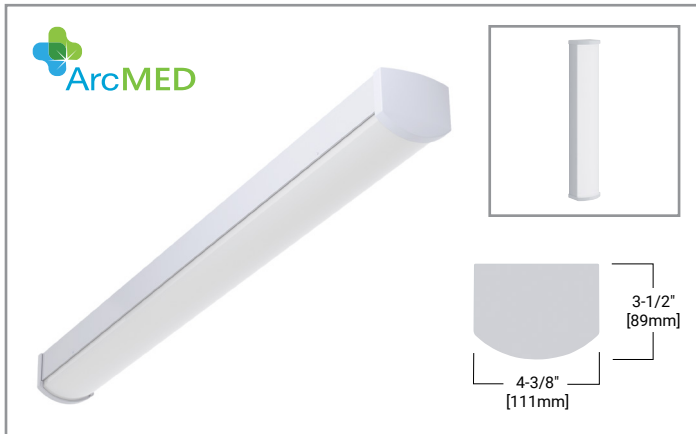


Project		Catalog #		Type	
Prepared by		Notes		Date	



Fail-Safe



ASL4 Architectural Surface Linear 4" Impact Resistant

ADA Compliant
1' - 8' Lengths, 4" Width
Individual or Continuous
Surface or Pendant / Wall or Ceiling
Ligature Resistant / Behavioral Health
Up to 3,500 lumens/ft

Typical Applications

Hospitals • Clinics • Behavioral Health • Schools K-12 • Higher Education • Locker Rooms • Public Spaces • Stadiums • Canopies • Restrooms • Industrial / Manufacturing • Mezzanines / Public Transportation • Data Centers • Kitchens

Interactive Menu

- Order Information [page 2](#)
- Product Specifications [page 6](#)
- VividTune Color Tuning Solutions [page 7](#)
- BioUp Melanopic Lighting [page 8](#)
- Product Warranty

Product Features

- ADA compliant
- 1' - 8' lengths, individual or continuous run
- Surface, pendant, or cable mount; wall or ceiling mount
- Frosted polycarbonate lens, life-time lens warranty
- Wet location under covered ceiling and IP64 available
- Select SKUs 40°C and 50°C ambient rated
- VividTune, BioUp, and narrow spectrum red, green, and amber available
- Ligature resistant
- Options to meet Build America, Buy America, Buy American and other domestic preference requirements

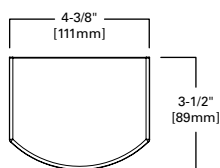
Product Certification



Product Features



Dimensions

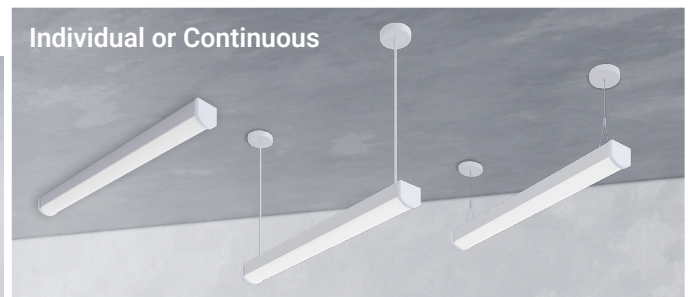


Mounting Options



Vertical Wall

Horizontal Wall



Surface

Stem & Canopy

Y-Toggle

[additional product diagrams](#)

Sample Catalog Numbers:

- INDIVIDUALS: **4ASL4-35VHE-27-UNV-EDD1** (Individual, 4' length, 4" wide, opal lens, flat endcaps, white)
8ASL4-25HE-40-UNV-CRV-EDD1-SLG (Individual, 8' length, 4" wide, opal lens, curved endcaps, silver grey)
6ASL4-30VHE-50-UNV-CRV-EDD1-EL10W-BLK-IP64 (Individual, 6' length, 4" wide, curved endcaps, EM, black, IP64)
- 24' CONTINUOUS RUN: **8ASL4-20HE-35-UNV-BER-ED1D1** (8' beginning of continuous run) - 1 qty
8ASL4-20HE-35-UNV-MR-ED1D1 (8' middle of continuous run) - 1 qty
8ASL4-20HE-35-UNV-BER-ED1D1 (8' end of continuous run) - 1 qty
 *1 row joiner ships with each "BER" fixture and each "MR" fixture

Domestic Preferences ⁽¹⁾	Length	Fixture / Width	Nominal Lumens Ft. ⁽³⁾			CCT
[Blank] =Standard BAA =Buy American Act BABA =Build America Buy America Act	1=1' 2=2' 3=3' 4=4' 6=6' 8=8'	ASL4=4" Wide	Standard 5=500 lumens/ft. ⁽²⁾ 10=1000 lumens/ft.	High Efficacy 5HE=500 lumens/ft. 10HE=1000 lumens/ft. 15HE=1500 lumens/ft. 20HE=2000 lumens/ft.	Very High Efficacy 20VHE=2000 lumens/ft. 25VHE=2500 lumens/ft. ^{(5), (6)} 30VHE=3000 lumens/ft. ^{(5), (6)} 35VHE=3500 lumens/ft. ^{(6), (5), (6), (7)}	27=2700K, 90 CRI 30=3000K, 90 CRI 35=3500K, 90 CRI 40=4000K, 90 CRI 50=5000K, 90 CRI 65=6500K, 90 CRI 92765=VividTune, 90CRI, 2700K to 6500K ⁽¹²⁾ A59=Amber, 590nm ^{(9), (12)} G52=Green, 520nm ^{(8), (9), (12)} R63=Red, 630nm ^{(8), (9), (12)} B35=BioUp Static 3500K ^{(8), (10), (12)} B40=BioUp Static 4000K ^{(8), (10), (12)} B50=BioUp Static 5000K ^{(8), (10), (12)} B2750=BioUp Tunable 2700K-5000K ^{(8), (11), (12)}
Notes <small>(1) Only product configurations with these prefixes are built to be compliant with the Buy American Act of 1933 (BAA), or the Build America Buy America Act (BABA). BABA is the minimum Government compliance requirement for the Build America Buy America standards which is part of the Infrastructure and Investment Jobs Act (IIJA). Individual Government Agencies may have more stringent compliance standards. Please refer to DOMESTIC PREFERENCES website for more information. Components shipped separately may be separately analyzed under domestic preference requirements.</small>			Notes <small>(2) 1' length fixture not available 500 lumens/ft. (3) Lumen values above are for 25°C max ambient. (4) 2' fixture, 35VHE; not available with EM. (5) 2' fixture, 25VHE and above - 2 drivers for DALI, 2 drivers for Lutron - no EM - 2 digital addresses for DALI. (6) 4' fixtures, 25VHE, 30VHE; 2 drivers. 35VHE, 3 drivers EL6W only when 3 drivers are used. 8' fixture, 25VHE, 30VHE; 4 drivers. 35VHE, 6 drivers. EL6W only. (7) 3' fixture, 35VHE, 2 drivers. For 5LTHD, 2 drivers, 2 addresses. 6' fixture, 35VHE, 4 drivers. For 5LTHD, 4 drivers, 4 addresses.</small>			Notes <small>(8) Available in 2', 4', 6', 8' lengths only. (9) Lumen multiplier from white LED (nominal); A59=0.25, G52= 0.71, R63=0.29. Narrow spectrum LEDs. (10) BioUp Static to be used with HCD driver. (11) BioUp Tunable provides correlated color temperatures (CCT) between 2700K to 5000K. Must be used with W2A or W2D driver. See BioUp page for more information. (12) Available standard, High Efficacy only.</small>

Voltage ⁽¹⁴⁾	Lens	End Cap	Mounting	Driver	Circuits/Drivers	EM Packs ^{(24), (25)}	Sensors
UNV=120-277V 120=120V 277=277V 347=347V ⁽¹³⁾	[Blank]=Opal, Ribbed, polycarbonate	[Blank]=Flat CRV=Curved	[Blank]=Individual MR=Middle of Run BER=Beginning/End of Run ⁽¹⁵⁾	EDD=10% Dim ED1D=1% Dim 5LTHD=DALI, 1% Dim W2A=VividTune, 2 channel, 0-10V, 1% dim ^{(16), (17), (20), (22), (23)} W2D=VividTune, DALI Type 8, 1% dim ^{(18), (21), (22), (23)} LH1=Lutron Hi-Lum, 1% Dim ⁽¹⁹⁾	1=1 Circuit 2=2 Circuits	EL6W=6 watt EM pack EL7W=7 watt EM pack EL10W=10 watt EM pack EL14W=14 watt EM pack	WLS (formerly WAB)=WaveLinX LITE Wireless Sensor, Occupancy w/ photocell, Independent & Networked ^{(26), (28), (8)} WPS (formerly WAA)=WaveLinX PRO Wireless Sensor, Occupancy w/ photocell, Networked ^{(27), (28), (A)}
Notes <small>(13) Not available 1' length. Not available with EM pack. (14) Consult factory technical for 480V. May be available via ETO (engineer to order).</small>			Notes <small>(15) BER used interchangeably for beginning or end-of-run.</small>	Notes <small>(16) 2-10V dimming channels - CCT and intensity. (17) With integrated sensing system a 0-10V dimming driver can be substituted with another type. (18) W2D for use with BioUp only, between 2700K and 5000K, must be used with DALI controls - CCT and intensity. Not for use with sensing systems Only EL10WSD EM pack can be used. (19) 1' fixture not available with 5, 10, 5HE, 10HE lumen packages. (20) 2' fixture, 30VHE, 35VHE not available with W2A. (21) 2' fixture, 25VHE-35VHE requires 2 drivers - 2 digital addresses. (22) W2A, W2D only available in 2', 4', 8' fixtures. (23) W2A, W2D not available with 30VHE, 35VHE.</small>	Notes <small>(24) Not available 1' length fixture. (25) 2', 3' length, only available with EL6W.</small>	Notes <small>(26) WLS sensor to be used with CD or HCD driver. (27) WPS sensor to be used with CD, HCD or W2A driver. (28) Sensor is located in extended end cap. Drawing on pg 4. Integrated options must be used in conjunction with the associated system and may not be compatible with other options or accessories. Please refer to the following: (A) Consult WaveLinX PRO system pages for additional details and compatibility. (B) Consult WaveLinX LITE system pages for additional details and compatibility.</small>	

continued next page

Maximum Ambient Operating Temperatures

	Standard			High Efficacy (HE)					Very High Efficacy (VHE)			
Cat Logic	5	10	15	5HE	10HE	15HE	20HE	25HE	20VHE	25VHE	30VHE	35VHE
Lumens / ft.	500 lm/ft	1000 lm/ft	1500 lm/ft	500 lm/ft	1000 lm/ft	1500 lm/ft	2000 lm/ft	2500 lm/ft	2000 lm/ft	2500 lm/ft	3000 lm/ft	3500 lm/ft
Max Ambient (F)	122F	122F	122F	122F	122F	122F	104F	104F	104F	104F	77F	77F
Max Ambient (C)	50C	50C	50C	50C	50C	50C	40C	40C	40C	40C	25C	25C

Maximum operating temperatures above 25°C (40°C, 50°C) are for fixtures with either 1% or 10% dimming drivers (EDD or ED1D) and without EM packs, sensors.

Order Information

CONTINUED

Mounting	Color / Finish		Options	Accessories ⁽³⁵⁾
[Blank] =Surface or "Y" Toggle Cable Mount PM =Pendant Mount	Standard Colors [Blank] =Matte White ⁽²⁹⁾ AM =Antimicrobial Matte White GW =Gloss White DP =Dark Platinum, Satin Finish BK =Black, Satin Finish BZ =Bronze, Satin Finish	Premium Colors TCB =Terra Cotta Brick MRR =Merlot Red PMK =Pumpkin GLD =Goldenrod SGG =Sage Green EVG =Evergreen CBL =Coastal Blue NTB =Night Blue UMB =Ultramarine Blue PPV =Purple Violet NTN =Neutral Tan DBG =Dark Beige CRM =Cream SLG =Silver Grey OLG =Olive Green MHB =Mahogany Brown RALxxxx =RAL Number Color ⁽³⁰⁾	SD =Super-durable white outdoor-rated white paint, stainless steel hardware, aluminum components ⁽³³⁾ IP64 =IP64 Rated, dust and water ingress protection ^{(32),(34)} WL =Wet location, under covered ceiling ^{(32),(34)} PI1BLK-6PP-WG =Single circuit harness, hot conductor black and white neutral connected to driver(s), with ground ⁽³¹⁾ PI2BLK-6PP-WG =Dual circuit harness, hot black conductor and white neutral connected to driver(s), with ground ⁽³¹⁾ PI2BLU-6PP-WG =Dual circuit harness, hot blue conductor and white neutral connected to driver(s), with ground ⁽³¹⁾ PBS =Push Button Switch, 120V TP =Tamper resistant screws to secure the lens to the housing. Painted to match the luminaire color.	SCF-XX-B =Fixed Stem Set XX=Length (6, 8, 12, 24, 36, 48, 60, 72), One set consists of one stem assembly. Minimum of two sets required per fixture. Y-TOG-LEVELER-LOOP-10FT =Y-toggle aircraft cable, with leveling capability, 10' length, loop on end ⁽³⁶⁾ Y-TOG-LEVELER-LOOP-30FT =Y-toggle aircraft cable, with leveling capability, 30' length, loop on end ⁽³⁶⁾ Corner Mount Bracket =ASL-CMB Available 1', 2', 3', 4', 6', 8' lengths. Example: 4ASL4-CMB=Corner Mount Bracket, ASL4 4' length ROWJNR =Row Joiner, to join 2 ASL fixtures together in continuous run ⁽³⁷⁾
	Notes (29) Leave blank for standard matte white or when specifying "SD" which has a gloss white finish. (30) Replace XXXX with unique 4 digit RAL number. Please contact Fail-Safe Tech for a list of additional finish swatches.		Notes (31) Consult factory for additional configurations. (32) Individual mounting only. Surface ceiling only. Wet location under covered ceiling listed also. (33) For SD option, please leave "color/finish" blank. (34) IP64 rating is defined by the IEC under the international standard 60529. Wet location under covered ceiling listing is tested to UL standards.	Notes (35) Accessories sold separately will be separately analyzed under domestic preference requirements. Consult factory for further information. (36) Consists of 2 aircraft cables. Safe working load of 33 lbs per cable. Ends of cable are inserted in obround holes, shown on bottom of page 5. (37) Number of ROWJNR units is equal to the number of "MR" fixtures, plus 1.

Fail-Safe Standard Colors



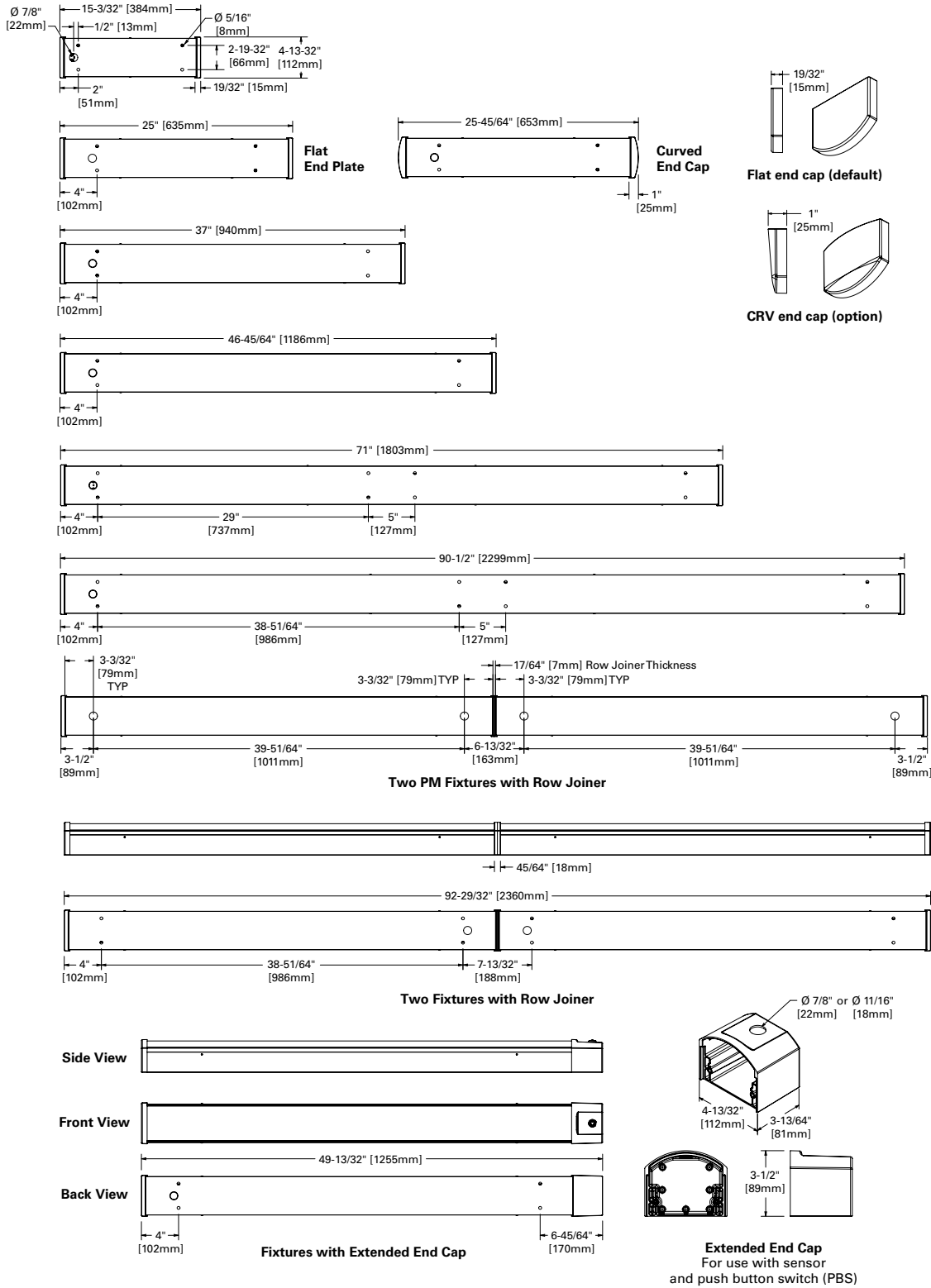
Fail-Safe Premium Colors



Mental Health Compliant Features

Aesthetics	Construction / Versatility	Patient Safety / Robustness
Curved lens, to minimize ligature points—and maximize aesthetic appeal	Impact resistant lens, 100% polycarbonate. Lifetime lens warranty. Smooth outer surface.	IK10 impact resistant lens and housing. IK09 end caps.
Architectural matte white paint, standard	Die-cast aluminum end caps, to capture and secure the lens	Multiple attachment points, to secure the lens to the housing
Tamper resistant hardware, painted to match the fixture color	Extruded aluminum housing, 1/16" nominal wall thickness	Curved end cap, nominal 5 degree taper for ligature resistance
16 premium colors available. Custom colors to perfectly match the ASL4 to the color palette of the space.	3 1/2" deep, 4 3/8" wide – inconspicuous luminaire that blends into the environment. Ideal when space is at a premium.	4 screws secure the end plates to the housing; 4 screws secure the end caps to the end plate. Very durable, robust luminaire.

Mounting Details



Energy and Performance Data by Catalog Number

Length	Nominal Lm/ft	Input Watts	CCT	Delivered Lumens	LPW	Length	Nominal Lm/ft	Input Watts	CCT	Delivered Lumens	LPW
1'	5	4.5	4000K	558	124	4'	5	16.8	4000K	2064	123
	10	8.8	4000K	1038	118		10	35.2	4000K	4152	118
	5HE	4.3	4000K	568	132		5HE	15.6	4000K	2044	131
	10HE	8.3	4000K	1047	126		10HE	33.2	4000K	4188	126
	15HE	13	4000K	1575	121		15HE	52	4000K	6300	121
	20HE	17.9	4000K	2089	117		20HE	71.6	4000K	8356	117
	20VHE	16.9	4000K	2069	122		20VHE	67.2	4000K	8220	122
	25VHE	21.5	4000K	2570	120		25VHE	85.6	4000K	10224	119
	30VHE	26.3	4000K	3063	117		30VHE	105.2	4000K	12252	117
	35VHE	31.6	4000K	3569	113		35VHE	126.4	4000K	14276	113
2'	5	8.4	4000K	1032	123	6'	5	25.8	4000K	3180	123
	10	17.6	4000K	2076	118		10	52.8	4000K	6228	118
	5HE	7.8	4000K	1022	131		5HE	24.6	4000K	3180	129
	10HE	16.6	4000K	2094	126		10HE	49.8	4000K	6282	126
	15HE	26	4000K	3150	121		15HE	78	4000K	9450	121
	20HE	35.8	4000K	4178	117		20HE	107.4	4000K	12534	117
	20VHE	33.6	4000K	4110	122		20VHE	100.8	4000K	12360	123
	25VHE	42.8	4000K	5112	119		25VHE	128.4	4000K	15366	120
	30VHE	52.6	4000K	6126	117		30VHE	157.8	4000K	18378	117
	35VHE	63.2	4000K	7138	113		35VHE	189.6	4000K	21414	113
3'	5	12.9	4000K	1590	123	8'	5	33.6	4000K	4128	123
	10	26.4	4000K	3114	118		10	70.4	4000K	8304	118
	5HE	12.3	4000K	1590	129		5HE	31.2	4000K	4088	131
	10HE	24.9	4000K	3141	126		10HE	66.4	4000K	8376	126
	15HE	39	4000K	4725	121		15HE	104	4000K	12600	121
	20HE	53.7	4000K	6267	117		20HE	143.2	4000K	16712	117
	20VHE	50.4	4000K	6180	123		20VHE	134.4	4000K	16440	122
	25VHE	64.2	4000K	7683	120		25VHE	171.2	4000K	20448	119
	30VHE	78.9	4000K	9189	117		30VHE	210.4	4000K	24504	117
	35VHE	94.8	4000K	10707	113		35VHE	252.8	4000K	28552	113

Nominal CCT	Relative Lumen Output
2700K	0.903
3000K	0.942
3500K	0.971
4000K	1
5000K	1
6500K	0.981

Product Specifications

Housing

- Extruded aluminum housing
- Electrostatically applied, powder coat paint standard
- 16 premium colors available, in addition to 6 standard colors. For other colors, please specify RAL#, or paint manufacturer / color designation. Powder coat.
- IK10 rated

End Caps

- One piece, die-cast aluminum
- Two designs. Flat aluminum and curved.
- Row Joiner - die-cast component, used to secure two fixtures together in continuous runs
- IK9 rated

Lens

- Frosted polycarbonate lens, UV stabilized, lifetime warranty
- Linear ribbed design for soft, uniform light distribution
- Smooth side outward, linear rib internal
- Nominal thickness 0.080"
- IK10 rated

Reflector

- Steel construction, powder coat painted gloss white

LEDs

- Available 2700K to 6500K, 90 CRI static white LEDs standard
- Green, red, and amber narrow spectrum LEDs available
- BioUp options available in static or tunable white

Electrical

- Driver is electronic, 10% dimming standard. 1% dimming driver available.

Compliances

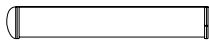
- CULus listed for damp locations, under covered ceiling (indoor), standard
- Wet location under covered ceiling listed (WL option)
- IP64 ingress protection rated against dust and water
- IK10 standard for lens and housing. IK09 for die-cast end caps.

Warranty

- Five year limited warranty, standard. Fail-Safe will repair any ASL product that is deemed non-functional due to physical damage to the luminaire exterior housing or polycarbonate lens. The ASL must be installed correctly, and the warranty does not include any interior component, nor does it include damage due to gun-fire, paint, caustic material / chemicals, disastrous or abnormal events.
- Lifetime lens warranty; lens must be installed correctly and not subjected to non-standard environments, such as: gun fire, caustic material/chemicals

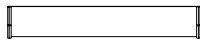
Curved End Caps - Continuous Run (CRV)

BR/ER=Beginning/End of Run



Curved Endcaps on left, flat endcap on right, to attach to MR fixture.

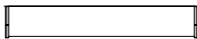
MR (Middle Run)



Flat endcaps on both ends, by default.

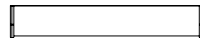
Flat End Caps - Continuous Run (FLT)

BR/ER=Beginning/End of Run



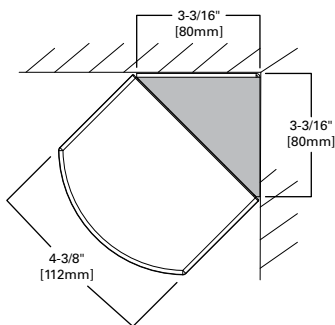
Flat endcaps on both ends to attach to MR fixture.

MR (Middle Run)



Flat endcaps on both ends, by default.

Corner Mount Bracket (Accessory)

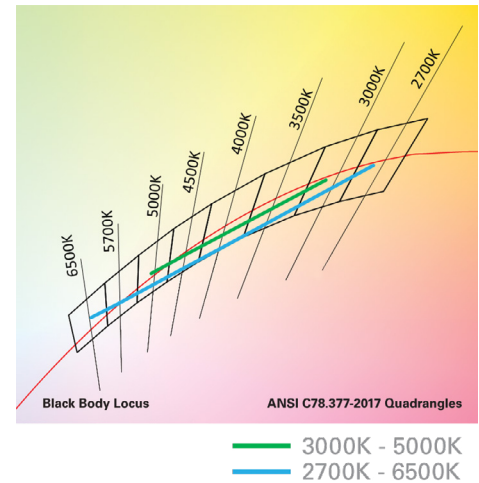


VividTune™

color tuning solutions

22 Cruze ST LED with VividTune Tunable White

VividTune tunable white luminaires from Cooper Lighting Solutions 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.



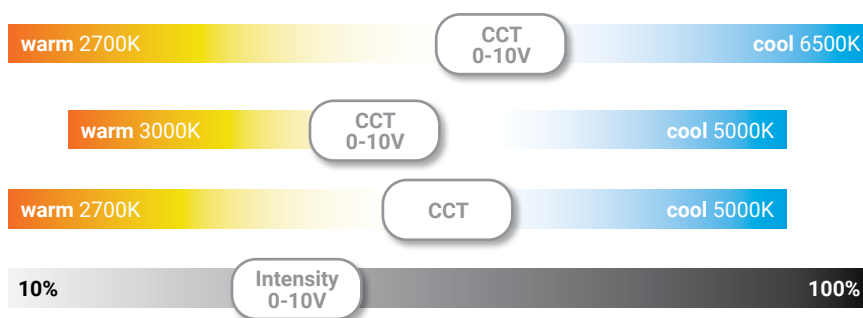
Energy and Performance Data

Tunable White - Lumen Adjustment Factors						
CCT	VividTune 3000K-5000K		VividTune 2700K-6500K		BioUp Tunable White 2700K-5000K	
	80 CRI	90 CRI	80 CRI	90 CRI	CRI	Lumen Adjustment
2700K	-	-	0.903	0.771	95	0.938
3000K	0.929	0.765	0.928	0.801	94	0.929
3500K	0.983	0.836	0.961	0.842	90	0.912
4000K	1.033	0.903	0.981	0.868	87	0.899
4500K	1.042	0.918	0.999	0.891	85	0.890
5000K	1.042	0.918	1.013	0.909	84	0.879
6500K	-	-	1.028	0.933	-	-

2' x 2' Cruze ST LED - Example of Approximate Lumen Calculation				
	Standard Catalog #	VividTune 80 CRI Catalog #	VividTune 90 CRI Catalog #	BioUp Tunable White
CCT Setting	22CZ2-34HE-UNV-L835-CD1-U	22CZ2-34HE-UNV-L83050-W2A1-U	22CZ2-34HE-UNV-L93050-W2A1-U	22CZ2-34HE-UNV-B2750-W2A1-U
2700K	-	3058	2611	3176
3000K	-	3026	2491	3146
3500K	3386	3202	2722	3088
4000K	-	3362	2940	3044
4500K	-	3394	2991	3014
5000K	-	3394	2991	2976
6500K	-	3481	3159	-

Controlling VividTune and BioUp Tunable White

From wall dimmers to wireless controls, tunable white luminaires are compatible with industry standard 0-10V and DALI controls. One channel to control intensity (brightness) and a second channel to adjust CCT.



Example of Lumen Adjustment Calculation

22CZ2-34HE-UNV-L83050-W2A1-U at 80 CRI tuned to 3500K

Adjusted Lumen = published lm x adjusted lm factor

Adjusted Lumen = 3386 x 0.946

Adjusted Lumen = 3202 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.*

Proven Research. Industry Recognized.

BioUp Melanopic Lighting



See better



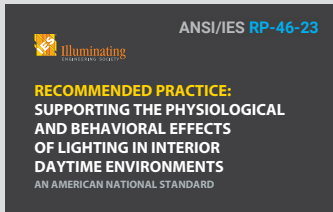
Feel better



Function better



See [BioUp brochure](#) for more details

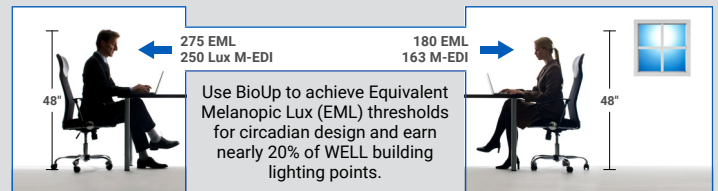


ANSI/IES RP-46-23 / TM18 published March 2024 based on over 40 years of research.

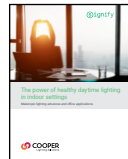
"...circadian clock synchronization is paramount to the body's efficient and appropriate functioning." – TM18



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



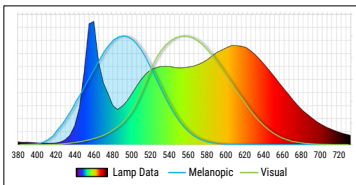
MDER, M-EDI and EML are key metrics used to quantify non-visual performance of indoor lighting systems.



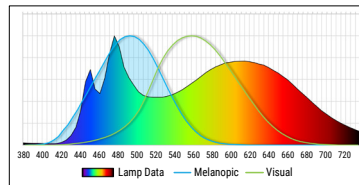
See [BioUp white paper](#) for more details

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

Standard 4000K LED
MDER = .62



BioUp 4000K LED
MDER = .82



30% boost Biological impact compared to traditional LED sources

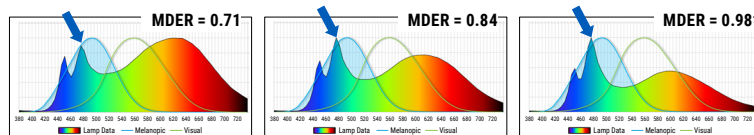
CCT	LED MDER ~83 CRI	BioUp Static		BioUp Dynamic	
		MDER	CRI	MDER	CRI
2700K	0.44	-	-	0.43	95
3000K	0.49	-	-	0.54	94
3500K	0.56	0.71	90	0.71	90
4000K	0.64	0.84	87	0.82	87
5000K	0.77	0.98	84	0.98	84

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.**

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 non-visual biological response is enhanced.



3500K or **4000K** or **5000K**

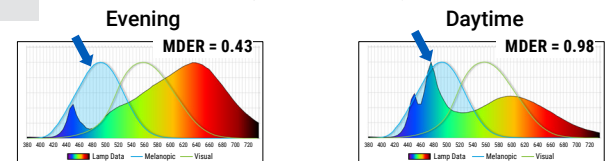
Cyan light component always present



> no CCT control needed

Dynamic - (Tunable)

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



Warmer CCT Without Cyan content ← → Cooler Light With Cyan content

2700K – 5000K



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