

# CLUSTER

## PENDANT



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.

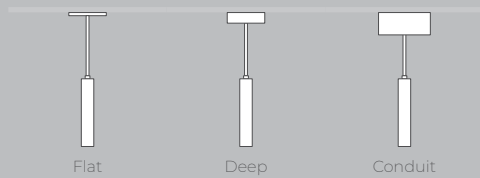
Cluster pendant is available in 1, 3, 5, 2x2, and 3x3 cell configurations, all with a choice of precision optics, beam spreads and subtle louver treatments.



### Beam



### Mounting Options



### Sizes



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

#### Recessed, Wood Slat



#### Recessed Adjustable



#### Pendant



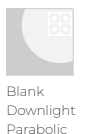
#### Surface



#### Combo



#### Acoustix



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

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

## Order Guide

### LIGHT

| LUMINAIRE ID  | CUBOID HEIGHT   | CUBOID FINISH  | LOUVER   | LOUVER FINISH  |
|---|---|--|--|--|
| <b>CLU01P</b> - Cluster 1x1 Pendant<br><b>CLU03P</b> - Cluster 3x1 Pendant<br><b>CLU05P</b> - Cluster 5x1 Pendant<br><b>CLU22P</b> - Cluster 2x2 Pendant<br><b>CLU33P</b> - Cluster 3x3 Pendant | <b>3IN</b> - 3"<br><b>8IN</b> - 8"<br><b>12IN</b> - 12" | <b>FTMW</b> - Matte white<br><b>FTMB</b> - Matte black<br><b>CF#</b> - Custom finish, specify RAL# | <b>SQR</b> - Square<br><b>HYP</b> - Hyperbolic | <b>MF01</b> - Matte white<br><b>MF04</b> - Matte black<br><b>BL05</b> - Black chrome |

| REVEAL FINISH  | LIGHT SOURCE | OPTIC   | BEAM   | CRI  | COLOR TEMP.  |
|--|--------------|---|--|--|--|
| <b>FTMW</b> - Matte white<br><b>FTMB</b> - Matte black<br><b>CF#</b> - Custom finish, specify RAL# | <b>SW</b>    | <b>SOF</b> - Soft edge downlight<br><b>REF</b> - Sharp edge downlight | <b>SOF</b><br><b>NFL</b> - Narrow flood<br><b>FLD</b> - Flood<br><b>WFL</b> - Wide flood | <b>REF</b><br><b>SPT</b> - Spot<br><b>FLD</b> - Flood<br><b>WFL</b> - Wide flood | <b>90CRI</b><br><b>90CRI</b> - 90+ CRI<br><b>27K</b> - 2700K<br><b>30K</b> - 3000K<br><b>35K</b> - 3500K<br><b>40K</b> - 4000K<br><b>50K</b> - 5000K |

| DRIVER          | VOLTAGE  | LUMEN PACKAGE <sup>1</sup>  | DIMMING  | CANOPY TYPE <sup>3</sup>   | CANOPY FINISH  | SUSPENSION   |
|-----------------|--|---|--|--|--|--|
| <b>INTEGRAL</b> | <b>120V</b> - 120V<br><b>277V</b> - 277V<br><b>UNV</b> - 120V-277V       | 1x1 <b>200LM</b> - 200 lm<br>3x1 <b>578LM</b> - 578 lm<br>5x1 <b>923LM</b> - 923 lm<br>2x2 <b>811LM</b> - 811 lm<br>3x3 <b>1743LM</b> - 1743 lm<br><sup>1</sup> Lumen packages shown at 3500K, with SOF-NFL 25°. For other, see lumen output multipliers on page 5. | 1x1 <b>ND</b> - No dimming<br>3x1 - 3x3 <b>DI</b> - 1% 0-10V<br><b>ELV</b> <sup>2</sup> - ELV 120V<br><b>TRI</b> <sup>2</sup> - TRIAC 120V<br><sup>2</sup> Only available with 120V. | <b>FLS</b> <sup>4</sup> - Flat square canopy, 4" octagonal junction box<br><b>DS</b> - Deep square canopy<br><b>CDS</b> - Conduit feed, square canopy<br><sup>3</sup> See page 4 for details.<br><sup>4</sup> Not available with 3" cuboid height when specified with integral driver. | <b>FTMW</b> - Matte white<br><b>FTMB</b> - Matte black<br><b>CF#</b> - Custom finish, specify RAL# | <b>STEM</b> <sup>5</sup><br><b>BKS##IN</b> - Matte black stem<br><b>WHS##IN</b> - Matte white stem<br><b>BKFCS##IN</b> - Matte black field-cutttable stem<br><b>WHFCS##IN</b> - Matte white field-cutttable stem<br><b>CF#S##IN</b> <sup>6</sup> - Custom finish stem<br><b>CF#FCS##IN</b> <sup>6</sup> - Custom finish field-cutttable stem<br><sup>5</sup> Min 10" - max 72", specify length (##) in inches.<br><sup>6</sup> Specify RAL#. |
| <b>REMOTE</b>   | <b>DO NOT SPECIFY FOR REMOTE. SEE "REMOTE DRIVER BOX" SECTION BELOW.</b> |   |  |  |  |  |

## REMOTE DRIVER BOX

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

| REMOTE DRIVER <sup>7</sup>  | LUMINAIRE QTY. <sup>8</sup>   | LUMINAIRE ID  | VOLTAGE  | LUMEN PACKAGE <sup>9</sup>  | DIMMING <sup>10</sup>  |
|---|---|---|--|---|--|
| <b>RDB#</b> - Remote driver box<br><sup>7</sup> Specify an RDB number (#) for each required remote driver box.                                      | <b>#X</b> - Number of luminaires<br><sup>8</sup> Specify number (#) of luminaires per remote driver. See page 4 for minimum and maximum per driver. | <b>CLU01P</b> - Cluster 1x1 Pendant<br><b>CLU03P</b> - Cluster 3x1 Pendant<br><b>CLU05P</b> - Cluster 5x1 Pendant<br><b>CLU22P</b> - Cluster 2x2 Pendant<br><b>CLU33P</b> - Cluster 3x3 Pendant | <b>120V</b> - 120V<br><b>277V</b> - 277V<br><b>UNV</b> - 120V-277V | 1x1 <b>50LM</b> - 50 lm <b>125LM</b> - 125 lm <b>200LM</b> - 200 lm       | <b>RD1</b> - 1% 0-10V<br><b>RELV</b> <sup>11,12</sup> - ELV 120V<br><b>RTRI</b> <sup>11,12</sup> - TRIAC 120V<br><b>RDA</b> <sup>13</sup> - DALI<br><b>RLDE1</b> <sup>13</sup> - Lutron Hi-lume 1% Eco<br><b>RELD1</b> - eldoLED 1% ECOdrive 0-10V<br><b>RELD0</b> - eldoLED 0.1% SOLOdrive 0-10V<br><sup>10</sup> For configurations involving different Cluster sizes on a remote driver, please consult factory.<br><sup>11</sup> Only available with 120V.<br><sup>12</sup> Only available with high lumen packages.<br><sup>13</sup> On-site commissioning is required. |
|   |   |   |  | 3x1 <b>145LM</b> - 145 lm <b>362LM</b> - 362 lm <b>578LM</b> - 578 lm     |  |
|   |   |   |  | 5x1 <b>230LM</b> - 230 lm <b>577LM</b> - 577 lm <b>923LM</b> - 923 lm     |  |
|   |   |   |  | 2x2 <b>203LM</b> - 203 lm <b>507LM</b> - 507 lm <b>811LM</b> - 811 lm     |  |
|   |   |   |  | 3x3 <b>436LM</b> - 436 lm <b>1089LM</b> - 1089 lm <b>1743LM</b> - 1743 lm |  |
| <sup>9</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. |   |   |  |   |  |

## EXAMPLE

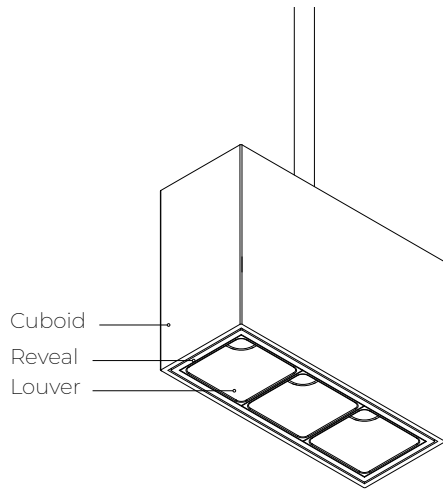
|       |   |               |   |
|-------|---|---------------|---|
| LIGHT | CLU01P-3IN-FTMW-HYP-MF01-FTMW-SW-SOF-NFL-90CRI-35K-INTEGRAL-120V-200LM-ND-DS-FTMW-BKS18IN | REMOTE DRIVER | N/A   |
| LIGHT | CLU01P-3IN-FTMW-HYP-MF01-FTMW-SW-SOF-NFL-90CRI-35K-REMOTE-FLS-FTMW-BKS18IN                | REMOTE DRIVER | RDB1-10X-CLU01P-120V-125LM-RD1<br>RDB2-8X-CLU01P-120V-125LM-RD1 |

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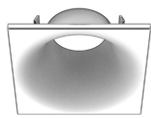
### Overview



### OPTICS



**SQR** - Square



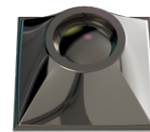
**HYP** - Hyperbolic



**MF01** - Matte white



**MF04** - Matte black

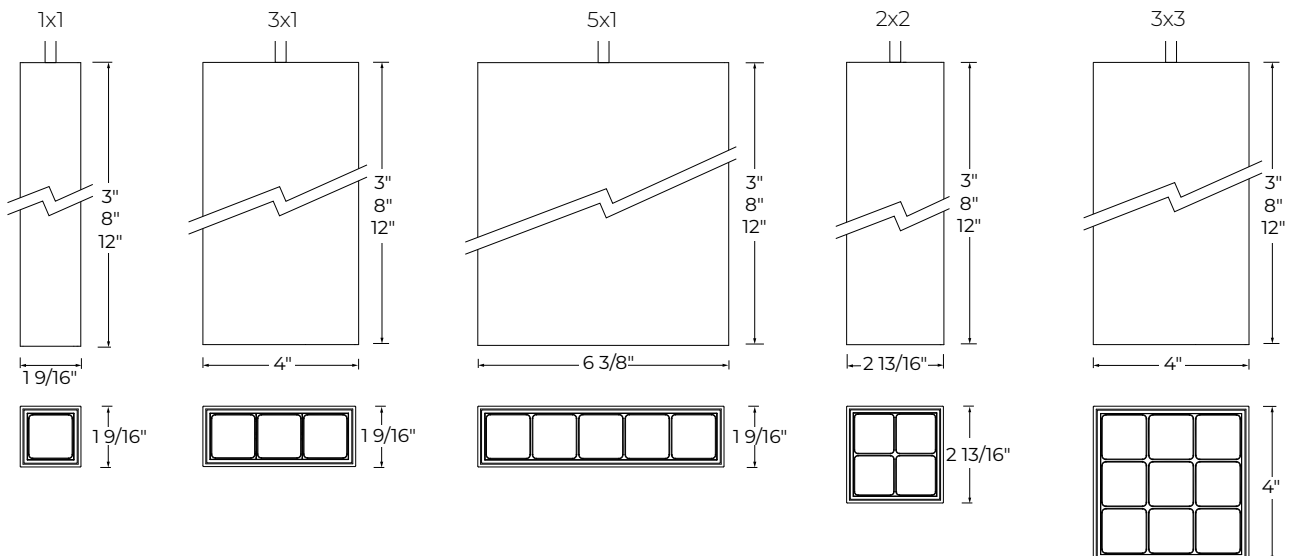


**BL05** - Black chrome

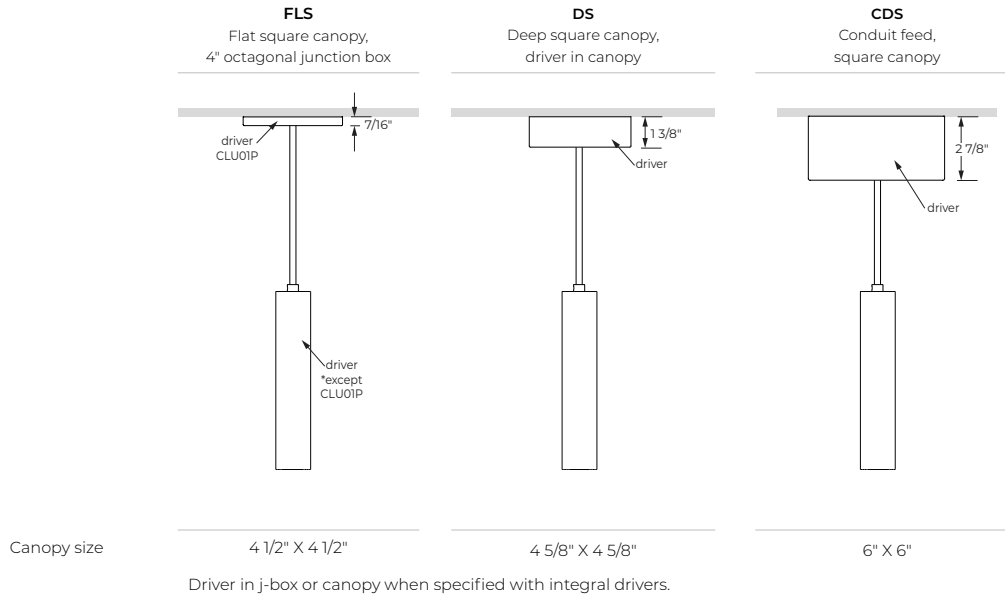
### LOUVER FINISHES

Louver is injection molded with integral texture and color.

### Dimensions



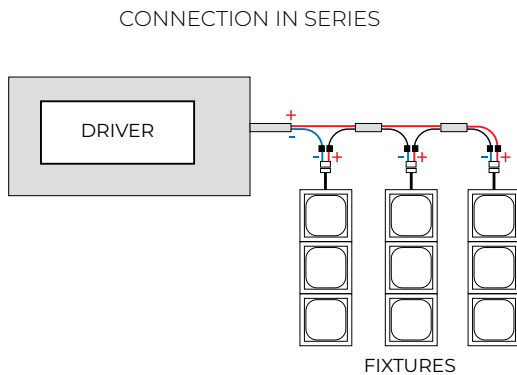
## Mounting



## 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

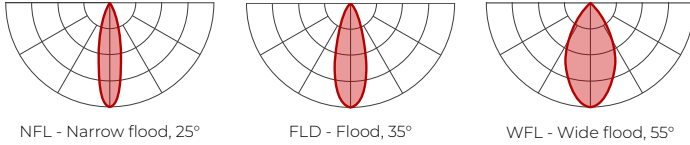
## PENDANT



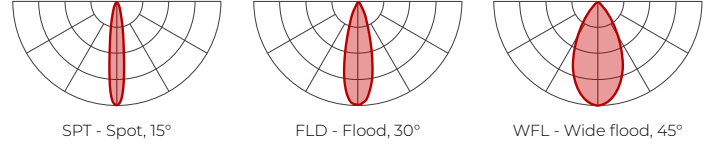
### Photometrics

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

#### SOF - Soft edge downlight



#### REF - Sharp 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   |

#### MULTIPLIER TABLES

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

| CCT   | LPW  |      |      |      |      |      |
|-------|------|------|------|------|------|------|
|       | SOF  |      |      | REF  |      |      |
|       | 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

**Optics:** Polycarbonate

**Cuboid:** Extruded aluminum

**Cover pendant:** Aluminum

**Extension bar:** Galvanized steel metal

**Stem:** Ø 1/2" rigid stem and field-cuttable stem 10" to 72" standard length

### CERTIFICATION

**ETL:** Rated for indoor dry/damp locations. Conforms to ANSI/UL Std. 1598 and certified to CAN/CSA Std 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.