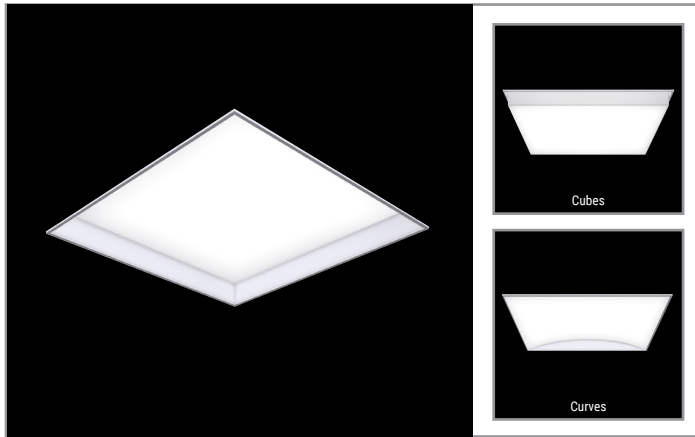


Project		Catalog #		Type	
Prepared by		Notes		Date	



Metalux

InDepth 22ID

2' x 2' LED Specification InDepth Series

Typical Applications

Office • Education • Healthcare • Hospitality • Retail

Product Certification



Systems | Features & Awards



Interactive Menu

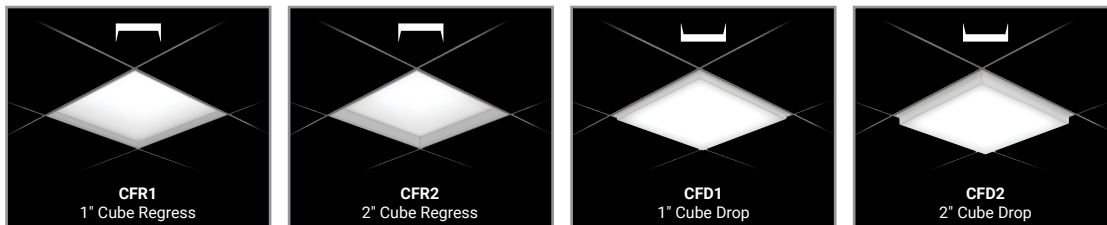
- Order Information page 2
- Photometric Data page 4
- Connected Systems page 8
- Product Warranty

Top Product Features

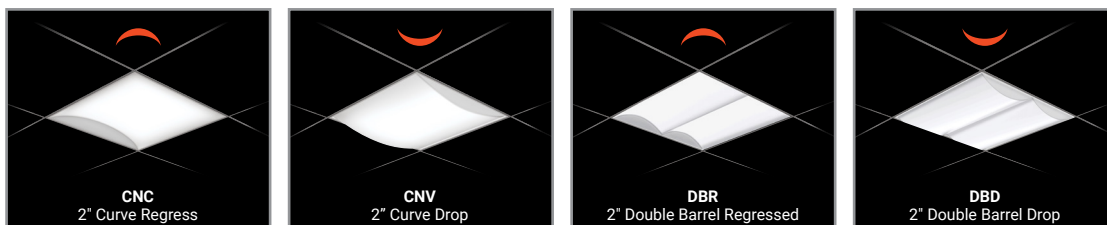
- Designer delight - create ceiling topography with regressed and drop lens options from factory or convert during installation
- Full range of lens options - cube, single curve, double curve, and unique sweep
- Regressed lens provides optical cut off with smooth lens for reduced glare
- Extruded aluminum housing is matte white powder coated
- Wireless control options maintain superb aesthetics
- Options to meet Trade Agreements Act requirements

Options

2x2 Cubes



2x2 Curves



additional product diagrams



Order Information

SAMPLE ORDER NUMBER: 22ID-40-CFR2-L835-MU

Domestic Preferences	Rating	Series	Lumen Output	Shielding	Voltage	Options	Emergency Options
Domestic Preferences ⁽¹⁰⁾	Rating	Series ⁽¹⁾	Lumen Output ⁽²⁾	Shielding ⁽⁴⁾	Voltage	Options	Emergency Options
[Blank]=Standard TAA=Trade Agreements Act	[Blank]=Standard ATW-SW4=Chicago Rated	22ID=2x2 InDepth	Standard Efficacy 20=2000 Lumens ⁽³⁾ 25=2500 Lumens ⁽³⁾ 30=3000 Lumens 35=3500 Lumens 40=4000 Lumens 45=4500 Lumens 50=5000 Lumens 55=5500 Lumens	CFR1=1" Cube Regressed CFR2=2" Cube Regressed CFD1=1" Cube Drop CFD2=2" Cube Drop CNC=2" Curve Regressed CNCV=2" Curve Drop DBR=2" Double Barrel Regressed DBD=2" Double Barrel Drop	[Blank]=Universal Voltage 120-277 347V=347 Volt ⁽⁵⁾ 48V=48 Volt Low-voltage (Class 2) ⁽⁶⁾	GL=Single Element Fuse GM=Double Element Fuse	[Blank]=No emergency EL7W=7-watt 120V-277V emergency battery pack ⁽⁶⁾ EL10W=10-watt 120V-277V emergency battery pack ⁽⁶⁾ EL14W=14-watt 120V-277V emergency battery pack ⁽⁶⁾ EL10WSD=10W emergency battery pack with self-diagnostic installed ^{(6),(8)} EL14WSD=14W emergency battery pack with self-diagnostic installed ^{(6),(8)} ELV7W=Low-voltage system, 7-watt emergency battery pack ^{(6),(C)} ELV14W=Low-voltage system, 14-watt emergency battery pack ^{(6),(C)} ETRD=Emergency Transfer Relay with dimming control ⁽⁷⁾
Notes (10) Only product configurations with this designated prefix are built to be compliant with the Trade Agreements Act of 1979 (TAA). Please refer to DOMESTIC PREFERENCES website for more information. Components shipped separately may be separately analyzed under domestic preference requirements.		Notes (1) DesignLights Consortium® Qualified and classified for both DLC Standard and DLC Premium, refer to www.designlights.org for details.	Notes (2) Lumens are approximate. Use IES files for actual performance. (3) WN WaveLinx not available on 20 and 25.	Notes (4) 1" and 2" options may be ordered as regressed or drop or they can be converted on site.	Notes (5) 347 with emergency not available with SD driver. (C) Consult WaveLinx Low-Voltage or DLVP system pages for additional details and compatibility.		Notes (6) Factory installed with integral test switch/indicator/laser test. For approximate delivered lumens multiply the lumens per watt of the desired fixture by the wattage of the emergency battery pack (100 lm/W x 7=700 lumens). IES-format photometry for luminaire under emergency operation available. Battery option increases total height by 1 inch. (7) Used to bypass local control during outage. Must be used in conjunction with UL 1008 device (provided by others). ETRD option only requires one relay when used on a dimming fixture. Must specify voltage as 120V or 277V when ordering these devices. 347 not available. (8) EL10WSD and EL14WSD not available with 347V. (C) Consult DLVP system pages for additional details and compatibility.

CRI/CCT	Flex	Driver Type	Number of Drivers
CRI/CCT	Flex ⁽⁹⁾	Driver Type	Number of Drivers
L830=80CRI, 3000K L835=80CRI, 3500K L840=80CRI, 4000K L850=80CRI, 5000K	[Blank]=No Flex A3/8-4/18GDIM=3/8" Flex with 0-10V Dimming Leads A3/8-2/18G=3/8" Flex with line and common A3/8-5/18GDIM=Flex with 0-10V Dimming leads and Blue for alternate wiring. See below for details.	[Blank]=0-10V Driver (1%-100% Dimming) SLTD=DALI Driver (5%-100% Dimming) SLTHD=DALI Driver (1%-100% Dimming) LVT=Low-voltage System Driver (0%-100% Dimming) ^(C) SD=Step Dimming Driver (50%, 100% Dimming) LH=Lutron HiLume (LDE1 series) 1%-100% EcoSystem Driver with Soft-on Fade to Black dimming ^(F)	[Blank]=1 Driver
	Flexible Metal Conduit Options (9) Multiple options available in online configurator. See additional notes on Flex below. Flex options available for 0-10V dimming control, DALI dimming control, emergency and night light functions. 72-inch factory installed and pre-wired to driver, fitted to luminaire housing access plate with 90° enclosed FMC connector. Not all options may be combined and installation ratings vary by type. A3/8-***** series notes: Factory installed dimming option 3/8" flexible metal conduit with 2-#18 power and ground wires and 2-#18 UL-listed jacketed 0-10V +/- control wires. Meets UL 66, 83, 1479, 1569, 1581, 2556. NEC® 250.118, 300.22(C), 392, 396, 330, 501, 502, 503, 530, 504, 505, 518, 520, 530, 645, 72; Federal Specification A-A-59544 (formerly J-C-30B); all applicable OSHA and HUD Requirements. UL Classified 1-, 2-, and 3-hour through penetration with applicable fire stop product (not included). May be surface mounted, fished and/or embedded in plaster. Cable tray and approved raceway rated, install per NEC®; Environmental Air-Handling Space Installation per NEC® 300.22(C).	Notes 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: (C) Consult WaveLinx Low-Voltage or DLVP system pages for additional details and compatibility. (F) Consult Marketplace Options - Lutron system pages for additional details and compatibility. Compatible only with driver series shown, and may require two or more drivers. Requires field commissioning to operate or dim. Contact Lutron at www.lutron.com	

Integrated Sensing Systems	Options	Packaging	Accessories
Integrated Sensing Systems	Options	Packaging	Accessories (order separately) ⁽¹¹⁾
[Blank]=No Sensor WTA=Factory installed WaveLinx Pro sensor Kit ^{(A),(12)} WTK=Factory installed WaveLinx Lite sensor Kit ^{(B),(12)}	[Blank]=None	MU=Metalux Unit Pack MPAL= Metalux Job Pack, out of carton MPALC= Metalux Job Pack, in carton	T3A END E.Q. BRACKET PARTS BAG (Standard with fixture) DF-22W-U=2' x 2' Drywall Frame Kit SK-22-WS=2' x 2' Shallow Surface Mount Kit 22CF1PK=Cube 1" Replacement Lens 22CF2PK=Cube 2" Replacement Lens 22CN2PK=Curved 2" Replacement Lens 22DB2PK=Double Barrel 2" Replacement Lens 22SWPK=Sweep Replacement Lens
Notes (12) WTA and WTK sensor options to be used with default driver. 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) WaveLinx Lite devices are not currently compatible with the WaveLinx Wireless Area Controller. Consult WaveLinx Lite system pages for additional details and compatibility.			Notes (11) Accessories sold separately will be separately analyzed under domestic preference requirements. Consult factory for further information.

Product Specifications

Construction

- Extruded aluminum channels form rigid housing for robust life and aesthetic appeal
- Extruded edges are smooth to enable easy installation
- Earthquake clips are included on every fixture to ensure code compliance for all regions
- If desired, one extruded frame member may be removed to enable lens conversion between regress and drop arrangement during installation
- Four auxiliary fixture corner suspension points for use with suspension option
- Driver enclosures use access plate to speed wiring and conduit installation with additional KO on sides. There are six KO.
- Chicago plenum option available

Integrated Controls

- 0-10V dimming to 1% standard
- Tile mount WaveLinX sensor compatible for standalone, controlled, connected, and IoT capability
- Tile mount Enlighted sensor compatible for IoT capability
- Low-voltage driver compatible for WaveLinX Low-Voltage and DLVP applications
- DALI 2.0, Lutron, and step-dimming available

LED and Light Engine

- LED's available in 3000K, 3500K, 4000K, or 5000K at 80 CRI minimum
- TM21 life at 60,000 hours up to L86 and calculated L70 exceeds 131,000 hrs.
- Drivers available in 120-277V and 347V

Emergency Battery Options

- 120V-277V integral emergency battery pack comes in 7-watts, 10-watt, or 14-watts
- Self-diagnostic emergency battery available in 10 or 14-watts (NFPA 101® Life Safety Code®)
- Constant power to the LED system for controlled, predictable discharge
- Integrated test switch/indicator light visible from floor
- Min. 90-minute backup period for code compliance
- Integral emergency transfer relay available for generator equipped power systems

Finish

- 90% reflective, matte white enamel finish
- Full fixture housing painted after fabrication
- Back plate and J-box are constructed of code gauge steel for code compliance

Shielding

- Multiple acrylic lens options enable regression and drop options from factory or change at installation
- Acrylic lenses are finely textured to optimize aesthetics, cleaning and do not show finger prints after installation
- Texture is specifically designed to limit glare from other light sources in on or off state
- 5 regressed options and 6 drop lens options enables versatility in many spaces
- Lenses are made with smooth corners and no sharp edges to enable easy cleaning and maintenance

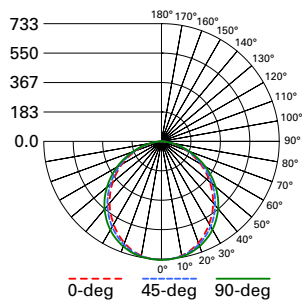
Compliance

- IC rated for insulation contact
- cULus listed for damp locations for all lens options
- cULus listed for wet location, IP66, with regressed lens options
- RoHS compliant
- Tested to IESNA LM-79 and LM-80
- Stated life tested to TM21 standards
- Can be used for State of California Title 24 high efficacy luminaire
- DesignLights Consortium® Qualified and classified for DLC Standard and DLC Premium (refer to www.designlights.org)
- Contributes to meeting several WELL™ v1 and v2 Features

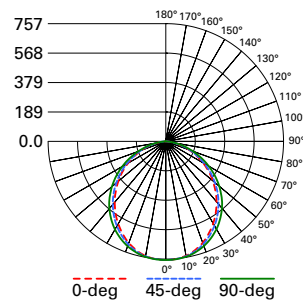
Warranty

- Five year warranty standard. Extended ten year warranty available.

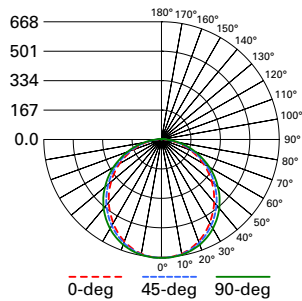
Photometric Data

 View IES files
**22ID-20-L835-CFR1**

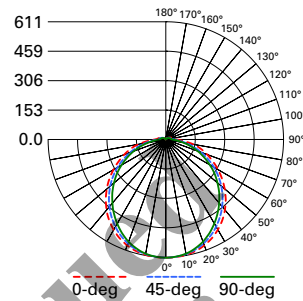
Electronic Driver
Linear LED 3500K
Spacing criterion: (II) 1.2 x mounting height, (⊥) 1.28 x mounting height
Lumens: 2002
Input Watts: 16.3W
Efficacy: 122.8 LPW
Test Report: 22ID-20-L835-CFR1.IES

**22ID-20-L835-CFR2**

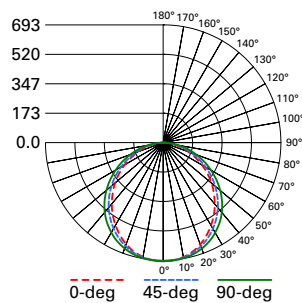
Electronic Driver
Linear LED 3500K
Spacing criterion: (II) 1.19 x mounting height, (⊥) 1.27 x mounting height
Lumens: 2010
Input Watts: 16.3W
Efficacy: 123.3 LPW
Test Report: 22ID-20-L835-CFR2.IES

**22ID-20-L835-CFD1**

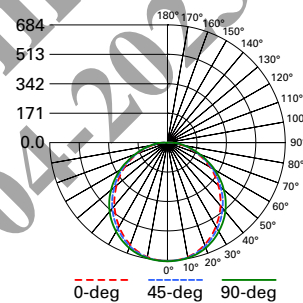
Electronic Driver
Linear LED 3500K
Spacing criterion: (II) 1.21 x mounting height, (⊥) 1.29 x mounting height
Lumens: 1987
Input Watts: 16.3W
Efficacy: 121.9 LPW
Test Report: 22ID-20-L835-CFD1.IES

**22ID-20-L835-CFD2**

Electronic Driver
Linear LED 3500K
Spacing criterion: (II) 1.31 x mounting height, (⊥) 1.22 x mounting height
Lumens: 1996
Input Watts: 16.3W
Efficacy: 122.5 LPW
Test Report: 22ID-20-L835-CFD2.IES









**22ID-20-L835-CNC**

Electronic Driver
Linear LED 3500K
Spacing criterion: (II) 1.2 x mounting height, (⊥) 1.3 x mounting height
Lumens: 1936
Input Watts: 16.3W
Efficacy: 118.8 LPW
Test Report: 22ID-20-L835-CNC.IES

**22ID-20-L835-CNV**

Electronic Driver
Linear LED 3500K
Spacing criterion: (II) 1.22 x mounting height, (⊥) 1.28 x mounting height
Lumens: 1996
Input Watts: 16.3W
Efficacy: 122.5 LPW
Test Report: 22ID-20-L835-CNV.IES

Other Optical Metrics

	Shielding	UGR	Uplight
	CFR1	17.5	0%
	CFR2	17.2	0%
	CFD1	17.4	2%
	CFD2	18.6	5%
	CNC	17.3	0%
	CNV	17.3	1%
	DBR	16.6	0%
	DBD	16.3	0%

Energy and Performance Data

Electrical Performance - 2x2 Cubes (3500K)

Lumen Pkg	Delivered Nominal Lumens				Power Watts	Efficacy (LPW)				Current (A)	
	CFR1	CFR2	CFD1	CFD2		CFR1	CFR2	CFD1	CFD2	120V	277V
2000	2034	2042	2018	2028	16.3	125	125	124	124	0.14	0.06
2500	2593	2604	2574	2585	20.6	126	126	125	126	0.17	0.07
3000	3036	3049	3014	3027	24.2	126	126	125	125	0.20	0.09
3500	3581	3595	3554	3570	28.8	124	125	123	124	0.24	0.10
4000	4056	4073	4026	4044	32.5	125	125	124	124	0.27	0.12
4500	4574	4593	4540	4561	37.2	123	124	122	123	0.31	0.13
5000	5078	5099	5040	5063	41.1	124	124	123	123	0.34	0.15
5500	5589	5612	5547	5572	45.9	122	122	121	121	0.38	0.17

Optical Performance - 2x2 Cubes (3500K)

Lumen Pkg	UGR [CIE 190:2010] ⁽¹⁾ (4H, 8H; Reflectance: 70% Ceiling, 50% Wall, 20% Ref. Plane)				MAX LUMINANCE [45-90 DEG FROM NADIR] ⁽²⁾ (CD/M ²)			
	CFR1	CFR2	CFD1	CFD2	CFR1	CFR2	CFD1	CFD2
2000	17.5	17.2	17.4	18.6	1925	1965	1729	1573
2500	18.3	18	18.3	19.4	2455	2505	2205	2005
3000	18.9	18.6	18.8	20	2874	2933	2582	2348
3500	19.4	19.1	19.4	20.5	3390	3459	3044	2769
4000	19.9	19.6	19.8	21	3840	3919	3449	3137
4500	20.3	20	20.3	21.4	4330	4419	3889	3537
5000	20.6	20.4	20.6	21.7	4807	4906	4317	3927
5500	21	20.7	21	22.1	5291	5400	4752	4322

Notes: (1) For other UGR data for room or reflective ceiling plans please see technical data on website. (2) For other CCT please see technical data on website.

Nominal Lumen Maintenance

TM-21 Lumen Maintenance (60,000 hours)	Theoretical L70 (hours) ⁽³⁾
> 86%	> 131,000

Notes: (3) Theoretical values represent estimations. Refer to LED Product Lifetime Prediction, IES PS-10-18, that explains proper use of IES TM-21 and LM-80.

Load Data

Thd	6%
Power Factor	0.99
Weight (lbs.)	10.6
Low Temp. Start	-20°C

Shipping Data

Lens Catalog No.	Weight (lbs)	Units per Pallet 49"L x 52"W x 55"H
CFR1, CFR2, CNC, DBR, SWR	16	18
CFD1, CFD2, CFD3, CNV, DBD, SWD	16	10

Lumen Calculator

CCT Multiplier	80 CRI
3000K	0.98
3500K	1.0
4000K	1.03
5000K	1.07

Example of Lumen Adjustment Calculation

22ID-40-CFR2-L835 at 80CRI at 5000K

Lumen Adjustment Factor = 1.07

Total Light Output =

4,009 lm x 1.07 = 4,290 lm

Efficacy = $\frac{4,290 \text{ lm}}{32.7 \text{ W}}$ = 131 lm/W

Energy and Performance Data

Electrical Performance - 2x2 Curves (3500K)

Lumen Pkg	Delivered Nominal Lumens				Power Watts	Efficacy (LPW)				Current (A)	
	CNC	CNV	DBR	DBD		CNC	CNV	DBR	DBD	120V	277V
2000	2028	1967	2014	2010	16.3	124	121	124	123	0.14	0.06
2500	2585	2509	2568	2563	20.6	126	122	125	124	0.17	0.07
3000	3027	2937	3007	3001	24.2	125	121	124	124	0.20	0.09
3500	3570	3464	3546	3539	28.8	124	120	123	123	0.24	0.10
4000	4044	3924	4017	4009	32.5	124	121	124	123	0.27	0.12
4500	4561	4425	4530	4521	37.2	123	119	122	122	0.31	0.13
5000	5063	4912	5029	5019	41.1	123	120	122	122	0.34	0.15
5500	5572	5406	5535	5524	45.9	121	118	121	120	0.38	0.17

Lumen Calculator

CCT Multiplier	80 CRI
3000K	0.98
3500K	1.0
4000K	1.03
5000K	1.07

Example of Lumen Adjustment Calculation

22ID-40-CNC-L835 at 80CRI at 5000K

Lumen Adjustment Factor = 1.07

Total Light Output =

4,044 lm x 1.07 = 4,306 lm

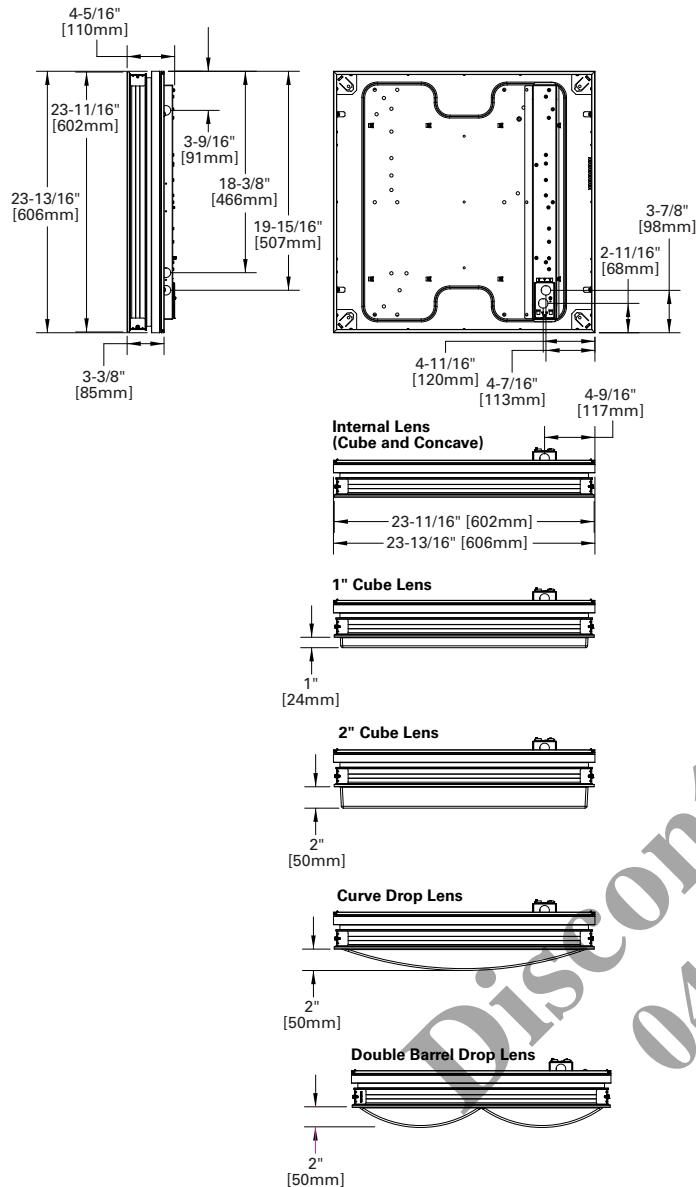
Efficacy = $\frac{4,306 \text{ lm}}{32.5 \text{ W}} = 132 \text{ lm/W}$

Optical Performance - 2x2 Curves (3500K)

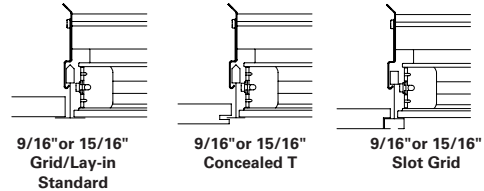
Lumen Pkg	UGR [CIE 190:2010] ⁽¹⁾ (4H, 8H; Reflectance: 70% Ceiling, 50% Wall, 20% Ref. Plane)				MAX LUMINANCE [45-90 DEG FROM NADIR] ⁽²⁾ (CD/M ²)			
	CNC	CNV	DBR	DBD	CNC	CNV	DBR	DBD
2000	17.3	17.3	18.1	18.2	1926	1522	1907	1653
2500	18.1	18.2	18.9	19.0	2448	1934	2431	2107
3000	18.7	18.7	19.5	19.6	2963	2341	2847	2467
3500	19.2	19.3	20.0	20.1	3371	2663	3357	2910
4000	19.7	19.7	20.5	20.6	3860	3050	3803	3296
4500	20.1	20.2	20.9	21.0	4352	3439	4289	3717
5000	20.4	20.5	21.3	21.4	4830	3816	4761	4126
5500	20.8	20.9	21.6	21.7	5304	4191	5240	4542

Notes: (1) For other UGR data for room or reflective ceiling plans please see technical data on website. (2) For other CCT please see technical data on website.

Dimensional and Shielding Details



Ceiling Compatibility

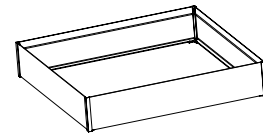


Ceiling Mounting Choices

Application	Catalog	UPC	Description
Hard Ceiling Recessed	DF-22W-U	662401232963	2x2 Dry Wall Frame Kit
Surface Mount	SK-22-WS	080083719402	2x2 Shallow Surface Mount Kit

Suspension Cover (available in June 2020)

Catalog	UPC	Description
SUS-22-W	coming soon	Field installed suspension cover kit - side covers, corner covers and installation hardware



Suspension Kit

Catalog	UPC	Description
FPSUS2	080083802784	2 point Y-hanger suspension kit includes aircraft cable, carabiner, ceiling connection, SO cord, cord connectors and round 4" J-box cover plate

Mounting height from ceiling
Min. = 7-1/4" [184mm]
Max. = 27" [286mm]

Control Systems

- WaveLinx Pro Wireless
- WaveLinx Lite Wireless
- WaveLinx Wired
- DLVP



Connected Systems
CLICK HERE

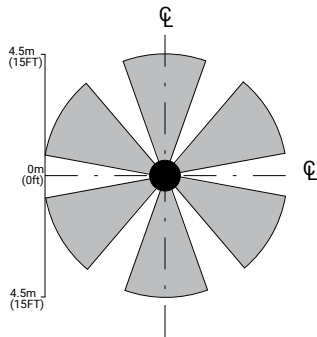
The InDepth with factory-installed tilemount sensor provides automatic energy savings without sacrificing performance. The InDepth delivers superior lighting with luminaire occupancy and daylighting control.

For standalone and controlled applications, the WaveLinx Lite sensor provides out-of-the-box functionality with no gateways required and factory startup is not needed.

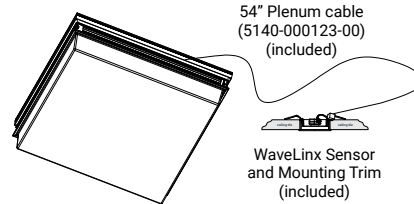
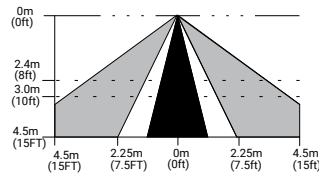
When more connectivity is required, the WaveLinx Pro Wireless sensor meets modern code and utility requirements, delivers energy and cost savings, while enabling buildings to become smart buildings.

The WaveLinx Wireless Connected Lighting System combined with Trellix provides an open IoT platform and infrastructure that connects intelligent sensors leveraging the real-estate of the physical light fixture to solve higher complexity problems to deliver actionable insights through the aggregation of valuable data.

TOP VIEW:



SIDE VIEW:



For more information on tilemount sensor specifications and installation, see WaveLinx Pro and WaveLinx Lite Tilemount Sensor Kit at cooperlighting.com.

Note: Installation of integrated sensors within 3-ft (1m) of HVAC air vents is not recommended. The pattern shown is intended solely as a general guide and is not to scale.

Systems comparison chart

Cooper Lighting Solutions provides many lighting system solutions designed to satisfy code requirements and meet the unique needs of any project.



Luminaire with standalone sensor



Standalone Spaces WaveLinx Lite



Networked Spaces WaveLinx Pro



Enterprise Trellix

	Luminaire with standalone sensor	Standalone Spaces WaveLinx Lite	Networked Spaces WaveLinx Pro	Enterprise Trellix
Occupancy	Yes	Yes	Yes	Yes
Daylighting	Yes	Yes	Yes	Yes
Wallstations	–	Yes	Yes	Yes
Gateways	–	–	1 WAC	300 WACs
Devices (MAX)	–	50 per Area (1400 per site)	200 per WAC2	32,500 per Core Enterprise
Software	–	WaveLinx Lite Mobile App	WaveLinx Pro Mobile App	Trellix Core
Areas	–	28 per Site	50 per WAC2	up to 3,000
Zones	–	16 per Area	16 per Area	up to 9,000
Scheduling	–	–	Local	Global
VividTune™	–	–	Yes	Yes
Plug-Load Control	–	–	Yes	Yes
Low-Voltage Power	–	–	Yes	Yes
Integration	–	–	–	BACnet, API
Dashboards	–	–	–	Energy, Occupancy
Configuration	–	Installer	Technician	Technician / IT

SCALABILITY

