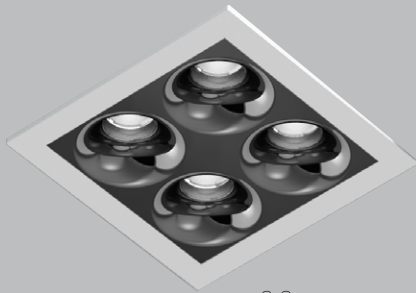
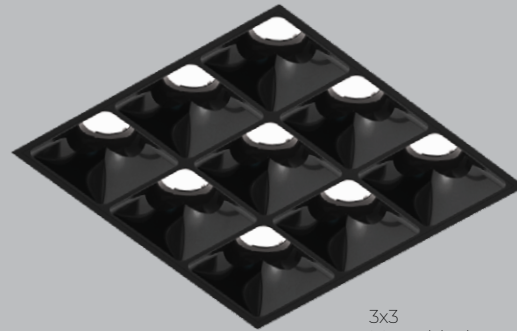


CLUSTER

RECESSED



2x2
Black chrome hyperbolic louver
Flanged trim



3x3
Matte black square louver
Trimless

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 recessed downlights are available in 1, 2, 3, 5, 10, 15, 2x2, 3x3, and 5x5 cell configurations, all with a choice of precision optics, beam spreads and subtle louver treatments.

Beam

Soft edge



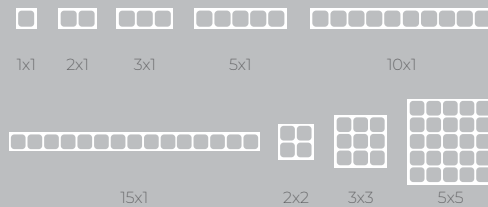
25° 35° 55°

Sharp edge



15° 30° 45°

Sizes



Cluster Family (Refer to other spec sheets)

Recessed, Wood Slat



Downlight Parabolic Wall Wash

Recessed Adjustable



Downlight Parabolic Wall Wash

Pendant



Downlight Parabolic Wall Wash

Surface



Downlight Parabolic Wall Wash

Combo



Recessed
Pendant
Surface

Acoustix



Blank
Downlight
Parabolic

CLUSTER

RECESSED



Project: _____

Type: _____

Order Guide

1. HOUSING

IC RATED

LUMINAIRE ID	TRIM STYLE	LIGHT SOURCE	INSTALLATION TYPE	MOUNTING OPTION ¹	DRIVER	VOLTAGE	LUMEN PACKAGE ³	DIMMING
		SW						
CLU01R - Cluster 1x1 Recessed CLU02R - Cluster 2x1 Recessed CLU03R - Cluster 3x1 Recessed CLU05R - Cluster 5x1 Recessed CLU10R - Cluster 10x1 Recessed CLU15R - Cluster 15x1 Recessed CLU22R - Cluster 2x2 Recessed CLU33R - Cluster 3x3 Recessed CLU55R - Cluster 5x5 Recessed	TRM - Flanged trim TLMP - Trimless drywall mudplate TLMW - Trimless millwork	SW - Static white	OF - Open Frame Type Non-IC IC - Type-IC RM - Remodel Type Non-IC CP - Chicago Plenum Type-IC (CCEA)	ASB ² - Adjustable standard bar hangers FMB ² - Flush mount bars ACB ² - Adjustable commercial bar hangers AHC ² - Adjustable hat channel bars NA - None	INTEGRAL 120V - 120V 277V - 277V UNV - 120V-277V	1x1 2x1 3x1 5x1 10x1 15x1 2x2 3x3 5x5	200LM - 200 lm 380LM - 380 lm 578LM - 578 lm 923LM - 923 lm 1791LM - 1791 lm 2600LM - 2600 lm 811LM - 811 lm 1743LM - 1743 lm 4670LM - 4670 lm	1x1, 2x1 ND - No dimming 3x1 - 5x5 D1 - 1% 0-10V ELV ^{4,5} - ELV 120V TRI ^{4,5} - TRIAC 120V ⁴ Available with 120V only. ⁵ Not available with 5x5.
				¹ See page 4 for more details. ² Not available with RM installation type.	REMOTE	DO NOT SPECIFY FOR REMOTE. SEE "REMOTE DRIVER BOX" SECTION BELOW.		

2. LIGHT

LUMINAIRE ID	TRIM STYLE	LIGHT SOURCE	OPTIC	BEAM	CRI	COLOR TEMP.	TRIM FINISH ⁶	LOUVER	LOUVER FINISH
		SW			90CRI				
CLU01RL - Cluster 1x1 Recessed CLU02RL - Cluster 2x1 Recessed CLU03RL - Cluster 3x1 Recessed CLU05RL - Cluster 5x1 Recessed CLU10RL - Cluster 10x1 Recessed CLU15RL - Cluster 15x1 Recessed CLU22RL - Cluster 2x2 Recessed CLU33RL - Cluster 3x3 Recessed CLU55RL - Cluster 5x5 Recessed	TRM - Flanged trim TLMP - Trimless drywall mudplate TLMW - Trimless millwork	SW - Static white	SOF - Soft edge downlight REF - Sharp edge downlight	SOE NFL - Narrow flood FLD - Flood WFL - Wide flood REE SPT - Spot FLD - Flood WFL - Wide flood	90CRI - 90 CRI	27K - 2700K 30K - 3000K 35K - 3500K 40K - 4000K 50K - 5000K	FTMW - Textured matte white FTMB - Textured matte black CF# - Custom finish, specify RAL#	SQR - Square HYP - Hyperbolic	MF01 - Matte white MF04 - Matte black BL05 - Black chrome

3. REMOTE DRIVER BOX

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

REMOTE DRIVER ⁷	LUMINAIRE QTY. ⁸	LUMINAIRE ID	VOLTAGE	LUMEN PACKAGE ⁹				DIMMING ¹⁰
RDB# - Remote driver box ⁷ Specify each required remote driver box on a separate line.	#X - Number of luminaires ⁸ Specify number (#) of luminaires per remote driver. See page 5 for minimum and maximum per driver.	CLU01R - Cluster 1x1 Recessed CLU02R - Cluster 2x1 Recessed CLU03R - Cluster 3x1 Recessed CLU05R - Cluster 5x1 Recessed CLU10R - Cluster 10x1 Recessed CLU15R - Cluster 15x1 Recessed CLU22R - Cluster 2x2 Recessed CLU33R - Cluster 3x3 Recessed CLU55R - Cluster 5x5 Recessed	120V - 120V 277V - 277V UNV - 120V-277V		Low	Medium	High	RD1 - 1% 0-10V RELV ^{11, 12, 13} - ELV 120V RTRI ^{11, 12, 13} - TRIAC 120V RDA ¹⁴ - DALI RLDE1 ^{12, 14} - Lutron Hi-lume 1% Eco RELD1 ¹² - eldoLED 1% ECOdrive 0-10V RELD0 - eldoLED 0.1% SOLOdrive 0-10V ¹⁰ For configurations involving different cluster sizes on a remote driver, please consult factory. ¹¹ Available with 120V only. ¹² Not available with 5x5. ¹³ Only available with high lumen packages. ¹⁴ On-site commissioning is required.
				1x1	50LM - 50 lm	125LM - 125 lm	200LM - 200 lm	
				2x1	95LM - 95 lm	238LM - 238 lm	380LM - 380 lm	
				3x1	145LM - 145 lm	362LM - 362 lm	578LM - 578 lm	
				5x1	230LM - 230 lm	577LM - 577 lm	923LM - 923 lm	
				10x1	448LM - 448 lm	1120LM - 1120 lm	1791LM - 1791 lm	
				15x1	650LM - 650 lm	1625LM - 1625 lm	2600LM - 2600 lm	
				2x2	203LM - 203 lm	507LM - 507 lm	811LM - 811 lm	
				3x3	436LM - 436 lm	1089LM - 1089 lm	1743LM - 1743 lm	
				5x5	1168LM - 1168 lm	2920LM - 2920 lm	4670LM - 4670 lm	
				⁹ 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.				

EXAMPLE

MOUNTING	CLU05R-TRM-SW-OF-FMB-REMOTE	REMOTE DRIVER	RDB1-4X-CLU05R-120V-577LM-RD1
LIGHT	CLU05RL-TRM-SW-SOF-NFL-90CRI-30K-FTMW-HYP-MF01		RDB2-2X-CLU05R-120V-577LM-RD1

CLUSTER

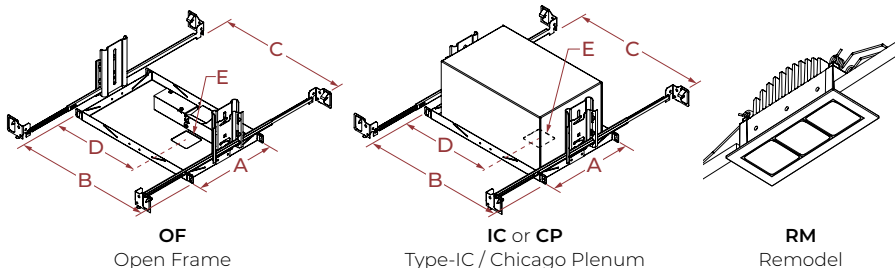
RECESSED



Housing

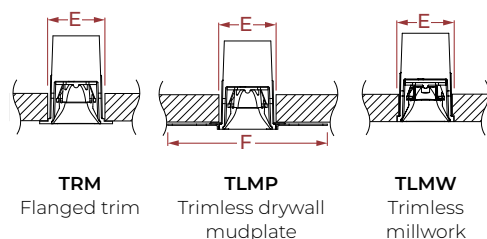
Cluster can be installed in a wide range of ceiling conditions and with various ceiling trim options. Spring clips clamp the lighting unit to the mounting frame (or directly to the ceiling for remodel). Maximum ceiling thickness is 1.25".

INSTALLATION TYPES



Shown with adjustable standard bar hangers.

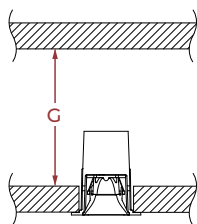
CUT-OUT DIMENSIONS



	A HOUSING WIDTH	B HOUSING LENGTH	C SPACING BETWEEN BARS	D DISTANCE FROM CUT-OUT
1x1	7"	11 11/16"	11 1/8"	7 1/4"
2x1	7"	11 11/16"	11 1/8"	6 7/8"
3x1	8 9/16"	13 5/16"	12 3/4"	5 3/8"
5x1	8 9/16"	13 5/16"	12 3/4"	6 5/8"
10x1	10 1/16"	19 5/16"	18 3/4"	10 5/8"
15x1	10 1/16"	25 5/16"	26 9/16"	12 1/16"
2x2	10 3/4"	12 1/16"	12 11/16"	7 1/2"
3x3	12 3/4"	14 1/16"	14 11/16"	9 13/16"
5x5	12 9/16"	17 13/16"	18 7/16"	11 3/4"

E CUT-OUT DIMENSIONS		F MUDPLATE DIMENSIONS
TRM / TLMP	TLMW	
1 9/16" x 1 9/16"	1 5/16" x 1 5/16"	3 7/8" x 3 7/8"
2 3/4" x 1 9/16"	2 1/2" x 1 5/16"	5 1/8" x 3 7/8"
4" x 1 9/16"	3 13/16" x 1 5/16"	6 5/16" x 3 7/8"
6 3/8" x 1 9/16"	6 1/8" x 1 5/16"	8 11/16" x 3 7/8"
12 3/8" x 1 9/16"	12 1/8" x 1 5/16"	14 11/16" x 3 7/8"
18 3/8" x 1 9/16"	18 1/8" x 1 5/16"	20 11/16" x 3 7/8"
2 13/16" x 2 13/16"	2 1/2" x 2 1/2"	5 1/8" x 5 1/8"
4" x 4"	3 11/16" x 3 11/16"	6 5/16" x 6 5/16"
6 3/8" x 6 3/8"	6 1/8" x 6 1/8"	8 11/16" x 8 11/16"

PLENUM CLEARANCE



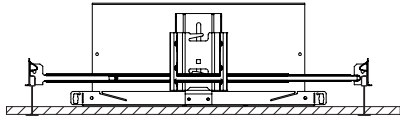
	G PLENUM CLEARANCE HEIGHT			
	OF	IC / CP	RM	
	REMOTE & INTEGRAL		INTEGRAL	REMOTE
1x1	4 13/16"	4 7/8"	4"	2 3/16"
2x1	4 13/16"	4 7/8"	4"	1 15/16"
3x1	4 13/16"	5 3/8"	4 13/16"	2 3/16"
5x1 10x1 15x1	4 13/16"	5 3/8"	4"	2 3/16"
2x2	6"	6 1/8"	6"	1 15/16"
3x3	6"	6 1/8"	4"	2 7/16"
5x5	4 13/16"	6 1/8"	4"	2 7/16"

CLUSTER

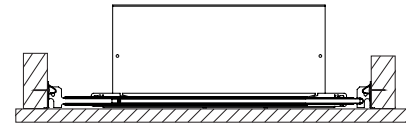
RECESSED



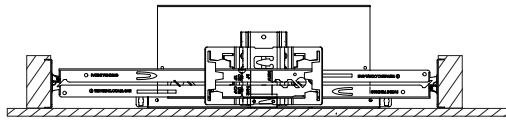
MOUNTING OPTIONS



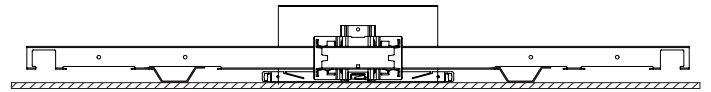
ASB - Adjustable standard bar hangers.
Grid ceiling or drywall with variable height (commercial applications)



FMB - Flush mount bars.
Drywall/metal/wood frame mounting (residential applications)

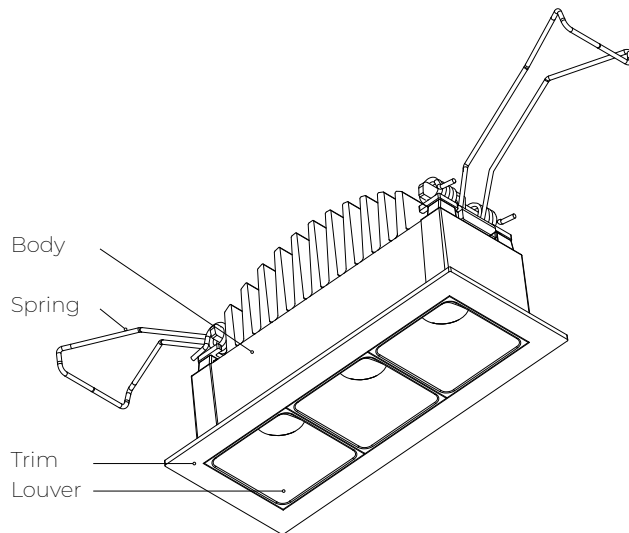


ACB - Adjustable commercial bar hangers.
Grid ceiling, drywall, metal, wood, frame mounting (also openings for multiple hanging options such as hat channel, IC channel and metal tubing, supplied by others)



AHC - Adjustable hat channel bars.
With adjustable height

Light



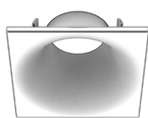
LOUVERS

LOUVER FINISHES

Louver is injection molded with integral texture and color.



SQR - Square



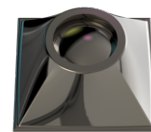
HYP - Hyperbolic



MF01 - Matte white



MF04 - Matte black



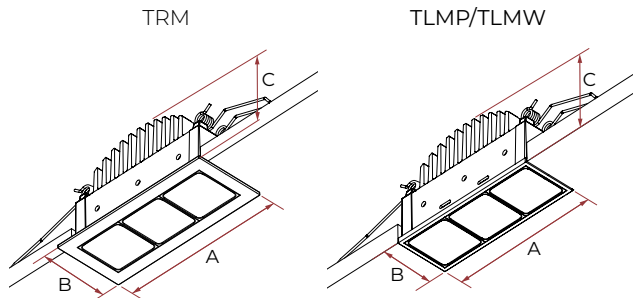
BL05 - Black chrome

CLUSTER

RECESSED



Dimensions



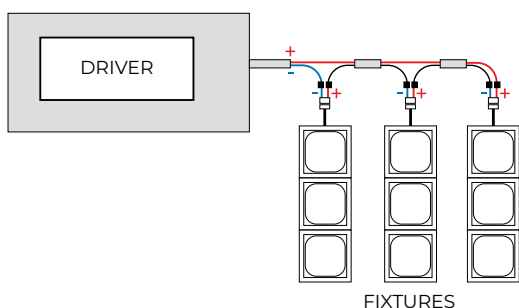
	TRM			TLMP/TLMW		
	A	B	C	A	B	C
1x1	1 13/16"	1 13/16"	1 7/8"	1 3/8"	1 3/8"	1 7/8"
2x1	3"		1 15/16"	2 9/16"		1 15/16"
3x1	4 3/16"		2 3/16"	3 13/16"		2 3/16"
5x1	6 9/16"			6 3/16"		
10x1	12 9/16"			12 3/16"		
15x1	18 9/16"			18 3/16"		
2x2	3"		1 15/16"	2 9/16"		1 15/16"
3x3	4 3/16"		2 3/8"	3 13/16"		2 3/8"
5x5	6 9/16"			6 3/16"		

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).

CONNECTION IN SERIES



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

DRIVER	1x1	2x1	3x1	5x1	10x1	15x1	2x2	3x3	5x5
RD1	4-34	2-16	2-10	1-6	1-2	1-2	1-8	1-3	1
RELV	10-18	5-9	4-6	2-3	1	1	3-4	1	-
RTRI	10-18	5-9	4-6	2-3	1	1	3-4	1	-
RDA	2-34	1-16	1-10	1-6	1-2	1-2	1-8	1-3	1
RLDE1	8-16	4-8	3-5	2-3	1	1	2-4	1	-
RELD1	2-34	1-16	1-10	1-6	1-2	1-2	1-8	1-3	-
RELD0	2-34	1-16	1-10	1-6	1-2	1-2	1-8	1-3	1

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

CLUSTER

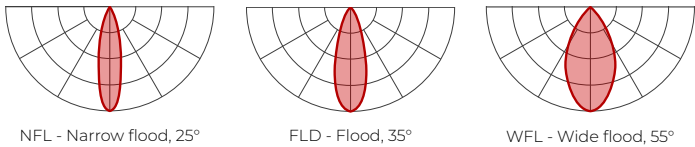
RECESSED



Photometrics

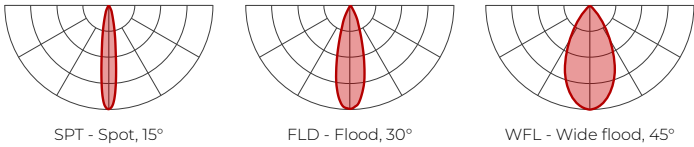
Values calculated based on 3500K, 90 CRI, SOF, and NFL.

SOF - Soft edge downlight



	LM	W	LM/W
1x1	200	3.3	60
2x1	380	6.1	63
3x1	578	7.8	74
5x1	923	11.8	78
10x1	1791	23.6	76
15x1	2600	34.2	76
2x2	811	10.4	78
3x3	1743	21.5	81
5x5	4670	59	79

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



CLUSTER

RECESSED



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

	OF		IC / CP		RM	
	lb	kg	lb	kg	lb	kg
1x1	1.94	0.85	4.23	1.89	0.50	0.20
2x1	2.02	0.89	4.32	1.94	0.60	0.25
3x1	3.00	1.34	6.04	2.72	0.70	0.30
5x1	3.60	1.63	6.45	2.93	1.10	0.50
10x1	5.49	2.48	9.99	4.52	2.00	0.90
15x1	7.10	3.23	12.90	5.86	3.00	1.36
2x2	3.14	1.41	6.67	3.01	0.70	0.30
3x3	4.58	2.08	8.82	4.00	1.10	0.50
5x5	7.13	3.27	12.69	5.80	3.00	1.40

CONSTRUCTION

Housing: Die-cast aluminum

Optics: Polycarbonate

Mounting frame: Galvanized sheet metal

Driver housing: Galvanized sheet metal

Mounting clips: Ø 1.0-1.4 mm spring clips

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.

Chicago Plenum: City of Chicago approved (CCEA) when specified with CP installation type option.

IC rated: Suitable for direct contact with insulation when specified with IC or CP installation type options.

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.