

# CLUSTER

## SURFACE



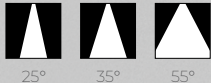
Cluster is the precise, and scalable family of downlights, wall washers, and adjustables, available for recessed, pendant, and surface mounting.

Based on a fundamental 1.2" square cell, Cluster delivers lighting that is optically sophisticated and aesthetically refined.

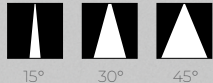
Cluster Surface is available in 1, 3, 5, 2x2, and 3x3 cell configurations, all with a choice of precision optics, beam spreads and subtle louver treatments.

### Beam

#### Soft edge



#### Sharp edge



### Mounting Options



Flat



Conduit



Direct mount

### Sizes



1x1



3x1



5x1



2x2



3x3



Declare.



### Cluster Family (Refer to other spec sheets)

#### Recessed, Wood Slat



Downlight



Parabolic



Wall Wash

#### Recessed Adjustable



Downlight



Parabolic



Wall Wash

#### Surface



Downlight



Parabolic



Wall Wash

#### Pendant



Downlight



Parabolic



Wall Wash

#### Combo



Recessed  
Pendant  
Surface

#### Acoustix



Blank  
Downlight  
Parabolic

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Project: \_\_\_\_\_

Type: \_\_\_\_\_

## Order Guide

LUMINAIRE ID	CUBOID HEIGHT <sup>1</sup>	CUBOID FINISH	LOUVER	LOUVER FINISH	
<b>CLU01S</b> - Cluster 1x1 Surface <b>CLU03S</b> - Cluster 3x1 Surface <b>CLU05S</b> - Cluster 5x1 Surface <b>CLU22S</b> - Cluster 2x2 Surface <b>CLU33S</b> - Cluster 3x3 Surface	<b>3IN</b> - 3" <b>8IN</b> - 8" <b>12IN</b> - 12"  <sup>1</sup> Conduit feed canopy option will add 3" to total height.	<b>FTMW</b> - Textured matte white <b>FTMB</b> - Textured matte black <b>CF#</b> - Custom finish, specify RAL#	<b>SQR</b> - Square <b>HYP</b> - Hyperbolic	<b>MF01</b> - Matte white <b>MF04</b> - Matte black <b>BL05</b> - Black chrome	
REVEAL FINISH	LIGHT SOURCE	OPTIC	BEAM	CRI	COLOR TEMP.
	<b>SW</b>			<b>90CRI</b>	
<b>FTMW</b> - Textured matte white <b>FTMB</b> - Textured matte black <b>CF#</b> - Custom finish, specify RAL#	<b>SW</b> - Static white	<b>SOF</b> - Soft edge downlight <b>REF</b> - Sharp edge downlight	<b>SOF</b>  <b>NFL</b> - Narrow flood <b>FLD</b> - Flood <b>WFL</b> - Wide flood	<b>REF</b>  <b>SPT</b> - Spot <b>FLD</b> - Flood <b>WFL</b> - Wide flood	<b>90CRI</b> - 90 CRI  <b>27K</b> - 2700K <b>30K</b> - 3000K <b>35K</b> - 3500K <b>40K</b> - 4000K <b>50K</b> - 5000K
DRIVER	VOLTAGE	LUMEN PACKAGE <sup>3</sup>	DIMMING	CANOPY TYPE <sup>5</sup>	CANOPY FINISH Specify NA for DMRM
<b>INTEGRAL</b> <sup>2</sup>  <sup>2</sup> Not available with 3" cuboid height.	<b>120V</b> - 120V <b>277V</b> - 277V <b>UNV</b> - 120V-277V	1x1 <b>200LM</b> - 200 lm 3x1 <b>578LM</b> - 578 lm 5x1 <b>923LM</b> - 923 lm 2x2 <b>811LM</b> - 811 lm 3x3 <b>1743LM</b> - 1743 lm  <sup>3</sup> Lumen packages shown at 3500K, with SOF-NFL 25°. For other, see lumen output multipliers on page 5.	<u>1x1</u> <b>ND</b> - No dimming  <u>3x1 - 3x3</u> <b>D1</b> - 1% 0-10V <b>ELV</b> <sup>4</sup> - ELV 120V <b>TRI</b> <sup>4</sup> - TRIAC 120V  <sup>4</sup> Available with 120V only.	<b>FLS</b> - Flat square canopy, 4" octagonal junction box <b>CDRE</b> <sup>6</sup> - Conduit feed, rectangular canopy <b>DMRM</b> <sup>6,7</sup> - Direct mount, remodel  <sup>5</sup> See page 4 for details. <sup>6</sup> Not available with 1x1. <sup>7</sup> Single wiring entry only. No daisy chain connections allowed. May be installed as new construction but without a j-box.	<b>FTMW</b> - Textured matte white <b>FTMB</b> - Textured matte black <b>CF#</b> - Custom finish, specify RAL# <b>NA</b> - Not applicable
<b>REMOTE</b>	DO NOT SPECIFY FOR REMOTE. SEE "REMOTE DRIVER BOX" SECTION BELOW.				

## REMOTE DRIVER BOX

Ordered separately. Specify each required remote driver box on a separate line.

REMOTE DRIVER <sup>8</sup>	LUMINAIRE QTY. <sup>9</sup>	LUMINAIRE ID	VOLTAGE	LUMEN PACKAGE <sup>10</sup>	DIMMING <sup>11</sup>
<b>RDB#</b> - Remote driver box <small><sup>8</sup>Specify an RDB number (#) for each required remote driver box.</small>	<b>#X</b> - Number of luminaires <small><sup>9</sup>Specify number (#) of luminaires per remote driver. See page 4 for minimum and maximum per driver.</small>	<b>CLU01S</b> - Cluster 1x1 Surface <b>CLU03S</b> - Cluster 3x1 Surface <b>CLU05S</b> - Cluster 5x1 Surface <b>CLU22S</b> - Cluster 2x2 Surface <b>CLU33S</b> - Cluster 3x3 Surface	<b>120V</b> - 120V <b>277V</b> - 277V <b>UNV</b> - 120V-277V	1x1 <b>50LM</b> - 50 lm 3x1 <b>145LM</b> - 145 lm 5x1 <b>230LM</b> - 230 lm 2x2 <b>203LM</b> - 203 lm 3x3 <b>436LM</b> - 436 lm <small><sup>10</sup>Watts and lumen per watts will vary based on the number of lighting units per remote driver as well as on the type of driver selected.</small>	Low Medium High <b>RD1</b> - 1% 0-10V <b>RELV</b> <sup>12,13</sup> - ELV 120V <b>RTRI</b> <sup>12,13</sup> - TRIAC 120V <b>RDA</b> <sup>14</sup> - DALI <b>RLDE1</b> <sup>14</sup> - Lutron Hi-lume 1% Eco <b>RELD1</b> - eldoLED 1% ECOdrive 0-10V <b>RELD0</b> - eldoLED 0.1% SOLOdrive 0-10V <small><sup>11</sup>For configurations involving different Cluster sizes on a remote driver, please consult factory.  <sup>12</sup>Available with 120V only.  <sup>13</sup>Only available with high lumen packages.  <sup>14</sup>On-site commissioning is required.</small>

## EXAMPLE

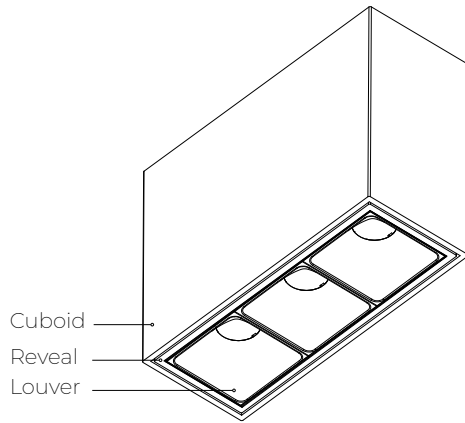
LIGHT	CLU01S-8IN-FTMW-HYP-MF01-FTMW-SW-SOF-NFL-90CRI-35K-INTEGRAL-120V-200LM-ND-FLS-FTMW	REMOTE DRIVER	N/A
LIGHT	CLU01S-3IN-FTMW-HYP-MF01-FTMW-SW-SOF-NFL-90CRI-35K-REMOTE-FLS-FTMW	REMOTE DRIVER	RDB1-10X-CLU01S-120V-125LM-RD1 RDB2-8X-CLU01S-120V-125LM-RD1

# CLUSTER

## SURFACE



### Overview



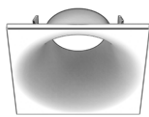
### LOUVERS

### LOUVER FINISHES

Louver is injection molded with integral texture and color.



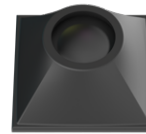
**SQR** - Square



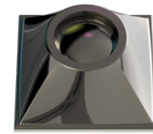
**HYP** - Hyperbolic



**MF01** - Matte white

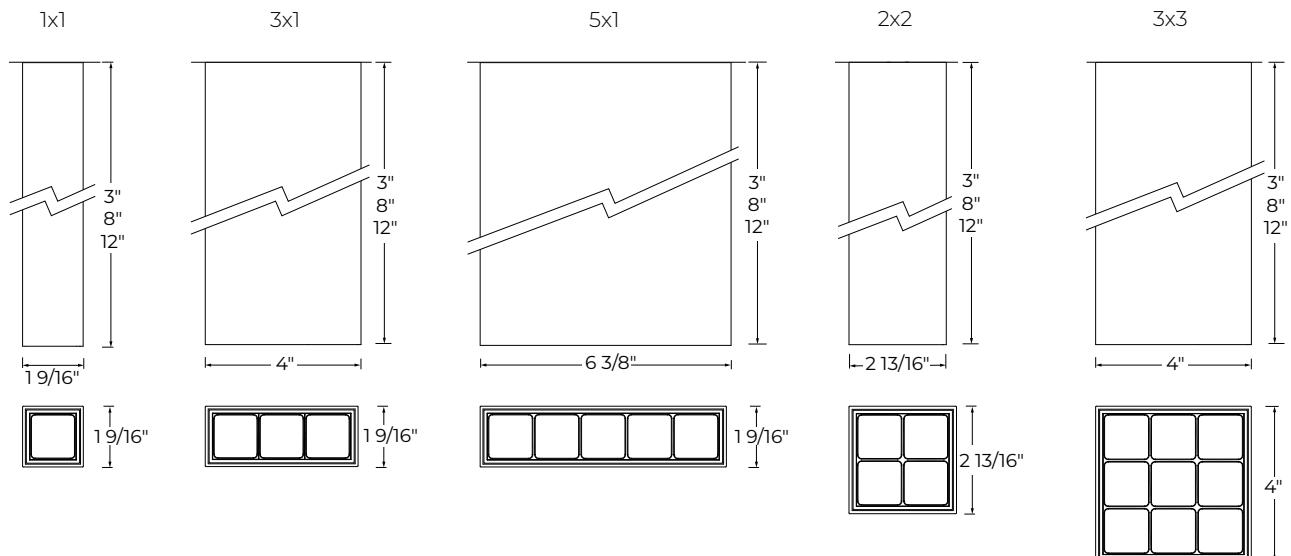


**MF04** - Matte black



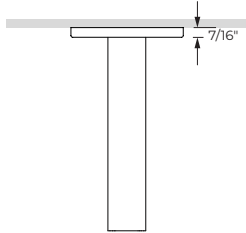
**BL05** - Black chrome

### Dimensions

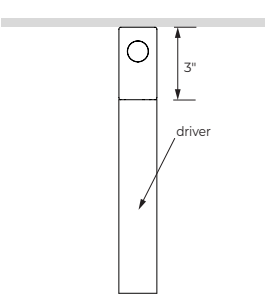


Mounting

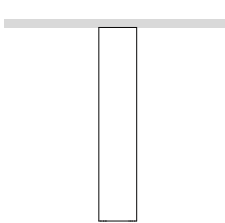
FLS  
Flat square canopy,  
4" octagonal junction box



CDRE  
Conduit feed,  
rectangular canopy



DMRM  
Direct mount,  
remodel



Canopy size

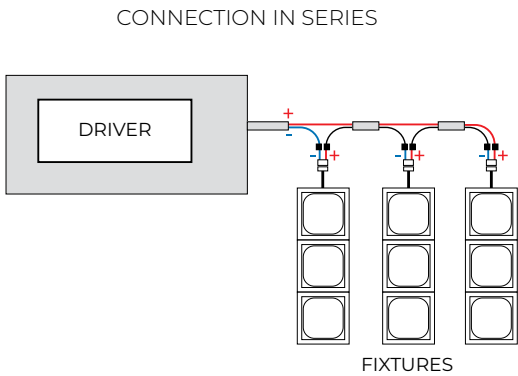
3x1	4 5/8" X 7 1/16"	3x1	1 9/16" x 4"
5x1	4 5/8" X 9 7/16"	5x1	1 9/16" x 6 3/8"
2x2	4 5/8" X 4 5/8"	2x2	2 13/16" x 2 13/16"
3x3	4 5/8" X 4 5/8"	3x3	4" x 4"

Driver in j-box or canopy when specified with integral drivers.

Driver

REMOTE DRIVER

The remote 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. The remote driver and lighting units are wired together through connection boxes, which are furnished pre-wired to the driver enclosure. All wiring is Class 2 with quick-splice connectors. The remote driver requires access from above the ceiling (or an access panel).



Number of lighting units per driver (minimum and maximum).

DRIVER	1x1	3x1	5x1	2x2	3x3
RD1	4-34	2-10	1-6	1-8	1-3
RELV	10-18	4-6	2-3	3-4	1
RTRI	10-18	4-6	2-3	3-4	1
RDA	2-34	1-10	1-6	1-8	1-3
RLDE1	8-16	3-5	2-3	2-4	1
RELD1	2-34	1-10	1-6	1-8	1-3
RELD0	2-34	1-10	1-6	1-8	1-3

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

# CLUSTER

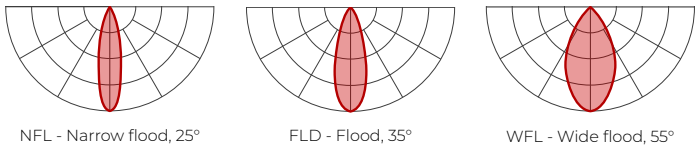
## SURFACE



### Photometrics

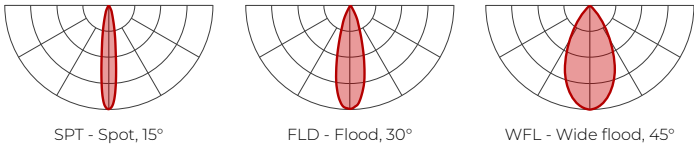
Values calculated based on 3500K, 90 CRI, SOF, and NFL.

#### SOF - Soft edge downlight



	LM	W	LM/W
1x1	200	3.3	60
3x1	578	7.8	74
5x1	923	11.8	78
2x2	811	10.4	78
3x3	1743	21.5	81

#### REF - Sharp edge downlight



#### MULTIPLIER TABLES

Please follow the multiplier tables to ensure correct lumen value. CCT and optics will change the lumen value.

CCT		LPW				
	SOF			REF		
Beam angle	25°	35°	55°	15°	30°	45°
2700K	0.87	0.92	0.82	0.80	0.84	0.86
3000K	0.93	0.99	0.87	0.86	0.89	0.92
3500K	1	1.06	0.94	0.92	0.96	0.99
4000K	1.03	1.09	0.97	0.95	0.99	1.02
5000K	1.08	1.14	1.02	0.99	1.04	1.07

## Technical Specifications

### OPTICS

#### Soft edge downlight (SOF)

The Soft edge downlight 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).



Shown with 25°

#### Sharp edge downlight (REF)

The Sharp edge downlight 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).



Shown with 15°

### LIGHT SOURCE

Custom array of high-flux LEDs mounted onto aluminum-backed circuitry. Available in 2700K, 3000K, 3500K, 4000K and 5000K with a minimum 90 CRI with elevated R9 value. Color consistency is maintained to within 3 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.

### ELECTRICAL

Unless otherwise specified, dimming down to 1%. At maximum driver load: efficiency>84%, PF>0.9, THD<20%.

**Integral:** 0-10V, ELV, TRIAC

**Remote:** 0-10V, ELV, TRIAC, Lutron Hi-Lume 1% EcoSystem, DALI, eldoLED 0.1% SOLOdrive 0-10V, eldoLED 1% ECOdrive 0-10V

### PoE

Depending on the PoE manufacturer selected, Lumenwerx will install the node in factory as either integral to the luminaire or as a remote module. Factory programming of the PoE node may or may not enable the following functionalities: lumen package, DUO (tunable white), QUADRO (RGBW), emergency battery backup, and sensor integration. These must be addressed and evaluated on a case-by-case basis.

### WEIGHT

	3'		8'		12'	
	lb	kg	lb	kg	lb	kg
<b>1x1</b>	0.75	0.31	1.12	0.48	1.42	0.62
<b>3x1</b>	1.06	0.46	1.57	0.69	1.97	0.88
<b>5x1</b>	1.95	0.88	3.19	1.45	4.18	1.9
<b>2x2</b>	1.08	0.47	1.57	0.7	1.97	0.88
<b>3x3</b>	1.65	0.75	2.27	1.03	2.77	1.26

### CONSTRUCTION

**Housing:** Die-cast aluminum (0.95" nominal)

**Optics:** Polycarbonate

**Cuboid:** Extruded aluminum

**Cover surface:** Galvanized steel metal

**Extension bar:** Galvanized steel metal

### CERTIFICATIONS

**ETL:** Rated for indoor dry/damp locations. Conforms to ANSI/UL Std. 1598 and certified to CAN/CSA Std C22.2 No. 250.0.

**Declare:** [LBC Red List Approved](#)

### 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.