Tape Light

SkyBlue™ LED Circadian Solutions

Circadian Lighting Without Compromise

BIOS SkyBlue™ Circadian LED solutions include a blue peak at 490nm, giving you the health and wellness benefits of a "blue sky", supporting healthy circadian rhythms and improved daytime alertness. BIOS Tape Light have standardized features that make it easy to design and control troffers, linear pendants, and cove-mounted fixtures, etc. for circadian lighting - without compromising color temperature or requiring additional illumination.

Daytime + Evening Solutions

BIOS Tape Light are available for Day-to-Evening applications: Biological Dynamic and Biological Tunable.

BIOS Day-to-Evening Solutions			
Tunable		Dynamic	
Daytime Spectrum	Evening Spectrum	Daytime Spectrum	Evening Spectrum
3000K	2700K	3000K	2700K
3500K	2700K	3500K	3000K
4000K	2700K	4000K	3500K

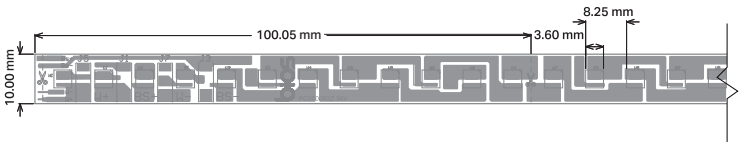
Daytime Only Solutions

BIOS Tape Light are also available in Biological Static SkyBlue™ spectrum for maximum daytime wellness. BIOS Static SkyBlue™ Solutions are ideal for day-only applications (such as offices, schools, outpatient clinics, etc.).

Tape Light Features + Applications

Tape Light Features

- Environmentally friendly: RoHS and REACH compliant
- 'UL Recognized' component
- Cuttable 100mm (nominal 4") increments
- 3M Adhesive Back



Luminaire Profiles

- Troffers
- Linear Fixtures
- Cove Uplight
- Specialty
- Decorative
- Pendants
- Retrofit

Applications

- Healthcare Facilities
- Schools
- Senior Living
- NICU
- Factories
- Offices
- Outpatient
- Clinics
- WELL Buildings
- Sport Facilities
- Hospitality
- Retail
- Residential

[1] The melanopic rations (m/p) provided have been calculated using the WELL v2 methodology. Corresponding CIE melanopic Daylight Equivalent Ratios (m-DER) can be extrapolated by applying a 10% reduction to the m/p ratios as shown.

Pursuant to the terms and conditions set forth in our Limited Warranty. Biological Innovation and Optimization Systems. LLC ("BIOS") warrants its BIOS SkyBlue™ COB. Linear and Tape LED components (collectively known as the "Product") against defects in materials or workmanship for a period of five (5) years from the original date of purchase.

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Tape Light

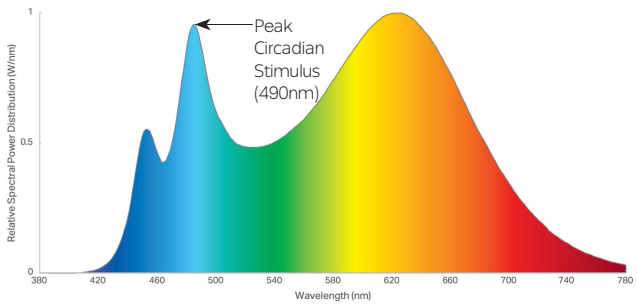
SkyBlue™ LED Circadian Solutions

Tape Light Spectral Power Distribution

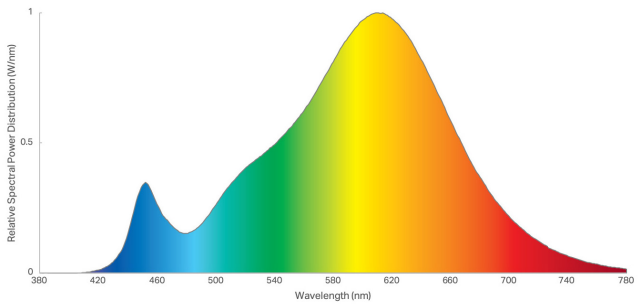
BIOLOGICAL TUNABLE WHITE SPECTRUM

Daytime ⟶ Evening

BIOS SkyBlue™ 3500K
High Melanopic Ratio (M/P)
M/P = 0.83



BIOS 2700K (SkyBlue™ removed)
Low Melanopic Ratio (M/P)
M/P = 0.47

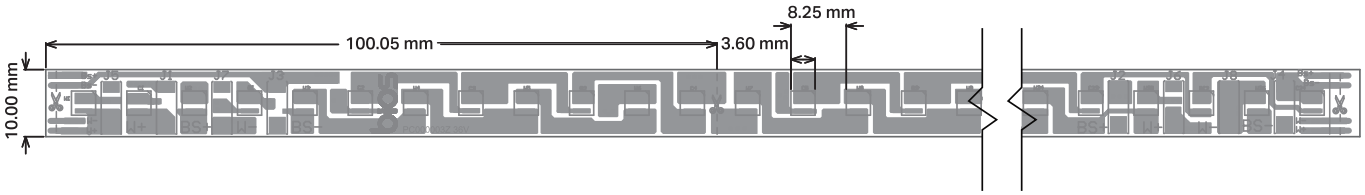


Note: BIOS Biological Static Solutions includes BIOS SkyBlue™ Daytime Spectra only. BIOS Biological Dynamic and Biological Tunable Solutions include both SkyBlue™ Daytime and BIOS Evening Spectra.

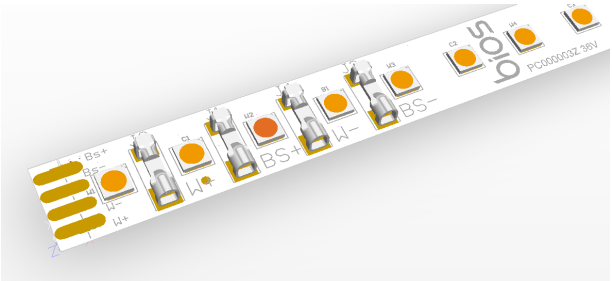
Tape Light Dimensions and Details

TAPE 100 x 10 (BH-XTAP-8XX-010100-1)

Cuttable Tape (100mm lengths), Reel size 4.8m



Connector Details



Connector Manufacturer / Part No: TE #2834010-3
Connector Height: 2.45 mm (0.096 in.)
Connector placed at 400 mm increments

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Tape Light

SkyBlue™ LED Circadian Solutions

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Linear Array Part Number Details

BH — _____ TAP — 8 _____ — _____ 10100 — 1

Tape Type

0 - Product Reel
S - Sample Cut Lengths*

*Tape Light Samples come in individual 100mm cut lengths

Daytime CCT

30 - 3000K
35 - 3500K
40 - 4000K

BIOS Engine

0 - Biological Static or Biological Tunable
D - Biological Dynamic

Tape Light

SkyBlue™ LED Circadian Solutions

Tape Light - Full Part Numbers

BIOLOGICAL STATIC / BIOLOGICAL TUNABLE

BIOS SkyBlue™ Performance Characteristics

Data Shown for Ambient Temperature (T_a) = 25°C

BIOS Part Number	Profile	CCT		Current		Lumens		Efficacy	CRI	R9	COI	COI_{10}[1]
		Daytime	Evening[2]	Nominal	Max.	Nominal	Max.	Typ. lm/W				
BH-0TAP-830-010100-1	*Tape*	3000K	2700K	150	300	725	1300	145	81	90	6	5.4
BH-0TAP-835-010100-1	*Tape*	3500K	2700K	150	300	750	1350	153	84	96	4	3.3
BH-0TAP-840-010100-1	*Tape*	4000K	2700K	150	300	775	1400	160	84	95	2.6	1.5

BIOLOGICAL DYNAMIC

BIOS SkyBlue™ Performance Characteristics

Data Shown for Ambient Temperature (T_a) = 25°C

BIOS Part Number	Profile	CCT		Current		Lumens		Efficacy	CRI	R9	COI	COI_{10}[1]
		Daytime	Evening[2]	Nominal	Max.	Nominal	Max.	Typ. lm/W				
BH-0TAP-830-D10100-1	*Tape*	3000K	2700K	150	300	725	1300	145	81	90	6	5.4
BH-0TAP-835-D10100-1	*Tape*	3500K	2700K	150	300	750	1350	153	84	96	4	3.3
BH-0TAP-840-D10100-1	*Tape*	4000K	2700K	150	300	775	1400	160	84	95	2.6	1.5

[1] **COI_{10}**: Cyanosis Observation Index using the CIE 2006 Color Matching Functions. COI is color fidelity of oxygenated blood and cyanosed blood relative to a 4000K reference.

[2] ***Evening spectra are only available for Biological Tunable and Biological Dynamic Solutions.*** BIOS Biological Static solutions only include BIOS SkyBlue™ daytime spectrum.

[3] M/P - The melanopic ratios (m/p) provided are m-EER values from the Lucas, et al. model. Corresponding CIE melanopic Daylight Equivalent Ratios (m-DER) can be extrapolated by applying a 10% reduction to the m/p ratios as shown.

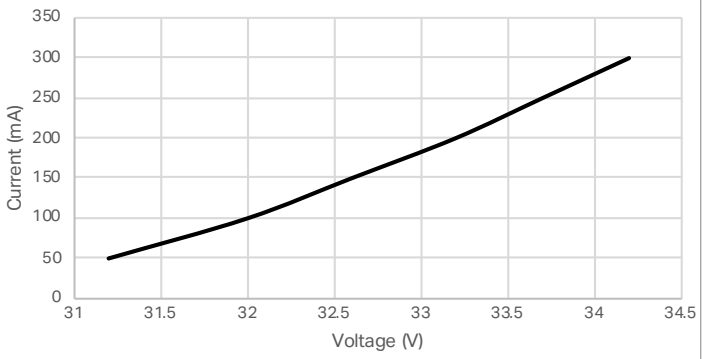
Note: All performance characteristics provided in this document are taken on bare LED boards and do not account for changes which may occur once the module is installed within a luminaire.

Tape Light

SkyBlue™ LED Circadian Solutions

Tape Light - Current vs Voltage

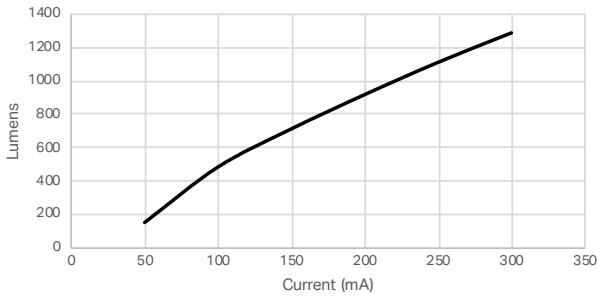
TAPE 100 x 10 (BH-XTAP-8XX-010100-1)



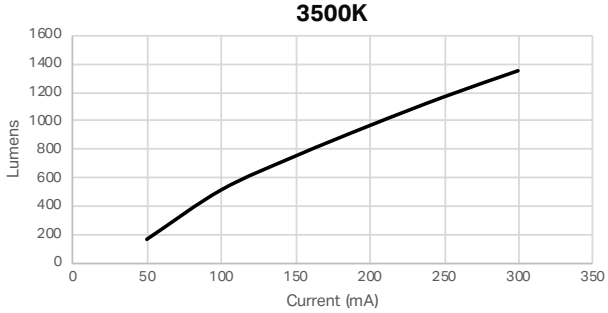
Tape Light - Lumen vs Current

TAPE 100 x 10 (BH-XTAP-8XX-010100-1)

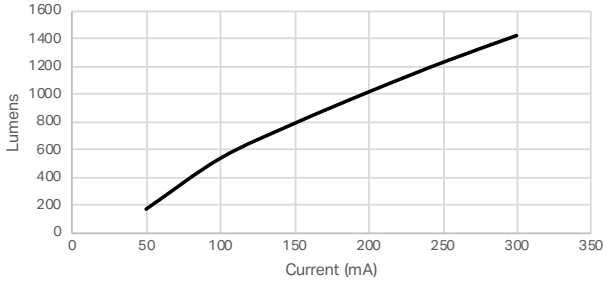
3000K



3500K



4000K



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Tape Light

SkyBlue™ LED Circadian Solutions

Bio-Dimming™ Module Details

Overview

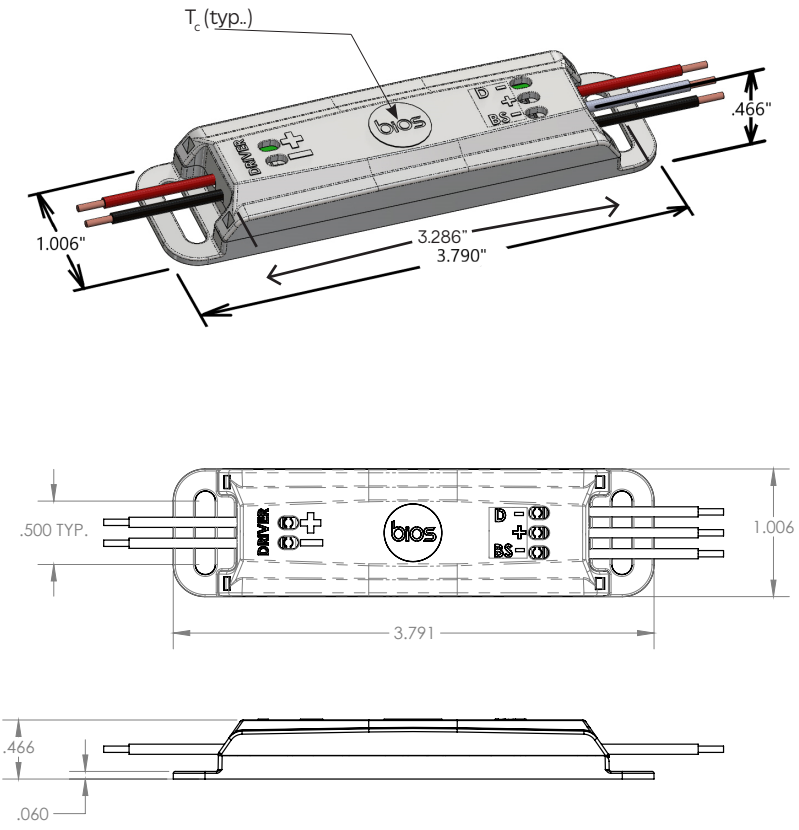
To achieve effective circadian lighting, it is important to create biologically brighter days and darker nights. The BIOS Bio-Dimming™ Module is designed to integrate that concept into a single dimming interface. The Bio-Dimming™ Module senses current from the single channel LED driver and steers that current to daytime and evening LED strings accordingly.

The BIOS Bio-Dimming™ Module responds to the driver output current, not the control interface that adjusts it, therefore it is compatible with all standard control protocols (DALI, 0-10V, etc.). For additional information, please visit www.bioslighting.com

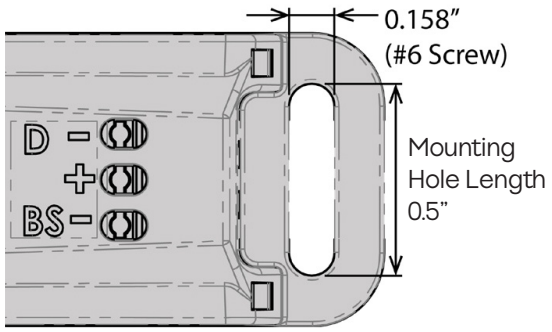
For Biological Dynamic or Biological Tunable, BIOS SkyBlue™ is removed when transitioning from daytime to evening. Between 100-75% intensity will be relatively constant, but the spectrum will shift to the evening spectrum linearly. Dimming beyond 75% will reduce intensity using this evening light spectrum.

Note: Biological Tunable (two-channel applications) do not use a Bio-Dimming™ Module. For additional information on two-channel applications, please refer to BIOS "Linear Tape Light 2 Channel Application Note" document on the BIOS website.

Bio-Dimming™ Module Dimensions



Bio-Dimming™ Module Mounting Hole Detail



- Works with most single channel constant current drivers
- Works with any dimming protocol (0-10 V, DMX, ELV, DALI, etc.)
- **Case Temperature (T_c) - 70° max.**

Notes:

- T_c point to be measured on the top of Bio-Dimmer™ housing at the BIOS logo.
- All dimensions shown are in inches.

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Tape Light

SkyBlue™ LED Circadian Solutions

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Bio-Dimming™ Module Part Numbers

BIOS Part Number	Compatible BIOS Light Engine	Compatible BIOS Profile	CCT	Voltage (V)		Current (A)		Operational Temp (°C)
				Min.	Max.	Min.	Max.	Max.
BH-0DIM-830-LINARH-1	Biological Tunable	Tape Light	All	22	60	0.2	3	70
BH-5DIM-835-LINARH-1	Biological Dynamic							

Bio-Dimming™ Module Technology Guide

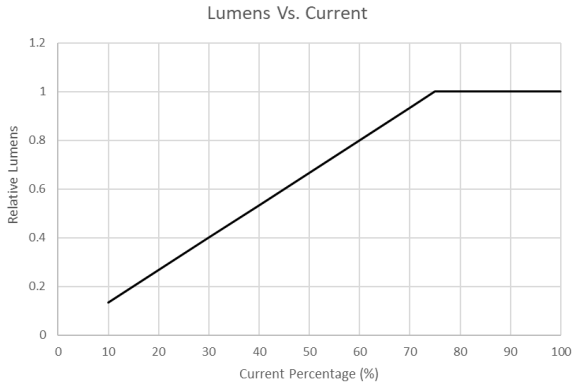
BIOS LED Solution	Required Bio-Dimming™ Module?	CCT Note	Lighting Controls Note	BIOS SkyBlue™ (490nm)
	Linear Array			
Biological Static	No	No CCT Change	Intensity Dimming Control Only	Daytime SkyBlue™ Spectrum Always Present
Biological Dynamic	Yes	**"500K Shift"** 4000K dims to 3500K 3500K dims to 3000K 3000K dims to 2700K	Intensity Dimming + Spectrum Change Controlled **Together**	Daytime SkyBlue™ Spectrum removed with Bio-Dimming™
Biological Dynamic (Two-Channel)	No	**"500K Shift"** 4000K dims to 3500K 3500K dims to 3000K 3000K dims to 2700K	Intensity Dimming + Spectrum Change Controlled Separately	Daytime SkyBlue™ Spectrum removed by adjusting "Spectrum Channel"
Biological Tunable (Single-Channel)	Yes	**"Dims to 2700K"** 4000K dims to 2700K 3500K dims to 2700K 3000K dims to 2700K	Intensity Dimming + Spectrum Change Controlled **Together**	Daytime SkyBlue™ Spectrum removed with Bio-Dimming™
Biological Tunable (Two-Channel)	No	**"Dims to 2700K"** 4000K dims to 2700K 3500K dims to 2700K 3000K dims to 2700K	Intensity Dimming + Spectrum Change Controlled Separately	Daytime SkyBlue™ Spectrum removed by adjusting "Spectrum Channel"

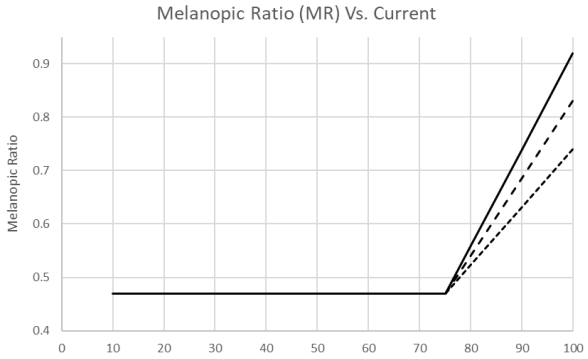
Tape Light

SkyBlue™ LED Circadian Solutions

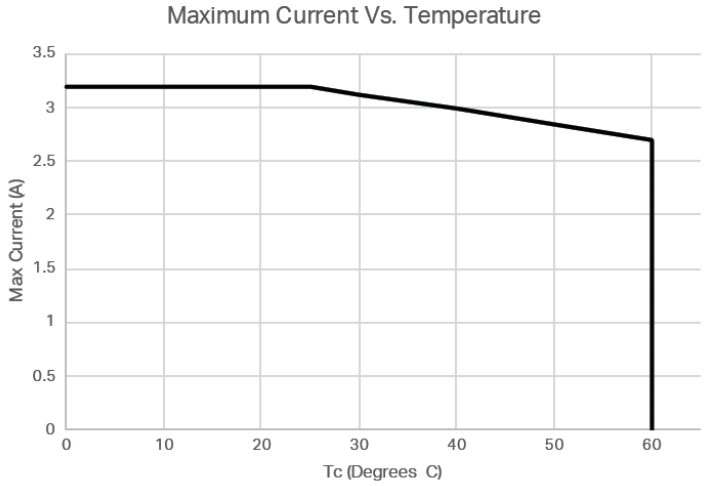
Bio-Dimming™ Performance Characteristics

SkyBlue™ Linear Array / Tape Light + Dynamic Bio-Dimming™ Module*
**Measurements taken at the LED Board*





SkyBlue™ Linear Array / Tape Light + Dynamic Bio-Dimming™ Module*
**Measurements taken at the LED Board*



Tape Light

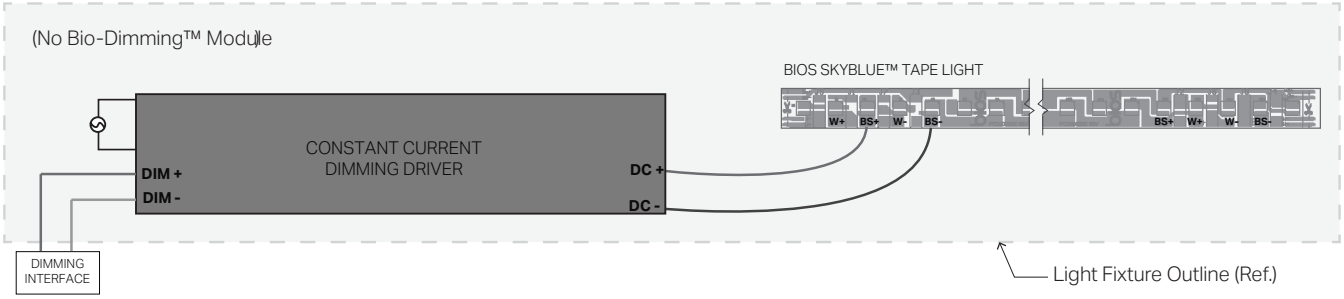
SkyBlue™ LED Circadian Solutions

Tape Light Single-Channel Driver Wiring Diagram

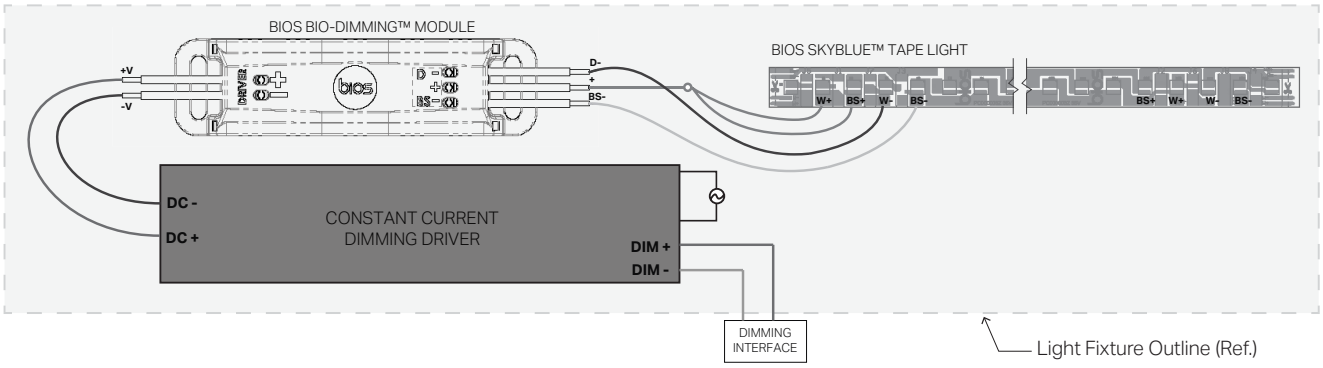
Overview

BIOS SkyBlue™ Tape Light includes 3M adhesive backing and is cuttable every 4" (100mm). BIOS Biological Dynamic and Biological Tunable Engines for Single-Channel Applications require the use of a compatible Bio-Dimming™ Module. BIOS Biological Static Engines do not require the use of the Bio-Dimming™ Module for Tape Light profiles (see Static Solution wiring diagram below).

Biological Static
Tape Light (Series)



Biological Tunable | Biological Dynamic
Linear Array (Series)



Note: To avoid voltage drop and maintain light uniformity, the disatance between wire inputs and the end of usable tape or between multiple wire inputs should not exceed 4ft (1.2 m). For run lengths greater than 4', wire inputs should be located at the center of the tape. Run lengths greater than 8' require multiple wire inputs.

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SkyBlue™-Tape-Light-Spec-Sheet-REV2 - April 29, 2025

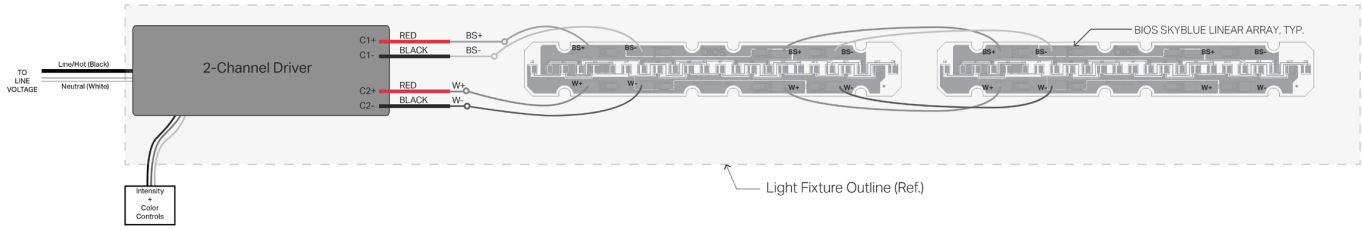
Tape Light

SkyBlue™ LED Circadian Solutions

Tape Light Two-Channel Driver Wiring Diagram

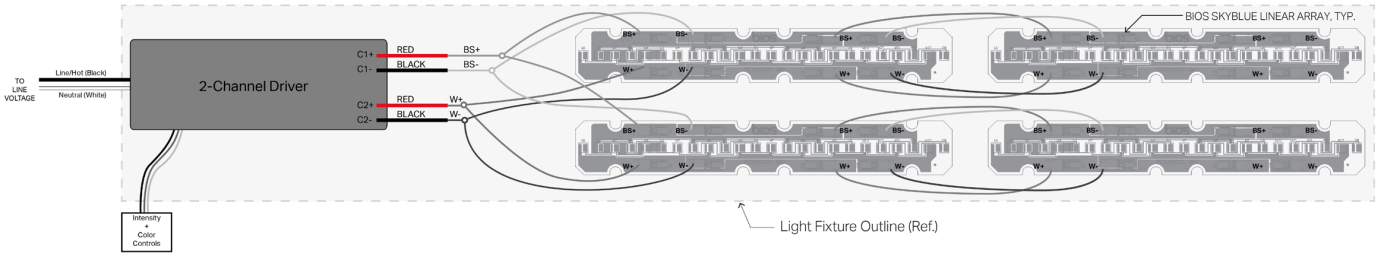
Biological Tunable | Biological Dynamic

Linear Arrays / Tape Light (Series)



Biological Tunable | Biological Dynamic

Linear Arrays / Tape Light (Series)



For additional information about BIOS Solutions and 2-Channel Drivers, please refer to "BIOS_Linear_Tape_2-Channel App_Note.pdf" at www.bioslighting.com

Note: To avoid voltage drop and maintain light uniformity, the disatance between wire inputs and the end of usable tape or between multiple wire inputs should not exceed 4ft (1.2 m). For run lengths greater than 4', wire inputs should be located at the center of the tape. Run lengths greater than 8' require multiple wire inputs.

Tape Light

SkyBlue™ LED Circadian Solutions

How to Create a BIOS Ordering Code

Step 1 - Select Tape Light
Step 2 - Select your daytime CCT
Step 3 - Select the BIOS Light Engine
(Biological Static, Biological Dinamic, Biological Tunable (single or two-channel)
Step 4a - Build the Tape Light Light Engline Part Number (Refer to page 4)
Step 4b - Add the corresponding Bio-Dimming™ Module Part Number (Refer to page 7)
Step 5 - Build your complete BIOS Solution Ordering Code (see example below)

Building A Complete BIOS Ordering Code

Use the ordering code information in the table below to build your BIOS order.
You must provide BOTH a **BIOS Tape Light Profile Part Number** and **Bio-Dimming™ Module Part Number** to complete your ordering code.

Complete Ordering Code Example for *BIOS 3500K Tape Light*

BIOS Tape Light Profile		Bio-Dimming™ Module
BH - **0**TAP - 8**35** - 0101000 - 1	+	BH - **5**DIM - 000 - LINARH - 1

BIOS SkyBlue™ Tape Light Circadian Solution	BIOS Light Engine Part Number		Bio-Dimming™ Module Part Number
Biological Static	Refer to page 4 for part numbers		N/A
Biological Dynamic Bio-Dimming™ (Single Channel Control)	Refer to page 4 for part numbers	+	Refer to page 7 for corresponding Bio-Dimming™ Module part number
Biological Dynamic (Two-Channel Control)	Refer to page 4 for part numbers		N/A
Biological Tunable Bio-Dimming™ (Single Channel Control)	Refer to page 4 for part numbers	+	Refer to page 7 for corresponding Bio-Dimming™ Module part number
Biological Tunable (Two-Channel Control)	Refer to page 4 for part numbers		N/A

Tape Light

SkyBlue™ LED Circadian Solutions

BIOS Safety + Handling Notes

BIOS products are designed for robust performance in general lighting applications; however, care must be taken when handling and assembling the LEDs within their luminaires. To avoid damage, please refer to the following application notes and guidelines, which outline recommended care and handling practices when working with these devices. For more detailed information, please visit the BIOS website at www.bioslighting.com.

Safety

Only qualified personnel should perform the installation. Ensure the power is disconnected to avoid electrical shock and/or component damage.

Static Electricity

LEDs are electronic devices that can be damaged by electrostatic discharge (ESD). Please take appropriate measures to ensure the devices do not experience ESD during handling and/or storage. ESD protection guidelines should always be used when working with LEDs.

Storage

BIOS products are delivered in ESD-shielded bags and should be stored in these bags until used.

Assembly

Individuals handling LEDs during assembly should be trained in ESD protection practices. Assemblers should maintain constant conductive contact with a path to ground using a wrist strap, mat, or other ESD protection system.

Transporting

When transporting the devices from one assembly area to another, ESD-shielded carts and carriers should be used.

Thermal Interface Material (TIM)

Proper thermal management is critical for the successful operation of any LED system. Excess operating temperature can reduce the device's light output, and excessive heating can cause permanent damage. Proper TIM is a crucial component for effective heat transfer away from the LED during normal operation. Please refer to the BIOS website for specific recommendations for TIM solutions.

Human Eye Safety

Caution must be taken not to stare at the light emitted from BIOS LEDs, as severe eye damage may occur.