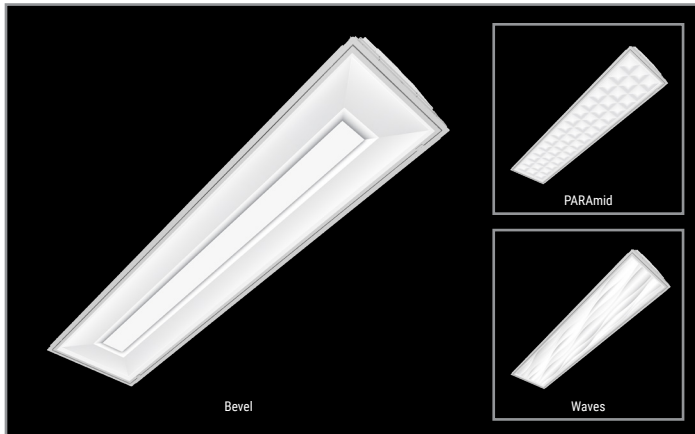


Project		Catalog #		Type	
Prepared by		Notes		Date	



Metalux

Perceive™ 14PD

1' x 4' Recessed LED Specification Series

Typical Applications

Office • Education • Healthcare • Hospitality • Retail

Interactive Menu

- Order Information [page 2](#)
- Photometric Data [page 3](#)
- Connected Systems [page 6](#)
- Product Warranty

Top Product Features

- Proprietary optical system based on human perception of depth
- Multiple dynamic 3D optical patterns
- Glare-reducing performance provides comfortable high-quality illumination
- Available in 2x2, 2x4, and 1x4 sizes
- Thoughtfully designed wireless control options
- Options to meet Trade Agreements Act requirements

Product Certification



Product Features



PERCEIVE



Options



Bevel



PARAMid



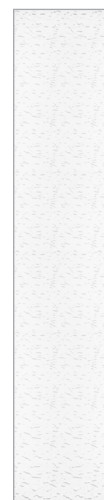
Prism



Waves



Leaves



Ripple

Order Information

SAMPLE ORDER NUMBER: **14PD-40-PB1-L835-U**

Domestic Preferences	Rating	Series	Lumen Output	Shielding	Voltage	Options	Emergency Options
Domestic Preferences ⁽¹³⁾	Rating	Series	Lumen Output ⁽¹⁾	Shielding	Voltage	Options	Emergency Options
[Blank] =Standard TAA =Trade Agreements Act	[Blank] =Standard ATW-SW4 =Chicago Rated	14PD =1x4 Perceive, Service From Below	20 =2000 Lumens ⁽³⁾ 25 =2500 Lumens 30 =3000 Lumens 35 =3500 Lumens 40 =4000 Lumens 45 =4500 Lumens 50 =5000 Lumens 55 =5500 Lumens 60 =6000 Lumens ^{(2), (3)} 70 =7000 Lumens ^{(2), (3)} 80 =8000 Lumens ^{(2), (3)}	PB1 =Bevel PC3 =PARAMid PP3 =Prism PW1 =Waves PL1 =Leaves PR1 =Ripple	[Blank] =Universal Voltage 120-277 347V =347 Volt ⁽⁴⁾	GL =Single Element Fuse GM =Double Element Fuse	[Blank] =No emergency EL7W =7-watt 120V-277V emergency battery pack ⁽⁵⁾ EL10W =10-watt 120V-277V emergency battery pack ⁽⁵⁾ EL14W =14-watt 120V-277V emergency battery pack ⁽⁵⁾ EL10WSD =10W emergency battery pack with self-diagnostic installed ^{(5), (7)} EL14WSD =14W emergency battery pack with self-diagnostic installed ^{(5), (7)} ETRD =Emergency Transfer Relay with dimming control ⁽⁶⁾ RRU =LVS Controls Emergency Transfer Relay with dimming control ⁽⁶⁾
Notes (13) 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) Custom lumen output available: 2000 to 8000 lumens. (2) 5LTHD driver not available on 60, 70, and 80 lumen outputs. (3) WN WaveLinX not available on 20, 60, 70, and 80 lumen outputs.		Notes (4) 347 with emergency not available with SD driver.		Notes (5) 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. (6) Used to bypass local control during outage. Must be used in conjunction with UL 1008 device (provided by others). Devices are universal voltage (120-277V). 347 not available. (7) EL10WSD and EL14WSD not available with 347V.

CRI/CCT	Flex	Driver Type	Number of Drivers
CRI/CCT ⁽⁸⁾	Flex ⁽⁹⁾	Driver Type	Number of Drivers
L830 =80CRI, 3000K L835 =80CRI, 3500K L840 =80CRI, 4000K L850 =80CRI, 5000K L930 =90CRI, 3000K L935 =90CRI, 3500K L940 =90CRI, 4000K L950 =90CRI, 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 Dimming Driver (1%-100% Dimming) SLTD =DALI Driver (5%-100% Dimming) SLTHD =DALI Driver (1%-100% Dimming) SD =Step Dimming Driver (50%, 100% Dimming) LH =Lutron HiLume (LDE1 series) 1%-100% EcoSystem Driver with Soft-on Fade to Black dimming ⁽⁷⁾ SR =Sensor-ready Driver (1%-100% Dimming)	[Blank] =1 Driver
Notes (8) 90CRI - 2700K available - consult factory.	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: (F) Consult Marketplace Options - Lutron system pages for additional details and compatibility. Compatible only with driver series shown. Requires field commissioning to operate or dim. Contact Lutron at www.lutron.com	

Integrated Sensing Systems	Packaging	Accessories
Integrated Sensing Systems	Packaging	Accessories (order separately) ⁽¹⁴⁾
[Blank] =No Sensor WAA =WaveLinX Wireless Integrated Sensor ^{(10), (A)} WAB =WaveLinX Lite Wireless Integrated Sensor ^{(11), (B)} SVPD1 =0-10V Stand-alone Integrated Sensor ^{(11), (D)}	U =Unit Pack PAL =Job Pack, out of carton PALC =Job Pack, in carton	EQ-CLIP-U =T-BAR Safety Earthquake Clips ⁽¹²⁾ DF-14W-U =1' x 4' Drywall Frame Kit SK-14-WT =1' x 4' Tall Surface Mount Kit ^(D) ISHH-01 =Programming Remote for Integrated Sensor ^(B) ISHH-02 =Personal Control Remote for Integrated Sensor ^(B)
Notes (10) WAA sensor to be used with CD or W2A driver. (11) WAB and SVPD1 sensor to be used with CD 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 Wireless system pages for additional details and compatibility. (B) WaveLinX Lite devices are not currently compatible with the WaveLinX Wireless Area Controller. Consult WaveLinX Lite Commercial system pages for additional details and compatibility. (D) Consult SVPD series system pages for additional details and compatibility.		Notes (12) An EQ Grid Clip is recommended for all 9/16" ceiling systems. (14) Accessories sold separately will be separately analyzed under domestic preference requirements. Consult factory for further information. (D) For use with SVPD sensor only. Consult SVPD series system pages for additional details and compatibility.

Product Specifications

Construction

- 3-1/4" Rigid housing is die formed of code gauge prime cold rolled steel
- Full length die-formed stiffeners and unibody endplate for added strength
- Four auxiliary fixture end tie-back points provided
- Endplates have integral Grid-lock feature for safety and convenience
- 1/2" Regressed extruded aluminum door

Hinging/Latching

- Door assembly hinges down for easy access from below
- Positive cam action steel latches with powder coat matte white finish
- Safety-lock T-hinges allow hinging and latching either side

Frame/Shielding

- Proprietary Perceive™ optical system enables dynamic visual depth on a flat surface
- Bottom surface can be wiped down for easy cleaning and maintenance
- Durable lens system is >.107" thick and includes diffuser, 3D elements and anti-glare

Controls

- 0-10V dimming to 1% standard
- WaveLink wireless sensor compatible for standalone, controlled, connected, and IoT capability
- SVPD sensor compatible for out-of-the-box functionality
- DALI 2.0, Lutron, and step-dimming available

Light Engine / Electrical

- LED's available in 3000K, 3500K, 4000K, or 5000K at 80 CRI or 90 CRI minimum
- Color accuracy ≤ 3 -Step MacAdam ellipse (SDCM)
- TM21 life at 72,000 hours up to L86 and calculated L70 exceeds 170,000 hrs
- Drivers available in 120-277V and 347V

Emergency Battery Pack Option

- 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

- Multistage, iron phosphate pretreatment
- Housing is high reflectance pre-paint white finish
- Frame assembly is powder coat matte white finish

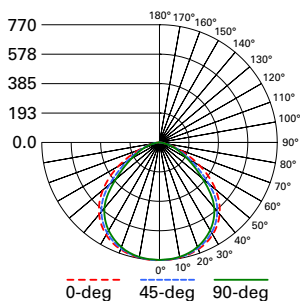
Compliance

- IC rated for insulation contact
- cULus listed for damp locations for 25°C ambient environments
- RoHS compliant
- Tested according to IESNA LM-79 and LM-80 procedures
- Stated life per TM21 standards
- Can be used to comply with California Title 24 Non-Residential
- Meets IEEE 1789-2015 Standard Recommended Practice for LED flicker light modulation
- Contributes to meeting several WELL™ v1 and v2 Features

Warranty

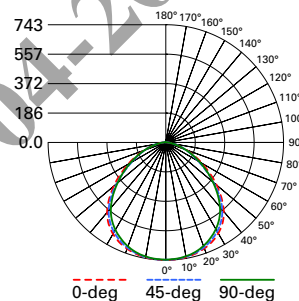
- Five year warranty standard. Optional ten year warranty available.

Photometric Data

[View IES files](#)


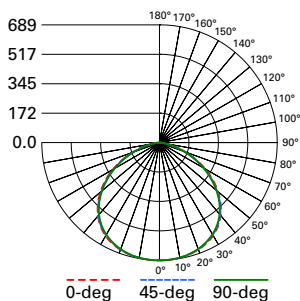
14PD-20-PB1-L835

Electronic Driver
Linear LED 3500K
Spacing criterion: (II) 1.34 x mounting height, (⊥) 1.28 x mounting height
Lumens: 1980
Input Watts: 17.4W
Efficacy: 114 LPW
Test Report: 14PD-20-PB1-L835.IES



14PD-20-PC3-L835

Electronic Driver
Linear LED 3500K
Spacing criterion: (II) 1.32 x mounting height, (⊥) 1.27 x mounting height
Lumens: 1915
Input Watts: 17.4W
Efficacy: 110 LPW
Test Report: 14PD-20-PC3-L835.IES



14PD-20-PP3-L835

Electronic Driver
Linear LED 3500K
Spacing criterion: (II) 1.35 x mounting height, (⊥) 1.33 x mounting height
Lumens: 2003
Input Watts: 17.4W
Efficacy: 115 LPW
Test Report: 14PD-20-PP3-L835.IES

Energy and Performance Data

Electrical Performance - Perceive 1x4

Lumen Package	CCT	Delivered Lumens						Power	Efficacy (LPW)						Current (A)	
		Bevel (PB1)	PARAmid (PC3)	Prism (PP3)	Waves (PW1)	Leaves (PL1)	Ripple (PR1)	Watts	Bevel (PB1)	PARAmid (PC3)	Prism (PP3)	Waves (PW1)	Leaves (PL1)	Ripple (PR1)	120V	277V
2000	3500	1980	1915	2003	1990	1903	1931	17.4	114	110	115	115	110	111	0.14	0.06
2500	3500	2527	2444	2556	2540	2429	2464	22.7	111	108	113	112	107	108	0.19	0.08
3000	3500	2992	2894	3027	3007	2876	2918	27.0	111	107	112	111	106	108	0.23	0.10
3500	3500	3486	3372	3526	3503	3351	3399	31.8	110	106	111	110	105	107	0.27	0.11
4000	3500	4010	3879	4057	4030	3854	3910	37.8	106	103	107	107	102	104	0.31	0.14
4500	3500	4495	4348	4547	4517	4320	4383	42.9	105	101	106	105	101	102	0.36	0.15
5000	3500	5018	4854	5076	5043	4823	4893	48.6	103	100	105	104	99	101	0.40	0.18
5500	3500	5493	5313	5557	5520	5280	5356	54.1	101	98	103	102	98	99	0.45	0.20
6000	3500	6027	5830	6097	6057	5793	5877	59.3	102	98	103	102	98	99	0.49	0.21
7000	3500	6968	6741	7049	7003	6697	6795	71.2	98	95	99	98	94	95	0.59	0.26
8000	3500	8057	7794	8151	8097	7744	7857	84.4	96	92	97	96	92	93	0.70	0.30

Optical Performance - Perceive 1x4

Lumen Package	CCT	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)					
		Bevel (PB1)	PARAmid (PC3)	Prism (PP3)	Waves (PW1)	Leaves (PL1)	Ripple (PR1)	Bevel (PB1)	PARAmid (PC3)	Prism (PP3)	Waves (PW1)	Leaves (PL1)	Ripple (PR1)
2000	3500	16.4	16.1	17.2	17.1	16.8	16.8	2104	1936	1930	1936	1829	1887
2500	3500	17.2	16.9	18.1	17.9	17.7	17.7	2685	2471	2463	2470	2334	2408
3000	3500	17.8	17.5	18.7	18.5	18.3	18.3	3179	2925	2916	2925	2763	2851
3500	3500	18.3	18.1	19.2	19.0	18.8	18.8	3704	3408	3397	3408	3219	3322
4000	3500	18.8	18.6	19.7	19.5	19.3	19.3	4261	3921	3908	3920	3703	3821
4500	3500	19.2	18.9	20.1	19.9	19.7	19.7	4776	4395	4381	4394	4151	4284
5000	3500	19.6	19.3	20.5	20.3	20.1	20.1	5332	4906	4890	4906	4634	4782
5500	3500	19.9	19.6	20.8	20.6	20.4	20.4	5837	5371	5353	5370	5073	5235
6000	3500	20.2	20	21.1	20.9	20.7	20.7	6404	5893	5874	5892	5566	5744
7000	3500	20.7	20.6	20.8	21.4	21.2	21.2	7404	6813	6791	6812	6435	6640
8000	3500	21.2	21.1	21.3	21.9	21.7	21.7	8561	7878	7852	7877	7441	7678

Nominal Lumen Maintenance

TM-21 Lumen Maintenance (72,000 hours)	Theoretical L70 (hours) ⁽¹⁾
> 86%	> 170,000

Notes: (1) 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.

Lumen Adjustment Factors

CCT Multiplier	80 CRI	90 CRI
3000K	0.953	0.826
3500K	1.000	0.837
4000K	1.005	0.849
5000K	1.027	0.894

Shipping Data

Series Catalog No.	Weight (lbs)	Units per Pallet 49"L x 52"W x 55"H
14PD	13	21

Example of Lumen Adjustment Calculation

14PD-40-PB1-L835 at 80CRI at 5000K

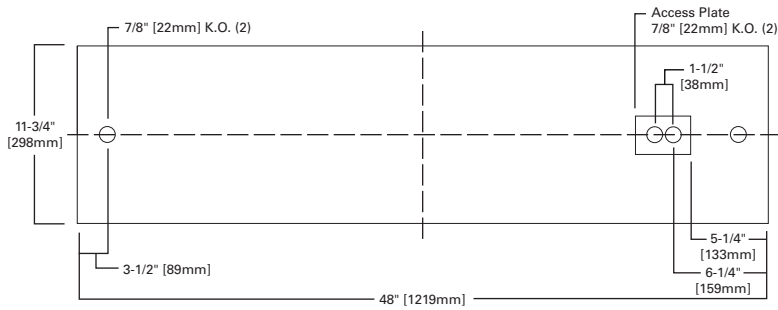
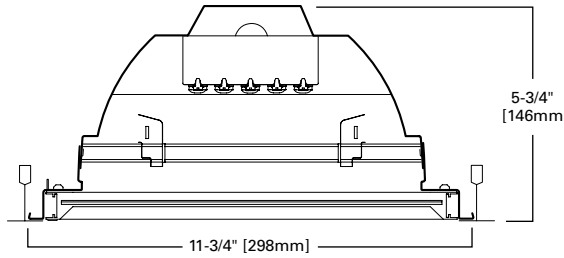
Lumen Adjustment Factor = 1.027

Total Light Output =

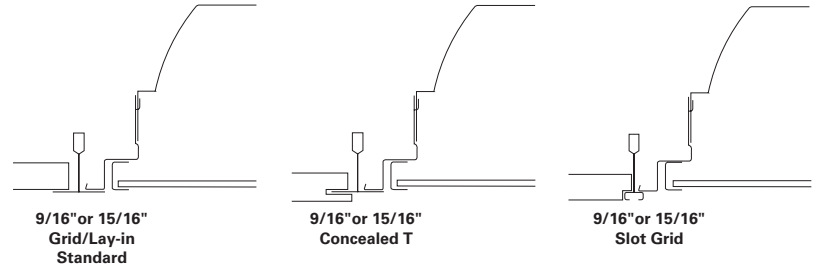
4,010 lm x 1.027 = 4,118 lm

Efficacy = 4,118 lm / 37.8W = 109 lm/W

Dimensional and Mounting Details



Ceiling Compatibility



Ceiling Mounting Choices

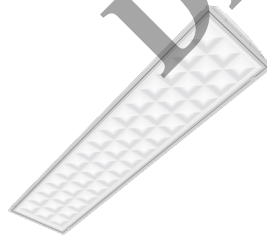
Application	Catalog	UPC	Description
Hard Ceiling Recessed	DF-14W-U	662401232949	1x4 Dry Wall Frame Kit
Surface Mount	SK-14-WT	080083906703	1x4 Tall Surface Mount Kit

Perceive Optic Patterns

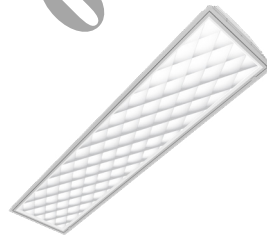
Cooper Lighting Solutions' Perceive™ technology enables a wide-variety of 3D visual forms; all on an easy-to-clean flat surface.



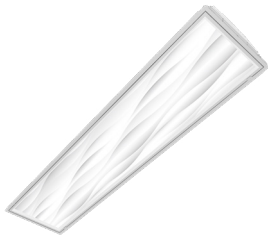
Bevel (PB1):
Distinct regressed
coffer appearance



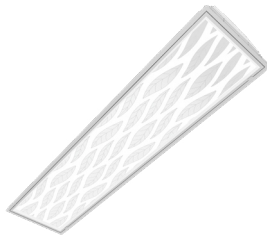
PARAMid (PC3):
Dynamic pyramid stud 3"
cells



Prism (PP3):
Diamond prismatic
geometry



Waves (PW1):
Energetic flowing waves,
sculpted appearance



Leaves (PL1):
Subtle organic leaves



Ripple (PR1):
Soft undulating form

Control Systems

- WaveLinx Wireless
- WaveLinx Wired
- WaveLinx Lite



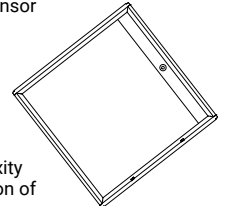
Connected Systems
[CLICK HERE](#)

The Perceive with Integrated Sensor technology provides automatic energy savings without sacrificing performance. The Perceive delivers superior lighting with integrated occupancy and daylighting controls.

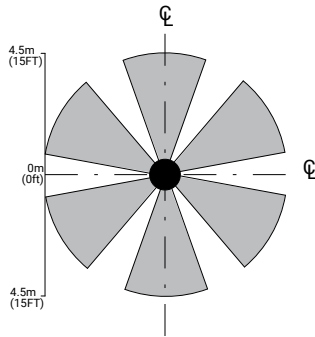
For standalone and controlled applications, the WaveLinx Lite integral sensor provides out-of-the-box functionality with no gateways required and factory startup is not needed.

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

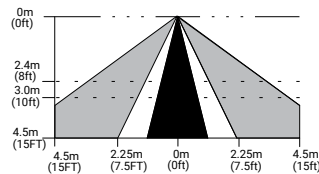
The WaveLinx Wireless Connected Lighting System combined with Trellix provides an open IoT platform and infrastructure that connects intelligent sensors leveraging the real-estate of the physical light fixture to solve higher complexity problems to deliver actionable insights through the aggregation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



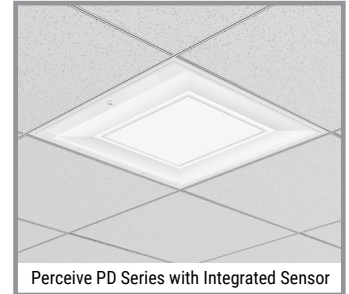
TOP VIEW:



SIDE VIEW:



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

