

CLUSTERS

SURFACE COMBINATIONS



LUMENWERX

PROJECT: _____

TYPE: _____

NOTES: _____



DESCRIPTION

Cluster Combinations integrate the Cluster lighting elements into a 1.5" wide x 3.75" high aluminum channel, creating endless possibilities for visually interesting lighting. Six different downlight optics in 3-, 5-, or 10-cell configurations and multiple finishes can be arranged in continuous rows or separated by diffusers for general lighting or by blank covers. All LED's used in the combination have consistent color characteristics. Channel modules are available from 4' to 12' in 1' increments, can be neatly connected together, and install in accessible grid and drywall ceilings. All drivers are mounted in the channel. For configurations other than those shown here, please consult the factory.

We require a drawing illustrating the combination you would like to order - anything from a simple line drawing to elaborate architectural drawings. Enter the required **TOTAL LUMINAIRE LENGTH**, CRI, Lumens, Color Temperature and Voltage.

Consult pages 2-5 for details before specifying

GENERAL SPECIFICATIONS CODE:

Luminaire ID	Total Luminaire Length (MIN 4')		Light Source	CRI	Color Temp	Voltage
	FT	IN	SW	90		

OPTICS	BEAM	LOUVER	LOUVER FINISH
SOF - Soft edge downlight REF - Sharp edge downlight	SPT ¹ - Spot NFL ² - Narrow flood FLD - Flood WFL - Wide flood ¹ Available with REF only. ² Available with SOF only.	CON ³ - Conical HYP - Hyperbolic SQR - Square ³ Faceplate matches body finish black and white only.	MF01 - Matte white MF04 - Matte black BL05 - Black chrome GL06 - Gold CP06 - Copper

OPTICS LIST CODE:

CLUSTER OPTIONS	Quantity (for actual clusters size see page 2)	Lumen Package Per Unit		
		LOW	MED	HIGH
CLU03 - Clusters 1x3	<input type="text"/>	145 lm	362 lm	578 lm
CLU05 - Clusters 1x5	<input type="text"/>	230 lm	577 lm	923 lm
CLU10 - Clusters 1x10	<input type="text"/>	448 lm	1120 lm	1791 lm

CONFIGURATION OPTIONS	Optic Length			Im/ft	350 lm-750 lm
	FT	FT	IN		
* HLO - High-Efficiency Lambertian Optic	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	
** BLA - Blank	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	No minimum length

IMPORTANT

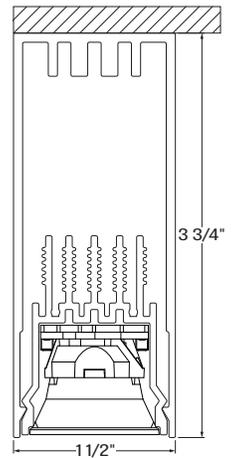
*HLO & CLUSTER CONFIGURATIONS

- 1) Minimum individual section 4'
- 2) Specify in increments of 1'
- 3) Minimum distance between Clusters is 3'

**BLANK & CLUSTER CONFIGURATIONS

- 1) Minimum individual section 4'
- 2) Minimum distance between Clusters is 2'

CROSS SECTION



ALL OTHER PARTS OF THE CODE:

DRIVER	ELECTRICAL	MOUNTING	FINISH
D1 - 1% 0-10V DA ⁴ - DALI LTEA2W ⁵ - Lutron 1% - 2 wire FP 120V LDE1 ⁴ - Lutron Hi-Lume 1% Eco ⁴ On-site commissioning is required. ⁵ Available with 120V only.	1 - 1 circuit 2 - 2 circuits +#EM - Emergency light circuit +#NL - Night light circuit	GRD - Grid ceiling DRC - Drywall ceiling	W - Matte white B - Matte black CF# - Custom finish, specify RAL#



CLUSTERS

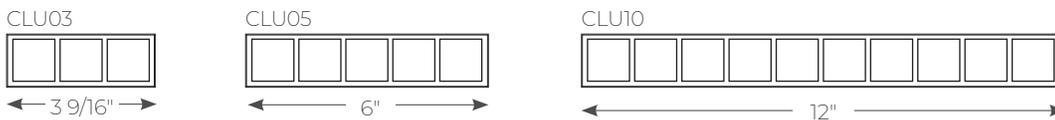
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LUMENWERX

LOUVER OPTIONS



AVAILABLE CLUSTER SIZES



CONFIGURATION WITH CLUSTER DOWNLIGHTS (HLO & BLANK)

Configuration A - OPTIC CODE: 2xCLU05 - 1x CLU10 - HLO6FT



Configuration B - OPTIC CODE: 3xCLU05 - BLA4FT



Configuration C - OPTIC CODE: 3xCLU03 - HLO6FT

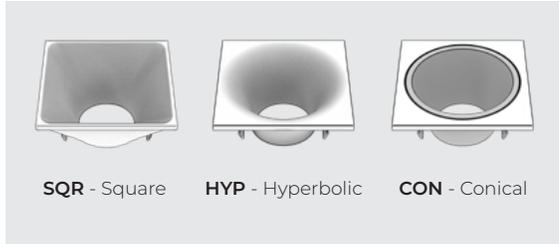


Configuration D - OPTIC CODE: 3xCLU05 - HLO6FT - BLA4IN

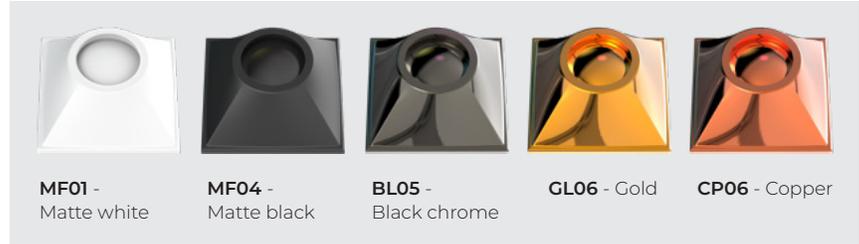


LIGHT

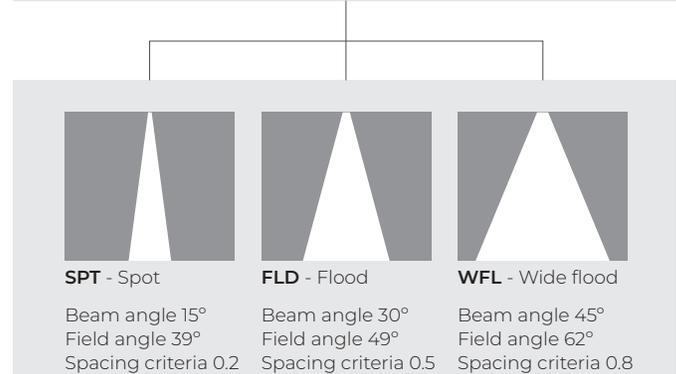
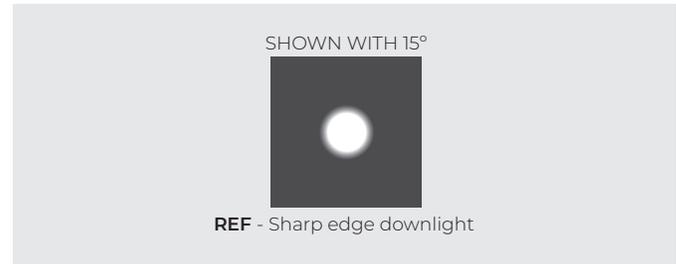
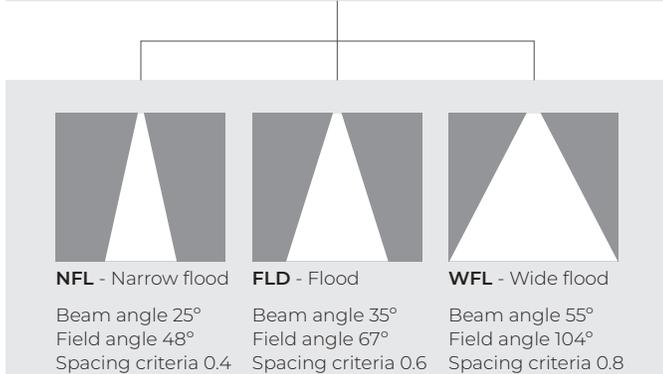
LOUVER SHAPE



LOUVER FINISH - Louver is injection molded with integral texture and color



OPTICS & BEAM ANGLE



SOFT-EDGED FEATHERED BEAM (SOF)

blends the light into darker areas for a gentle brightness transition. Each LED emitter directs light through a single, custom molded circular optic using total internal reflection (TIR) to shape the light. A 0.5" reflective square louver provides a cut off with a UGR of 10. Three different TIR elements create a choice of beam spread: 25° narrow flood (NFL), 35° flood (FLD), or 55° wide flood (WFL).



SHARP-EDGED CUT-OFF BEAM (REF)

creates dramatic impact, limiting the spread of light outside of the primary beam. A molded conical reflector redirects light from each emitter into the desired beam angle. A 0.5" reflective square louver provides a cut off with a UGR of 10. Three different TIR elements create a choice of beam spread: 15° spot (SPT), 30° flood (FLD), or 45° wide flood (WFL).



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OPTICS

High-Efficiency Lambertian Optic (HLO) - The High-Efficiency Lambertian Optic (HLO) shielding of diffusing 0.075" thick acrylic with up to 88% transmission and good source obscuration is combined with matte white side reflectors to create an efficient optical chamber with uniform luminosity.

Aluminum Blank (BLA) - Blank covers are available to provide spacing – functional or rhythmic – in the direct component of a Cluster combinations luminaire. Covers are sized according to the combination design, finished to match the luminaire housing, and snap into the aperture.

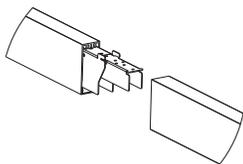
LIGHT SOURCE

Custom array of high-flux LEDs mounted onto aluminum-backed circuitry. Available in 2700K, 3000K, 3500K and 4000K with a minimum 90 CRI with elevated R9 value. Color consistency is maintained to within 2 SDCM. All LEDs have been tested in accordance with IESNA LM-80-08 and the results have shown L80 lumen maintenance greater than 60,000 hours. Absolute product photometry is measured and presented in accordance with IESNA LM-79, unless otherwise indicated.

LUMINAIRE LENGTH

Cluster combinations is made up of standard 4, 8 and 12 foot sections that may be joined together to create longer continuous run lengths. Exact run length must be noted in the product code. The minimum individual section available is 4 foot.

All individual sections are joined together onsite using the joiner kits provided. Lumenwerx offers joiner kits that are extremely simple to work with in the field and result in a fixture that appears virtually seamless with no light leak at any connection.



Joining system

ELECTRICAL

Factory-set, adjustable output current LED driver with universal (120-277VAC) input. Dimmable from 100% to 1% with 0-10V dimming control. Rated life (90% survivorship) of 50,000 hours at 50°C max. ambient (and 70°C max. case) temperature. At maximum driver load: Efficiency>84%, PF>0.9, THD<20%. Other specifiable options include Lutron Hi-Lume 1% (specify 2-wire, or Ecosystem Dim-to-Off), and DALI protocol drivers. All of our standard 0-10V drivers are NEMA 410 compliant.

MOUNTING OPTIONS

Fixtures can be mounted directly to T-Bar, drywall and hard surface ceilings, hardware supplied by others. Long runs require a minimum of 6" distance from the vertical wall.

FINISH

Interior - 95%, reflective matte powder coated white paint
Exterior - Matte white or matte black powder coating
Louwer - Reflective white or reflective black

CONSTRUCTION

Housing - Extruded aluminum (0.095" nominal) up to 90% recycled content
Interior channel - Extruded aluminum (0.095" nominal) up to 90% recycled content
Joining system - 16 gauge galvanized sheet metal
End caps - Die cast aluminum (0.95" nominal)
Louwer optics - Polycarbonate

CERTIFICATIONS

ETL - Rated for indoor dry/damp locations. Conforms to UL Standard 1598 and certified to CAN/CSA Standard C22.2 No. 250.0

WARRANTY

Lumenwerx provides a five-year limited warranty on electrical and mechanical performance of the luminaires, including the LED boards, drivers, and auxiliary electronics. Lumenwerx will repair or replace defective luminaires or components at our discretion, provided they have been installed and operated in accordance with our specifications. Other limitations apply, please refer to the full warranty on our website.

DRIVER

The driver can power several lighting units, depending on their total power. The minimum and maximum number of lighting units and driver type are shown in the table below and must be observed.

LUMEN PACKAGE ¹ (AT 3500K)

LUMINAIRE ID	LUMEN PACKAGE			VOLTAGE	DRIVER	NUMBER OF LIGHTING UNITS PER DRIVER
CLU03 CLU05 CLU10	LOW 145 lm 230 lm 448 lm	MEDIUM 362 lm 577 lm 1120 lm	HIGH 578 lm 923 lm 1791 lm	120 - 120V 277 - 277V UNV - 120V-277V	D1 - 1% 0-10V DA ² - DALI LTEA2W ³ - Lutron 1% - 2 wire FP 120V LDE1 ² - Lutron Hi-lume 1% Eco	See table below for maximum and minimum possible number of lighting units per each driver.
² On-site commissioning is required. ³ Available with 120V only.						

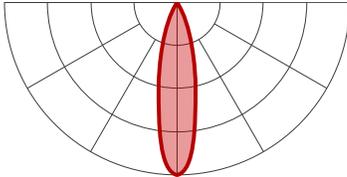
¹ Watts and lumen per watts will vary based on the number of light units per remote driver as well as on the type of driver selected

NUMBER OF LIGHTING UNITS PER DRIVER - MINIMUM AND MAXIMUM

DRIVER TYPE	CLU03	CLU05	CLU10
D1 - 1% 0-10V	3-8	2-4	1-2
DA - DALI	3-8	2-4	1-2
LTEA2W - Lutron 1% - 2 wire FP 120V	2-5	1-3	1
LDE1 - Lutron Hi-lume 1% Eco	3-5	2-3	1

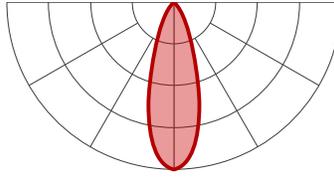
For any quantities of lighting units per driver that fall outside the minimum and maximum listed above, please consult factory.

SOFT-EDGE DOWNLIGHT



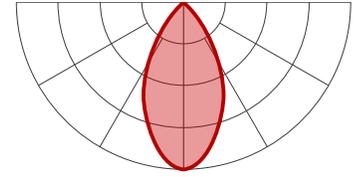
NFL - Narrow flood

Beam angle 25°
Field angle 48°
Spacing criteria 0.4



FLD - Flood

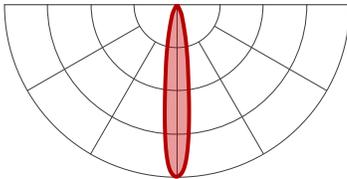
Beam angle 35°
Field angle 67°
Spacing criteria 0.6



WFL - Wide flood

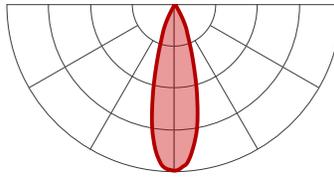
Beam angle 55°
Field angle 104°
Spacing criteria 0.8

SHARP-EDGE DOWNLIGHT



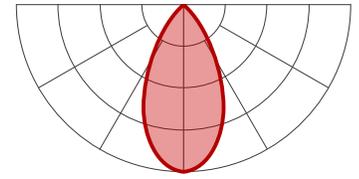
SPT - Spot

Beam angle 15°
Field angle 39°
Spacing criteria 0.2



FLD - Flood

Beam angle 30°
Field angle 49°
Spacing criteria 0.5



WFL - Wide flood

Beam angle 45°
Field angle 62°
Spacing criteria 0.8