gotham | IVO™

IVO™ 4" Square Shallow Recessed Wall Wash
New Construction & Remodel

TRIM STYLES AND COLORS

2" [5.1]

5 1/2" [14]
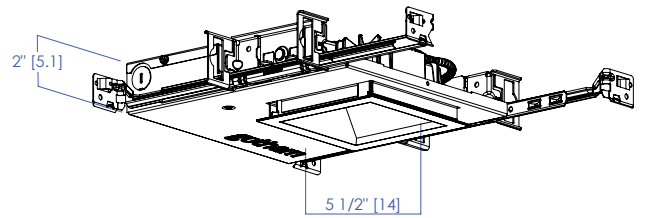
New construction housing shown. Please see pages 5-6 for full set of dimensional drawings.

## Flange Styles

Flanged

Flangeless

Reflector Colors

| Clear Alzak | Gold | Pewter | Wheat | Black | White Anti-Microbial | Soft White | Bronze |

Feature Set

- Ultra Shallow recessed downlight fits in plenums as small as 2-inches above ceiling
- Perfect Color™ consistency within 1/2-step MacAdam Ellipse
- Exceptional color rendering with 80 CRI, 90 CRI, or 95 CRI minimum
- Bounding Ray™ optical design delivers low brightness apertures for a comfortable lighting experience
- 65° cutoff to source and source image
- Proprietary optical design delivers exceptional uniformity ceiling to floor
- Up to 90% lumen maintenance at 55,000 hours
- Fixtures are wet location, covered ceiling

QUICK SPECIFICATIONS

Distribution / Beam Angles

LW
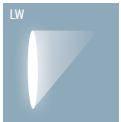
Superior Perfomance*

Nominal Lumens	05LM	07LM	10LM	15LM	20LM	25LM	30LM
Delivered Lumens	375	553	755	1050	1373	1690	1991
Wattage	5.3	7.8	10.5	15.7	22.4	25.0	30.7
Lumens per Watt	71	71	72	67	61	68	65

*Based on **3500K** 80CRI LW AR LSS

PRODUCT FAMILY

IVO 4" Square Shallow Product Family

Downlight

WET LOCATION™

CA+ CAPABLE   LOW UGR   nLIGHT

Luminaire Type: _____

Catalog Number: _____

ORDERING INFORMATION

EXAMPLE: IVO4SQS WW 10LM 35K 80CRI MIN10 MVOLT ZT NCH LW AR LSS F

Series		Function		Lumen Packages		Kelvin Temperature		Color Rendering Index[2]		Dimming Level	
IVO4SQS	Square Shallow Recessed	WW	Wall Wash	05LM[1]	500 Lumens	27K	2700K	80CRI	80+ CRI	MIN10	Constant current, dimming to 10%
				07LM	700 Lumens	30K	3000K	90CRI	90+ CRI	MIN1	Constant current, dimming to 1%
				10LM	1000 Lumens	35K	3500K	95CRI	95+ CRI	DARK	Constant current, dimming to 0.1%
				15LM	1500 Lumens	40K	4000K				
				20LM	2000 Lumens	50K	5000K				
				25LM	2500 Lumens						
				30LM	3000 Lumens						

Voltage		Control Input		Emergency Option		Housing Style		Options	
MVOLT	120V-277V	ZT[4]	0-10V Generic. Linear dimming to 1% min	(Blank)	No Emergency	NCH	New Construction Housing	SF[8]	Single Fuse. Specify 120 or 277.
120	120V	EZT	0-10V eldoLED. Linear dimming to 1% min	E6WR[7]	6W integral emergency battery, CA Title 20 compliant emergency battery pack with remote test switch. 2000LM max.	ICAT	IC/Airtight Housing (new construction only). 2000LM max.		
277	277V	ELV[5]	Electronic line voltage. Forward phase-cut (120V only)			CP	Chicago Plenum (new construction only). 2000LM max.		
347[3]	347V	DMX[6]	DMX with RDM (remote device management). Square Law dimming to <1%			RM	Remodel/Install from below. Not available with Emergency Pack options. 2500LM max.		
		DALI[6]	DALI Compatible. Logarithmic dimming to <1%						
		NLIGHT	Embedded wired controls by nLight						
		NLTAIR2	Embedded wireless controls by nLight						
		NLIGHTER	Embedded wired controls by nLight with UL924 listed emergency operation						
		NLTAIREM2	Embedded wireless controls by nLight with UL924 listed emergency operation						

Trim Style		Trim Color		Trim Finish		Flange Option	
LW	Lensed Wall Wash	AR	Clear Metalized	LD	Matte Diffuse	F	Self Flanged (color matches trim)
		BR	Black (painted)	LSS	Semi Specular	FL	Flangeless (Drywall)
		GR	Gold Metalized			FBL[11]	Flange Only Black
		PR	Pewter Metalized			FWR[12]	Flange Only White
		WTR	Wheat Metalized			FRALTBD[10]	Flange Only RAL
		WMR[9]	Soft White Matte (painted)			FCPC	Flange Only Custom Paint Color
		WRAMF[9]	White with Anti-Microbial (painted)				
		BZR[9]	Dark Bronze Matte (painted)				
		TRALTBD[9,10]	Trim RAL # (TBD for pricing only)				
		TCPC[9]	Trim Custom Paint Color				

ORDERING NOTES

1. 05LM only available with ELV or ZT. Not available with 347V.
2. 50K CCT is not available with 90CRI. 35K, 40K or 50K is not available with 95CRI.
3. 347 only available with ZT at MIN1 or MIN10. Not available with nLight devices or Emergency Options.
4. ZT is not available with DARK.
5. Only available with MIN1.
6. DMX and DALI are not available with MIN1 or MIN10.
7. E6WR is not available with DMX, NLIGHT, NLIGHTER, or NLTAIREM2

8. RM with SF is not valid with DMX or nLight.
9. Not available with Optical Finish.
10. Replace with applicable RAL number and finish when ready to order. See RAL BROCHURE for available color options.
11. For use with different trim colors only (i.e. AR, BZR, GR, MWR, PR, WTR, WMR, WRAMF options). Not applicable with BR (black reflector) or FL (flangeless) option.
12. For use with different trim colors only (i.e. AR, BR, BZR, GR, PR, WTR options). Not applicable with WMR, WRAMF (white reflector) or FL (flangeless) option.

SPECIFICATIONS

Optical System

Bounding Ray™ optical design delivers top-down flash for superior brightness control. Source and source image present simultaneously

Unitized optical system has mechanical attachment of the light engine to the trim for optimized optical alignment.

Source regression delivers 65 degrees of visual cutoff to source and source image.

LED Light engine

Proprietary light engines are custom binned to deliver perfect color consistency of 0.5-step MacAdam Ellipse fixture to fixture.

LED light engine is rated for L90 / 55,000 hours up to 2500 lumens and L80 / 55,000 hours at 3000 lumens.

Available in 80, 90, or 95 CRI minimum. 90 CRI has an R9 greater than 50. 95 CRI has an R9 greater than 80.

Trims

Trims are field interchangeable via twist-lock mechanism.

Trims are available in nine (9) standard colors and three standard finishes that can be customized.

Electrical

Luminaire operates from a 50 or 60 Hz ±3 Hz AC line over a voltage ranging from 120 VAC to 347 VAC. The fluctuations of line voltage have no visible effect on the luminous output.

Luminaire has a power factor of 85% or greater at all standard operating voltages and full luminaire output.

EMI/RFI per FCC Title 47 CFR, Part 15, Class A rated. ELV Phase dimming Driver is Class B rated except when used with E6WR or at 15LM and above.

Input wires are 18AWG, 600V minimum, solid copper.

Controls (Optional)

Luminaire is equipped with interface for nLight wired, meaning it has the ability to communicate over an nLight network. When wired, using CAT-5 cabling, with other nLight-enabled sensors, power packs, or WallPods, an nLight control zone is created. Once linked to a Gateway, directly or via a Bridge, the zone becomes capable of remote status monitoring and control via SensorView software. Luminaire is equipped with interface for nLight Air, meaning it can communicate over the wireless nLight control platform. It pairs to other luminaires and wall switches through our mobile app, CLAIRITY+, which allows for single fixture control.

Dimming

The luminaire is capable of continuous dimming without perceivable stroboscopic flicker as measured by flicker index (ANSI/IES RP-16-10) over a range of 100 – 10%, 100 – 1.0% or 100 – 0.1% of rated lumen output with a smooth shut off function to step to 0%.

eldoLED LED drivers (EZT) conforms to IEEE P1789 standards.

The driver is inaudible in 24dB environment, and stable when input voltage conditions fluctuate over what is typically experienced in a commercial environment.

Emergency Battery (Optional)

Self testing integral emergency battery (E6WR) provides a emergency lighting for a duration of 90 minutes to meet egress code requirements.

Emergency battery is accessible from below the ceiling.

Emergency battery is CEC T20 Compliant.

Installation

Luminaire installs in 2" plenum depth ceiling (unless noted otherwise).

Fixture is suitable for installation in ceilings from 5/8" to 2" in ceiling thickness via patented retention spring design.

Luminaire has telescopic mounting bars with maximum 24" and minimum 10 1/2" extension and 1 1/8" vertical adjustment.

Mounting brackets also work with C-Channel from ¾" to 11/2", Flat Strap from ½" to ¾", Conduit up to ¾" in diameter, and ½" angle bar.

Luminaire is rated for up to (8) No. 12 AWG 90°C through branch circuit conductors.

Fixture should be used in ceilings with 25°C ambient temperature as standard.

Non-IC rated luminaires shall be installed with 3" of clearance on all sides from insulation or 1/2" clearance on all sides from non-combustible materials (unless marked spacing noted otherwise.)

IC rated luminaires can be installed in direct contact with insulation.

Construction

Luminaire features LED module with quick-disconnect harness and strain relief for ease of inspection and service.

Servicing and maintaining the light engine, driver and branch circuit conductors is possible without tools from below the ceiling.

Luminaire is constructed with 20 gauge galvanized steel.

Listings

Fixtures are CSA certified to meet US and Canadian Standards. All fixtures manufactured in strict accordance with the appropriate and current requirements of the "Standards for Safety" to UL wet location, covered ceiling only, standard.

Photometrics

All photometry is conducted by IESNA standard LM-79-08 in an accredited lab. LEDs are tested to LM-80 standards. Lumen maintenance is calculated via TM-21.

Warranty

5-year limited warranty. This is the only warranty provided and no other statements in this specification sheet create any warranty of any kind. All other express and implied warranties are disclaimed. Complete warranty terms located at: www.acuitybrands.com/support/warranty/terms-and-conditions

Note:

Actual performance may differ as a result of end-user environment and application.

All values are design or typical values, measured under laboratory conditions at 25 °C.

The product images shown are for illustration purposes only and may not be an exact representation of the product.

⌐A+ Capable Luminaire

This item is an A+ capable luminaire, which has been designed and tested to provided consistent color appearance and out-of-the-box control capability with simple commissioning when used with Acuity Brands controls products.

All configurations of this luminaire are calibrated and tested meet the Acuity Brands' specification for chromatic consistency - including color rendering, color fidelity and color temperature tolerance around standard CIE chromaticity coordinates.

To learn more about A+, visit www.acuitybrands.com/aplus.

TABLES OF USE

Marked Spacing in Inches			
IVO4SQS LW NCH - 3000 Lumens Max.			
Lumen Package	Fixture Center to Center Min	Fixture Center to Building Member MIN	Space Above Fixture
3000	24	12	0.5

Dimming Configurations

Dimming Level		Control Input	Dimming Level	Driver Dim Curve	Recommended Control Dim Curve
MIN10	+	ZT	100% to 10%	Linear	Linear/Logarithmic
	+	EZT	100% to 10%	Linear	Linear/Logarithmic
MIN1	+	ZT	100% to 1%	Linear	Linear/Logarithmic
	+	EZT	100% to 1%	Linear	Linear/Logarithmic
	+	ELV	100% to 1%*	n/a	n/a
DARK	+	EZT	100% to 0.1%	Logarithmic	Linear
	+	DMX	100% to 0.1%	Square	Linear
	+	DALI	100% to 0.1%	Logarithmic	Linear

* ELV Minimum Dimming level depends on dimmer and dimmer load

Embedded Night Configurations

Dimming Level		Control Input	Dimming Level	Control Provided	Driver Provided
MIN10	+	NLIGHT	100% to 10%	NIO EZDXA	eldoLED 0-10V ECOdrive
	+	NLIGHTER	100% to 10%	NIO EZDCL ER	eldoLED 0-10V ECOdrive
	+	NLTAIR2	100% to 10%	RIO EZDL G2	eldoLED 0-10V ECOdrive
	+	NLTAIREM2	100% to 10%	RIO EZDL EM G2	eldoLED 0-10V ECOdrive
MIN1	+	NLIGHT	100% to 1%	NIO EZDXA	eldoLED 0-10V ECOdrive
	+	NLIGHTER	100% to 1%	NIO EZDCL ER	eldoLED 0-10V ECOdrive
	+	NLTAIR2	100% to 1%	RIO EZDL G2	eldoLED 0-10V ECOdrive
	+	NLTAIREM2	100% to 1%	RIO EZDL EM G2	eldoLED 0-10V ECOdrive
DARK	+	NLIGHT	100% to 0.1%	NIO EZDXA	eldoLED 0-10V SOLOdrive
	+	NLIGHTER	100% to 0.1%	NIO EZDCL ER	eldoLED 0-10V SOLOdrive
	+	NLTAIR2	100% to 0.1%	RIO EZDL G2	eldoLED 0-10V SOLOdrive
	+	NLTAIREM2	100% to 0.1%	RIO EZDL EM G2	eldoLED 0-10V SOLOdrive

How to Estimate Delivered Lumens in Emergency Mode
Delivered Lumens = P x LPW
P = Output power of emergency driver. P = 6W for E6WR
LPW = Lumen per watt rating of the luminaire. This information is available on the ABL luminaire spec sheet.

FLANGELESS

Flangeless Installation

Gotham's flangeless option utilizes a micro-thin polymer mud ring that minimizes the amount of drywall compound required to finish the ceiling. The end result is a virtually undetectable flangeless downlight installation.

The polymer mud ring is installed independent of the of the recessed frame, therefore floating with the ceiling. This innovation minimizes any surface cracks during reflector installation, ceiling movement and any future service to the recessed frame, wiring, electronics, etc.

Partially finished mud ring, showing cross-section detail.

An IVO downlight requires only approximately 3" of plaster to finish.

IVO with flangeless trim

DIMENSIONAL DATA

New Construction Dimensions

Dimensions in inches [centimeters]

1/2" clearance on all sides required from non-combustible materials in non-IC applications, unless marked spacing noted otherwise.
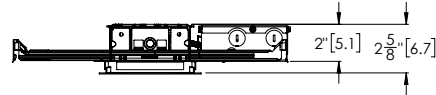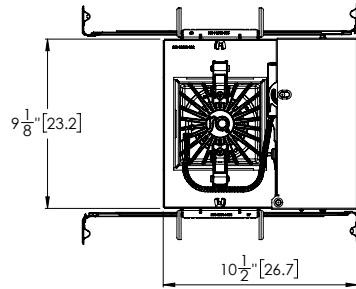
Trim Aperture: 4 5/16" x 4 5/16" (11 x 11)

Trim Flange O.D.: 5 1/2" x 5 1/2" (14 x 14)

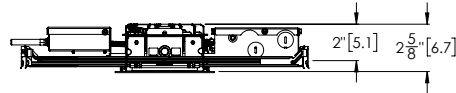Ceiling Cutout (flanged): 5" x 5" (12.7 x 12.7)

Ceiling Cutout (flangeless): 5 1/4" x 5 1/4" (13.3 x 13.3)
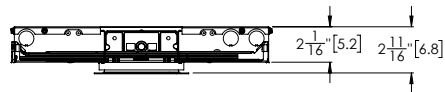
Standard New Construction Housing (NCH)

9 $\frac{1}{8}$"[23.2]

10 $\frac{1}{2}$"[26.7]

2"[5.1]   2 $\frac{5}{8}$"[6.7]

Shipping Weight: 5.7 lbs

NCH with NLIGHT, NLTAIR2, DMX

2"[5.1] NLTAIR2

9 $\frac{1}{8}$"[23.2]

13 $\frac{15}{16}$"[35.5] NLIGHT

15 $\frac{5}{16}$"[38.8] DMX

2"[5.1]   2 $\frac{5}{8}$"[6.7]
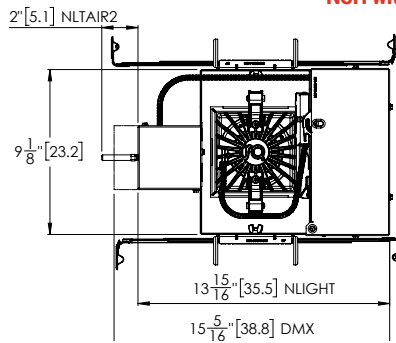
Shipping Weight: 7.2 lbs

IC Airtight ICAT or Chicago Plenum CP
(dimensions are the same when E6WR added)

9 $\frac{1}{4}$"[23.4]

14 $\frac{7}{8}$"[37.8]

2 $\frac{1}{16}$"[5.2]   2 $\frac{11}{16}$"[6.8]
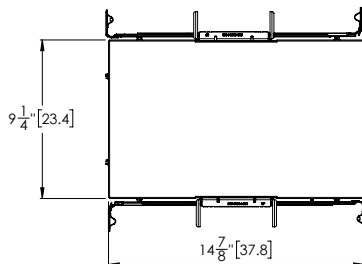
Shipping Weight: 8.7 lbs

DIMENSIONAL DATA

Remodel Dimensions

Dimensions in inches [centimeters]

1/2" clearance on all sides required from non-combustible materials in non-IC applications, unless marked spacing noted otherwise.
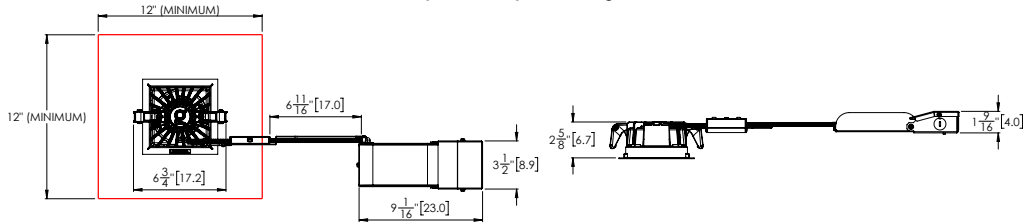
Trim Aperture: 4 5/16" x 4 5/16" (11 x 11)

Trim Flange O.D.: 5 1/2" x 5 1/2" (14 x 14)

Ceiling Cutout (flanged): 5" x 5" (12.7 x 12.7)

Ceiling Cutout (flangeless): 5 1/4" x 5 1/4" (13.3 x 13.3)

Remodel Construction (RM)
Requires 2" of plenum height

12" (MINIMUM)
12" (MINIMUM)
$6\frac{11}{16}$"[17.0]
$6\frac{3}{4}$"[17.2]
$2\frac{5}{8}$"[6.7]
$3\frac{1}{2}$"[8.9]
$9\frac{1}{16}$"[23.0]
$1\frac{9}{16}$"[4.0]

Shipping Weight: 3.6 lbs

Remodel Construction (RM) Driver Enclosure with Fuse (SF)
Requires 3" of plenum height

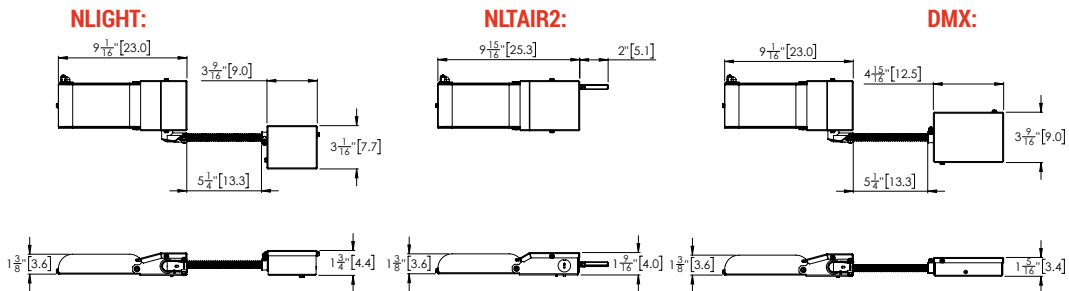$9\frac{15}{16}$"[25.3]
$3\frac{1}{2}$"[8.9]
$1\frac{3}{8}$"[3.6]
$1\frac{9}{16}$"[4.0]
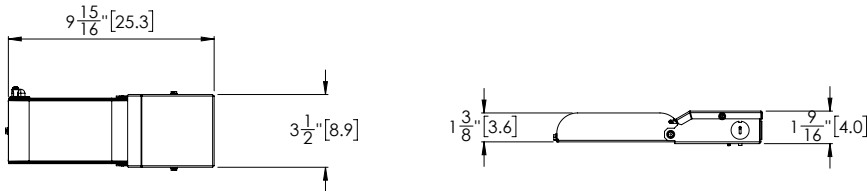
Shipping Weight: 4.8 lbs

Remodel Construction (RM) Driver Enclosures with Control Options
Requires 3" of plenum height

NLIGHT:

$9\frac{1}{16}$"[23.0]
$3\frac{9}{16}$"[9.0]
$3\frac{1}{16}$"[7.7]
$5\frac{1}{4}$"[13.3]
$1\frac{3}{8}$"[3.6]
$1\frac{3}{4}$"[4.4]

NLTAIR2:

$9\frac{15}{16}$"[25.3]
2"[5.1]
$1\frac{3}{8}$"[3.6]
$1\frac{9}{16}$"[4.0]

DMX:

$9\frac{1}{16}$"[23.0]
$4\frac{15}{16}$"[12.5]
$3\frac{9}{16}$"[9.0]
$5\frac{1}{4}$"[13.3]
$1\frac{3}{8}$"[3.6]
$1\frac{5}{16}$"[3.4]

Shipping Weight: 4.8 lbs

PHOTOMETRY

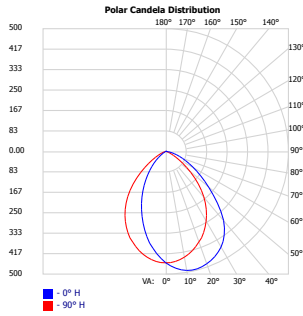## LW Lensed Wall Wash

IVO4SQS WW 20LM 35K 80CRI LW AR LSS

Wattage: 22.4, Lumens: 1373, LPW: 61, S/MH: 1.41, Test No: 23-462-1P51

Polar Candela Distribution

Candela Summary	
0°	796
10°	863
20°	854
30°	790
40°	642
50°	403
60°	224
70°	104
80°	30
90°	0

Zonal Lumen Summary		
Zone	Lumens	%
0-30	565.5	41.2%
0-40	871.1	63.4%
0-60	1280.2	93.2%
0-90	1373	100.0%

Cone of Light			
Mounting Height	Initial FC Center Beam	Beam Diameter (ft)	
		Horizontal	Vertical
8'	12.43	13.6	11.7
10'	7.96	17	14.6
12'	5.53	20.4	17.5
14'	4.06	23.9	20.4
16'	3.11	27.3	23.3

CRI/CCT Multiplier Table		
CRI	CCT	Multiplier
80	2700K	0.92
	3000K	0.96
	3500K	1.00
	4000K	1.01
	5000K	1.04
90	2700K	0.80
	3000K	0.85
	3500K	0.85
	4000K	0.89
95	2700K	0.68
	3000K	0.75

Reflector Finish Multiplier		
Trim Color	Optical Finish	Multiplier
AR	LSS	1.00
AR	LD	0.94
GR	LSS	0.99
GR	LD	0.94
PR	LSS	0.97
PR	LD	0.91
WTR	LSS	0.96
WTR	LD	0.91
WR		1.00
BZR		0.82
BR		0.82

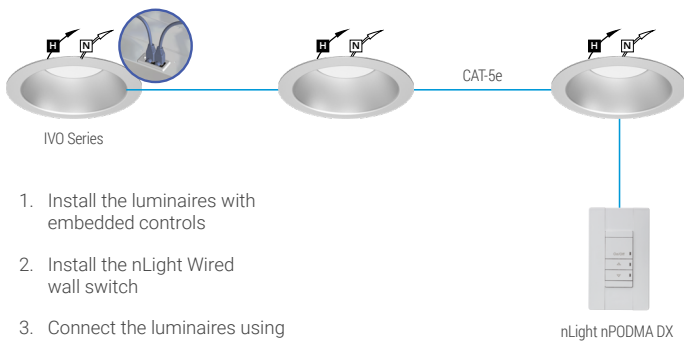| UGR (70% 50% 20% reflectance using a 4H x 8H room size)		
Lumen Package	Crosswise	Endwise
	LW	LW
05LM	22.7	16.9
07LM	24.1	18.2
10LM	25.1	19.3
15LM	26.3	20.4
20LM	27.2	21.4
25LM	27.9	22.1
30LM	28.5	22.6

NLIGHT

nLIGHT®

Single Lighting Controls Platform for Indoor & Outdoor Spaces

nLight® is your networked lighting controls platform, for indoor and outdoor applications, providing wired or wireless options. Scaling from room to campus-wide applications, it is the one platform that grows with your business today and tomorrow; to seamlessly address energy cost optimization, building code compliance, improved occupant comfort, and much more. nLight also interfaces with DALI®, BACnet®, DMX and additional third-party devices.

nLightcontrols.com

Wired Embedded Controls

IVO Series

CAT-5e

nLight nPODMA DX

1. Install the luminaires with embedded controls

2. Install the nLight Wired wall switch

3. Connect the luminaires using standard CAT-5e cables and the controls devices will automatically discover each other and work (plug and play)

Wireless Embedded Controls

IVO Series

nLight rPODBA 2P DX   Mobile Device

1. Install the luminaires with embedded controls

2. Install the nLight AIR battery-powered wall switch

3. Use CL**AIR**ITY+ mobile app to pair the fixtures with the wall switch and if desired, customize the sensor settings

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UL924 Sequence of Operation

The below information applies to all nLight AIR devices with an EM option.

- EM devices will remain at their high-end trim and ignore wireless lighting control commands, unless a normal-power-sensed (NPS) broadcast is received at least every 8 seconds.

- Using the CLAIRITY+ mobile app, EM devices must be associated with a group that includes a normal power sensing device to receive NPS broadcasts.

- Only non-emergency rPP20, rLSXR, rSBOR, rSDGR, and nLight AIR luminaires with version 3.4 or later firmware can provide normal power sensing for EM devices. See specification sheets for control devices and luminaires for more information on options that support normal power sensing.