

CLUSTERS

PENDANT COMBINATIONS

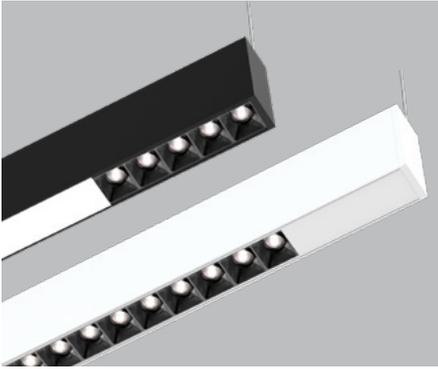


LUMENWERX

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 suspend by aircraft cables or stems. 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"/>	Im	145 Im	362 Im	578 Im
CLU05 - Clusters 1x5	<input type="text"/>	Im	230 Im	577 Im	923 Im
CLU10 - Clusters 1x10	<input type="text"/>	Im	448 Im	1120 Im	1791 Im

CONFIGURATION OPTIONS	Optic Length		Lm/ft	350 Im-750 Im
	FT	IN		
*HLO - High-efficiency lambertian optic	<input type="text"/>	<input type="text"/>	<input type="text"/>	
**BLA - Blank	<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'

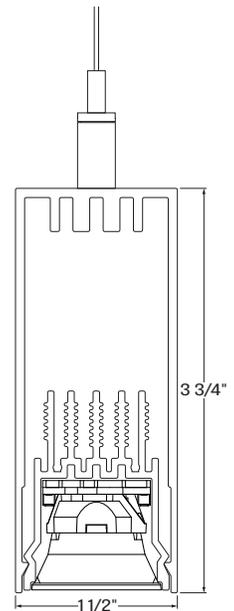
**BLANK & CLUSTER CONFIGURATIONS

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

ALL OTHER PARTS OF THE CODE:

DRIVER	ELECTRICAL	MOUNTING ⁶	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	ACS - Aircraft cable, standard STS - Stem, standard ACC() - Aircraft cable, custom STC() - Stem, custom ⁶ See page 6 for ordering details.	W - Matte white B - Matte black CF# - Custom finish, specify RAL#

CROSS SECTION



CLUSTERS

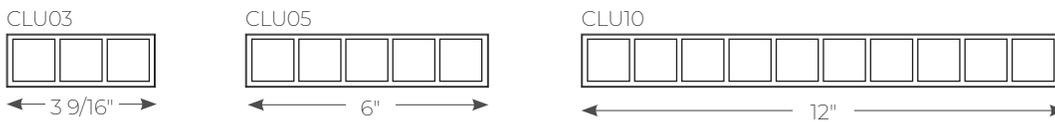
PENDANT COMBINATIONS

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

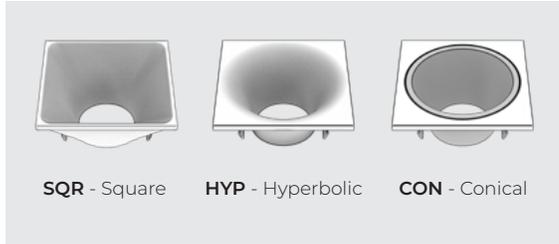


Configuration D - OPTIC CODE: 3xCLU05 - HLO6FT - BLA4IN

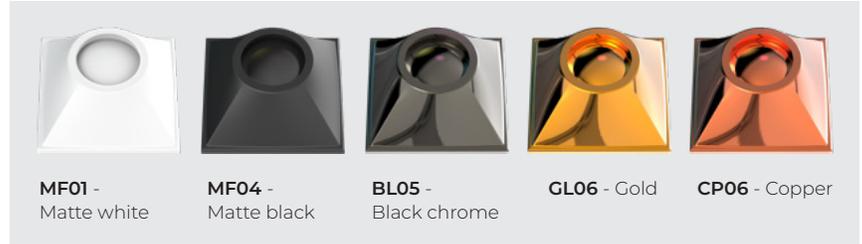


LIGHT

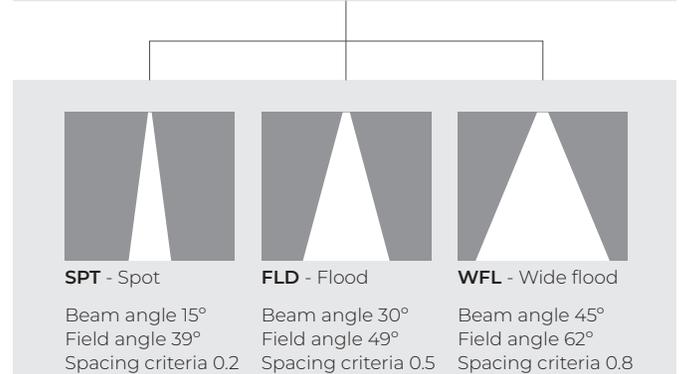
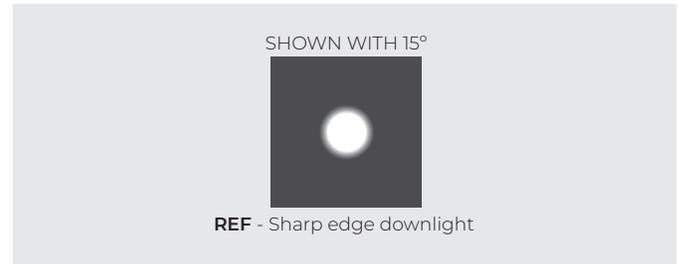
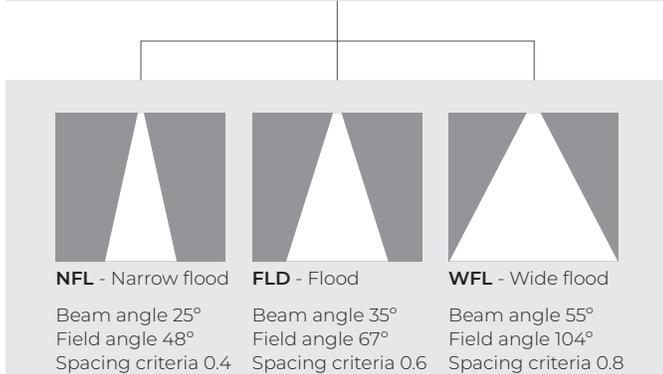
LOUVER SHAPE



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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LUMENWERX

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.

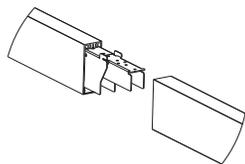
LIGHT SOURCE

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 pendant-mounted, using aircraft cables, or stem-mounted. Unless otherwise specified, Lumenwerx provides the following hardware:

Standard aircraft cable option (ACS) - Canopies are white, Ø5" for power canopy, Ø3" for non-power. Power cord is black for black fixtures, and white for all other fixture finishes. Aircraft cable length is 36".

Standard stem option (STS) - Canopies are white, Ø5" for both power and non-power. Stem finish is the same color as fixture. Stem length is 18". Stem is not field adjustable.

FINISH

Interior - 95%, reflective matte powder coated white paint

Exterior - Matte white or matte black powder coating

Louver - 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)

Hanger - Chromed griplock securely attached with spring steel hardware in end caps and/or joiners

Aircraft cable suspension - 7x7 braids aluminum air craft cable 0.06" thick

Stem - 0.5" diameter threaded steel tube matte white or aluminum powder coating. Custom finishes are also available

Louver 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	LOW	MEDIUM	HIGH	120 - 120V	D1 - 1% 0-10V	See table below for maximum and minimum possible number of lighting units per each driver.
CLU05	145 lm	362 lm	578 lm	277 - 277V	DA ² - DALI	
CLU10	230 lm	577 lm	923 lm	UNV -	LTEA2W ³ - Lutron 1% - 2 wire FP 120V	
	448 lm	1120 lm	1791 lm	120V-277V	LDEI ² - Lutron Hi-lume 1% Eco	

² On-site commissioning is required.
³ Available with 120V only.

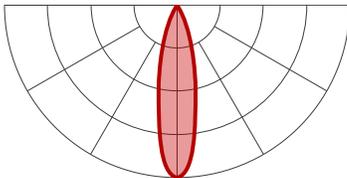
¹ Watts and lumen per watts will vary based on the number of light units per remote driver as well as on the type of driver selected

NUMBER OF LIGHTING UNITS PER DRIVER - MINIMUM AND MAXIMUM

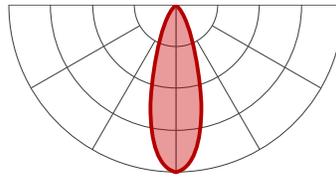
DRIVER TYPE	CLU03	CLU05	CLU10
D1 - 1% 0-10V	3-8	2-4	1-2
DA - DALI	3-8	2-4	1-2
LTEA2W - Lutron 1% - 2 wire FP 120V	2-5	1-3	1
LDEI - Lutron Hi-lume 1% Eco	3-5	2-3	1

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

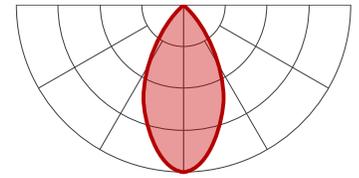
SOFT-EDGE DOWNLIGHT



NFL - Narrow flood
 Beam angle 25°
 Field angle 48°
 Spacing criteria 0.4

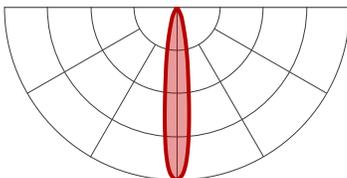


FLD - Flood
 Beam angle 35°
 Field angle 67°
 Spacing criteria 0.6

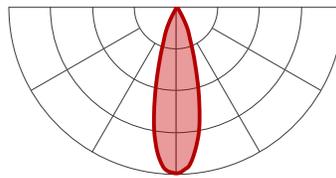


WFL - Wide flood
 Beam angle 55°
 Field angle 104°
 Spacing criteria 0.8

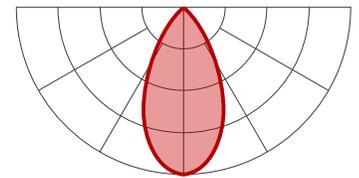
SHARP-EDGE DOWNLIGHT



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

Pendant Mounting Code

Standard

For a standard mounting, please refer to the information below.

MOUNTING	
ACS - Aircraft cable, standard	STS - Stem, standard
Ø5" for power canopy Ø3" for non-power Canopies are white Power cord is white for all fixture finishes (except black fixture is black power cord) Aircraft cable length is 36"	Ø5" for power canopy Ø5" for non-power Canopies are white Stem finish is the same color as fixture Stem length is 18" Stem is not field adjustable

Custom

Aircraft Cable

For a custom mounting, specify the options in the parentheses.

Example: ACC(3NPC-72-W-PCB-SLC)

MOUNTING					
ACC()					
	NON-POWER CANOPY SIZE	AIRCRAFT CABLE LENGTH	CANOPY FINISH	POWER CORD COLOR	OPTIONS
ACC	3NPC - Ø3" non-power canopy 5NPC - Ø5" non-power canopy	36 - 36" 72 - 72" 120 - 120" # ¹ - Other lengths, specify in inches ¹ Maximum length is 288". For longer lengths, please consult factory.	W - White AL - Aluminum B - Black CF# - Custom finish, specify RAL#	PCW - White PCB - Black	SEM - Seismic mounting SLC - Sloped ceiling for aircraft cable NA - None

Stem

For a custom mounting, specify the options in the parentheses.

Example: STC(5NPC-36-W-STW-SLS)

MOUNTING					
STC()					
	NON-POWER CANOPY SIZE	STEM LENGTH	CANOPY FINISH	STEM COLOR	OPTIONS
STC	5NPC - Ø5" non-power canopy	18 - 18" 36 - 36" # ² - Specify length in inches ² Minimum length is 6". Maximum length is 72". Stem is not field adjustable.	W - White AL - Aluminum B - Black CF# - Custom finish, specify RAL#	STW - White STAL - Aluminum STB - Black STCF# - Custom finish, specify RAL#	SLS - Sloped ceiling for stem NA - None