

# LIGHTING & LIGHTING CONTROL SOLUTIONS AND REBATES



Estes Park | Fort Collins | Longmont | Loveland



The Lighting Agency

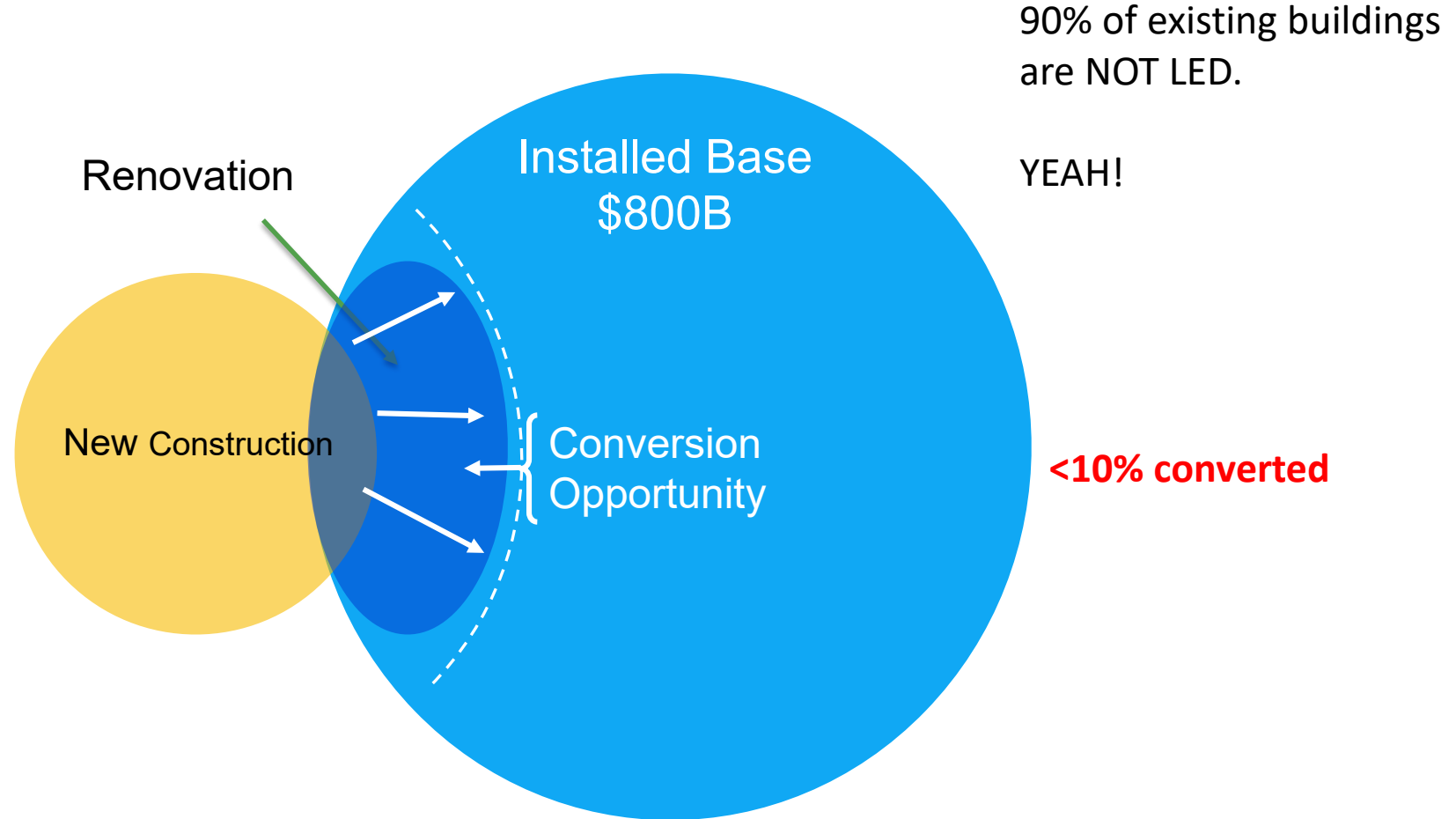
The Lighting Agency Team

Jason Solise – Outside Sales, Energy Specialist

Nick Berry – Controls Sales

2/26/2019

# Market



Source: U.S. Dept. of Energy; Company Estimates

Total available market includes: outdoor, lighting controls, HVAC controls, & BMS opportunity.  
Based on latest building stock square footage.

## Commercial

**ELECTRICAL** — Long-life LEDs, coupled with high-efficiency drivers, provide superior quantity and quality of illumination for extended service life. 80% LED lumen maintenance at 60,000 hours (L80/60,000). Color Variation within 3-step MacAdam ellipse (3SDCM).

**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.  
Specifications subject to change without notice.

77 degree F

## Industrial

standard to provide glare control and LED protection. Optics are IPX rated.

**ELECTRICAL** — L88 at 60,000 hours, L70>100,000 hours. Utilizes a 90°C case temperature driver for maximum life at high temperatures. 0.90 power factor. Luminaire Surge Protection Level: Designed to withstand up to 6kV/3kA per ANSI C82.77-5-2015. Luminaire Surge Protection Level: Designed to withstand up to 10kV/5kA per ANSI C82.77-5-2015, optional. Available as 120-277V or 347-480V input. 0-10V dimming standard for a dimming range of 100% to 10%.

**LISTINGS** — CSA certified to US and Canadian safety standards. Damp location listed. Suitable for ambient temperatures from -40°F (-40°C) to 113°F (45°C) when suspended 18" from ceiling. High ambient option available (HA), suitable for ambient temperatures -40°F (-40°C) to 131°F (55°C) when suspended 18" from ceiling. The Bluetooth® word mark and logos are registered trademarks owned by Bluetooth SIG, Inc. and any use of such marks by Acuity Brands is under license. Other trademarks and trade names are those of their respective owners.

DesignLights Consortium® (DLC) Premium qualified product and DLC qualified product. Not all versions of this product may be DLC Premium qualified or DLC qualified. Please check the DLC Qualified Products List at [www.designlights.org/QPL](http://www.designlights.org/QPL) to confirm which versions are qualified.



**Table 1: Luminaire Requirements**

#	Category	General Application	Requirements								Distribution
			Minimum Light Output (lm)	DLC Standard			DLC Premium**			Primary Use***	
				Minimum Efficacy (lm/W)	Minimum Warranty (years)	CCT / CRI / L70	Minimum Efficacy (lm/W)	Minimum Warranty (years)	CCT / CRI / L90 / L70		
1	Outdoor	Outdoor – Low Output	250-5,000	90	5	≤5700 / ≥65 / ≥50,000	110	5	≤5700 / ≥65 / >36,000 / ≥50,000	<ul style="list-style-type: none"><li>• Outdoor Pole/Arm-Mounted Area and Roadway Luminaires</li><li>• Outdoor Pole/Arm-Mounted Decorative Luminaires</li><li>• Outdoor Full-Cutoff Wall-Mounted Area Luminaires</li><li>• Outdoor Non-Cutoff and Semi-Cutoff Wall-Mounted Area Luminaires</li><li>• Bollards</li><li>• Parking Garage Luminaires</li><li>• Fuel Pump Canopy Luminaires</li><li>• Landscape/Accent Flood and Spot Luminaires</li><li>• Architectural Flood and Spot Luminaires</li><li>• Stairwell and Passageway Luminaires</li><li>• Specialty: _____</li></ul>	See Primary Use Zonal Lumen Density Requirements in Table 4, below
2		Outdoor – Mid Output	5,000-10,000	95			115				
3		Outdoor – High Output	10,000-30,000	100			120				
4		Outdoor – Very High Output*	≥30,000	100			120				
5	Indoor	Interior Directional	250-4,500	65	5	≤5000 / ≥80 / ≥50,000	90	5	≤5000 / ≥80 / >36,000 / ≥50,000	<ul style="list-style-type: none"><li>• Wall Wash Luminaires</li><li>• Track or Mono-Point Luminaires</li><li>• Specialty: _____</li></ul>	
6		Case Lighting	≥50 lm/ft	80			125			<ul style="list-style-type: none"><li>• Display Case Luminaires</li><li>• Horizontal Refrigerated Case Luminaires</li><li>• Vertical Refrigerated Case Luminaires</li><li>• Specialty: _____</li></ul>	
7		Troffer	≥1,500	100			125			<ul style="list-style-type: none"><li>• 2x2 Luminaires for Ambient Lighting of Interior Commercial Spaces</li><li>• 1x4 Luminaires for Ambient Lighting of Interior Commercial Spaces</li><li>• 2x4 Luminaires for Ambient Lighting of Interior Commercial Spaces</li><li>• Specialty: _____</li></ul>	
8		Linear Ambient	≥375 lm/ft	105			130			<ul style="list-style-type: none"><li>• Direct Linear Ambient Luminaires</li><li>• Linear Ambient Luminaires w/ Indirect component</li><li>• Specialty: _____</li></ul>	
9		High Bay	≥5,000	105			130			<ul style="list-style-type: none"><li>• High Bay Luminaires for Commercial and Industrial Buildings</li><li>• Low Bay Luminaires for Commercial and Industrial Buildings</li><li>• High Bay Aisle Luminaires</li><li>• Specialty: _____</li></ul>	

\*Under the next revision to the efficacy requirements (V5.0), DLC intends to split the “very high” outdoor lumen bin from the “high” lumen bin, and set unique efficacy requirements for each bin.

\*\*Products seeking qualification in the DLC Premium classification will be required to pass an L<sub>90</sub> >36,000 hours, as evaluated using TM-21. This requirement is in addition to the L<sub>70</sub> requirements of the DLC Standard classification.

\*\*\*Luminaires may not qualify for DLC Premium using “Specialty: \_\_\_\_\_” as the Primary Use designation.



## Topics

## Focus Areas



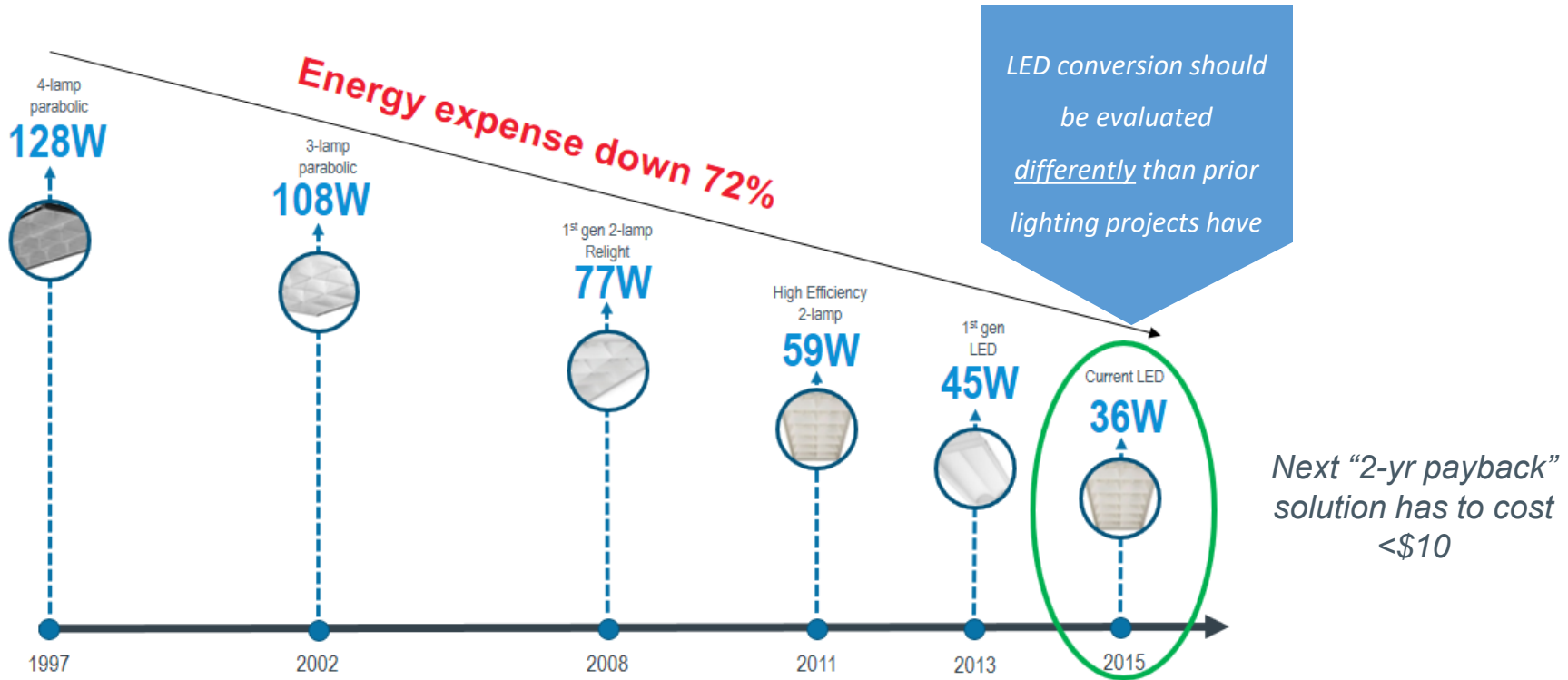
Efficacy update per  
pace of technology  
without sacrificing  
quality of light

Color Quality  
Distribution  
Glare  
Flicker  
Circadian Wellness

Dimming  
Integral controls  
Compatibility



Conversion to LED will probably be the last pure “energy payback” lighting change we’ll ever make





Estes Park | Fort Collins | Longmont | Loveland

## - Lighting

Upgrade Type	Rebate (per watt reduced)
LED Fixture (fluorescent replacement)	\$1.25
LED Fixture (HID/incandescent replacement)	\$1.00
LED Retrofit (fluorescent replacement)	\$0.50
LED Retrofit (HID/incandescent replacement)	\$0.25
LED Lamp, Bulb, or Other	\$0.10
Controls (multi-level)	\$0.25 bonus
Controls (DLC networked controls)	\$0.50 bonus

### Rebate Bonus

A **25% rebate bonus** is available for LED fixtures for any project pre-approved, completed, and submitted for payment by **November 15, 2019**. The bonus is available in all cities. Retrofits and lamps do not qualify. Bonus is calculated on Page 11.

# Efficiency Works- 2x4, 2x2, 1x4 Rebates



3 Lamp T8 Troffer=86  
watts.

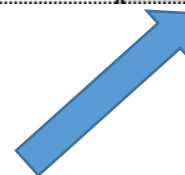
New LED Fixture =34 Watts.

Rebate  $86-34=52$  watts x 1.25=  
\$65 rebate per fixture.

Get a High Efficiency Version.  
\$72.50 rebate per fixture.



LED Rebate Category (description below)	Controls Rebate Category (description below)	Quantity	Wattage	Annual Hours	Incentive (\$/fixture)	Total Incentive
<i>LED fixture (replacing fluorescent)</i>	<i>Ineligible controls</i>	8	28.0	2,200	\$45.00	\$360
LED fixture (replacing fluorescent)	Ineligible controls	12	34.0	4,000	\$65.00	\$780
LED fixture (replacing fluorescent)	Ineligible controls	8	28.0	4,000	\$72.50	\$580



Lumens <sup>2</sup>			
Standard efficiency <sup>3,4</sup> (>125 LPW)		High efficiency <sup>5,6</sup> (>130 LPW)	
20L	2000	20LHE	2000
33L	3300	33LHE	3300
40L	4000	40LHE	4000
48L	4800	48LHE	4800



# Four Decades of Indoor Disruption and Lighting Trends

Parabolics



80's

Direct/Indirect



90's

Direct Dual /  
Center Basket



00's

Panels



10's

New Flat Panel. It's \$10



# Degradation of inferior panels

## Yellowing Panels



JFK Airport



Hotel (Europe)

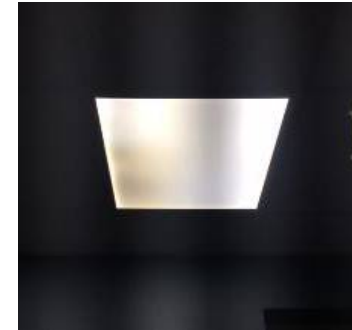


Miami Airport



Krispy Kreme (US)

## Unreliable Electronics



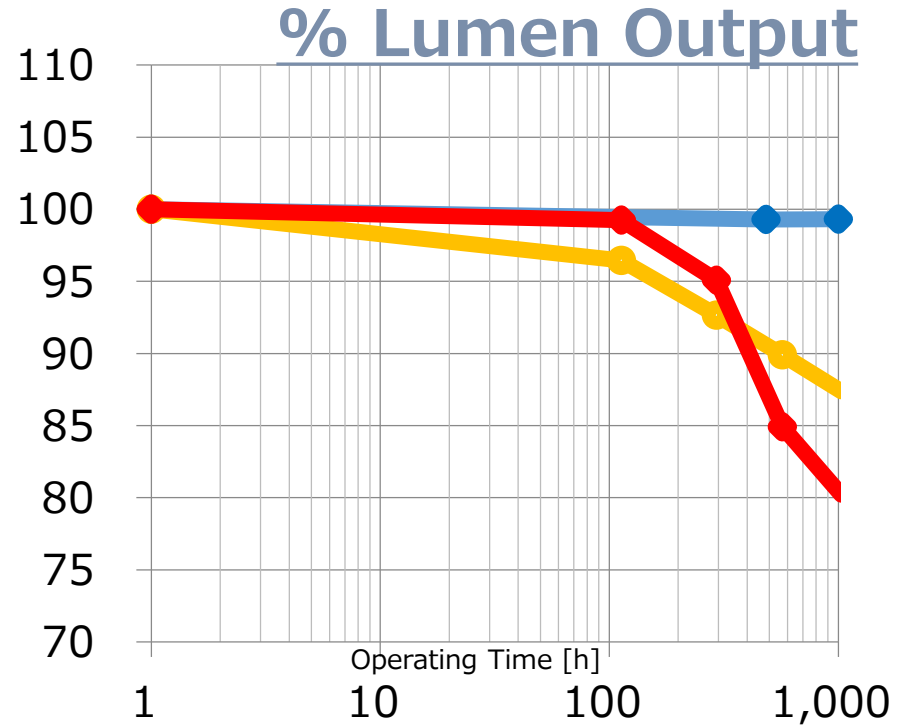
Hotel (US)  
LED Failures



Car Dealership (US)  
LED/LGP Coupling Issue

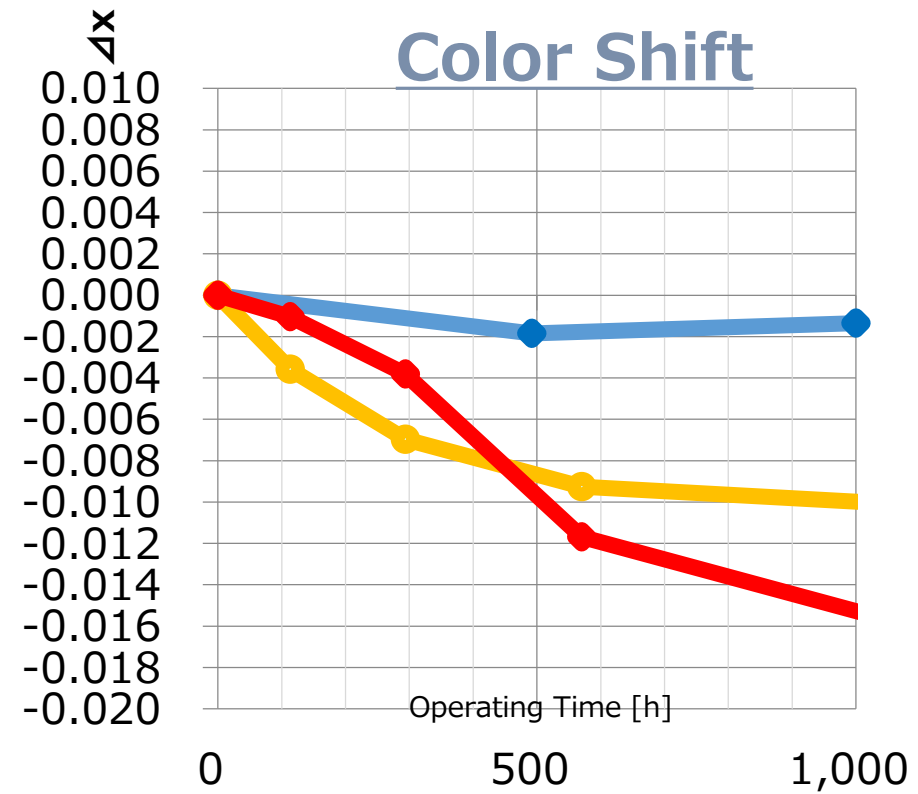
# Accelerated Reliability Testing

Test Environment: Ta=85°C, 85%RH, IF=120mA



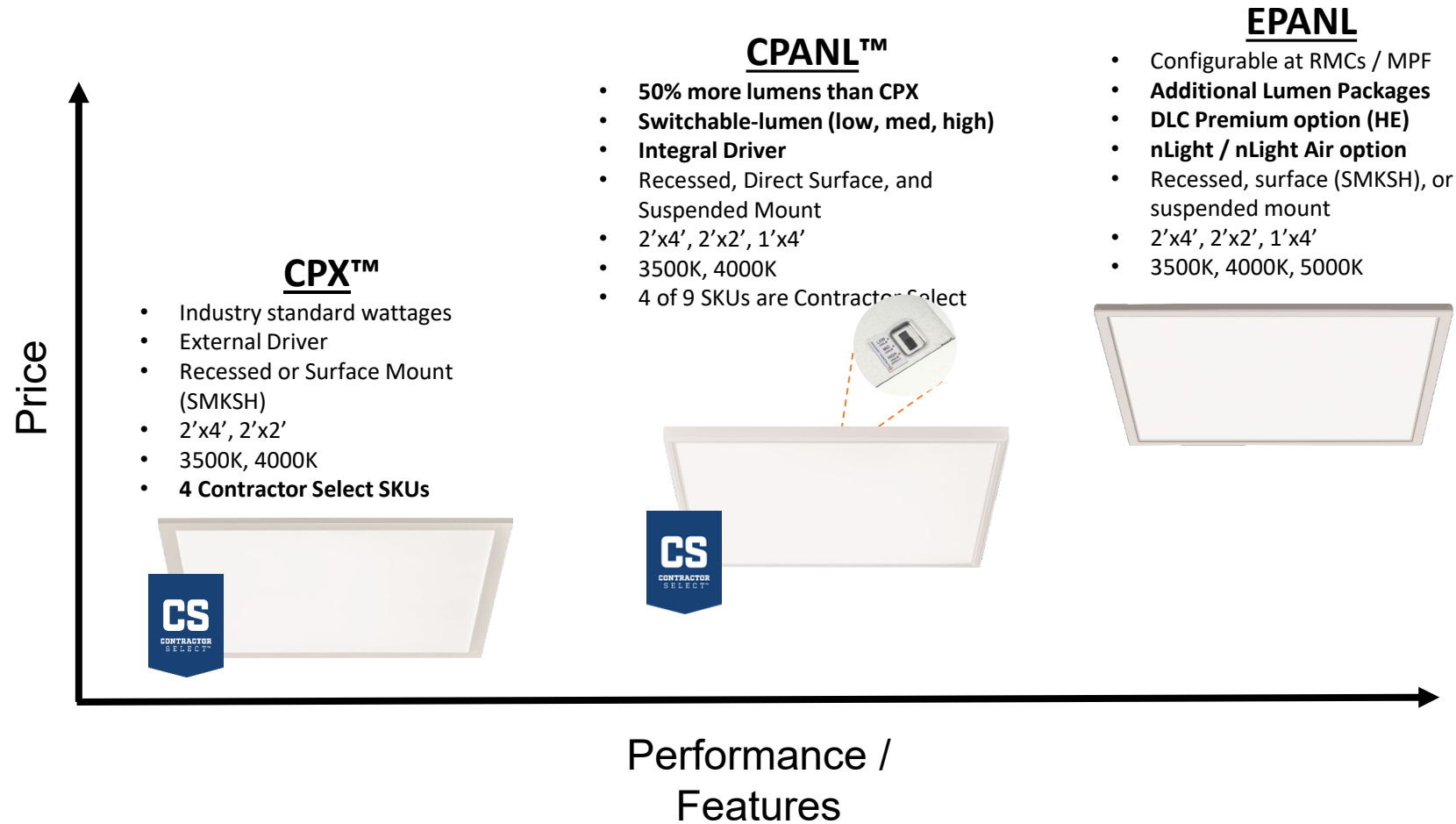
ABL Indoor LED

China LED #1



China LED #2

# Panel Positioning



## EPANL™ Series – New Options!

*Expanding beyond simple stock SKUs!  
Made in North America*

- 1,500 – 6,800 Lumens
- eldoLED™ 1% Dimming
- nLight and nLight Air
- Pre-wired Whips
- Generator Transfer Device
- Step-Level Dimming
- Emergency B/U



Generator Trans. Device



eldoLED1%  
dimming



Pre-wire  
whips



Step Level  
Dimming



Emergency B/U



## EPANL Ordering Tree (Page 1)

### ORDERING INFORMATION

Lead times will vary depending on options selected.

**Example:** EPANL 2X4 4000LM 80CRI 35K MIN1 E10WCP NLTAIR2 RIO

Series	Width and Length	Lumens		CRI	Color Temperature	Minimum Dimming Level <sup>3</sup>
EPANL LED Flat Panel	1x4 1'x4'	<u>Standard Lumens:</u> 1500LM 1500 Lumens 3000LM 3000 Lumens 4000LM 4000 Lumens 4800LM 4800 Lumens 6000LM 6000 Lumens <sup>1,2</sup>	<u>High Efficiency Lumens:</u>  4000LMHE 4000 Lumens <sup>1</sup>	80CRI 80 CRI	35K 3500K 40K 4000K 50K 5000K	MIN10 Dimsto 10% <sup>4</sup> MIN1 Dimsto 1%
	2x2 2'x2'	2000LM 2000 Lumens 3400LM 3400 Lumens 4000LM 4000 Lumens <sup>1</sup> 4800LM 4800 Lumens <sup>1,2</sup>	3400LMHE 3400 Lumens <sup>1</sup>			
	2x4 2'x4'	3000LM 3000 Lumens 4000LM 4000 Lumens 4800LM 4800 Lumens 5400LM 5400 Lumens 6000LM 6000 Lumens <sup>1,2</sup> 6800LM 6800 Lumens <sup>1,2</sup>	4000LMHE 4000 Lumens <sup>1</sup>			

Ordering continued on next page.

# CPANL™

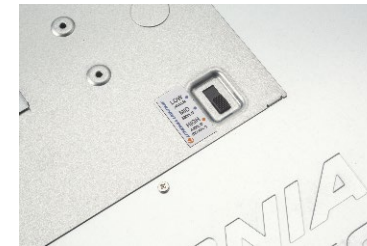
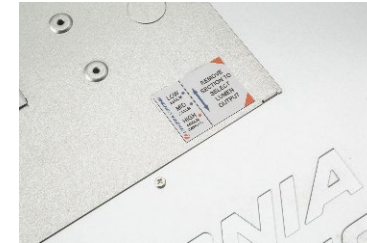


- Switchable-lumen feature via a three position switch on the back of the panel
- To lower the lumen output, cut the decal at the indicated dotted line and remove the decal portion to expose the switch

	1X4	2X2	2x4
 <b>High</b>	4400LM*	4400LM*	6000LM*
 <b>Mid</b>	3300LM	3300LM	5000LM
 <b>Low</b>	2400LM	2400LM	4000LM

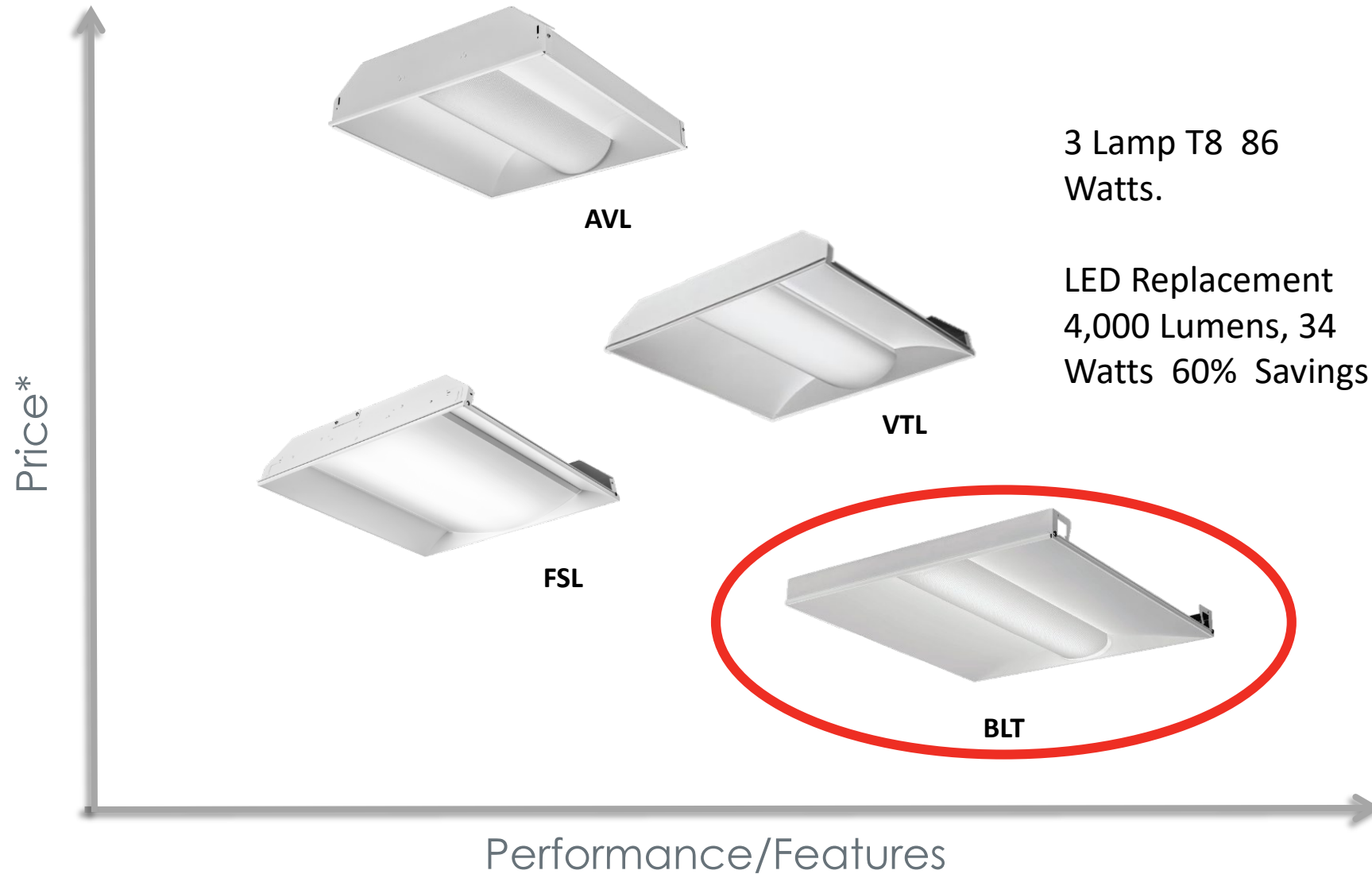
\* For optimal 0-10V dimming performance it is recommended that the luminaire remains at **factory default high lumen setting**.

Note: Product Specifications subject to change without notice.



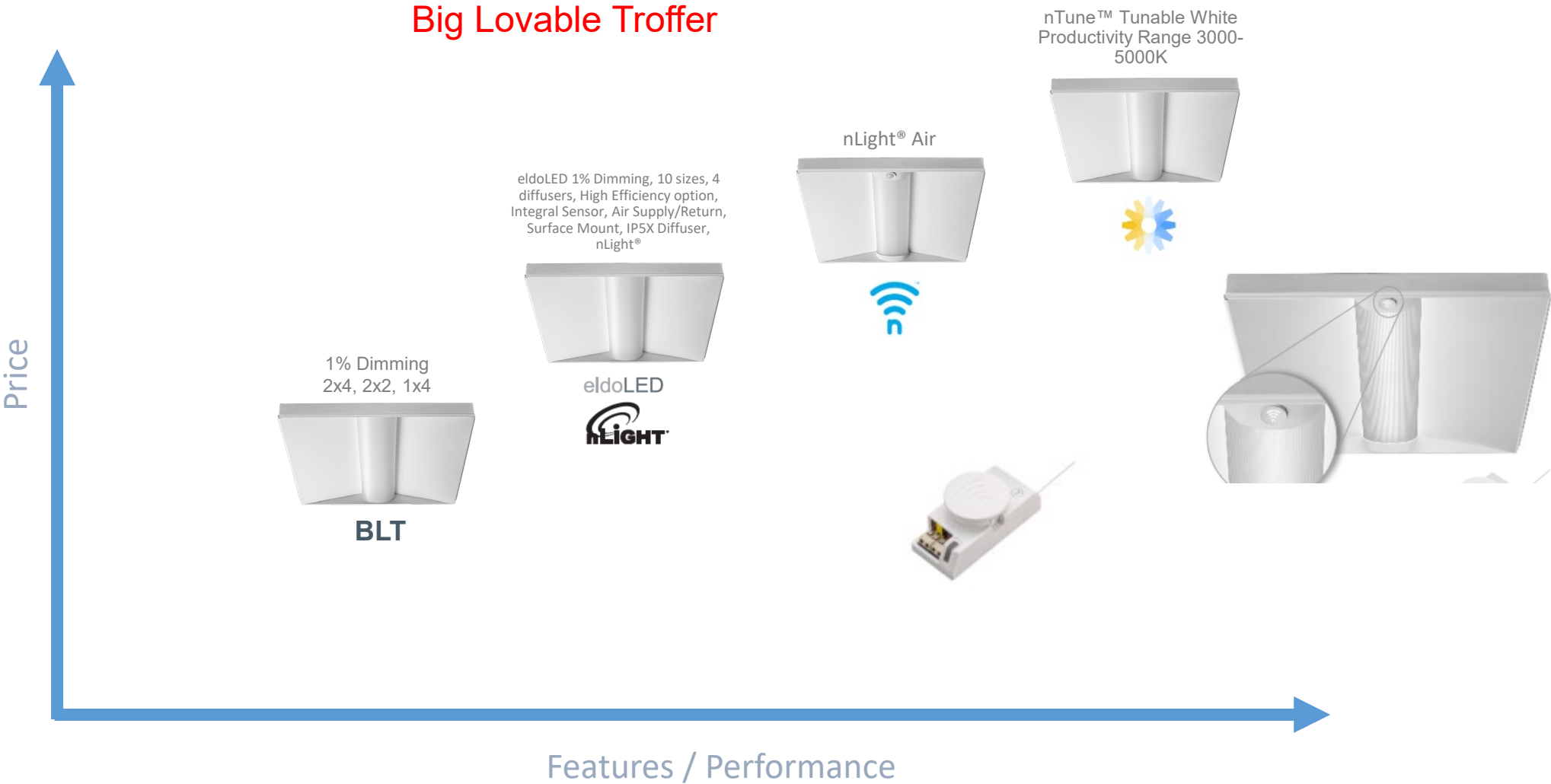


# Center Basket Product Positioning



# BLT Family Versatility

## Big Lovable Troffer



## BLT Series Tunable White



The **General** setting provides cool, crisp light ideal for **collaboration**.



The **Reading** setting offers relaxing, warmer light for **personal focus tasks**.



The **Testing** setting is a neutral, **non-distracting** color temperature.



The **Energy** setting is cooler, **refreshing** light to help combat afternoon fatigue.

1% Dimming  
2x4, 2x2, 1x4

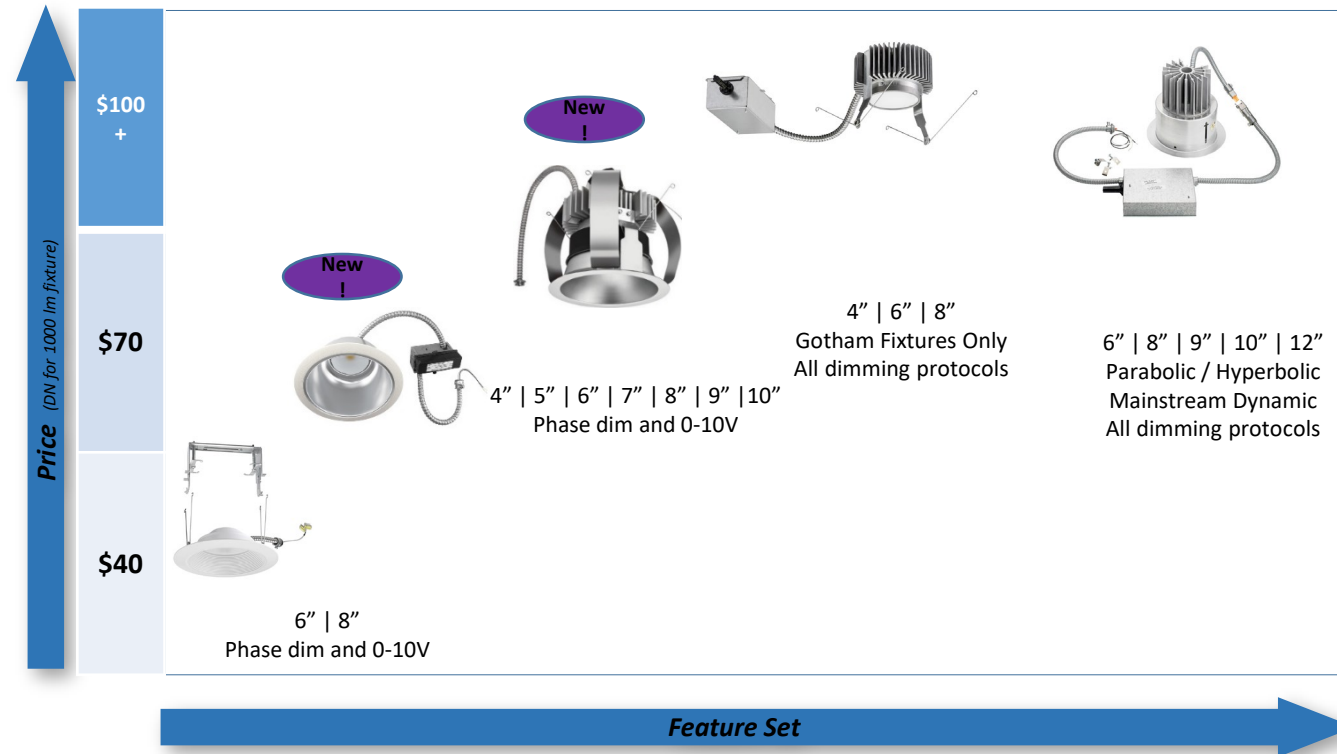


## BLT Cut Sheet

BLT						
nLight Interface		Control <sup>11</sup>			Options	
<b>nLight Wired</b>		<b>nLight Wired</b>		<b>Individual Control</b>		
(blank)	no nLight ® interface	(blank)	No sensor control	MSD7ADCX	PIR integral occupancy sensor with automatic dimming control photocell <sup>13</sup>	EL7L 700 lumen battery pack (non-CEC compliant) <sup>14</sup>
N80	nLight with 80% lumen management	NES7	nLight™ nES 7 PIR integral occupancy sensor <sup>12</sup>			EL14L 1400 lumen battery pack (non-CEC compliant) <sup>14</sup>
N80EMG	nLight with 80% lumen management For use with generator supply EM power <sup>9</sup>	NESPDT7	nLight™ nES PDT 7 dual technology integral occupancy control <sup>12</sup>			EL14LSD 1400 lumen battery pack with self-diagnostic testing feature (non-CEC compliant) <sup>14,15</sup>
N100	nLight without lumen management	NES7ADCX	nLight™ nES 7 ADCX PIR integral occupancy sensor with automatic dimming photocell <sup>12</sup>	MSDPDT7ADCX	PDT integral occupancy sensor with automatic dimming control photocell <sup>13</sup>	E10WLCP EM Self-Diagnostic battery pack, 10W Constant Power, CEC compliant <sup>14</sup>
N100EMG	nLight without lumen management For use with generator supply EM power <sup>9</sup>	NESPDT7ADCX	nLight™ nES PDT 7 dual technology integral occupancy sensor with automatic dimming photocell <sup>12</sup>			CP Chicago plenum <sup>16</sup>
<b>nLight Wireless</b>		<b>nLight Wireless</b>				BGTD Bodine Generator Transfer Device <sup>17</sup>
(blank)	no nLight ® interface	RES7	nLight AIR PIR integral occupancy sensor with automatic dimming photocell for Networking Capabilities <sup>13</sup>			PWS1836 6' pre-wire, 3/8" diameter, 18 gauge, 1 circuit
NLTAIR2	nLight AIR Generation 2 enabled <sup>10</sup>	RES7PDT	nLight AIR microphonics dual technology occupancy sensor with automatic dimming photocell <sup>13</sup>			PWS1846 6' pre-wire, 3/8" diameter, 18 gauge, 2 circuit
		RIO	nLight AIR radio module without sensor			PWS1846 PWSLV Two cables: one 6' pre-wire, 3/8" diameter, 18 gauge, 2 circuits; one 6' pre-wire, 3/8" diameter, 18 gauge, purple and gray <sup>18</sup>
						PWS1856LV 6' pre-wire, 3/8" diameter, 18 gauge, 1 circuit w/low voltage purple and grey wires <sup>18</sup>
						GLR Fast-blowing fuse <sup>19</sup>
						GMF Slow-blowing fuse <sup>19</sup>
						NPLT Narrow pallet
						RRL_ RELOC®-ready luminaire <sup>20</sup>
						LATC Earthquake clip
						DWAM Anti-Microbial paint
						JP32 Job packaging
						IP5X Gasketed diffuser compartment to meet IP5X rating <sup>21</sup>

Energy Star Regulates  
this VS. DLC

## Commercial Retrofit Solutions





2 Lamp 26  
watt CFL Can =  
54 Watts

## Efficiency Works Rebates for Downlights






15 Watt LED Retrofit


**\$48.75 rebate**







# Leading Portfolio Coverage Across The Categories






 IBG	 JCBL
--	---







 IBG	 JHBL	 JCBL
--	---	---










 IBE	 JEBL
---	--


 CLX
--

 CLX	 ZL1
--	--

 MNSL	 CDS
---	---

 FHE	 DMW2
--	---

 FEM	 DMW2	 VAP	 FHE	 W/V/SRTL
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 XVML
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High Bay

Strips & Low Bays

Special Applications

# Efficiency Works Rebates for LED High Bays



If it's Round, take it down!

400 Watt HID to 114 Watt LED High Bay.

\$286 Rebate.



LED Rebate Category (description below)	Controls Rebate Category (description below)	Quantity	Wattage	Annual Hours	Incentive (\$/fixture)	Total Incentive
LED fixture (replacing fluorescent)	Ineligible controls	8	28.0	2,200	\$45.00	\$360
LED fixture (replacing HID/incandescent)	Ineligible controls	12	114.0	3,000	\$286.00	\$3,432



Performance package	
SEF	Standard efficiency
HEF	Premium efficiency



## Efficiency Works Rebates for LED High Bays



4 Lamp T5HO  
225 Watts

**\$156.25**  
Rebate



High Efficiency  
DLC Premium.  
100 Watts

### IBG CHARACTERISTICS

Lumen package	Wattage								Length	Width	Depth	Comparable Light Source
	Standard efficiency				High efficiency							
	120V	277V	347V	480V	120V	277V	347V	480V	Dimensions are shown in inches (centimeters) unless otherwise noted.			
8000LM	55	54	58	61	50	49	51	54	25.6	11.75	2.75	100W MH, 4-lamp T8 NBF
12000LM	79	77	77	76	70	69	68	67	25.6	15.52	2.75	175W MH, 4-lamp T8 HBF, 2-lamp T5HO
15000LM	97	95	97	96	87	86	86	86	25.6	15.52	2.75	200W MH, 6-lamp T8 NBF
18000LM	114	112	114	115	102	100	102	103	25.6	20.65	2.75	250W MH, 6-lamp T8 HBF, 4-lamp T5HO
24000LM	154	150	150	150	136	133	135	135	25.6	20.65	2.75	400W MH, 6-lamp T5HO
30000LM	193	186	188	188	176	171	173	173	25.6	20.65	2.75	575W MH, 10-lamp T8 HBF
36000LM	225	221	227	229	200	197	203	206	47.29	20.65	2.75	750W MH, 8-lamp T5HO
48000LM	301	293	301	302	267	261	269	270	47.29	20.65	2.75	875W MH, 10-lamp T5HO
60000LM	385	374	378	377	332	323	330	330	47.29	20.65	2.75	1000W MH

Series	Nominal lumens				Performance package		Lens		Distribution		Voltage		Driver		Color temperature	
IBG IBGN <sup>1</sup>	8000LM	8,000 lumens <sup>2</sup>	30000LM	30,000 lumens	SEF	Standard efficiency	AFL	Acrylic, frosted	WD	Wide	MVOLT	120-277V	GZ10	0-10V dimming <sup>7</sup>	30K	3000 K
	12000LM	12,000 lumens	36000LM	36,000 lumens	HEF	Premium efficiency	ACL	Clear acrylic	GND	General	HVOLT	347-480V <sup>3</sup>	AZ10	0-10V dimming, aux. output <sup>8</sup>	35K	3500 K
	15000LM	15,000 lumens	48000LM	48,000 lumens			PCL	Clear polycarbonate	ND	Narrow	120	120V			40K	4000 K
	18000LM	18,000 lumens	60000LM	60,000 lumens			PFL	Semi-diffuse polycarbonate	FD	Focus	208	208V			50K	5000 K
	24000LM	24,000 lumens					L/LENS	Less lens			240	240V				
											277	277V				
											347	347V <sup>4,5</sup>				
											480	480V <sup>4,5,6</sup>				

Coloring rendering index	Options				Finish	
70CRI 70 CRI	HA	High ambient <sup>9</sup>	<b>Individual Controls:</b> <sup>22</sup>		DNA	Natural aluminum
80CRI 80 CRI	SPD	Surge protection device <sup>28</sup>			DWH	Gloss white
90CRI 90 CRI	BPK	Fixture backpack <sup>31</sup>	HLN360	Haleon 360° High Mount Occ Sensor, pre-wired; Bluetooth <sup>® 24</sup>		
	PS1050	Emergency battery pack 10W, CA Title 20 Noncompliant <sup>32</sup>	HLN360HL	Haleon 360° High Mount Occ Sensor w/HL Default, pre-wired; Bluetooth <sup>® 24</sup>		
	PS10250	Emergency battery pack 10W, Title 20 Noncompliant <sup>33</sup>	HLN360ADC	Haleon 360° High Mount Occ Sensor w/ADC Default, pre-wired; Bluetooth <sup>® 24</sup>		
	PS10250BC	Emergency battery pack 10W, Certified in CA Title 20 MAEDBS <sup>34</sup>	HLN360ANL	Haleon 360° High Mount Occ Sensor w/ANL Default, pre-wired; Bluetooth <sup>® 24</sup>		
	PS30250	Emergency battery pack 30W, Title 20 Noncompliant <sup>35</sup>	HLNASL	Haleon High Mount Aisleway Occ Sensor, pre-wired; Bluetooth <sup>® 24</sup>		
	BGTD	Generator transfer device <sup>25</sup>	HLNASLHL	Haleon High Mount Aisleway Occ Sensor w/HL Default, pre-wired; Bluetooth <sup>® 24</sup>		
	SF	Single fuse <sup>26</sup>	HLNASLADC	Haleon High Mount Aisleway Occ Sensor w/ADC Default, pre-wired; Bluetooth <sup>® 24</sup>		
	DF	Double fuse <sup>27</sup>	HLNASLANL	Haleon High Mount Aisleway Occ Sensor w/ANL Default, pre-wired; Bluetooth <sup>® 24</sup>		
	OUTCTR	Wiring leads pulled through back center of fixture <sup>28</sup>	LAQZU	360° high mount motion sensor, pre-wired <sup>25</sup>		
	OCS	RELOC <sup>®</sup> OnePass <sup>®</sup> selectable cable 6' installed <sup>29,31</sup>	LAHOSZU	360° high mount motion sensor with dimming, pre-wired <sup>25</sup>		
	OCU	RELOC <sup>®</sup> OnePass <sup>®</sup> unselectable cable 6' installed (must specify tap position) <sup>29,31</sup>	LAPZU	360° high mount motion sensor with photocell, pre-wired <sup>25</sup>		
	IMP	Integrated modular plug <sup>22</sup>	LAMOSZU	360° high mount motion sensor, dimming & switching photocell, pre-wired <sup>25</sup>		
	RRL	RELOC <sup>®</sup> -Ready luminaire. (Not available with Haleon sensor options) See page T1 for ordering information	C6D0SUEM	360° high mount motion sensor, dimming only (photocell disabled), pre-wired; UL924 listed (not available with battery pack or BGTD) <sup>26,27</sup>		
	WGX	Standard wire guard, installed (not available with Haleon sensor)	C10D0SUEM	360° low mount motion sensor, dimming only (photocell disabled), pre-wired; UL924 listed (not available with battery pack or BGTD) <sup>26,28</sup>		
	<b>Cord sets:</b>		<b>nLight wired:</b> <sup>29</sup>			
	CS1W	Straight plug, 120V <sup>36</sup>	nPP16D	nLight <sup>™</sup> dimming & switching module		
	CS3W	Twist-lock, 120V <sup>36</sup>	nPP16DER	nLight <sup>™</sup> dimming & switching module with emergency relay (not available with battery pack or BGTD)		
	CS7W	Straight plug, 277V <sup>36</sup>	nMSI	nLight <sup>™</sup> high mount aisleway motion sensor, pre-wired <sup>30</sup>		
	CS11W	Twist-lock, 277V <sup>36</sup>	nMSI360	nLight <sup>™</sup> 360° high mount motion sensor, pre-wired <sup>31</sup>		
	CS25W	Twist-lock, 347V <sup>36</sup>	nMSID	nLight <sup>™</sup> high mount aisleway motion sensor with dimming, pre-wired <sup>32</sup>		
	CS97W	Twist-lock, 480V <sup>36</sup>	nMSI360D	nLight <sup>™</sup> 360° high mount motion sensor with dimming, pre-wired <sup>33</sup>		
	CS93W	600 SO white cord, no plug (no voltage required)	<b>nLight wireless:</b>			
	CS93W4C	600V SO 4-conductor white cord, no plug (for use when unswitched hot is required for battery pack)	NLTAIR2 RK0A	nLight AIR Generation 2 enabled 360° high mount motion sensor		
			NLTAIR2 RK0B	nLight AIR Generation 2 enabled 360° low mount motion sensor		
			NLTAIR2 rPP20D	nLight AIR Generation 2 dimming and switching module <sup>34</sup>		
			NLTAIR2 rPP20DER	nLight AIR Generation 2 dimming and switching module with emergency relay (not available with battery pack or BGTD) <sup>34</sup>		
			<b>X-Point wireless:</b>			
			MSI6XADL DSCXADL	XPoint <sup>™</sup> Wireless 360° high mount motion sensor with photocell		
			XPW	XPoint <sup>™</sup> Wireless 0-10V relay, external (utilizes XPA CMR80) 55°C max ambient		
			XAD	XPoint <sup>™</sup> Wireless 0-10V relay, internal, lower max ambient (not available with Haleon sensor) <sup>35</sup>		
			XPWEM	XPoint <sup>™</sup> Wireless 0-10V relay, external (utilizes XPACMRB0EM) 55°C max ambient, meets UL924 (not available with battery pack or BGTD)		
			XAD924	XPoint <sup>™</sup> Wireless 0-10V relay, internal, lower max ambient, meets UL924 (not available with battery pack or BGTD) <sup>35</sup>		

# Ambient Temperature

By now, we all know how important it is to ensure the high bay you are using has the right ambient temperature ratings for your application.

Watch the 2 minute video below to see if you buy a low cost import China High Bay, You (or your customer) may be regretting it later!

[New Low Cost Import Temp Video!!!](#)

# LED High Bay

The Most Configurable (and efficient) High Bay on the Market

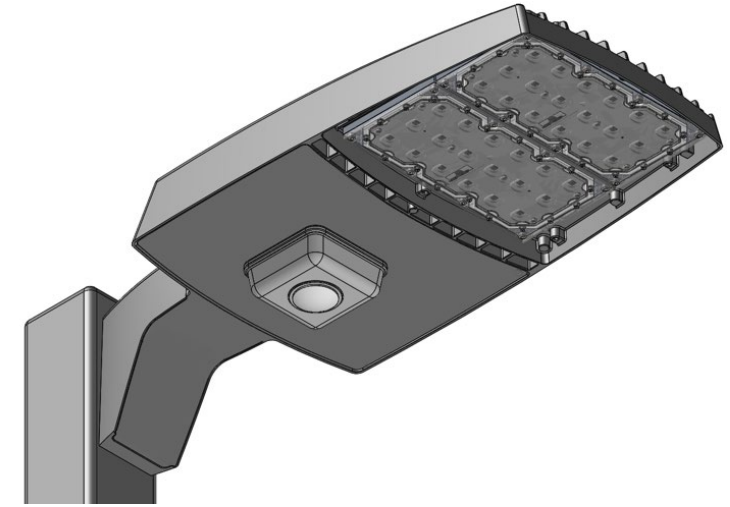
- 8L to 60L
- Standard (150+ LPW) and Premium Efficiency (180+ LPW) options. Up to 65% savings vs T5HO
- High-ambient option for reliable operation up to 131F (55C)
- Configurable housing options – Standard and Narrow (<12")
- Snap-fit IP5X-sealed optics to resist dust and debris build up in optics
- **400 Watt MH - 455 Watts. LED Replacement 136 Watts. 70% Savings**
- **6 Lamp T8-225 Watts. LED Replacement 97 Watts. 61% savings over fluorescent**



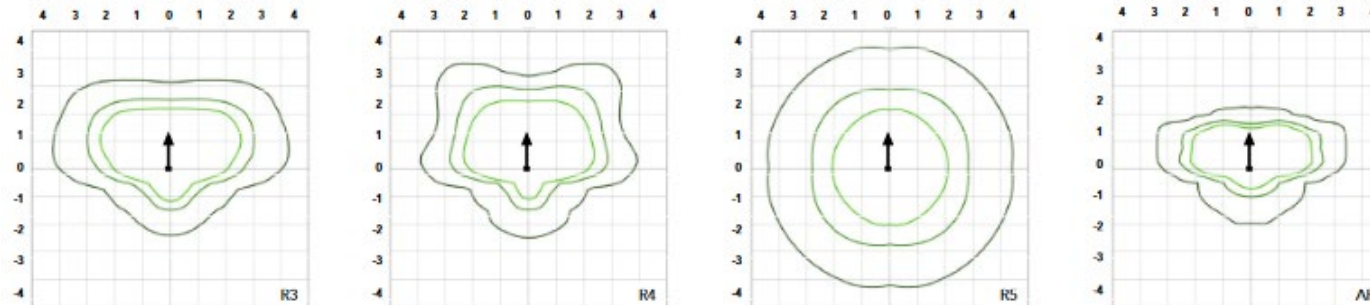
<https://youtu.be/axYrjIHdloo>

# Efficiency Works Rebates for LED Outdoor

400 Watt HID To 140 Watt LED



LED Rebate Category (description below)	Controls Rebate Category (description below)	Quantity	Wattage	Annual Hours	Incentive (\$/fixture)	Total Incentive
LED fixture (replacing fluorescent)	Ineligible controls	8	28.0	2,200	\$45.00	\$360
LED fixture (replacing HID/incandescent)	Ineligible controls	12	140.0	4,000	\$260.00	\$3,120



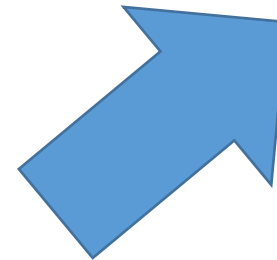




## Efficiency Works LED Wall Packs Rebates. 250 Watt to 51 Watts.



LED Rebate Category (description below)	Controls Rebate Category (description below)	Quantity	Wattage	Annual Hours	Incentive (\$/fixture)	Total Incentive
LED fixture (replacing fluorescent)	Ineligible controls	8	28.0	2,200	\$45.00	\$360
LED fixture (replacing HID/incandescent)	Ineligible controls	12	51.0	4,000	\$199.00	\$2,388
LED fixture (replacing fluorescent)	Ineligible controls	8	28.0	2,200	\$45.00	\$360



## TWR1 ALO – Home Run in the Wall Pack Game

Stocking HID replacement glass wall packs was never this easy!

- 900 to 6,200 lumens
- 120 lumens per Watt
- DLC listed
- Identical form factor as TWR1 LED
- ALO setting label inside the luminaire and on spec sheet
- 8 Settings from 9 to 51 Watts



Most Parking Garages  
are 175 Watt MH.  
Replace with 46 Watts of  
LED.



## VCPG

- Visual Comfort
- Highly configurable
- Uplight Options



## DSXPG

- Great performance
- Highly configurable
- Low-cost 10-LED version



## PGX

- Visual comfort
- Familiar form
- Battery option



# IECC 2015 - Lighting Controls

## *Section C405.2 - Mandatory*

### **Lighting systems required to be provided with controls as specified for:**

- Occupant sensor controls – C405.2.1
- Time-switch controls – C405.2.2
- Daylight-responsive controls – C405.2.3
- Specific application controls – C405.2.4
- Exterior lighting controls – C405.2.5

### **Exemptions:**

- Security or emergency areas that must be continuously lighted
- Interior exit stairways, interior exit ramps and exit passageways
- Emergency egress lighting normally off





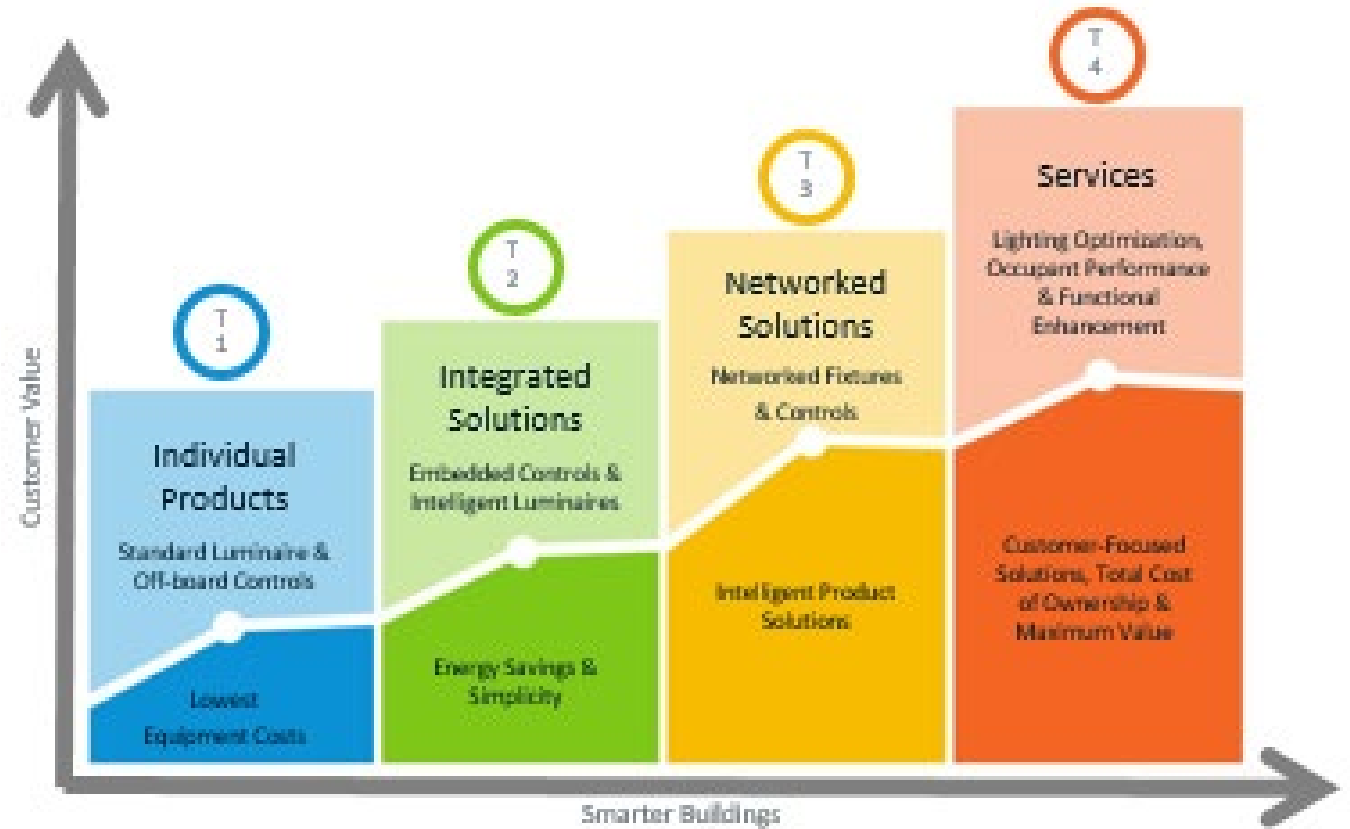
Bonus Rebates for Automatic Controls <sup>1</sup>		
Multi-level controls	\$0.25	Add automatic controls to new LED fixtures/retrofits/lamps such that each fixture is controlled by at least two means, e.g. occupancy/motion sensor and photocell/daylighting sensor
DLC networked controls	\$0.50	DLC Networked Lighting Control System (NLCS). If the controls are integral to the fixture, the full fixture model number indicating the controls must be shown on the invoice to be eligible

<https://www.designlights.org/lighting-controls/download-the-qpl/>

A	B	C
Show All		
Company	Brand	System
Acuity Brands	Acuity Controls	nLight AIR
Acuity Brands	Acuity Controls	nLight

## / Why choose one over the other?

- Desired Functionality
- Space Type
- End User Sophistication
- Installation Considerations
- \$\$\$ COST \$\$\$



# Interior Individual Products

Controls (multi-level)

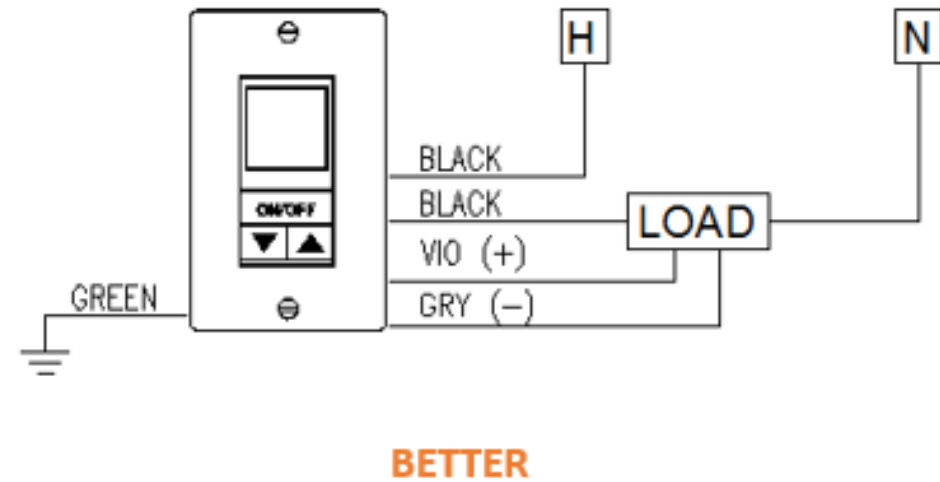
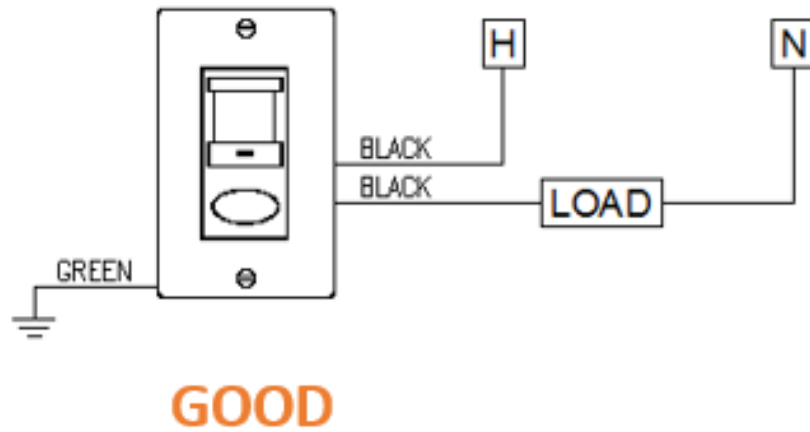
\$0.25 bonus



# Interior Individual Products

Controls (multi-level)

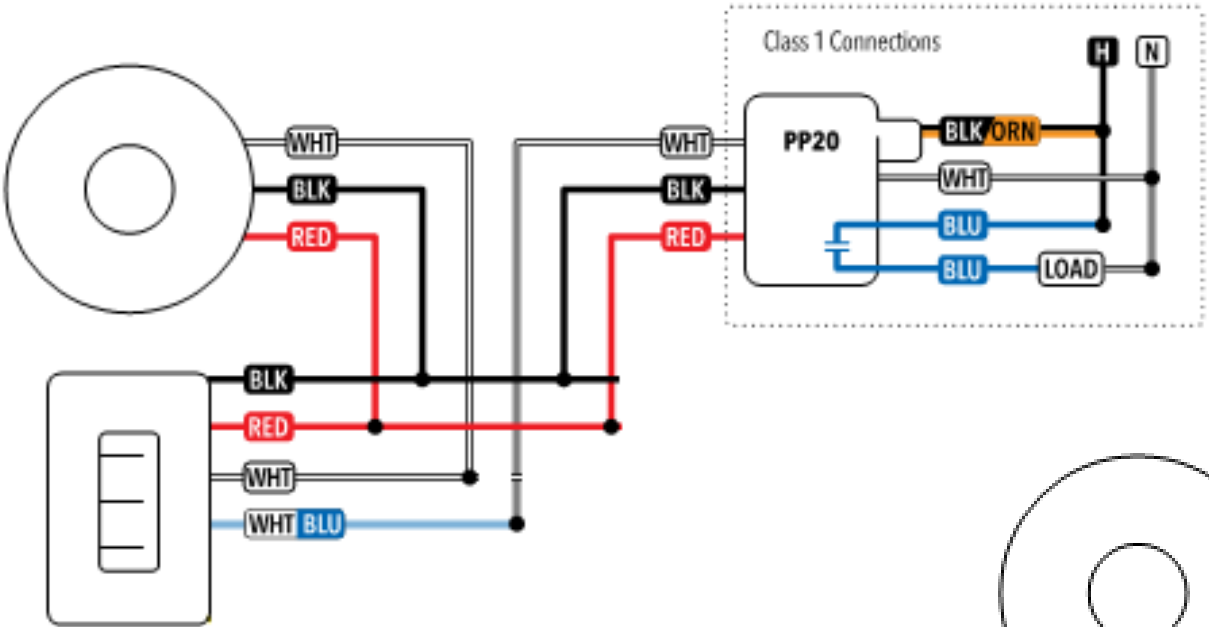
\$0.25 bonus



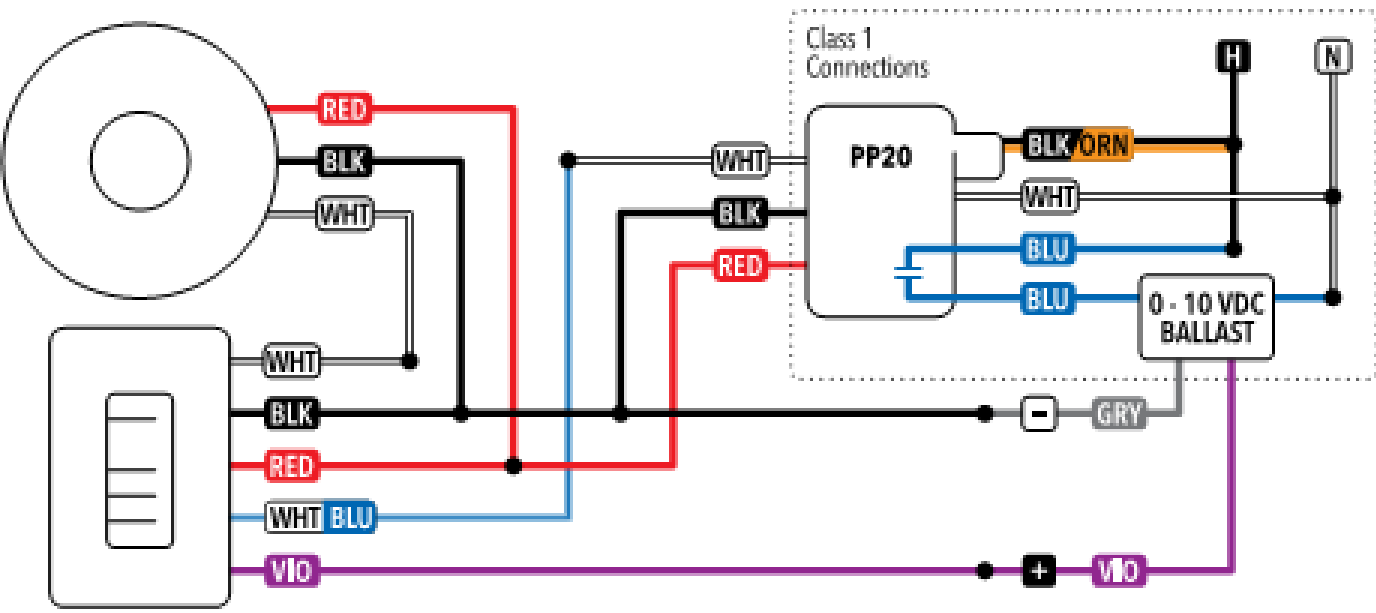
# Interior Individual Products

Controls (multi-level)

\$0.25 bonus



GOOD



BETTER

# Interior Integrated Solutions

DLC networked controls	\$0.50
------------------------	--------

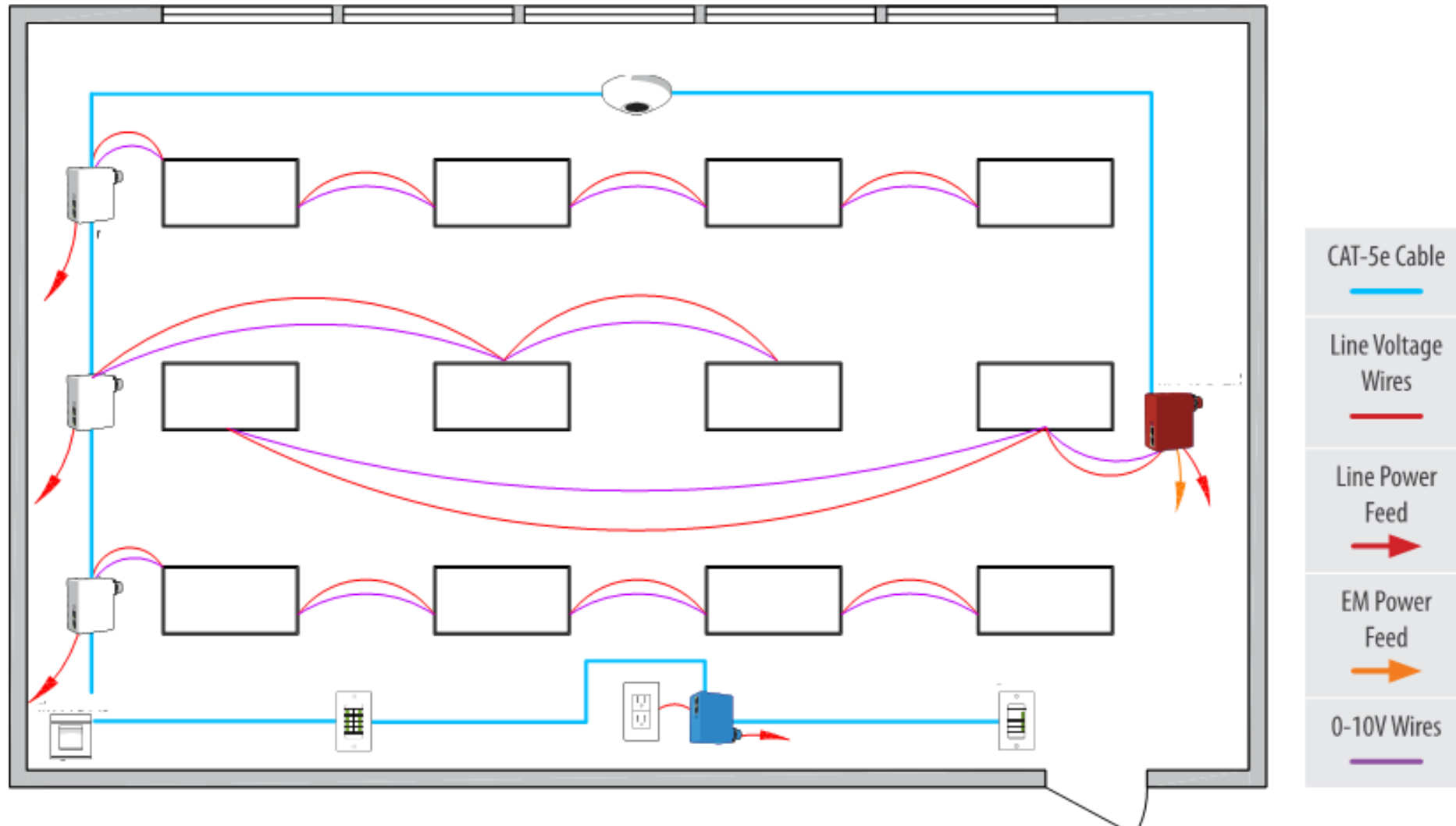


# Interior Integrated Solutions

## Room Solutions – Classroom Example #1

DLC networked controls

\$0.50



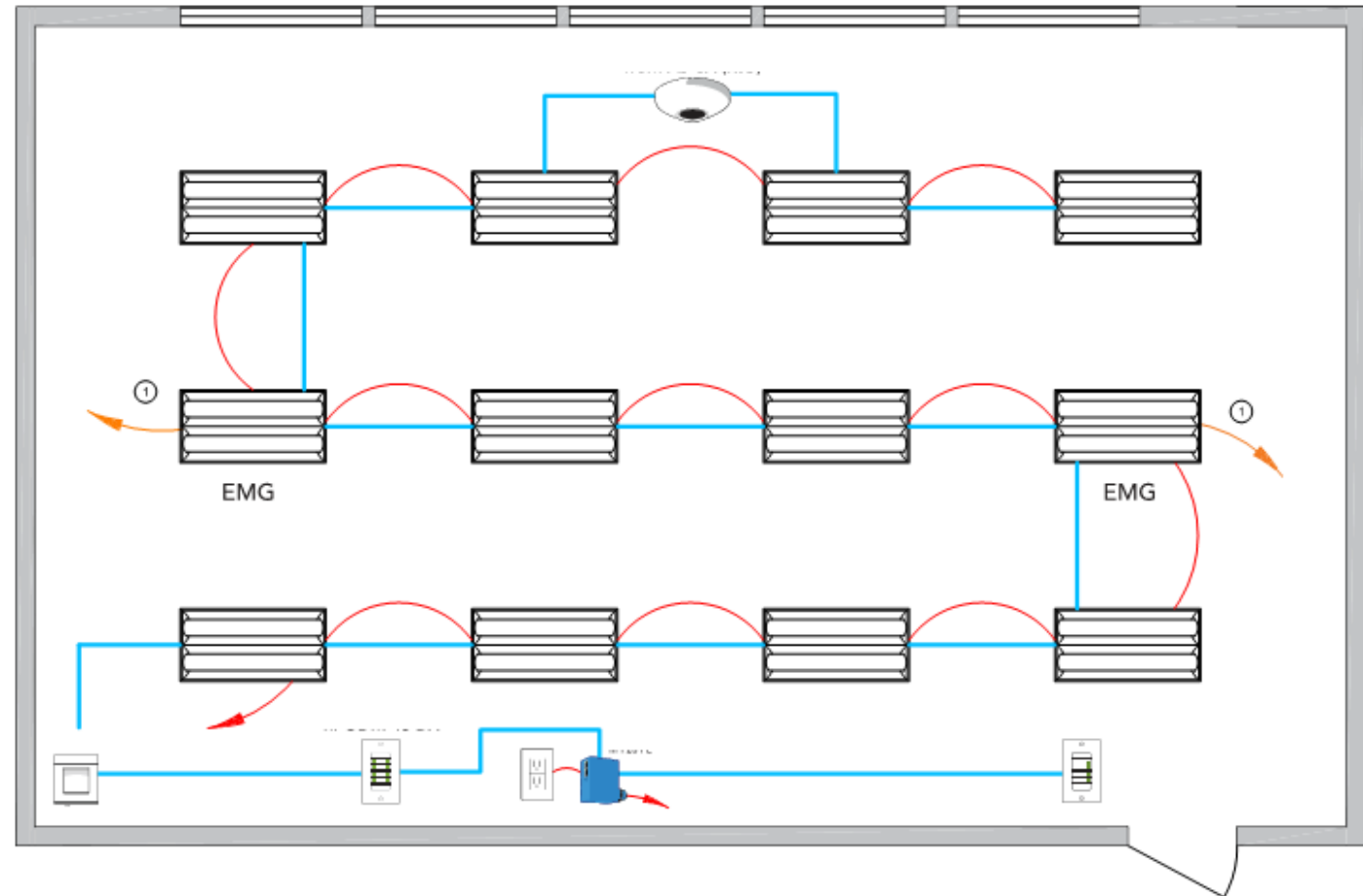


# Interior Integrated Solutions

## Room Solutions – Classroom Example #2

DLC networked controls

\$0.50



CAT-5e Cable

Line Voltage  
Wires

Line Power  
Feed

EM Power  
Feed

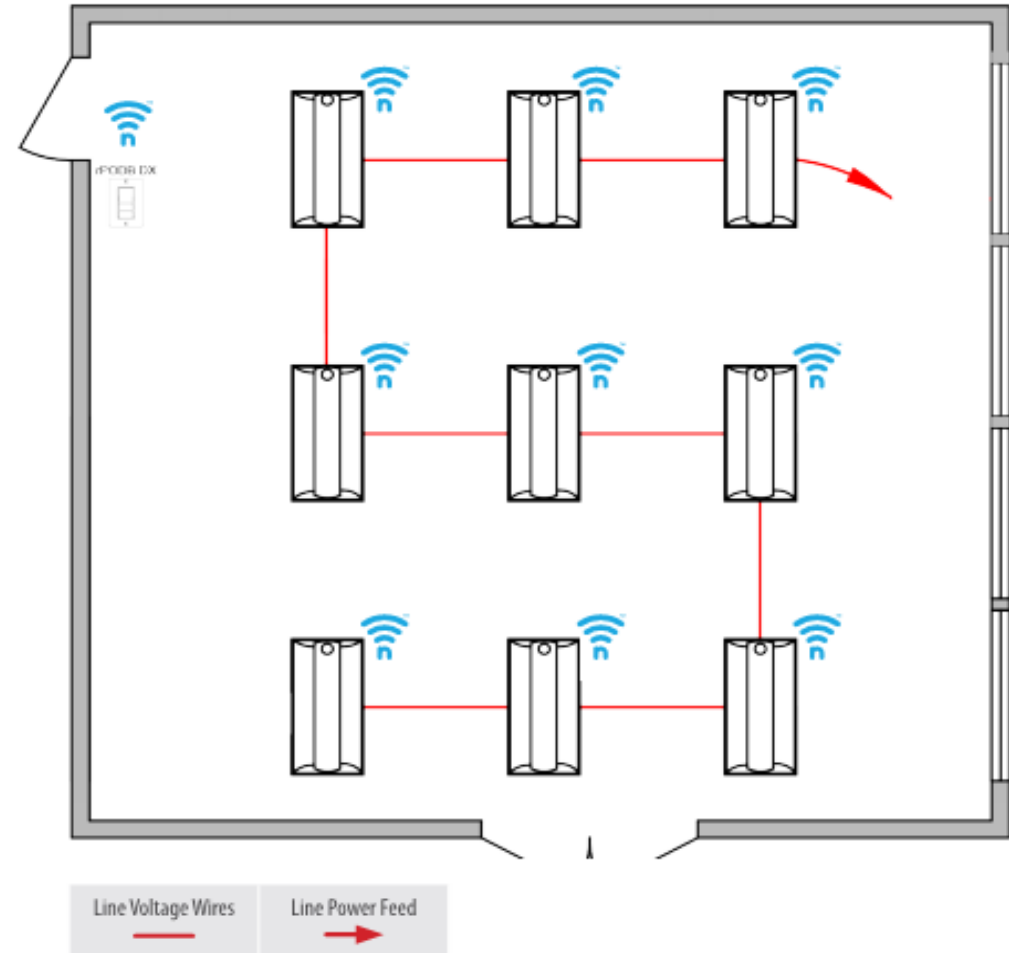
0-10V Wires

# Interior Integrated Solutions

## Room Solutions – Classroom Example #3

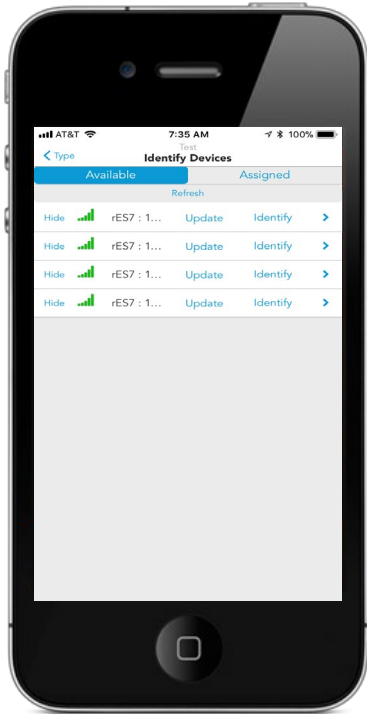
DLC networked controls

\$0.50



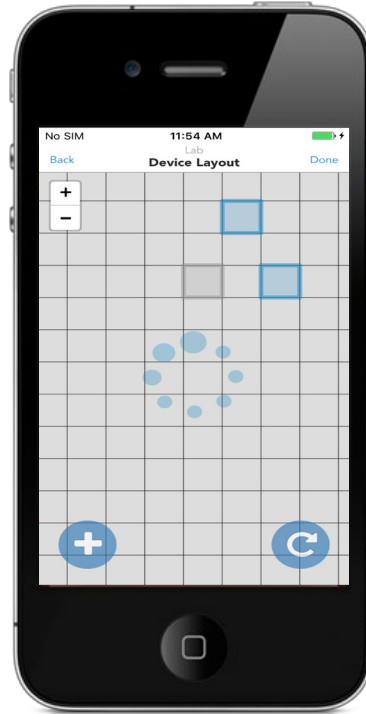
# nLight AIR Startup Tool

CLAIRITY PRO: Simple and Secure Mobile App



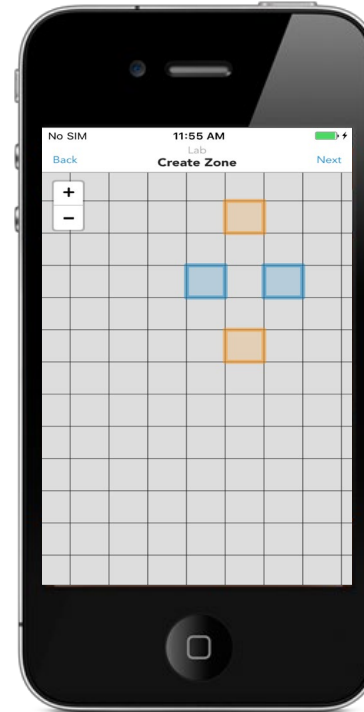
1

Discover the nLight AIR devices in your space



2

Assign the devices in your space to Groups



3

Configure any sensor and switch settings, if necessary



4

Confirm your Group and you are done!

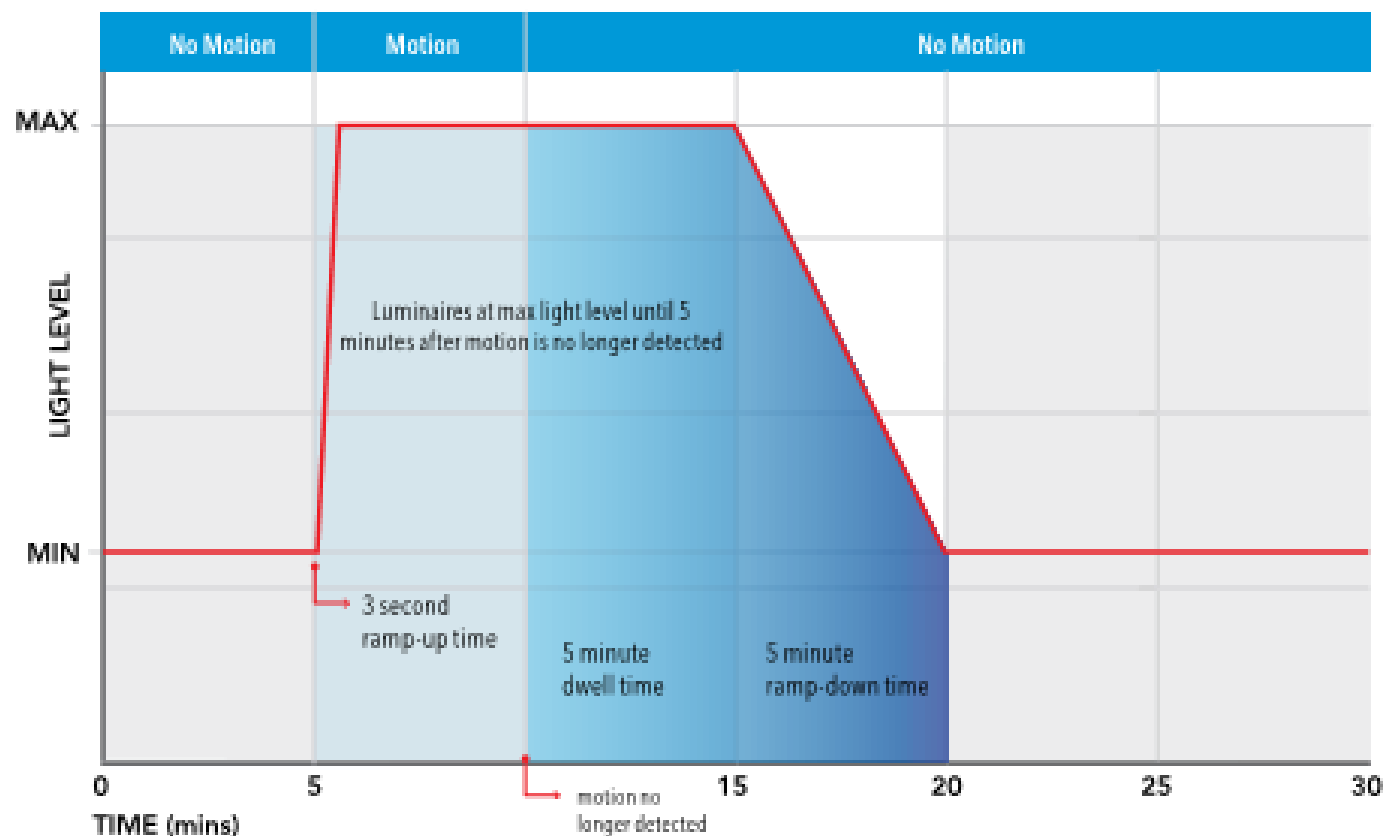
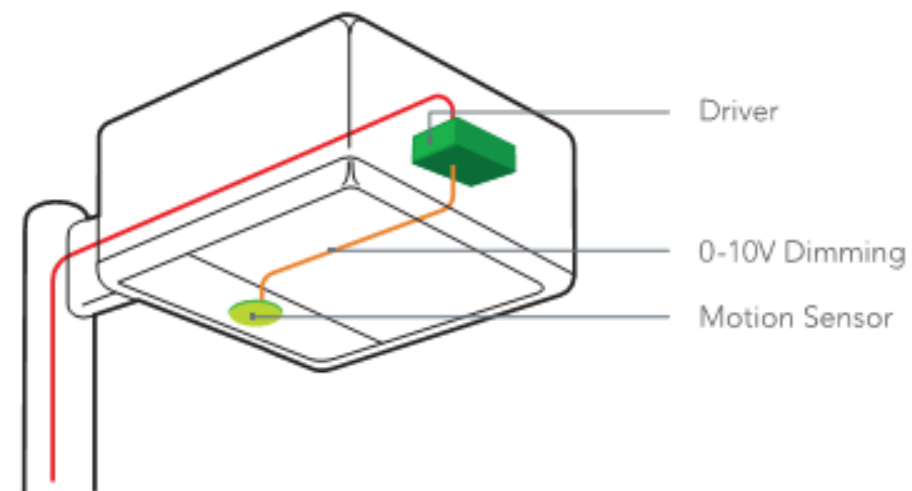
# Exterior Individual Products

Controls (multi-level)

\$0.25 bonus

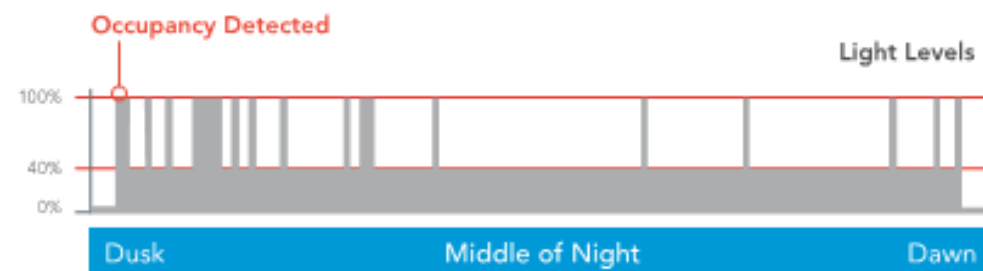


# Area Pole Lighting / Wallpacks



## How It Works

Motion sensors enable luminaires to respond to occupancy.



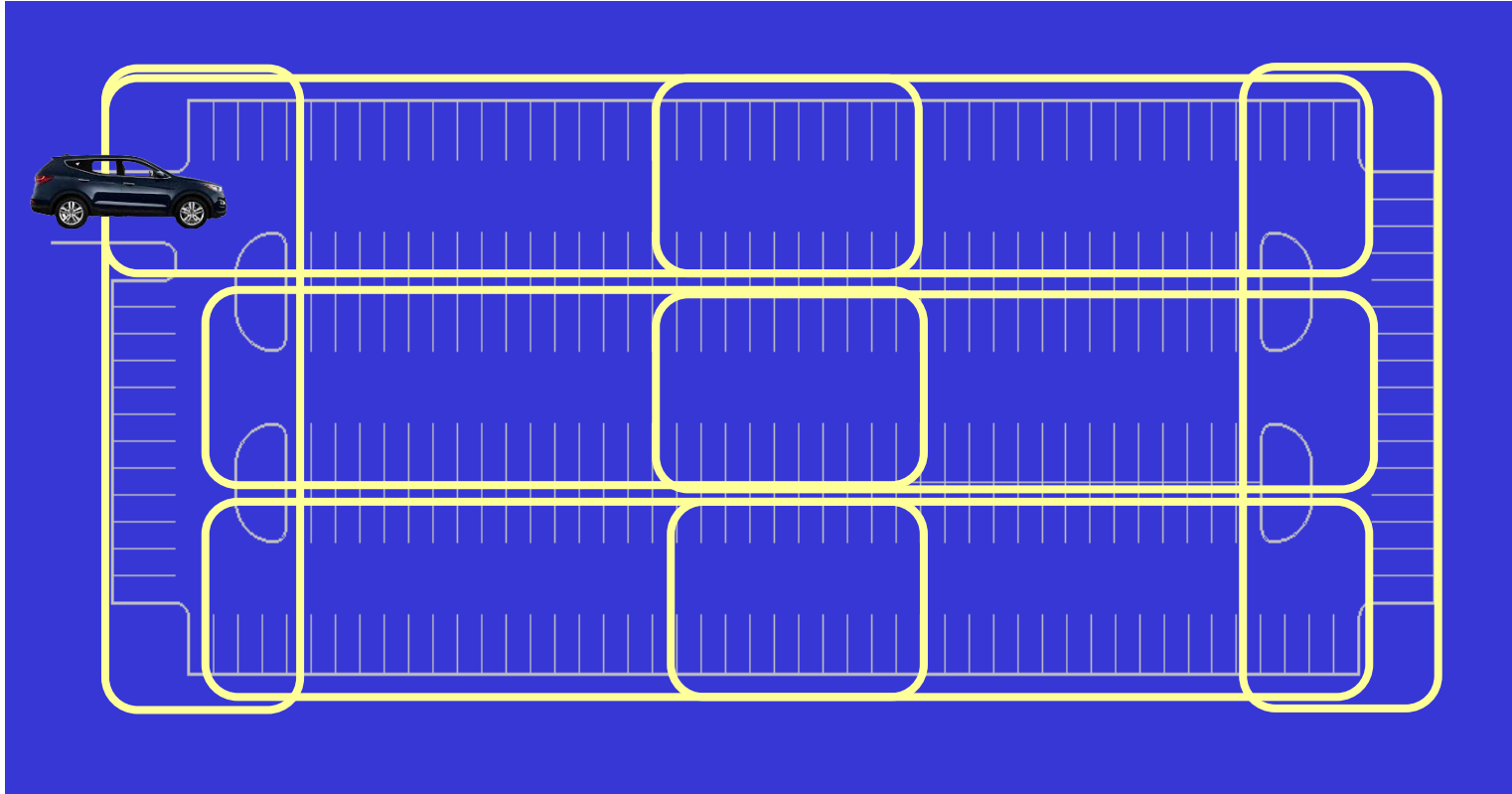
# Exterior Integrated Solutions

DLC networked controls	\$0.50
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# Exterior Integrated Solutions

DLC networked controls	\$0.50
------------------------	--------



Sensor “group response” results in the localized area and drive-lane to be fully illuminated when motion is detected by one luminaire in the group.

# Highbay / Garage Individual Products

Controls (multi-level)

\$0.25 bonus





# Highbay / Garage

Controls (multi-level)

\$0.25 bonus

## Individual Controls: <sup>23</sup>

HLN360	Haleon 360° High Mount Occ Sensor, pre-wired; Bluetooth® <sup>24</sup>
HLN360HL	Haleon 360° High Mount Occ Sensor w/HL Default, pre-wired; Bluetooth® <sup>24</sup>
HLN360ADC	Haleon 360° High Mount Occ Sensor w/ADC Default, pre-wired; Bluetooth® <sup>24</sup>
HLN360ANL	Haleon 360° High Mount Occ Sensor w/ANL Default, pre-wired; Bluetooth® <sup>24</sup>
HLNASL	Haleon High Mount Aisleway Occ Sensor, pre-wired; Bluetooth® <sup>24</sup>
HLNASLHL	Haleon High Mount Aisleway Occ Sensor w/HL Default, pre-wired; Bluetooth® <sup>24</sup>
HLNASLADC	Haleon High Mount Aisleway Occ Sensor w/ADC Default, pre-wired; Bluetooth® <sup>24</sup>
HLNASLANL	Haleon High Mount Aisleway Occ Sensor w/ANL Default, pre-wired; Bluetooth® <sup>24</sup>
LAOZU	360° high mount motion sensor, pre-wired <sup>25</sup>
LAHOSZU	360° high mount motion sensor with dimming, pre-wired <sup>25</sup>
LAPZU	360° high mount motion sensor with photocell, pre-wired <sup>25</sup>
LAMOSZU	360° high mount motion sensor, dimming & switching photocell, pre-wired <sup>25</sup>
C6D0SUEM	360° high mount motion sensor, dimming only (photocell disabled), pre-wired; UL924 listed (not available with battery pack or BGTD) <sup>26,27</sup>
C10D0SUEM	360° low mount motion sensor, dimming only (photocell disabled), pre-wired; UL924 listed (not available with battery pack or BGTD) <sup>26,28</sup>

## nLight wired: <sup>29</sup>

nPP16D	nLight® dimming & switching module
nPP16DER	nLight® dimming & switching module with emergency relay (not available with battery pack or BGTD)
nMSI	nLight® high mount aisleway motion sensor, pre-wired <sup>30</sup>
nMSI360	nLight® 360° high mount motion sensor, pre-wired <sup>31</sup>
nMSID	nLight® high mount aisleway motion sensor with dimming, pre-wired <sup>32</sup>
nMSI360D	nLight® 360° high mount motion sensor with dimming, pre-wired <sup>33</sup>

## nLight wireless:

NLTAIR2 RKOA	nLight AIR Generation 2 enabled 360° high mount motion sensor
NLTAIR2 RKOB	nLight AIR Generation 2 enabled 360° low mount motion sensor
NLTAIR2 rPP20D	nLight AIR Generation 2 dimming and switching module <sup>34</sup>
NLTAIR2 rPP20DER	nLight AIR Generation 2 dimming and switching module with emergency relay (not available with battery pack or BGTD) <sup>34</sup>



# Highbay / Garage

Controls (multi-level)

\$0.25 bonus

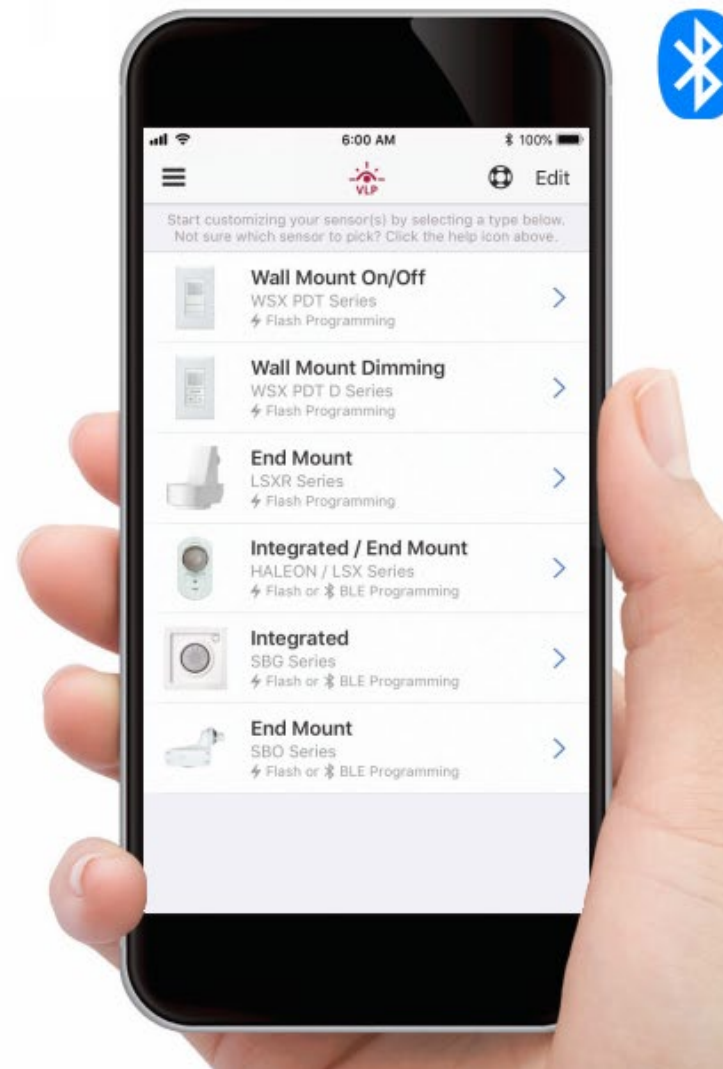
The Sensor Switch® mobile app gives users the ability to configure settings using Bluetooth® wireless technology, eliminating the need to use a lift or ladder.

Set occupancy time delay, trim values, photocontrol options and more on VLP-enabled occupancy sensors, photocontrols and luminaire-embedded sensors from the ground with this visually intuitive tool. Sensor customization has never been easier.



**Download the App**

Sensor Switch VLP Mobile App



# Highbay / Garage Integrated Solutions

DLC networked controls	\$0.50
------------------------	--------



# Highbay / Garage Integrated Solutions

DLC networked controls

\$0.50

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LAOZU	360° high mount motion sensor, pre-wired <sup>25</sup>
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# Highbay / Garage Integrated Solutions

DLC networked controls	\$0.50
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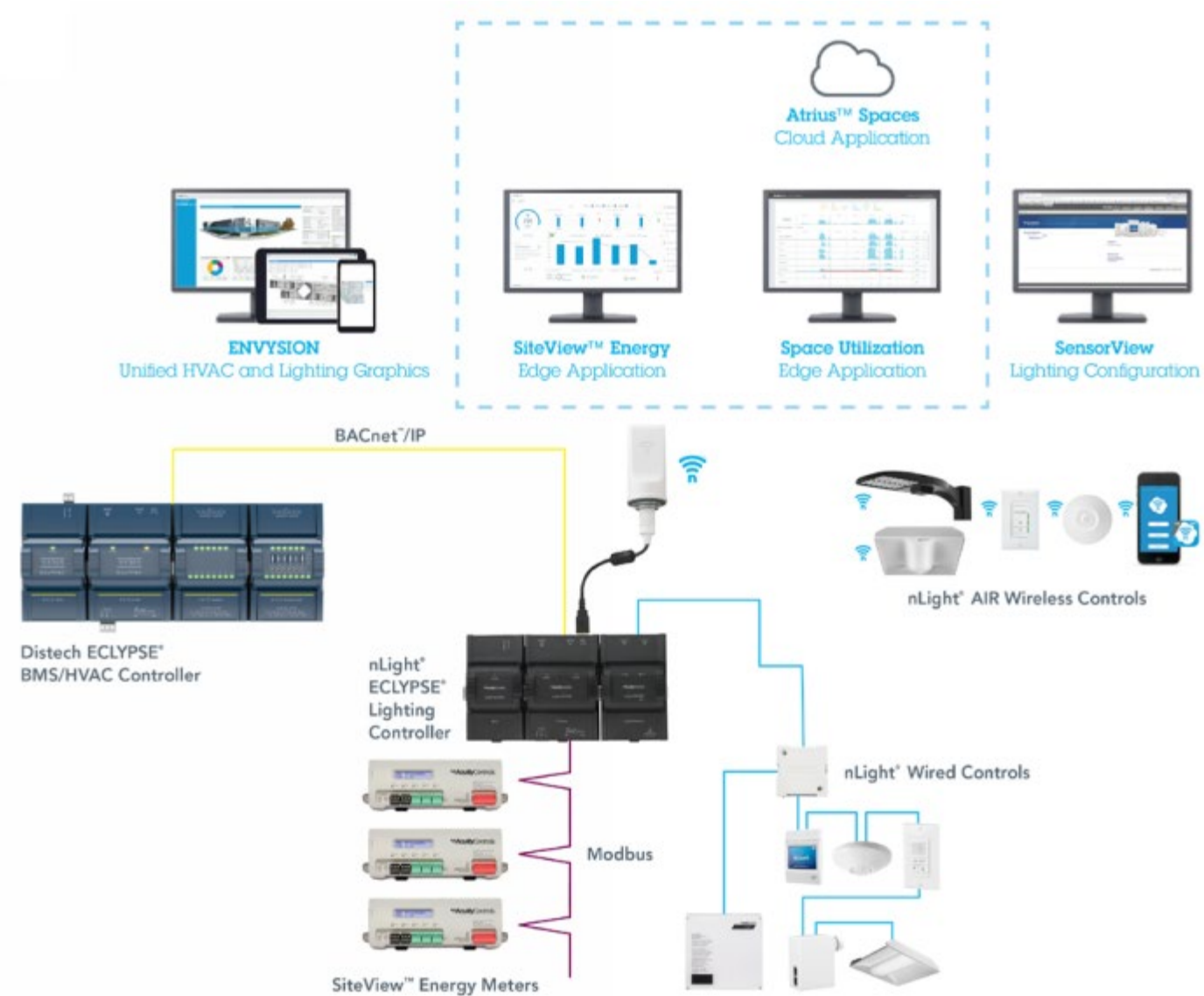


# Networking Benefits














# Networked!



# Networked!

STRATEGY	DESCRIPTION	SAVINGS
 Scheduling	Automated control based on time of day, or relative to sunrise and sunset. Temporary timers and blink warnings ensure easy occupant override.	10-40%
 Occupancy Sensing	Turn off lights and set-back HVAC in unoccupied areas. Share occupancy information with BMS or security systems.	10-30%
 Daylight Harvesting	Seamlessly dim or switch artificial lighting in response to available daylight.	5-15%
 Task Tuning	Reduce eye strain and save additional energy by presetting light levels below 100% (full output).	5-15%
 Occupant Controls	Intuitive controls allow adjustment of lighting or temperature to maximize occupant comfort and productivity.	5-25%
 Load Shedding	Minimize peak demand charges and reduce real time energy usages through automated curtailment of various building electrical loads.	5-15%
 HVAC	Leverage lighting system scheduling, sensors, and wall stations to integrate HVAC control.	Situational
 Plug Load Control	Turn off plug loads based on time, occupancy or for load shedding.	Situational
 PC-Based Control	Remote control and monitoring of lighting and sensors simplifies building operations for facility managers and security staff.	Situational

Mike B-OSPC (nCM PDT 9 ADC)

## Occupancy, Relay & Dimming



Occupied: No



Follow Photocell Level: 80%



Unscaled Dim Level: 80.0%



Dim Level: 80%



Pole State Reason: Not controlled by sensor



Actual Voltage Output: 8.18 V

## PIR & PDT



Time Delay Timer: 00:09:59



PIR Activity: Motion Detected



Tracked Occupancy Timer: 00:00:00



Mic Activity: No Activity

## Photocell



Transition Time: 00:10:00



Measured Light Level: 25.9 fc

## Scenes & Profiles



Scene Active: No



Profile Active: No



# Networked: Automatic Demand Response



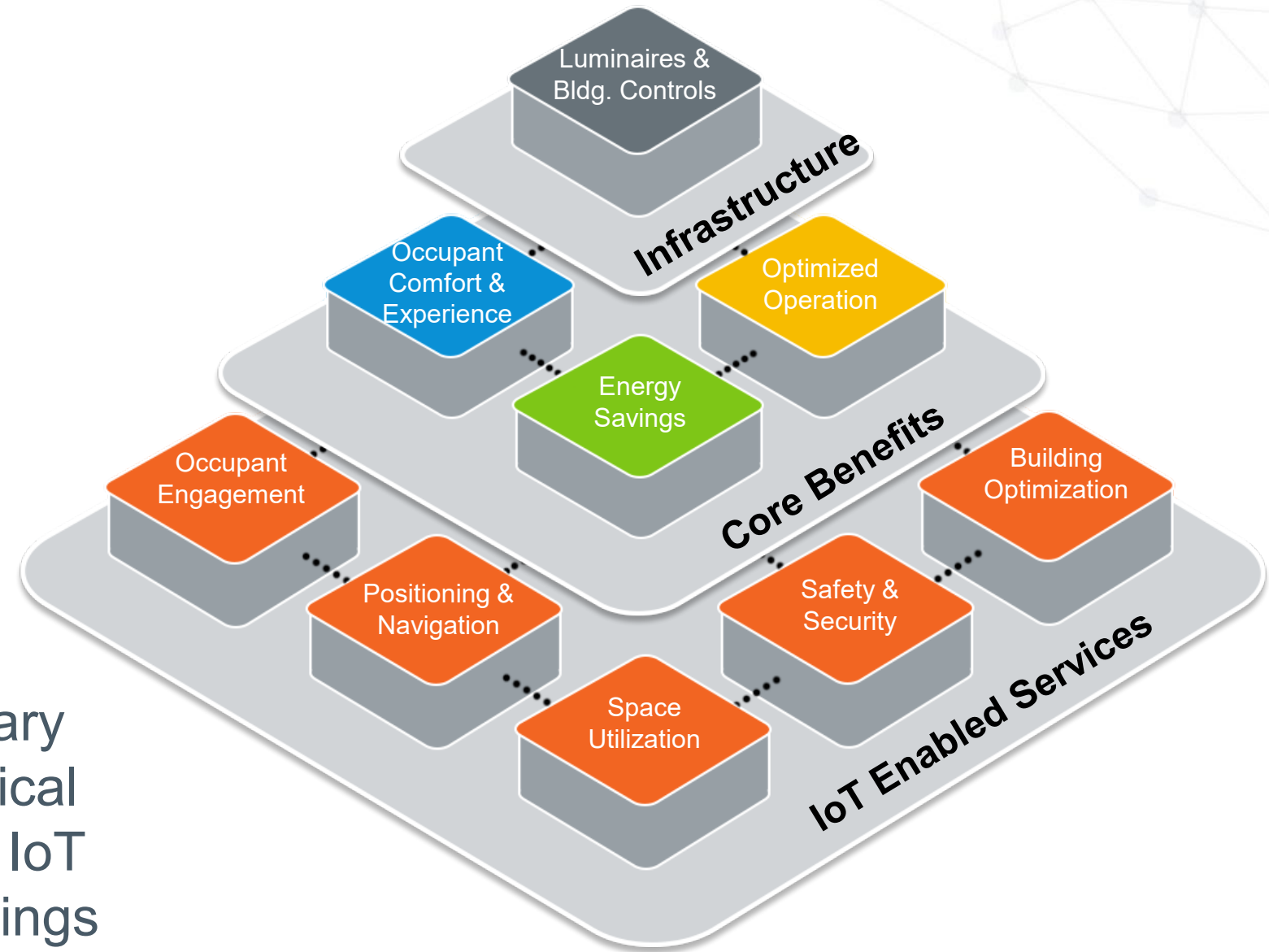
# Tiered Strategy





Energy & Maintenance optimization are just the tip of the iceberg...

# Consider the paradigm shift....



Transform this necessary infrastructure into a critical **Asset** - a Multi-Service IoT Platform for Smart Buildings





\*\*\*THANK YOU\*\*\*

