

# CLUSTERS

## PENDANT WALL WASH COMBINATIONS

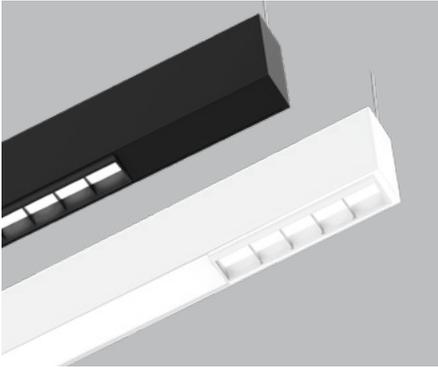


# LUMENWERX

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. Wall wash 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 2-4 for details before specifying

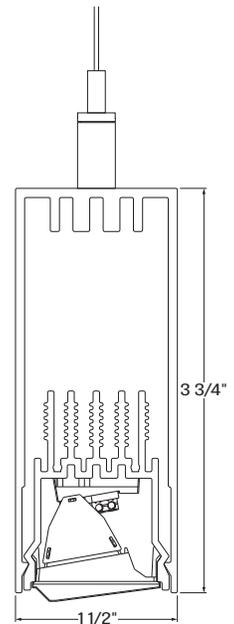
### GENERAL SPECIFICATIONS CODE:

Luminaire ID	Total Luminaire Length (MIN 4')		Light Source	CRI	Color Temp	Voltage
	FT	IN	SW	90		
<b>WRO</b>						<b>SW</b>
<b>OPTICS</b>	<b>LOUVER FINISH</b>			<b>LIGHT SOURCE</b>		
<b>WRO</b> - Wall Wash	<b>MF01</b> - Matte white <b>MF04</b> - Matte black			<b>SW</b> - Static white		

### OPTICS LIST CODE:

CLUSTER OPTIONS	Quantity (for actual clusters size see page 2)	Lumen Package Per Unit			
		LOW	MED	HIGH	
<b>CLU03</b> - Clusters 1x3	<input type="text"/>	<input type="text"/> lm	100 lm	250 lm	400 lm
<b>CLU05</b> - Clusters 1x5	<input type="text"/>	<input type="text"/> lm	200 lm	500 lm	800 lm
<b>CLU10</b> - Clusters 1x10	<input type="text"/>	<input type="text"/> lm	300 lm	750 lm	1200 lm
CONFIGURATION OPTIONS	Optic Length	Lumen Package Per Unit			
<b>*HLO</b> - High-Efficiency Lambertian Optic	<input type="text"/> FT	<input type="text"/> lm/ft	350 lm-750 lm		
<b>**BLA</b> - Blank	<input type="text"/> FT <input type="text"/> IN	No minimum length			
<b>IMPORTANT</b>		<b>**BLANK &amp; CLUSTER CONFIGURATIONS</b>			
<b>*HLO &amp; CLUSTER CONFIGURATIONS</b>		1) Minimum individual section 4'			
1) Minimum individual section 4'		2) Minimum distance between Clusters is 2'			
2) Specify in increments of 1'					
3) Minimum distance between Clusters is 3'					

### CROSS SECTION



### ALL OTHER PARTS OF THE CODE:

DRIVER	ELECTRICAL	MOUNTING <sup>3</sup>	FINISH
<b>D1</b> - 1% 0-10V <b>DA</b> <sup>1</sup> - DALI <b>LTEA2W</b> <sup>2</sup> - Lutron 1% - 2 wire FP 120V <b>LDE1</b> <sup>1</sup> - Lutron Hi-Lume 1% Eco	<b>1</b> - 1 circuit <b>+ #EM</b> - Emergency light circuit <b>+ #NL</b> - Night light circuit	<b>ACS</b> - Aircraft cable, standard <b>STS</b> - Stem, standard <b>ACC( )</b> - Aircraft cable, custom <b>STC( )</b> - Stem, custom	<b>W</b> - Matte white <b>B</b> - Matte black <b>CF#</b> - Custom finish, specify RAL#
<sup>1</sup> On-site commissioning is required. <sup>2</sup> Available with 120V only.		<sup>3</sup> See page 5 for ordering details.	

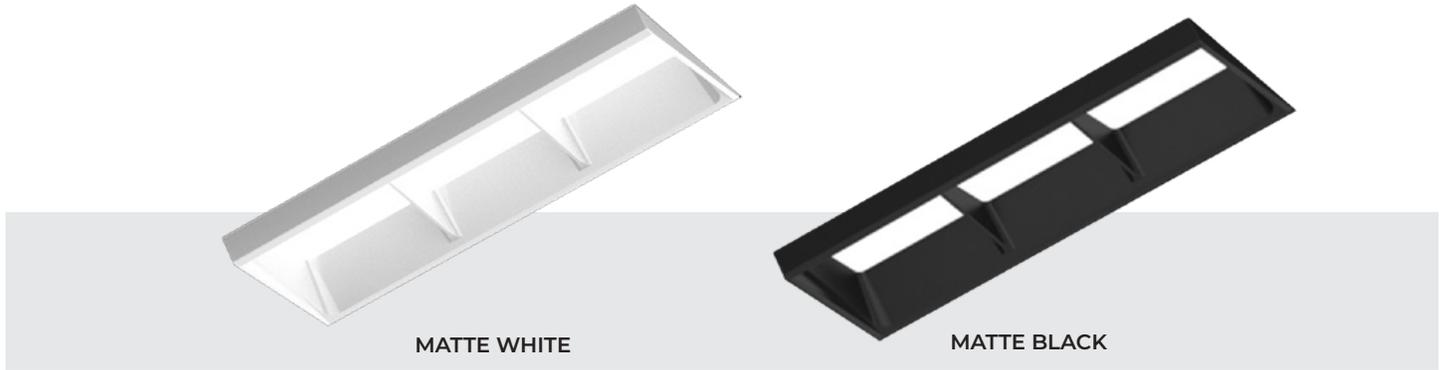


# CLUSTERS

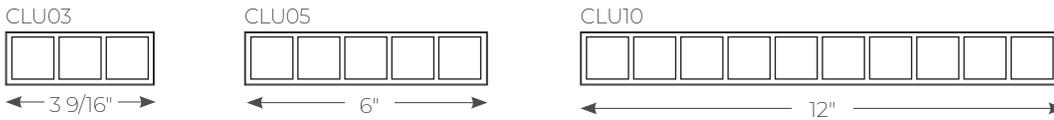
## PENDANT WALL WASH COMBINATIONS

# LUMENWERX

### WALL WASH OPTICS



### 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



WRO - Wall Wash

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



MF01 - Matte white

MF04 - Matte black

# CLUSTERS

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# LUMENWERX

### OPTICS

**Wall Wash Refractive Optic (WRO)** - Clusters Linear Wall Wash optics use multiple mid-flux emitters in a continuous array, supported by an angled board. An aluminum reflector collects and redirects emitter flux, while a refractive film adjusts both vertical and horizontal intensity and eliminates source image. The result is excellent uniformity up and down the wall, as well as between luminaires.

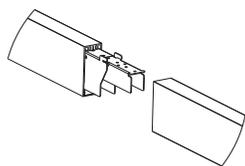
### LIGHT SOURCE

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 feet.

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

**Air craft 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.

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### 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 <sup>1</sup> (AT 3500K)

LUMINAIRE ID	LUMEN PACKAGE			VOLTAGE	DRIVER	NUMBER OF LIGHTING UNITS PER DRIVER
<b>CLU03WRO</b>	<b>LOW</b>	<b>MEDIUM</b>	<b>HIGH</b>	<b>120 - 120V</b>	<b>D1 - 1% 0-10V</b>	See table below for maximum and minimum possible number of lighting units per each driver.
<b>CLU05WRO</b>	100 lm	250 lm	400 lm	<b>277 - 277V</b>	<b>DA <sup>2</sup> - DALI</b>	
<b>CLU10WRO</b>	200 lm	500 lm	800 lm	<b>UNV -</b>	<b>LTEA2W <sup>3</sup> - Lutron 1% - 2 wire FP 120V</b>	
	300 lm	750 lm	1200 lm	<b>120V-277V</b>	<b>LDE1 <sup>2</sup> - Lutron Hi-lume 1% Eco</b>	
						<sup>2</sup> On-site commissioning is required. <sup>3</sup> Available with 120V only.

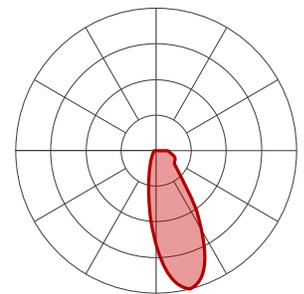
<sup>1</sup> Watts and lumen per watts will vary based on the number of light units per remote driver as well as on the type of driver selected

#### NUMBER OF LIGHTING UNITS PER DRIVER - MINIMUM AND MAXIMUM

DRIVER TYPE	CLU03WRO	CLU05WRO	CLU10WRO
<b>D1 - 1% 0-10V</b>	<b>2-13</b>	<b>1-6</b>	<b>1-3</b>
<b>DA - DALI</b>	<b>3-13</b>	<b>2-6</b>	<b>1-3</b>
<b>LTEA2W - Lutron 1% - 2 wire FP 120V</b>	<b>2-7</b>	<b>1-3</b>	<b>1-2</b>
<b>LDE1 - Lutron Hi-lume 1% Eco</b>	<b>2-13</b>	<b>1-6</b>	<b>1-4</b>

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

#### WALL WASH



#### VERTICAL ILLUMINANCE

CLU03C-WW-SB-LED-90-400LMS-35				
FC on Wall				
Distance from Ceiling	1'	20	19	20
	2'	24	24	24
	3'	24	24	24
	4'	19	19	19
	5'	14	14	14
	6'	10	10	10
	7'	9	9	9
	8'	7	7	7

CLU05C-WW-SB-LED-90-800LMS-35				
FC on Wall				
Distance from Ceiling	1'	40	38	40
	2'	48	48	48
	3'	48	48	48
	4'	37	37	37
	5'	28	28	28
	6'	21	21	21
	7'	17	17	17
	8'	15	14	15

CLU10C-WW-SB-LED-90-1200LMS-35				
FC on Wall				
Distance from Ceiling	1'	59	57	59
	2'	72	71	72
	3'	71	71	71
	4'	55	55	55
	5'	40	40	40
	6'	30	30	30
	7'	24	24	24
	8'	20	20	20

CLU03C-WW-SB-LED-90-400LMS-35				
FC on Wall				
Distance from Ceiling	1'	10	9	10
	2'	11	11	11
	3'	13	12	13
	4'	12	12	12
	5'	10	10	10
	6'	8	8	8
	7'	6	6	6
	8'	5	5	5

CLU05C-WW-SB-LED-90-800LMS-35				
FC on Wall				
Distance from Ceiling	1'	21	17	21
	2'	23	21	23
	3'	25	25	25
	4'	24	24	24
	5'	20	20	20
	6'	15	16	15
	7'	12	12	12
	8'	11	11	11

CLU10C-WW-SB-LED-90-1200LMS-35				
FC on Wall				
Distance from Ceiling	1'	31	26	31
	2'	34	32	34
	3'	38	37	38
	4'	36	35	36
	5'	29	29	29
	6'	23	23	23
	7'	19	19	19
	8'	16	16	16

CLU03C-WW-SB-LED-90-400LMS-35				
FC on Wall				
Distance from Ceiling	1'	8	7	8
	2'	9	8	9
	3'	10	10	10
	4'	10	10	10
	5'	10	10	10
	6'	8	8	8
	7'	7	7	7
	8'	6	6	6

CLU05C-WW-SB-LED-90-800LMS-35				
FC on Wall				
Distance from Ceiling	1'	16	15	16
	2'	17	17	17
	3'	19	19	19
	4'	20	20	20
	5'	19	19	19
	6'	17	17	17
	7'	14	14	14
	8'	12	12	12

CLU10C-WW-SB-LED-90-1200LMS-35				
FC on Wall				
Distance from Ceiling	1'	24	22	24
	2'	26	25	26
	3'	29	28	29
	4'	31	31	31
	5'	29	29	29
	6'	25	25	25
	7'	21	21	21
	8'	18	18	18

## 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" # <sup>1</sup> - Other lengths, specify in inches <sup>1</sup> 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" # <sup>2</sup> - Specify length in inches <sup>2</sup> 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