Color Spectrum (90 CRI)

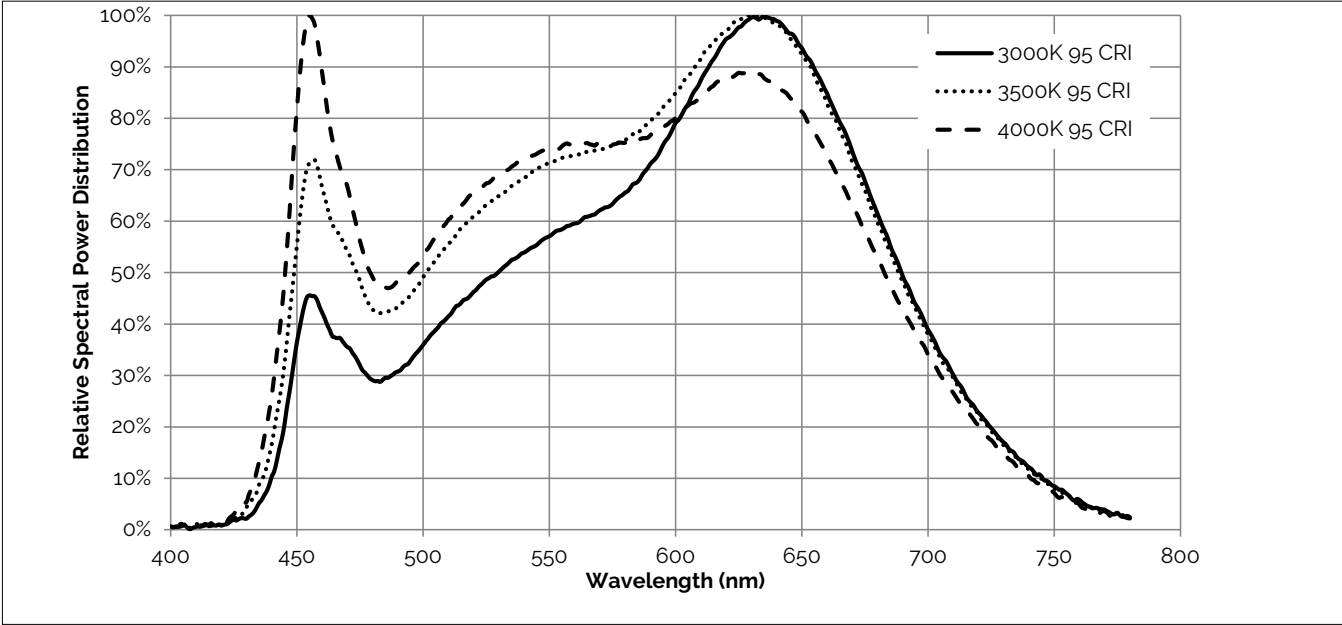


Note for Figures 12 & 13:

1. Color spectra measured at nominal current for  $T_c = 40^\circ\text{C}$ .

# Typical Color Spectrum

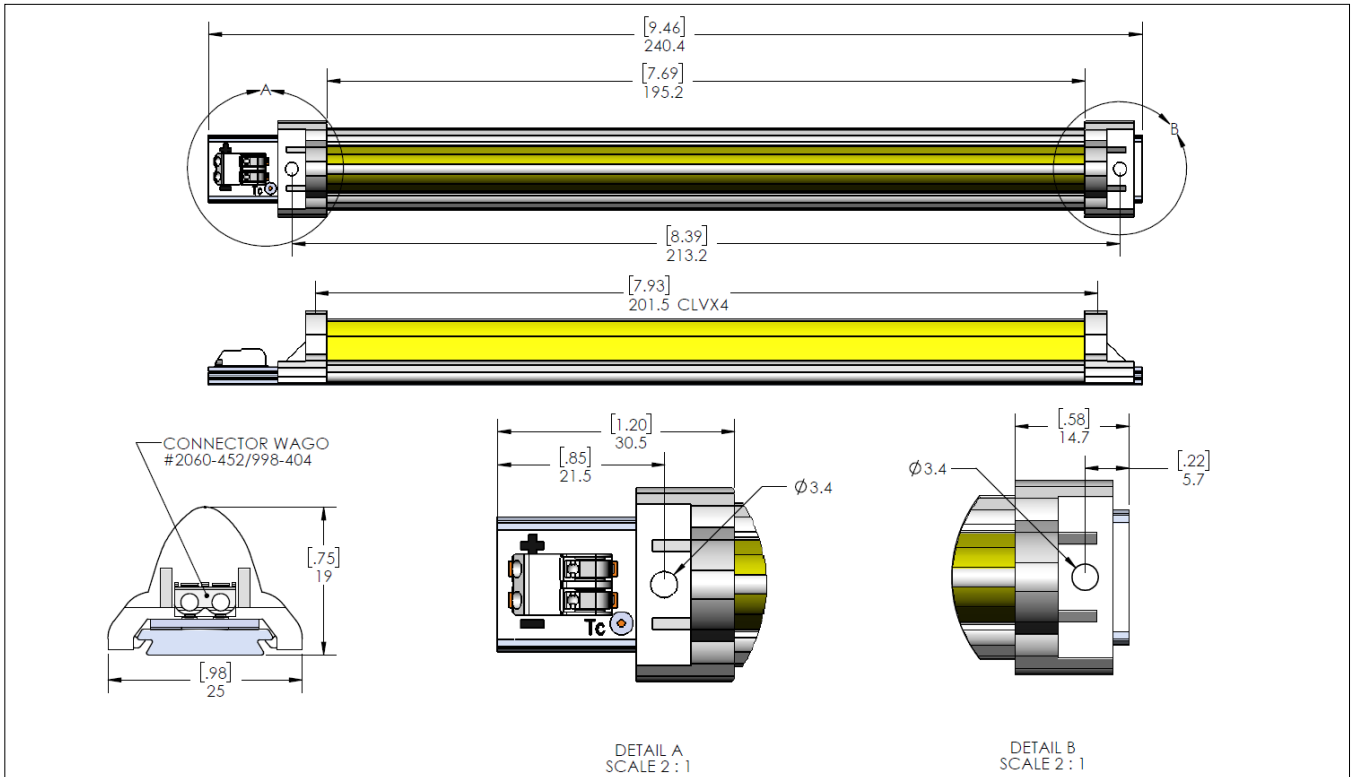
Figure 14: Typical Color Spectrum (95 CRI)



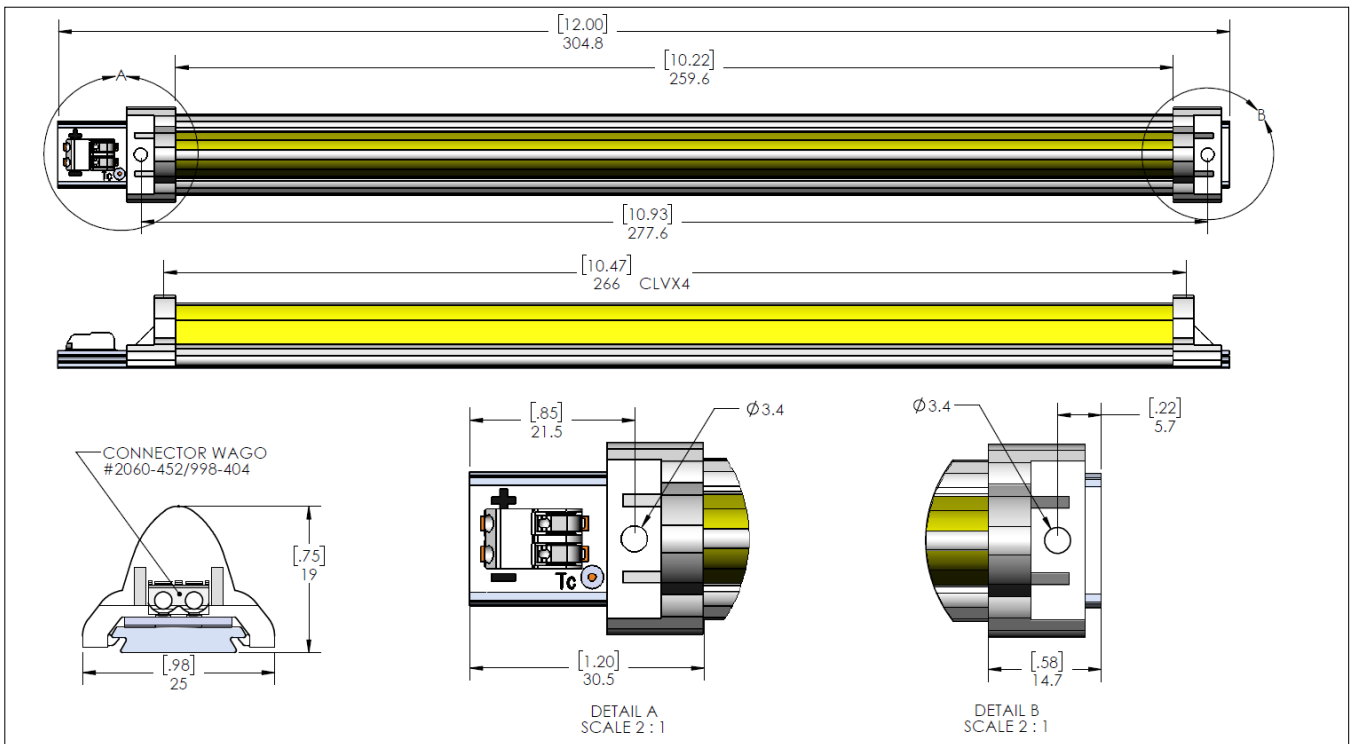
Note for Figure 14:  
1. Color spectra measured at nominal current for  $T_c = 40^\circ\text{C}$ .

# Mechanical Dimensions

**Figure 15: Drawing for IB Series 9 Inch Module**



**Figure 16: Drawing for IB Series 12 Inch Module**



# Mechanical Dimensions

Figure 17: Drawing for IB Series 20 Inch Module

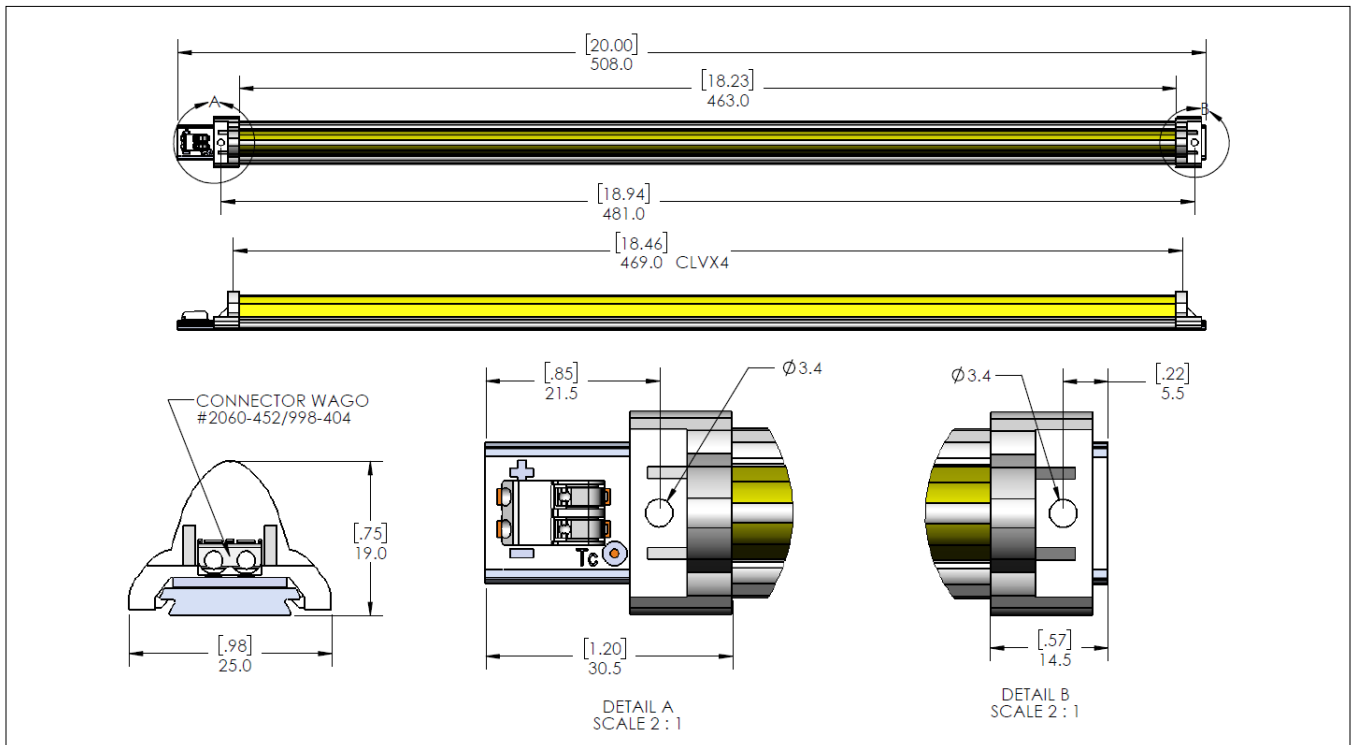
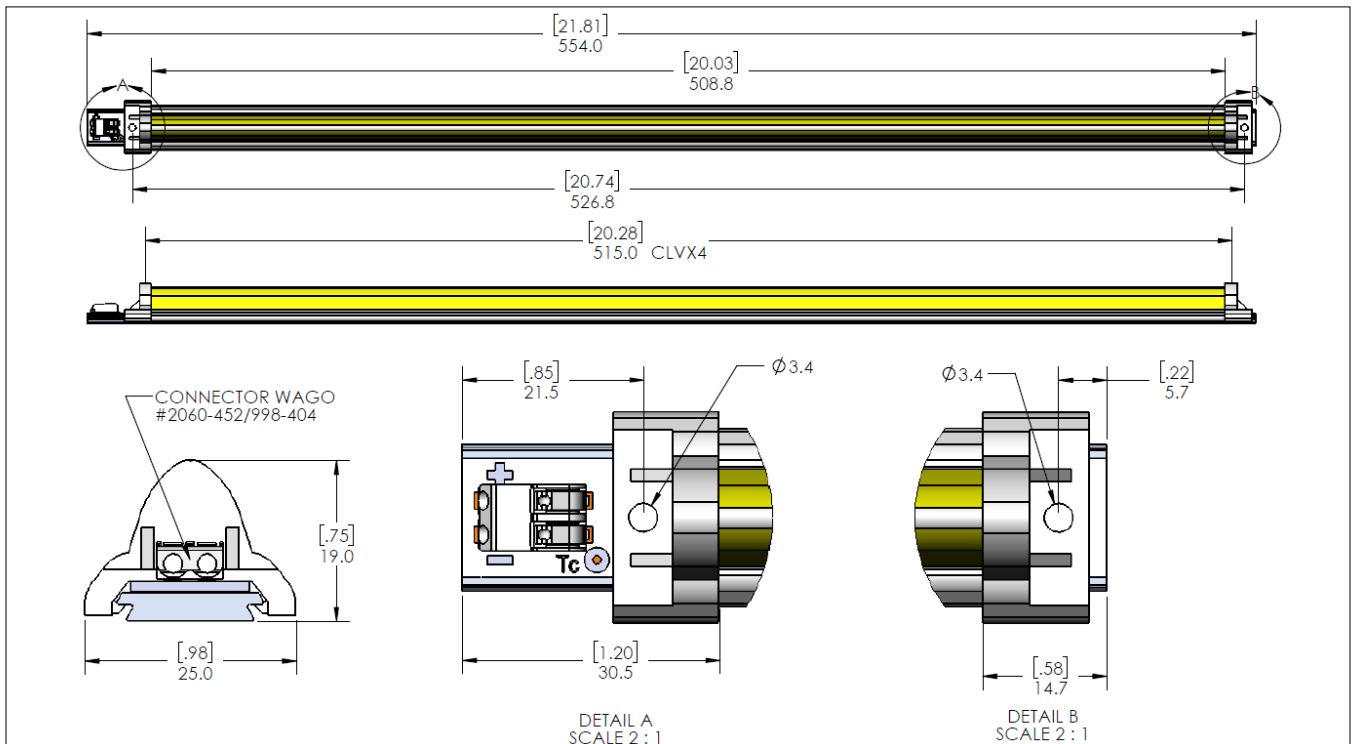
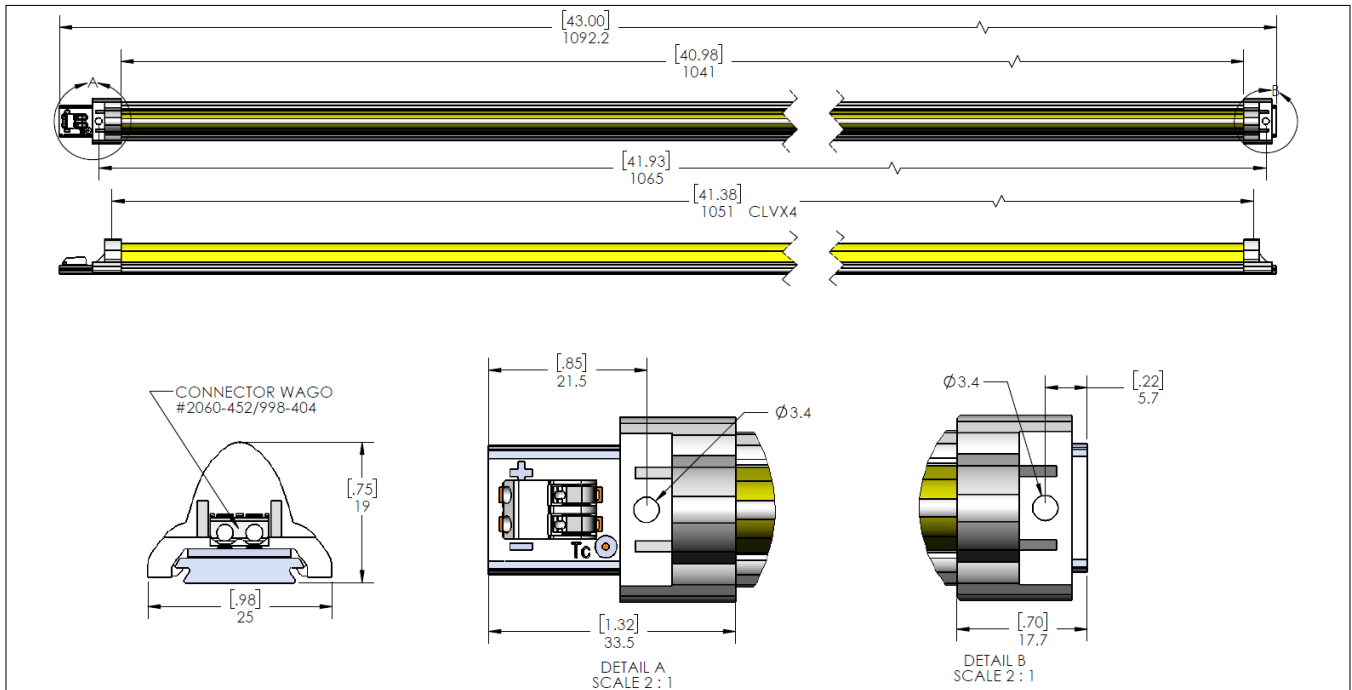


Figure 18: Drawing for IB Series 21.8 Inch Module



# Mechanical Dimensions

**Figure 19: Drawing for IB Series 43 Inch Module**



Notes for Figures 15 - 19

1. Drawings are not to scale.
2. Drawing dimensions are in millimeters.
3. Mount using 2x M3 or #4 fasteners at the ends of the module. Fasteners with flat shoulders (pan, dome, button, round, truss, mushroom) provide optimal torque control. Do NOT use flat, countersink, or raised head fasteners. Washers are recommended.

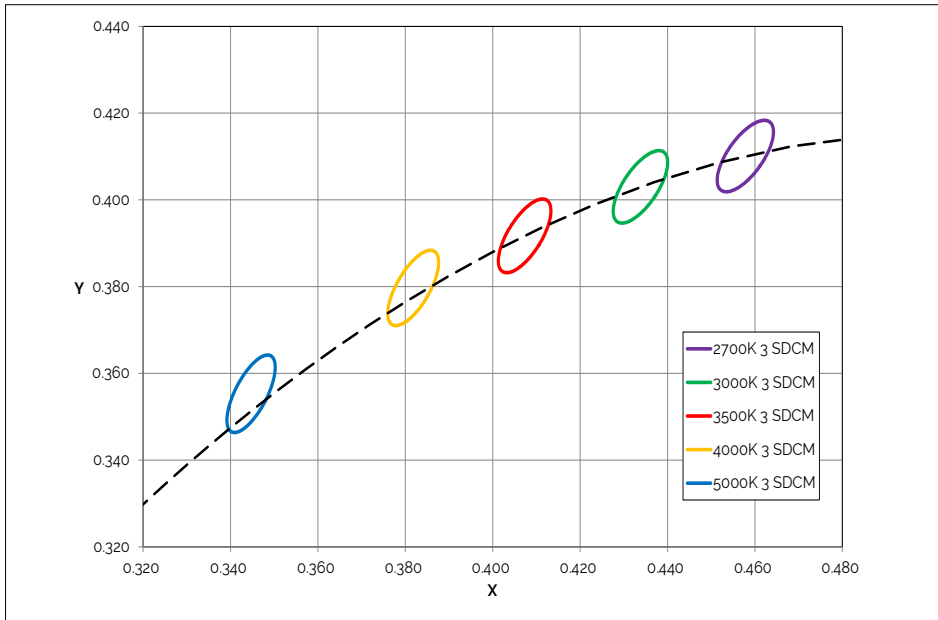
**Table 5: Connector and wiring**

Parameter	Specification
Input wire cross-section	18-24 AWG solid or fine stranded 0.2 - 0.75 mm <sup>2</sup>
Wire strip length	7-9 mm



# Color Binning Information

**Figure 20: Color Point Test Bins in xy Color Space**



Notes for Figure 20:

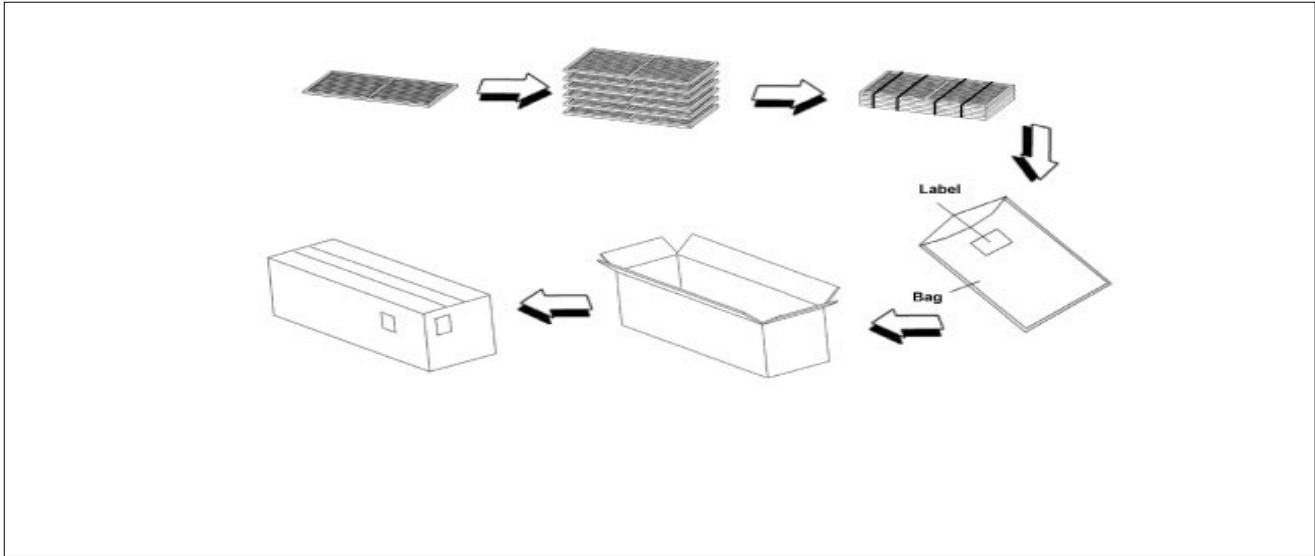
1. All color points are hot stabilized with a case temperature ( $T_c$ ) 40° C after 60 minutes of operation.
2. 3 SDCM color consistency is defined as variation from part to part, color over angle within a part from -90 to +90 degrees from the vertical axis of the part, and over the length of the product. Bridgelux maintains a tolerance of  $\pm 0.5$  SDCM on color consistency measurements.

**Table 6: xy Bin Coordinates and Associated Typical CCT**

Bin Code	2700K	3000K	3500K	4000K	5000K
ANSI Bin (for reference only)	(2780K - 2870K)	(2870K - 3220K)	(3220K - 3710K)	(3710K - 4260K)	(4745K - 5311K)
13 (3 SDCM)	(2651K - 2794K)	(2968K - 3136K)	(3369K - 3586K)	(3851K - 4130K)	(4835K - 5215K)
Center Point (x,y)	(0.4578, 0.4101)	(0.4338, 0.4030)	(0.4073, 0.3917)	(0.3818, 0.3797)	(0.3447, 0.3553)

# Packaging and Labeling

**Figure 21: IB Series Packaging and Labeling**



Note for Figure 21:

1. IB Series modules are packed in trays. Trays are sealed in a bag which is then placed in a box. The box is then labeled with corresponding part number. Only one product (part number) is contained per box.

**Table 7: Packaging Structure**

Product	Value	Tray	Box
9.5 Inch Module	Quantity	20	200
	Dimension	45 cm x 57 cm x 2.5 cm	47 cm x 59 cm x 27 cm
12 Inch Module	Quantity	10	100
	Dimension	40 cm x 36 cm x 2.5 cm	42 cm x 38 cm x 27 cm
20 Inch Module	Quantity	10	100
	Dimension	40 cm x 56 cm x 2.5 cm	42 cm x 58 cm x 27 cm
21.8 Inch Module	Quantity	10	100
	Dimension	45 cm x 62 cm x 2.5 cm	47 cm x 64 cm x 27 cm
43 Inch Module	Quantity	10	50
	Dimension	40 cm x 115 cm x 2.5 cm	42 cm x 117 cm x 15 cm

# Design Resources

## Application Notes

Bridgelux has developed a comprehensive set of application notes and design resources to assist customers in successfully designing with the IB Series product family. For a list of resources, visit [www.bridgelux.com](http://www.bridgelux.com).

## Photometric Files

IES and LDT files are available for the IB Series. For a list of available formats, visit [www.bridgelux.com](http://www.bridgelux.com).

## 3D CAD Models

Three dimensional CAD models depicting the product outline of all Bridgelux IB Series modules are available in STEP format. Please contact your Bridgelux sales representative for assistance.

## Lumen Maintenance

Bridgelux IB Series are predicted to deliver on average  $\geq 70\%$  lumen maintenance after 50,000 hours of operation when driven at their nominal forward current when  $T_c \leq 60^\circ\text{C}$ . LM80 testing is ongoing. Please contact your Bridgelux Sales Representative for more information or visit [www.bridgelux.com](http://www.bridgelux.com).

# Precautions

## CAUTION: CHEMICAL EXPOSURE HAZARD

Exposure to some chemicals commonly used in luminaire manufacturing and assembly can cause damage to the module. Please consult Bridgelux Application Note for additional information.

## CAUTION: EYE SAFETY

Eye safety classification for the use of Bridgelux IB Series is in accordance with IEC/TR62778: Application of IEC 62471 for the assessment of blue light hazard to light sources and luminaires. Please use appropriate precautions. It is important that employees working with LEDs are trained to use them safely.

## CAUTION: RISK OF BURN

Do not touch the IB Series during operation. Allow the module to cool for a sufficient period of time before handling. The IB Series modules may reach elevated temperatures such that could burn skin when touched.

## CAUTION

If parts require cleaning, use a lint free tissue, isopropanol (IPA), or a mild detergent. Dry using compressed clean dry air (CDA).

# Disclaimers

## STANDARD TEST CONDITIONS

Unless otherwise stated, linear testing is performed at the nominal drive current.

## MINOR PRODUCT CHANGE POLICY

The rigorous qualification testing on products offered by Bridgelux provides performance assurance. Slight changes that do not affect form, fit, or function may occur as Bridgelux continues product optimization.

# About Bridgelux: Bridging Light and Life™

At Bridgelux, we help companies, industries and people experience the power and possibility of light. Since 2002, we've designed LED solutions that are high performing, energy efficient, cost effective and easy to integrate. Our focus is on light's impact on human behavior, delivering products that create better environments, experiences and returns—both experiential and financial. And our patented technology drives new platforms for commercial and industrial luminaires.

**For more information about the company, please visit**

**[bridgelux.com](http://bridgelux.com)**

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**Bridgelux IB Series Data Sheet DS340 Rev. A (06/2018)**

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