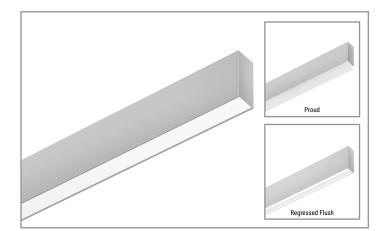
| Project | Catalog # | Туре | |
|-------------|-----------|------|--|
| Prepared by | Notes | Date | |



NeoRay

Define 2

2" LED Wall Direct/Indirect

Typical Applications

Office • Education • Healthcare • Hospitality • Retail















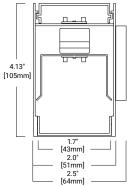


- Order Information page 2
- Product Specification page 3
- Photometric Data page 4
- Performance Data page 4
- VividTune page 6
- BioUp page 8

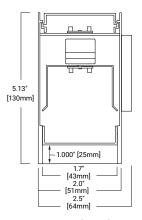
Top Product Features

- · Wall Slot family in 2", 3", 4" and 5" housing sizes
- · Specifiable to the nearest foot
- · Satin, Asymmetric and Drop Direct Lensing available, Satin and Raised Indirect Lensing available
- · Independently specifiable Direct / Indirect lumen packages
- 0-10V dimming standard; DALI dimming available
- · 2700K, 3000K, 3500K, 4000K, and 5000K correlated color temperatures available
- Available in VividTune and BioUp Technology
- · Options to meet Buy American Act requirements

Dimensional and Mounting Details







Regressed Housing





Order Information

SAMPLE ORDER NUMBER: S122RDIW-C675D435U835-4F0-1T-UDD-D2-W

Icon Key:

Grey bar denotes available with 10-Day Quick Spec Ø Consult factory for availability

| Domestic Preference | Series | Light Engine | Lumen Package Down (Lms/ft) | Lumen Package Up (Lms/ft) | CRI | LED CCT | Luminaire Length (Ft) | Max section length | Circuiting |
|--|---|---|--|---|---|---|--|--|---|
| [Blank]=Standard BAA=Buy American Act | QS-S122DIW= Define 2 Direct / Indirect Wall Quick Spec S122DIW=Define 2 Direct / Indirect Wall S122RDIW=Define 2 Regressed Direct / Indirect Wall | C=Core H=High Performance V=VividTune Ø B=BioUp | 290D=290 Lms/ft (2.9W/ft) 485D=485 Lms/ft (4.8W/ft) 675D=675 Lms/ft (6.7W/ft) 865D=865 Lms/ft (8.8W/ft) 1005D=1005 Lms/ft (10.6W)D=Custom Lms/ft Ø | 435U=435 Lms/ft (2.9W/ft) 710U=710 Lms/ft (4.8W/ft) 970U=970 Lms/ft (6.8W/ft) 1240U=1240 Lms/ft (9.0W/ft) 1440U=1240 Lms/ft (10.7W/ft)U=Custom Lms/ft Ø | 8=80 9=90 B= BioUp | 27=2700K 30=3000K 35=3500K 40=4000K 50=5000K 2765=2700K-6500K 3050=3000K-5000K 2750=2700K-5000K | _F0=Nominal length 4F0= 4' Nominal Length 8F0=8' Nominal LengthF0=4' Incremental Run (e.g. 40F0 = 40'0") | (blank)=12ft (std) /8=8ft | 1=Single Circuit 2=Dual Circuit S=Secondary Circuit |
| Notes | Notes | Notes | Notes | Notes | | Notes | Notes | Notes | Notes |
| Only product configurations with this designated prefix are built to be compliant with the Buy American Act of 1933 (BAA). Please refer to DOMESTIC PREFERENCES website for more information. Components shipped separately may be separately analyzed under domestic preference requirements. | RDIW regress of 1" will add an additional 1" to fixture depth. | See performance table for add'l details. Light engine must be consistent across run length. V option requires lumen package of 675 Ims/ft or greater. | 3500K/80CRI/DIP/F Lens. Please refer to scaling data for other variables. For custom lumen output, please refer to additional information on page 4. Refer to BioUp Driver Tables on page 7 for light level availability. | 3500K/80CRI/No Lens. Please refer to scaling data for other variables. For custom lumen output, please refer to additional information on page 4. 1080 Lms/ft not valid with DALI or Lutron Drivers. Refer to BioUp Driver Tables on page 7 for light level availability. | apply for configura VividTune light engi B40, B50, configura CRI range BioUp Tei | Il lead-time and cost may 927, 930, 935 and 940 100ns. 92765 and 940 10ns. 92765 and 9405 e configurations require V ne and W2A driver. B35, B2750 BioUp tions require B light engine. ss from >80CRI to 96CRI in chnology and is correlated remperature. | Minimum fixture length is 3ft. Specify to nearest foot in length. For 2ft fixture length, contact factory. Refer to BioUp Driver Tables on page 7 for minimum allowable lengths. | Individual fixtures configured as 12ft max by de- fault. Continuous runs configured as 8ft max (12ft not available). | Dual circuit will provide separate Up/ Down control. Secondary circuit similar to A/B switching. Price adder applies for "S" configuration. |

| Additional Section Wiring | Voltage | Driver Type | Shielding Down | Shielding Up |
|---|---|---|--|--|
| E=Emergency Circuit B3=6W UNV Integral T=UL924 EPC Emergency Bypass Relay | U=Universal (120V-277V) 1=120V 2=277V 3=347V | DD=Standard 0-10V Dimming (1%-100%) 5L=Fifth Light DALI (1%-100%) LH=Lutron HiLume (LDE1 series) 1%-100% EcoSystem W2A=2-Channel 0-10V (VividTune and Dynamic BioUp Only) W2D=2-Channel DALI (Dynamic BioUp Only) | F=Satin White Diffuser D=Satin Drop diffuser A=Asymmetric Diffuser C=Corridor Diffuse | (blank) =No Lens or N/A 1=Satin White Diffuser 2=Satin Raised Diffuser |
| Notes | Notes | Notes | Notes | Notes |
| Battery available on fixture ≥ 4ft in length. B3 and T options not compatible with 347V. Standard battery 4ft battery section located in the beginning of the fixture, but can be relocated using the linear product configurator. When configured with dual or secondary circuit, battery test switch will be located in a plate on the direct side of the fixture. B1 and B2 battery options not available with W2D driver in BioUp Technology | 347V only available with DD driver option. | Use standard 0-10V (DD) for Static BioUP (B35 B40 B50). 2-Channel 0-10V (W2A) available with VividTune (V) and Dynamic BioUp (B2750) only. 2-Channel DALI (W2D) available with Dynamic BioUp (B2750) only | All lensing options are snap-in lenses. "A" option is asymmetric toward the wall, "C" option is asymmetric away from the wall. | No lens up standard, use satin white diffuser when dust cover desired of top of the fixture is viewable during normal use. |

| Finish | Integrated Sensor | | | |
|---|---|--|--|--|
| W = White S = Silver B = Black RR = Real Red 00 = Oasis Orange YY = Yippee Yellow GG= Gracious Green CC = Cyprus Cyan TT = Totally Turquoise BB = Biosphere Blue PP = Perfect Purple VY = Vacation Violet MM = Magic Magenta C = Custom Color (RAL) CM = Custom Color (Match) | [Blank]=None WaveLinx Wireless -WLS (formerly WAB) = WaveLinx LITE Wireless Sensor, Occupancy w/ photocell, Independent & Networked -WPS (formerly WAA) = WaveLinx PRO Wireless Sensor Occupancy w/ photocell, Networked -WLN = WaveLinx LITE Wireless Control Node, without Sensor -WPN = WaveLinx PRO Wireless Control Node, without Sensor Other -LWIPD1=Enlighted Integrated Sensor | | | |
| Notes | Notes | | | |
| Custom Colors (C and CM) are available as ETO. Performance is based off White (W) and may vary | All sensor options are available with (DD) driver options only. | | | |
| with selected finish. | WPS and WLS sensor options are also available with W2A BioUp Dynamic Option | | | |
| | Refer to Sensor Placement section for additional details. | | | |
| | Integrated Sensors are available with Single Circuit (1) option only. | | | |
| | Integrated Sensors combined with Emergency Circuit (E) require one UL924 Bypass Relay (T) per emergency fixture. | | | |
| | Integrated Sensors combined with a Battery (B) are available with individual Direct/Indirect (DI) luminaires >4ft in length. | | | |
| | Integrated Sensor options with Regressed or Drop lenses available as ETO. Tilemount Sensor is recommended. | | | |



Product Specifications

- Available in Flush and Regressed Housing
- Precision cut housing extruded from 6063 aluminum
- Precision cut & welded end-caps ensure a robust and clean construction
- Nominal 2' -12' illuminated sections used in individual fixtures and 2'-8' illuminated sections used in continuous runs

· Electrostatically applied polyester powder coat paint

LED Module

Modular LED tray assembly comprising reflector and light engine with quick disconnect wire-harness for ease of installation and maintenance over the life of the luminaire

Light Engine

- Offered with two next generation Neo-Ray light engines delivering industry leading efficacy and
- LED's are available in 2700K, 3000K, 3500K, 4000K or 5000K
- CRI options of either ≥80CRI or ≥90CRI (Lumen output will be affected please refer to the lumen adjustment factor table)

- · LED system coupled with electrical driver
- · Traditional electronic drivers are available for 120-277V and 347V applications

Controls and Integrated Sensors

- Equipped standard with a 0-10V continuous dimming driver. Compatible with most standard dimming
- Additional control types are available (DALI & Lutron) at an additional cost
- WaveLinx and Enlighted wireless sensors as well as stand-alone sensors available

Mounting

Wall

Lengths

- Available in any length (2ft min) with a resolution of 1 foot. Max section length of 12ft (8ft max used on continuous runs and available for individual fixtures)
- Additional fixture lengths are available please consult factory. All lengths are nominal and do not include end caps.

Corners and Transition Pieces

- Corners and other transition pieces are fully luminous
- Constructed using precision mitered housing and lens components
- Extrusions are welded to ensure a precise and robust
- Standard 90° horizontal corners as well as custom corners are available
- Consult online linear configurator or the factory for precise corner locations and for ordering
- Alternative transition pieces such as T's, Y's, X's, etc. are also available Ø

- Direct Snap-In lensing Options

 Satin Flush Flush, high diffusion glare-free lens
- Satin Drop 1" Drop, high diffusion glare-free lens
- Asymmetric Flush, low-glare Asymmetric lens Flush options ship with our patent-pending underlens solution, the proud lens ships with an injection

molded end cap to eliminate light leak

- Indirect Snap-In lensing Options
 Satin Flush Flush, high diffusion glare-free lens
- No Lens No lens option provides the lowest cost solution with the highest efficacy

Reflectors

- Precision formed cold-rolled steel reflectors with high reflectivity
- Ultra high reflectivity used with High Performance light engine

Lumen Maintenance

- 90% (L90) of initial light output at 61,000+ hrs
- 70% (L70) of initial light output at 237,000+ hrs
- Derived from TM-21 standard @25°C for worst case operating conditions

Custom Lumen Output

Custom lumen output expressed option in Lumens per foot (e.g. -725D for 725 Lms/ft down). Refer to additional detail on page 4.

- Dimming provided as standard
- Dimming wires capped with wire-nuts for non-dimming applications
- Optional battery backup options provided
- Default battery location is internal to fixture
- Default emergency section is 4ft in length and located at the beginning of the fixture unless designated elsewhere
- Estimated lumen output = battery wattage * min
- reflicacy (see performance table)
 The EPC option will bypass local controls and dimming upon loss of normal power. This option is required when the fixture has both integrated sensors and emergency circuiting

Integrated Sensors

· Please reference page 5 for details

Weight

· 3.1 lbs per foot

Approvals

- cULus listed for damp locations
- Meets NYC requirements
- Meets CCEC requirements
- Tested to IESNA LM-79 and LM-80
- Can be used for State of California Title 24 high efficacy luminaire

Warranty

Five year warranty standard.

Standard Finish Options



W - White



S - Silver



B - Black



RR - Real Red **RAL 3020** Gloss



TT - Totally Turquoise **RAL 5018** Gloss



00 - Oasis Orange **RAL 2004** Gloss



BB - Bioshere Blue RAL 5017 Gloss



YY - Yippee Yellow **RAL 1018** Gloss



- Perfect Purple **RAL 4005** Gloss



GG - Gracious Green **RAL 6018** Gloss



VV - Vacation Violet **RAL 4008** Gloss



CC - Cyprus Cyan **RAL 6027** Gloss



MM - Magic Magenta RAL 4010 Gloss

Optic Options



Standard Flush Lens



Regressed Flush Lens



Standard Proud Lens



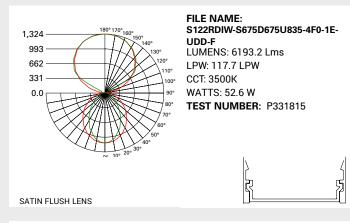
Asymmetric Lens

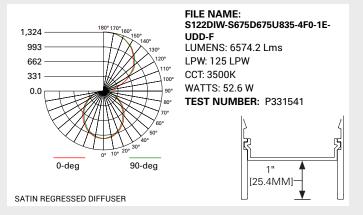
RAL & custom colors available as ETO

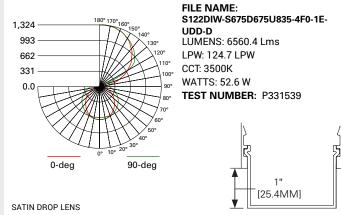


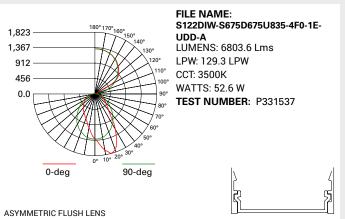
Photometric Data - Static White LED Technology











Photometric Overview and Performance Data

Direct Performance Per Linear Foot at 3500K/80CRI

| Nominal Output | Standard | | High Performance | | VividTune | |
|-------------------|----------|------|------------------|------|-----------|------|
| lms/ft | W/ft | lm/W | W/ft | lm/W | W/ft | lm/W |
| 290 | 2.9 | 105 | 2.9 | 108 | 3 | 102 |
| 485 | 4.8 | 106 | 4.4 | 111 | 4.9 | 103 |
| 675 | 6.7 | 104 | 6.1 | 111 | 6.7 | 102 |
| 865 | 8.8 | 102 | 8.1 | 109 | 8.9 | 99 |
| 1005 | 10.6 | 98 | 9.7 | 105 | 10.7 | 96 |

Indirect Performance Per Linear Foot at 3500K/80CRI

| Nominal Output | Standard | | High Performance | | VividTune | |
|-------------------|----------|------|------------------|------|-----------|------|
| lms/ft | W/ft | lm/W | W/ft | lm/W | W/ft | lm/W |
| 435 | 2.9 | 153 | 2.9 | 155 | 3 | 149 |
| 710.0 | 4.8 | 151 | 4.4 | 165 | 4.9 | 148 |
| 970 | 6.8 | 147 | 6.1 | 163 | 6.8 | 144 |
| 1240 | 9.0 | 142 | 8.1 | 155 | 9.1 | 138 |
| 1440 | 10.7 | 138 | 9.7 | 152 | 10.7 | 137 |

LUMEN ADJUSTMENT CALCULATIONS

Example 1 - Adjusted Lumen Output Nominal Lumen Output selected = 1025 lms/ft (based on standard of 3500K/80CRI) Lumen Adjustment Factor = 0.801 (2700K/90CRI desired)

Adjusted Lumen Output = Nominal Lumen Output x Lumen Adjustment Factor Adjusted Lumen Output = 1025 lms/ft x 0.801 = 821 lms/ft

Example 2 - Custom Lumen Output based on Required Lumens Per Foot Total light output (4ft) requirement of 2800 lms, desired CCT and CRI of 4000K/80CRI

Total required lumens per foot @ 4000K= 2800 lms / 4 ft = 700 lms/ft Lumen Adjustment Factor = 1.018 (Requirement based on 4000K / 80CRI)

Total required lumens per foot @ 3500K / 80CRI = 700 lms/ft ÷ 1.018 = 688 lms/ft

Estimated efficacy = 121 LPW (find nearest value using table above) Estimated power consumption = 688 lms/ft ÷ 121 lm/W = 5.69 W/ft

Custom Lumen Output

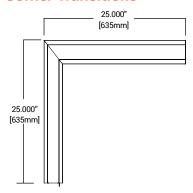
Total Light Output Range (Ims/ft)

| ССТ | Lumen Adj Factors | | Direct Output Range | | Indirect Output Range | |
|-------|-------------------|-------|---------------------|---------|-----------------------|----------|
| CCT | 80CRI | 90CRI | 80CRI | 90CRI | 80CRI | 90CRI |
| 2700K | N/A | 0.792 | N/A | 230-796 | N/A | 345-1140 |
| 3000K | 0.943 | 0.815 | 273-948 | 236-819 | 410-1358 | 355-1174 |
| 3500K | 1.000 | 0.861 | 290-1005 | 250-865 | 435-1440 | 375-1240 |
| 4000K | 1.010 | 0.892 | 293-1015 | 259-896 | 439-1454 | 388-1284 |
| 5000K | 1.010 | 0.892 | 293-1015 | 259-896 | 439-1454 | 388-1284 |

If your requirement is expressed in power consumption (W/ft) rather than light output, you can use the power to lumen output curves to convert power consumption to light output for specification. Efficacy for custom lumen outputs can be estimated using lumen output curves or with the use of our online custom lumen output tool.



Corner Transitions



Integrated Sensor Details and Placement

| Sensor Type | Wireless | Sensor Integration | Sensor Mounting | Ordering Code |
|----------------------|----------|---------------------|-----------------------------|---------------|
| WaveLinx Pro | Yes | Integral to Fixture | Mounted in solid cover | WAA |
| WaveLinx Lite | Yes | Integral to Fixture | Mounted in solid cover | WAB |
| Enlighted | Yes | Integral to Fixture | Mounted in illuminated lens | LWIPD1 |
| Stand-Alone SVPD1 | No | Integral to Fixture | Mounted in solid cover | SVPD1 |

Optional standalone and wireless connected integrated sensors require use of the DD (0-10V) driver. WaveLinx and Enlighted sensors require additional system hardware (not provided) for full functionality.

Standard sensor layout is shown below. Please refer to sensor coverage pattern diagrams to ensure proper coverage for the application. Standard configurations are available in both individual fixtures and in continuous runs. Default spacing is based on the maximum fixture length of 12ft and can be changed to 8ft sensor spacing for additional coverage by selecting the 8ft max fixture length option when ordering.

For additional information integrated sensors and connected lighting, please visit Cooper Lighting Solutions's Connected Lighting Website

O Standard Sensor with Luminaire Control Auxiliary Sensor used for Sensor Coverage (wireless systems only)

INTEGRAL SENSOR

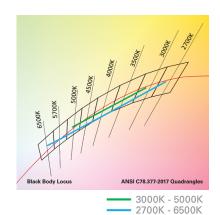
| ≤8ft Individual | 0 |
|-------------------------------|--|
| | |
| >8ft Individual | 0 |
| | Note: When 8ft max section length is used on individual fixtures > 8ft, sensor placement follows logic for continuous run. |
| | |
| Beginning of Run (BOR) | 0 |
| | |
| Intermediate Section (INT) | 0 |
| | |
| End of Run (EOR) > 4ft | 0 ⊗ |
| | |
| End of Run (EOR) ≤ 4ft | 0 |





Define 2 Pendant LED with VividTune Tunable White

VividTune tunable white luminaires deliver high-quality light in a broad range of continuously variable color temperatures and intensities. Create a dynamic environment by adjusting the ambient light warmer or cooler to influence mood, support the task at hand, or create a dramatic ambience. The ability to control correlated color temperature and intensity separately using simple controls is the next evolution of LED lighting for the commercial, educational, healthcare and hospitality space. The unparalleled flexibility and number of available lighting environments enable users to find the right light with tunable white.



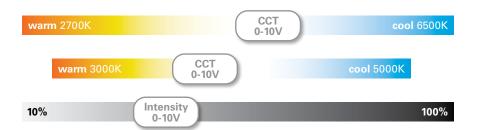
Performance Data*

| Tunal | Tunable White - Lumen Adjustment Factors | | | | | | |
|-------|--|--------|-------------|--------|--|--|--|
| ССТ | 3000K | -5000K | 2700K-6500K | | | | |
| CCI | 80 CRI | 90 CRI | 80 CRI | 90 CRI | | | |
| 2700K | - | - | 0.868 | 0.741 | | | |
| 3000K | 0.894 | 0.736 | 0.893 | 0.771 | | | |
| 3500K | 0.946 | 0.804 | 0.924 | 0.809 | | | |
| 4000K | 0.993 | 0.868 | 0.944 | 0.835 | | | |
| 4500K | 1.002 | 0.883 | 0.961 | 0.857 | | | |
| 5000K | 1.002 | 0.883 | 0.974 | 0.874 | | | |
| 6500K | - | - | 0.988 | 0.897 | | | |

| Example of Approximate Lumen Calculation | | | | | | | |
|--|-------------------------------|---|----------------------------------|--|--|--|--|
| | Standard Catalog # | Standard Catalog # VividTune 80 CRI Catalog # | | | | | |
| CCT Setting | S122DIW-C865D1240U835-UDD-F-W | S122DIW-V865D1240U83050-UW2A-F-W | S122DIW-V865D1240U93050-UW2A-F-W | | | | |
| 3000K | - | 7527 | 6197 | | | | |
| 3500K | 8420 | 7965 | 6770 | | | | |
| 4000K | - | 8361 | 7309 | | | | |
| 4500K | - | 8437 | 7435 | | | | |
| 5000K | - | 8437 | 7435 | | | | |

Controlling VividTune Tunable White

VividTune luminaires make tunable white more accessible by using simple and familiar controls. From wall dimmers to wireless controls, VividTune tunable white luminaires are compatible with industry standard 0-10V dimming controls. A single 0-10V dimming input is used to control intensity (brightness) while a second 0-10V dimming input is used to adjust CCT. For suggested control configurations, go to www.cooperlightingsolutions.com for tunable white application guides.



Example of Lumen Adjustment Calculation

S122DIW-V865D1240U83050-UW2A-F-W at 80 CRI tuned to 3500K

Adjusted Lumen = published Im x adjusted Im factor

Adjusted Lumen = 8420×0.946

Adjusted Lumen = 7965 lm

* Lumen adjustment factors are for reference and may be different for each product selected. Refer to IES files for actual performance data on each.



BioUp Photometry

Legend: • Available - Unavailable

| 2in | DIRECT | | | | |
|----------------|--------------------|--------------|--|--|--|
| Nominal Output | BioUp Light Engine | B35 Efficacy | | | |
| lm/ft | W/ft | lm/W | | | |
| 290 | - | - | | | |
| 485 | 5.9 | 82.2 | | | |
| 675 | 8.6 | 78.5 | | | |
| 865 | 11.1 | 77.9 | | | |
| 1005 | 15.0 | 67.0 | | | |

| 0-10V | | | | | | | | |
|----------------|--------------|-----|-----|-----|-----|------|--|--|
| | Availability | | | | | | | |
| Lumen | ıs/ft | 290 | 485 | 675 | 865 | 1005 | | |
| | 2 | - | - | - | - | - | | |
| | 3 | - | - | - | - | - | | |
| | 4 | - | • | • | • | • | | |
| | 5 | - | • | • | • | • | | |
| £ | 6 | - | • | • | • | • | | |
| Leng | 7 | - | • | • | • | • | | |
| Fixture Length | 8 | - | • | • | • | • | | |
| Œ | 9 | - | • | • | • | • | | |
| | 10 | - | • | • | • | • | | |
| | 11 | - | • | • | • | • | | |
| | 12 | - | • | • | • | • | | |

| 2in | INDIRECT WALL | | | |
|----------------|--------------------|--------------|--|--|
| Nominal Output | BioUp Light Engine | B35 Efficacy | | |
| lm/ft | W/ft | lm/W | | |
| 435 | - | - | | |
| 710 | 5.5 | 129.1 | | |
| 970 | 7.6 | 127.6 | | |
| 1240 | 10 | 124.0 | | |
| 1440 | 12 | 120.0 | | |

| 0-10V | | | | | | | |
|---------------------------|----|---|---|---|---|------|--|
| Availability | | | | | | | |
| Lumens/ft 330 530 725 925 | | | | | | 1080 | |
| | 2 | - | - | - | - | - | |
| | 3 | - | - | - | - | - | |
| Fixture Length | 4 | = | • | • | • | • | |
| | 5 | - | • | • | • | • | |
| | 6 | - | • | • | • | • | |
| | 7 | - | • | • | • | • | |
| | 8 | - | • | • | • | • | |
| | 9 | - | • | • | • | • | |
| | 10 | - | • | • | • | • | |
| | 11 | - | • | • | • | • | |
| | 12 | - | • | • | • | • | |

| DALI Availability | | | | | | | | |
|----------------------|----|---|---|---|---|---|--|--------------------------------|
| | | | | | | | | Lumens/ft 290 485 675 865 1005 |
| | 2 | - | - | - | - | - | | |
| | 3 | - | - | - | - | - | | |
| | 4 | - | • | • | • | - | | |
| | 5 | - | • | • | • | - | | |
| £ | 6 | - | • | • | • | - | | |
| Leng | 7 | - | • | • | • | - | | |
| Fixture Length | 8 | - | • | • | • | - | | |
| 正 | 9 | - | • | • | • | - | | |
| | 10 | - | • | • | • | - | | |
| | 11 | - | • | • | • | - | | |
| | 12 | - | • | • | • | - | | |

| DALI | | | | | | | |
|----------------|------|-----|-----|-----|-----|------|--|
| Availability | | | | | | | |
| Lumen | s/ft | 330 | 530 | 725 | 925 | 1080 | |
| | 2 | - | - | - | - | - | |
| | 3 | - | - | • | - | - | |
| | 4 | = | • | • | • | - | |
| | 5 | - | • | • | • | - | |
| gth | 6 | = | • | • | • | - | |
| e Len | 7 | - | • | • | • | - | |
| Fixture Length | 8 | - | • | • | • | - | |
| | 9 | - | • | • | • | - | |
| | 10 | - | • | • | • | - | |
| | 11 | - | • | • | • | - | |
| | 12 | - | • | • | • | - | |



Proven Research. Industry Recognized.











See BioUp brochure for more details



ANSI/IES RP-46-23 / TM18 published March 2024 based on over 40 years of research.

"...circadian clock synchronization is paramount to the body's efficient and appropriate functioning." - TM18



BioUp solutions maximize WELL points for Circadian Lighting Design (L03):



275 EML 250 Lux M-EDI

Use BioUp to achieve Equivalent Melanopic Lux (EML) thresholds for circadian design and earn nearly 20% of WELL building lighting points.



MDER, M-EDI and EML are key metrics used to quantify nonvisual performance of indoor lighting systems.



See BioUp white paper for more details

30% boost Biological impact

compared to traditional LED sources

| | LED MDER | BioUp | Static | BioUp Dynamic | |
|-------|----------|-------|--------|---------------|-----|
| CCT | ~83 CRI | MDER | CRI | MDER | CRI |
| 2700K | 0.44 | ı | ı | 0.43 | 95 |
| 3000K | 0.49 | ı | ı | 0.54 | 94 |
| 3500K | 0.56 | 0.71 | 90 | 0.71 | 90 |
| 4000K | 0.64 | 0.84 | 87 | 0.82 | 87 |
| 5000K | 0.77 | 0.98 | 84 | 0.98 | 84 |

BioUp enhances the LED spectrum with cyan light at 475nm increasing the biological impact of the light to enhance our circadian rhythm which regulates our sleep/

wake cycle, daytime engagement, and mood all without distorting visual color impression.

MDER - Melanopic Daylight Efficacy Ratio (MDER) measures the amount of light stimulating to the melanopsin receptors.

Standard 4000K LED

MDER = .62 180 400 420 440 460 480 500 520 540 560 580 600 620 640 660 680 700 720

BioUp 4000K LED

MDER = .82 380 400 420 440 460 480 500 520 540 560 580 600 620 640 660 680 700 720

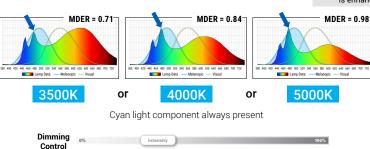
Static (non-tunable)

Static BioUp is used when simple Melanopic Lighting is desired at all times.

Arrow in graph shows BioUp spectrum boost is at 475nm where nonvisual biological response is enhanced.

Dynamic - (Tunable)

Dynamic BioUp is used when Melanopic Lighting is desired to adjust during the day.



no CCT control needed

Evening Daytime MDER = 0.43 MDER = 0.98 Warmer CCT Without Cooler Light With Cyan content 2700K - 5000K CCT Control Dimming Control

Control with Wavelinx, 2ch 0-10V, or DALI

