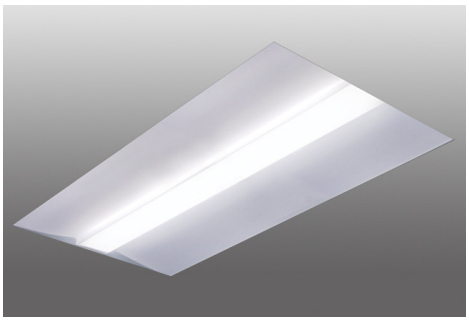
PINNACLE ARCHITECTURAL LIGHTING®

Project Name _____

Date _____ Type _____



LUCEN LU24

2x4 Architectural Recessed

Key Features

- Formed 22 gauge cold rolled steel housing
- Highly reflective die-formed white painted reflector
- Wiring access available on both ends and top of housing
- LED offered with a 5-year limited warranty. Covers LED, driver and fixture
- UL and cUL Listed, LO, MO, aend HO lumen packages are IC Rated
- Room-Side Maintenance for LED system

5 YEAR LED WARRANTY · DESIGNED IN DENVER CO. · TUNABLE · cULus · IC RATED · QUICKSHIP

Example Part #: LU24-A-830HO-G1-U-FSD-1-0-W

LU24 - [SHIELDING] - [CRI, CCT & OUTPUT] - [MOUNTING] - [VOLTAGE] - [DRIVER] - [CIRCUITING] - [BATTERY & EMERGENCY] - [FINISH] - [FIXTURE OPTIONS] - [CONTROLS]

__	______	______	_
SHIELDING	**SOURCE** QS [1, 2]	**MOUNTING**	**VOLTAGE**[3]
A - Satine Lens QS **W** - White Rails QS **S** - Silver Rails QS *Shielding pg. 2*	**_27__** - 2700K **_30__** - 3000K **_35__** - 3500K **_40__** - 4000K **TW __** - 2CH Tunable White *(2700-6500K, 90CRI)* **CL_____** - Custom Lumens **CW_____** - Custom Watts **MOD** - Mod options available *Lumen Output pg. 2*	**G1 -** 15/16" Grid QS **G9 -** 9/16" Grid QS **GS -** Screw Slot Grid QS **FL -** Flanged **S -** Surface Mount *Mounting pg. 3*	**U -** Universal *(120 thru 277V)* QS **1 -** 120V QS **2 -** 277V QS **3 -** 347V *Voltage pg. 3*

___	_	___	__
DRIVER	**CIRCUITING**[4]	**BATTERY & EMERGENCY**	**FINISH**
FSD - Factory Select Driver *(1%, 0-10v)* QS **PL2 -** Advance Xitanium *(1%, 0-10v)* **OL2 -** eldoLED Optotronic *(1%, 0-10v)* **OL4 -** eldoLED Optotronic 347v *(1%, 0-10v)* **EE1 -** eldoLED ECOdrive *(1%, 0-10v)* **ES1 -** eldoLED SOLOdrive *(0.1%, 0-10v)* **LH1 -** Lutron Hi-lume *(1%, EcoSystem)* **PR1 -** Advance Xitanium SR **MOD** - Mod options available *Driver pg. 4*	**1 -** Single Circuit QS **E -** Emergency *(entire fixture)* QS **N -** Night Light *(entire fixture)* QS *Circuiting pg. 4*	**0 -** None QS **FSB** - Factory Select Battery QS **FSG -** Factory Select ALCR **1PLL -** Bodine 10W **1ILL -** Iota 10W **GI -** Iota ETS DR **GB -** Bodine GTD *Battery and Emergency pg. 4*	**W -** White QS **MOD** - Mod options available *Finish pg. 5*

____	___
FIXTURE OPTIONS[5]	**CONTROLS**[6]
QS - QuickShip QS **TW -** Through-wiring **CP -** Chicago Plenum **AM -** Antimicrobial Paint **FW6 -** 6' Flex Whip QS **GLR -** Fast Blow Fusing QS **GMF -** Slow Blow Fusing **MOD** - Mod options available *Fixture Options pg. 5*	**DLMFC -** Wattstopper DLM **DLMFS -** Wattstopper LLLC **EASYS -** Philips EasySense **SNSLM -** Wattstopper PLUS SensiLUM **WVLX -** Eaton WaveLinx **VDO -** Lutron Vive Sensor **VRF -** Lutron Vive Connected **MOD** - Mod options available *Controls pg. 6*

[1]When specifying SOURCE the first _ is for specifying either **8** - 80CRI, **9** - 90CRI. The ending _ _ are for specifying output, example 835HO - 80CRI, 3500K High Output. See output charts for more information. [2]When specifying Tunable White, use **TW** and then specify output, example TWHO - Tunable White 90CRI, High Output 2700-6500K. See output charts for more information. Tunable White option requires driver option **FSD** which provides separate 0-10v control leads for Intensity and CCT. [3]Tunable White (**TW**) option only available with Universal (**U**), 120V (**1**) or 277V (**2**) options. [4]Consult factory for Emergency (**E**) or Night Light (**N**) options with Tunable White option. [5]If specifying QuickShip, **QS** must be used in fixture options section of part number to qualify. [6]Controls can only be used with Single Circuit (**1**) or Emergency Circuit (**E**). See Controls chart on page 5 for driver options and more information

Specifications and dimensions subject to change without notice. Specification sheets that appear on pinnacle-ltg.com are the most recent version and supersede all other previously printed or electronic versions.

Shielding

- Single piece extruded diffuse lens with convex wings and articulated center spine
- Fully luminous housing with optimal glare control
- Highly reflective white reflectors maintain uniform lens brightness

A
Satine Lens

W
Satine Lens with White Trim

S
Satine Lens with Silver Trim

Output

- Specify either 80 or 90 CRI for White light LED
- Longer lead-time may apply for 90 CRI or Tunable White option. Consult factory
- Tunable White option requires driver option FSD which provides separate 0-10v control leads for Intensity and CCT.
- Tunable White lumen packages shown at 4000K CCT setpoint
- 90 CRI = R9≥50

Custom Output- Lumens OR Wattage

CL_ _ _ _ _	Specify CRI, CCT and desired lumens (i.e. CL8351200)	*Specify lumens between standard offering listed below. Lumens are specified per color temp*
CW_ _ _ _ _	Specify CRI, CCT and desired wattage (i.e. CW94015)	*Specify watts between standard offering listed below*
CLTW_ _ _ _	Specify desired lumens for Tunable White (i.e. CLTW3200)	*Specify lumens between Tunable White offering listed below. Lumens are specified at 4000K CCT setpoint.*

80 CRI

	Color	Output	Watts	Shielding					
				A Satine Lens		**W** White Trim		**S** Silver Trim	
				Lumens	*LPW*	*Lumens*	*LPW*	*Lumens*	*LPW*
830LO	3000K	Low	22.1	3114	141	2806	127	2653	120
830MO		Middle	29.8	4095	137	3689	124	3489	117
830HO		High	36.8	5052	137	4552	124	4304	117
830VHO		Very High	55.0	7265	132	6546	119	6190	113
835LO	3500K	Low	22.1	3127	142	2818	127	2665	121
835MO		Middle	29.8	4112	138	3705	124	3503	118
835HO		High	36.8	5073	138	4571	124	4322	117
835VHO		Very High	55.0	7295	133	6573	120	6216	113
840LO	4000K	Low	22.1	3211	145	2893	131	2736	124
840MO		Middle	29.8	4222	142	3804	128	3597	121
840HO		High	36.8	5209	142	4693	128	4438	121
840VHO		Very High	55.0	7491	136	6749	123	6382	116

90 CRI

927LO	2700K	Low	22.1	2583	117	2327	105	2200	100
927MO		Middle	29.8	3396	114	3059	103	2893	97
927HO		High	36.8	4189	114	3774	103	3569	97
927VHO		Very High	55.0	6024	110	5428	99	5133	93
930LO	3000K	Low	22.1	2645	120	2384	108	2254	102
930MO		Middle	29.8	3478	117	3134	105	2964	99
930HO		High	36.8	4291	117	3866	105	3656	99
930VHO		Very High	55.0	6171	112	5560	101	5258	96
935LO	3500K	Low	22.1	2761	125	2487	113	2352	106
935MO		Middle	29.8	3630	122	3270	110	3093	104
935HO		High	36.8	4478	122	4035	110	3816	104
935VHO		Very High	55.0	6440	117	5802	105	5487	100
940LO	4000K	Low	22.1	2834	128	2553	116	2415	109
940MO		Middle	29.8	3726	125	3357	113	3175	107
940HO		High	36.8	4597	125	4142	113	3917	106
940VHO		Very High	55.0	6611	120	5956	108	5633	102

2 CH Tunable White (2700-6500K, 90CRI)

TWLO	2700 - 6500K	Low	29.1	3100	106.6	2790	96.0	2638	90.7
TWMO		Middle	39.2	4100	104.7	3694	94.3	3493	89.2
TWHO		High	48.8	5100	104.6	4591	94.1	4341	89.0
TWVHO		Very High	82.7	7400	89.5	6666	80.6	6304	76.2

Direct Source: MOD Options

- Specify **MOD** in the part number for any of the below options
- All RGB_ Source Options will require specific driver and control
- Consult factory for **MOD** specification details, pricing, and lead-time information

		Required Driver	Required Control
MOD	Color Changing RGB LED	EC1	DMX
	Color Changing RGB-W LED	EC1	DMX

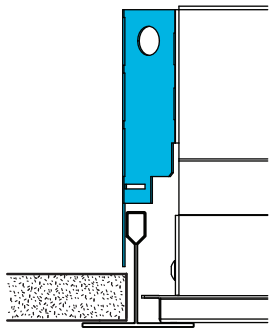
Mounting

- LUCEN is offered with a universal flange for all grid types. See below for fixture placement in relation to the tile for each grid type
- Grid retention clips integral to housing and require mechanical attachment
- Tie off fixture to structure with retention wires
- Refer to installation instructions during installation at the jobsite
- Maximum fixture weight is 25lbs - Surface Mount Box adds 10 lbs

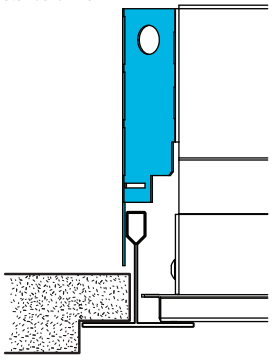
G1

1" Grid Mount

Works with 15/16" grid ceiling types. See profile for fixture position in relation to ceiling grid and tile.



Standard Tile

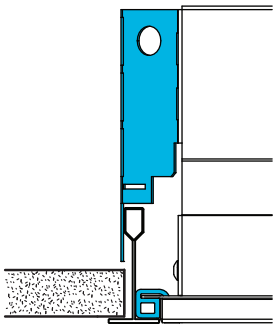


Tegular Tile

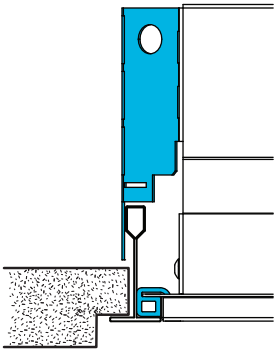
G9

9/16" Grid Mount

Works with 9/16" grid ceiling type. For tegular tile installations, fixture position will not be flush to the bottom of the tile. See tegular tile profile image below.



Standard Tile

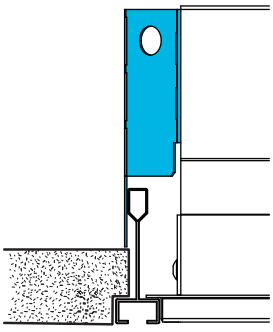


Tegular Tile

GS

Screw Slot Mounting

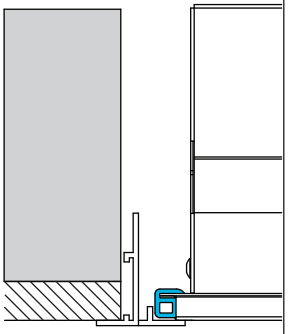
Works with screw slot and bolt slot grid ceiling types.

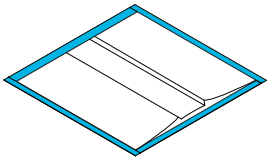


FL

Flange Kit

A separate flange kit is supplied for installations into inaccessible or drywall applications. Flange kit ships from factory uninstalled separately from fixture.

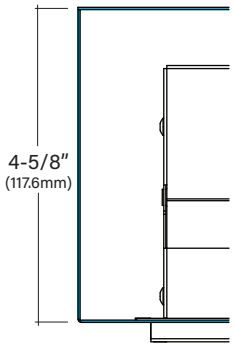


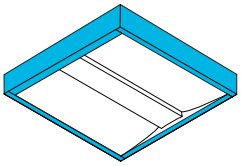


S

Surface Mount

Utilize for hard lid ceiling applications. The 20 gauge steel frame easily secures to ceiling. Surface Mount Box adds 10 lbs





Voltage

- Some LUCEN configurations will not accommodate all voltage options; consult with factory
- 347 volt not available with Tunable White (TW) option

U	Universal
1	120 volt
2	277 volt
3	347 volt

Driver

- Standard Driver Option = FSD
- Driver Lifetime: 50,000 hours at 25°C ambient operating conditions
- For more Driver options, see Pinnacle Resource Guide
- Some LUCEN configurations will not accommodate all driver options; consult with factory

0-10V Drivers	
FSD	Factory Select Driver 1%, 0-10v
PL2	Advance Xitanium 1%, 0-10v
PL4	Advance Xitanium 347v 1%, 0-10v, requires 347v
OL2	eldoLED Optotronic, 1%, 0-10v
OL4	eldoLED Optotronic 347v, 1% 0-10v, requires 347v
EE1	eldoLED ECOdrive 1%, 0-10v Logarithmic
EE2	eldoLED ECOdrive 1%, 0-10v Linear
ES1	eldoLED SOLOdrive 0-10v, 0.1% Logarithmic
ES2	eldoLED SOLOdrive 0-10v, 0% Linear
OL5	eldoLED Optotronic 1%, 0-10v, AUX
PL5	Advance Xitanium 1%, 0-10v, AUX
DALI Drivers	
EE3	eldoLED ECOdrive 1%, DALI 2, Logarithmic, DT6
ES3	eldoLED SOLOdrive 0.1%, DALI 2, Logarithmic, DT6
OD1	eldoLED Optotronic 1%, DEXAL, DALI 2, DT6, Self powered link
PR1	Advance Xitanium SR, DALI 2, Self powered link
Lutron Drivers	
LH1	Lutron Hi-lume Soft-on, Fade-to-black 1%, EcoSystem, LDE1
Alternate Drivers	
PS1	Advance Xitanium Step Dimming 50%/100%
EH1	ERP 1%, Line Voltage and ELV, requires 120v

Driver: MOD Options

- Specify **MOD** in the part number for any of the below options
- Consult factory for **MOD** specification details, pricing, and lead-time information

MOD	Power Over Ethernet

Circuiting

- Select fixture circuiting from options below
- Some LUCEN configurations will not accommodate all circuiting options; consult with factory
- Consult factory for Emergency (E) or Night Light (N) circuit with Tunable White (TW) option

1	Single Circuit
E	Emergency Circuit only
N	Night Light Circuit only

Battery & Emergency

- Select battery or emergency options if required
- Battery duration is 90 minutes
- For Tunable White (TW) option, battery with illuminate 6500K LED unless otherwise specified.
- Test button is integral to fixture
- For more Battery options, see Pinnacle Resource Guide
- Consult factory for Emergency Control Devices with Tunable White (TW) option

0	No Battery
FSB	Factory Select Battery 10w, Integral Lithium
FSBST	Factory Select Battery 10w, Integral Lithium, Self Testing
FSG	Factory Select ALCR Emergency Control Device, UNV
GI	Iota ETS-DR, Emergency Control Device, UNV
GB	Bodine GTD, Emergency Control Device, 120v or 277v
1ILL	Iota 10w, Integral Lithium, Self Testing
1PLL	Bodine 10w, Integral Lithium, Self Testing

For Approximate Battery Lumen Output

- Multiply battery wattage X fixture LPW shown on Lumen Table
- 10 (watts) x 92.3 (LPW) = 923 battery lumen output

Battery & Emergency Ordering Examples

- Single circuit, 10w integral battery — Ordering Code: 1-1FSB
- Emergency circuit only, 10w integral battery — Ordering Code: E-1PLL

Finish

- Powder-coat white painted finish

W	White

Finish: MOD Options

- Specify **MOD** in the part number for any of the below options
- Consult factory for **MOD** specification details, pricing, and lead-time information

MOD	Wood Grain
	Acoustic
	Metallic Silver
	Textured Black
	Bronze
	Graphite
	Custom Color

Fixture Options

- Additional options to enhance the fixture and finish of the product

QS	Quick Ship
TW	Through-Wiring
CP	Chicago Plenum
AM	Antimicrobial Paint
FW6	Flex Whip 6'
GLR	Internal Fast Blow Fuse
GMF	Internal Slow Blow Fuse

Fixture Options: MOD Options

- Specify **MOD** in the part number for any of the below options
- Consult factory for **MOD** specification details, pricing, and lead-time information

MOD	Remote Driver
	End Power Feed

Quick Ship

Shielding	Output	Mounting	Voltage	Driver	Circuiting	Battery	Finish	Options
10-Day								
A Satine Lens **W** White Rails **S** Silver Rails	80 CRI, All color temperatures, all lumen packages *See pg 4*	**G1** 1" Grid **G9** 9/16" Grid **GS** Screw Slot	**U** Universal **1** 120v **2** 277v	**FSD** Factory Select Driver *(1%, 0-10v)*	**1** Single **E** Emergency **N** Night Light	**0** None **FSB** Factory Select Battery	**W** White	**CP** Chicago Plenum **FW6** Flex Whip 6' 18-gauge **GLR** Internal Fast-Blow Fuse

Consult Factory for projects that are larger than 200 units.

Controls

- Pinnacle Lighting offers easy to specify network control solutions that connect to an intelligent centralized system to maximize lighting energy efficiencies or integral sensors for individual fixture control
- Pinnacle Lighting fixtures ship technology ready; commissioning by others
- Controls can only be used with Single Circuit (**1**) or Emergency Circuit (**E**)
- Contact factory for any non-standard configurations for layout, placement, or EM options
- Controls only compatible with Satine Lens.
- Must specify required driver in Driver Section
- Consult factory for available controls with Tunable White (TW) option

	Solution	Components	Network/Sensor	Connection	Required Drivers	Limitations
DLMFC	Legrand Wattstopper DLM	LMFC-011	Digital Lighting Management (DLM)	Wired, two RJ45 ports	OL2, OL4	Not available with Battery
DLMFS	Legrand Wattstopper LLLC	LMFS-601-W / LMFI-111	Wireless DLM Fixture Sensor	Wireless	OD1, PR1, 0-10v	0-10v requires interface
EASYS	Philips EasySense	SNS-210	Daylight/PIR Occupancy	Wireless to switches	PR1	Not available with 347 volt
SNSLM	Wattstopper PLUS SensiLUM	EN-CLM-PIR-DD-ZB	Encelium, Daylight/PIR Occupancy	Wireless	OD1, OL5	Not available with 347 volt
WLVX	Eaton WaveLinx	SWPD1, MSP3IVMVDC1	WaveLinx WCL, Daylight	Wireless	Any 0-10v	Not available with 347 volt
VDO	Lutron Vive Sensor	DFCSJ-OEM-OCC	Vive, Daylight/PIR Occupancy	Wireless	OD1, PR1	Not available with 347 volt
VRF	Lutron Vive Connected	DFCSJ-OEM-RF	Vive	Wireless	OD1, PR1	Not available with 347 volt

Controls: MOD Options

- Specify **MOD** in the part number for any of the below options
- **Control** Options may require specific driver. Refer to the chart below
- Consult factory for **MOD** specification details, pricing, and lead-time information

		Required Driver
MOD	Acuity nLight Air Wireless Connected	EE6, ES6

Approvals & Certifications

Construction: Formed 22 gauge cold rolled steel housing. Highly reflective die-formed reflectors maintain uniform lens brightness. Wiring access on both sides and top of housing. Housing designed to maintain optimal temperature of LED diodes and driver. Captive door frame swings open for room-side maintenance of lens, driver and LED boards.

Shielding: Single piece extruded diffuse lens with convex wings and articulated center spine creating a fully luminous housing with optimal glare control. Available with standard satine lens or optional white or silver lens side rails.

Mounting: Designed to install into acoustical grid and inaccessible ceilings. Specify G1, G9 or GS for acoustical grid ceiling. Specify FL for inaccessible ceilings. Grid retention clips integral to housing and require mechanical attachment. Tie off fixture to structure with retention wires.

White LED: 25°C test environment. Lumen output/wattage has a margin of +/- 5%. Luminaire configurations tested in accordance with IES LM-79. Diodes tested in accordance with IES LM-80. Lifetime calculated using IES TM-21. TM-21-21 Lifetime Rating L70 = >54,000 hours, L90 = >54,000 hours. MacAdam 3-Step Ellipses. For all available IES files, please visit our website at pinnacle-ltg.com.

Tunable White LED: 2 channel solution with 2700K and 6500K LED, 90CRI only, R9 >50. Lumen packages available shown at 4000K CCT setpoint, lumen output varies based on CCT. Use multipliers for other CCT; 2700K = .91 3000K= .93 3500K=.97 4000K=1.0 5000K=1.044 6500K=1.078.

Color & Lumen Output: Not all lumen packages available. Four lumen packages available. Low (LO), Medium (MO), High (HO) and Very High (VHO). Custom outputs are available. Specify custom lumens or watts between standard offering listed on CRI, CCT & Output page. 80 CRI is available for 3000K, 3500K, and 4000K. 90 CRI is available for 2700K, 3000K, 3500K and 4000K. 90 CRI = R9≥50.

Voltage: Universal (U), 120 volt (1), 277 volt (2) and 347 volt (3) options available. Must specify PL4 or OL4 in Driver section when 347 volt (3) is selected. Some LUCEN configurations will not accommodate all voltage options; consult with factory.

Driver: Standard Driver Option is Factory Select Driver 0-10V, 1% = FSD. Electronic driver, Power factor is >0.9 with a THD <20%. Driver Lifetime: 50,000 hours at 25°C ambient operating conditions. Ambient operating range: -20°F/-30°C to 112°F/45C. For more driver options, see Pinnacle Resource Guide. Some LUCEN configurations will not accommodate all driver options.

Circuiting: Select from single circuit (1), Emergency circuit (E) or Night Light circuit (N). Some LUCEN configurations will not accommodate all circuiting options, consult with factory.

Battery & Emergency: Select battery or emergency options if required. If battery or emergency option is not required, enter 0. Battery duration is 90 minutes as standard. Test button is integral to fixture. For more Battery options, see Pinnacle Resource Guide.

Finish: Powder-coat white painted finish on exposed trim.

Controls: Standard options available, refer to Controls section table for available options, component part number(s), connection type, required driver and limitations. Mod options available, consult with factory.

Labels: UL and cUL 1598 listed. LO, MO, and HO lumen packages are IC Rated, approved for dry/damp location unless otherwise noted.

Fixture Weight: 25 lbs maximum - Surface Mount Box 10 lbs.

Warranty: LUCEN LED offered with a 5-year limited warranty. Covers LED, driver and fixture.