

LUMENWERX



www.lumenwerx.com

tel. 514.225.4304

fax 514.931.4862

CLUSTERS

LUMENWERX



OPTICALLY SOPHISTICATED. AESTHETICALLY REFINED.

Clusters is the small, precise, and scalable system for downlighting. Based on a fundamental 1.2" square cell, Clusters provides a fresh, crisp look at architectural lighting.

Clusters light in three dimensions. From a single cell, Clusters scale up to a linear or planar array; both mount in, on, or from the ceiling.

Optically, each cell holds a single LED emitter with a choice of precise light distribution and subtle louver treatments. Quiet and discreet, Clusters provides excellent visual cut off and a superior Unified Glare Rating (UGR) of 10. The Clusters family includes three different downlight optics, wall washers and adjustables.

Remarkably flexible, Clusters offers multiple trim, driver and installation options.



NFL 25° / FLD 35° / WFL 55° · 1700 LM · 23.6W



NFL 25° · 1700 LM · 21.5W



Millwork and recessed mount clusters (in architectural channel) -
3500K, 90 CRI

CLUSTERS FEATURED

CONTENT

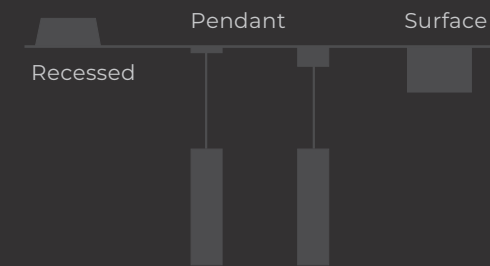
- 06 Light in 3D
- 08 Optics Overview
- 11 Parabolic Louver
- 13 Glare Control and UGR
- 15 Soft-Edge Optics
- 19 Sharp-Edge Optics
- 25 Wall Wash
- 26 Wall Wash Application Guidelines
- 28 Adjustable
- 31 Cluster Combinations
- 33 Louvers
- 35 Color
- 39 Clusters Technical Information



FLD 35° • 800 LM • 10.4W
Pendant clusters - 3500K, 90 CRI

CLUSTERS FEATURED

LIGHT IN 3D



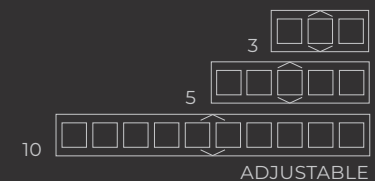
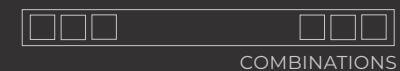
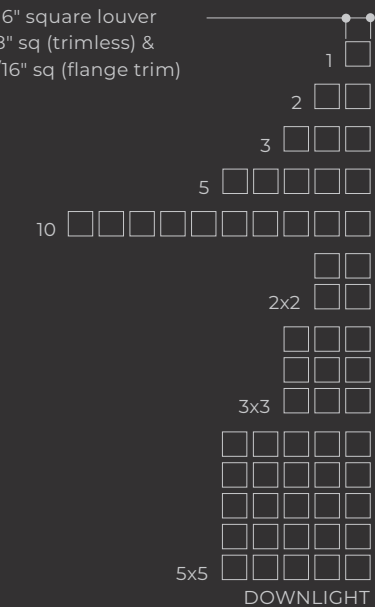
Clusters light in three dimensions; Linear Clusters align with walls or establish a subtle directional texture. Planar Clusters form crisp squares that are comfortable with the edges and corners of interior architecture.

Both linear and planar forms can be recessed, surface mounted, or suspended on pendants. Mounting options make Clusters compatible with a variety of ceiling conditions from drywall to wood to concrete.

See back cover fold-out for additional technical information.

CLUSTERS COLLECTION

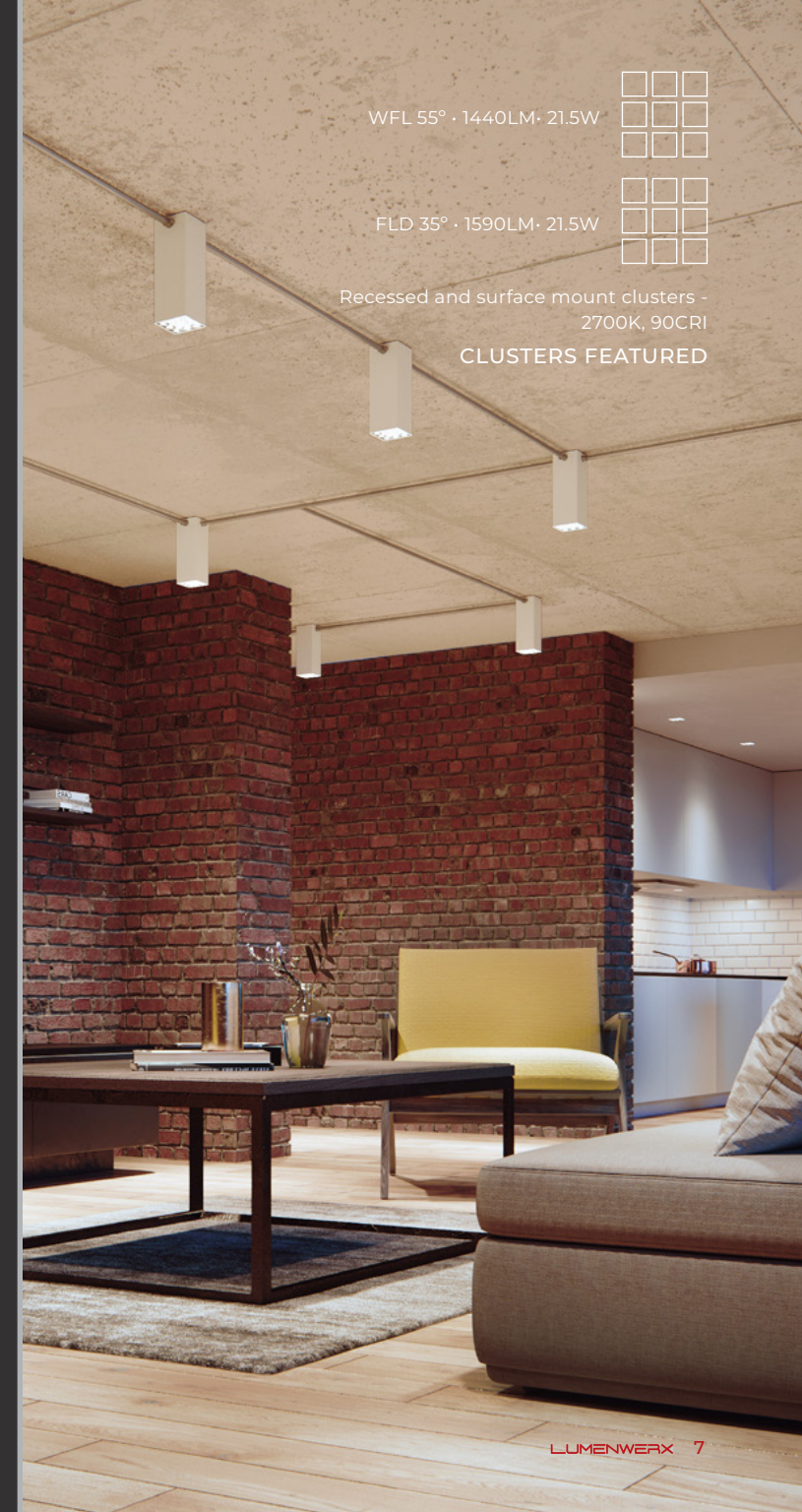
1 3/16" square louver
1 3/8" sq (trimless) &
1 13/16" sq (flange trim)



CLUSTER COLLECTION SYMBOLS



WFL 55° • 1440LM • 21.5W
FLD 35° • 1590LM • 21.5W
Recessed and surface mount clusters -
2700K, 90CRI
CLUSTERS FEATURED



PRECISE OPTICS

Precise optic elements with properly contoured and finished surfaces make the difference between quiet and impactful downlighting and glary and distracting ceiling clutter!

Clusters offers three downlight optics; parabolic, soft-edge and sharp-edge, as well as wall wash and adjustable. The optics provide multiple beam angles and edge qualities, which are described on the following pages.

All Cluster optics provide practical cut-off and excellent Unified Glare Rating (UGR, see page 13).

□□□□□ NFL 25° • 800 LM • 11.8W

□□□
□□□
□□□ FLD 35° • 1700 LM • 21.5W

Recessed and pendant clusters - 3000K, 90CRI
Recessed 1, 2 & 3 clusters in random configuration

CLUSTERS FEATURED





PARABOLIC LOUVER

Clusters' one-piece, molded parabolic louver delivers a wide, ultra-quiet beam that eliminates the distracting shadow patterns found on some multi-source luminaires.

The 0.5" deep louver provides 60° cut off, with an excellent UGR (Universal Glare Rating, see page 13). A diffusing panel at the top of the cell prevents direct view of the LED emitter. Together with the shallow parabolic contour, it effectively mixes light from each louver cell, eliminating the multiple shadows from hands or objects in the space.

Louver finishes include specular and matte silver, and matte white and black.



WFL 55° • 200 LM • 3.3W

SPL 60° • 800 LM • 10.4W 10.4W

Recessed parabolic millwork clusters
- 3500K, 90CRI

CLUSTERS FEATURED



GLARE CONTROL AND UGR

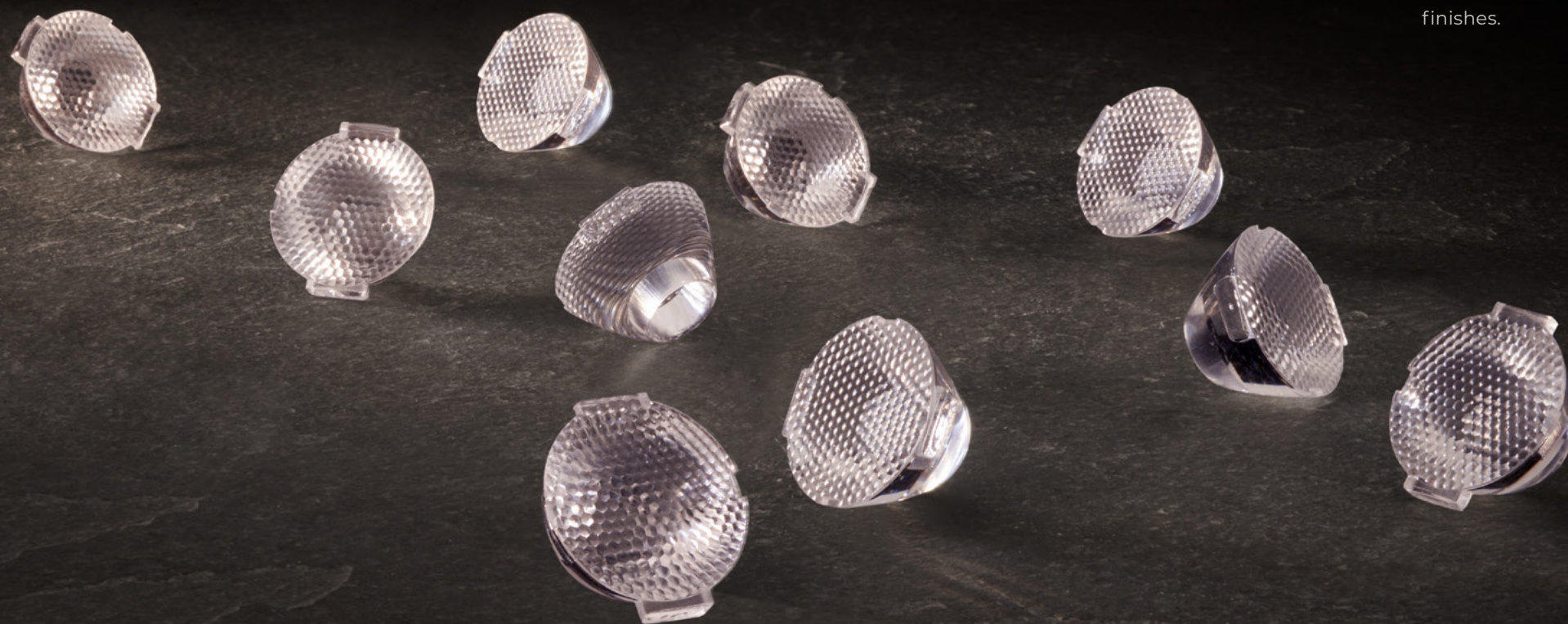
Very small sources of light can diminish visual comfort. The Universal Glare Rating (UGR) model assesses the glare from an installation of luminaires, based on the number and light distribution of the luminaires and the parameters of the space. Ratings range from 5 to 40; lower ratings are better.

As the table shows, Cluster downlights achieve a UGR of 11-18*, which is very comfortable and suitable for applications such as conference rooms, hospitality, and boutique retail.

OPTIC	PARA-BOLIC	PARA-BOLIC	SHARP EDGE	SHARP EDGE	SOFT EDGE	SOFT EDGE
Louver	SQR	SQR	CON	HYP	SQR	SQR
Finish**	SPL	MPL	GL06	GL06	BL05	MF01
Beam Spread	57°	62°	45°	45°	55°	55°
UGR	11	12	12	12	14	18

* UGR based on five-cell Clusters with nominal luminaire output of 1000 lumens at 3500K and 90CRI. The installation provides 35 FC in a 15' x 30' x 9' space (80-50-20 reflectances) and apply to other cell configurations and luminaire output delivering 35 FC.

** Finish codes are shown on pages 32-33



SOFT-EDGE OPTICS

Clusters Soft-Edge Optics use Total Internal Reflection (TIR), which captures and redirects light into a subtle, feathered beam. The single, custom molded optic of transparent, high purity acrylic features a refractive bottom surface and is paired with each LED emitter.

Soft-edge, TIR optics are available in three beam angles and with square, conical, and hyperbolic louver treatments in a variety of finishes.



WW WALL WASH · 400 LM · 7W



WW WALL WASH · 800 LM · 15W



WFL 55° · 800 LM · 12W



WFL 55° · 1530 LM · 21.5W



Recessed clusters - 3000K, 90CRI

CLUSTERS FEATURED

SOFT-EDGE BEAM SPREAD

Soft beams create diffuse lighting effects with smooth transition between light and shadow



NFL: 25°



4'-4"
36 FC



FLD: 35°



6'-4"
22 FC



WFL: 55°



10'-4"
11 FC

Data based on CL05 3500K at 90CRI with nominal luminaire output of 1000 lumens at 10ft mounting height and can be scaled for other cell configurations and lumen output.



SHARP-EDGE OPTICS

A molded, faceted and metallized reflector redirects light from each emitter into the desired beam angle. The sharp-edged beam adds dramatic impact, limiting the spread of light outside of the primary beam.

Sharp-edge, reflector optics are available in three beam angles and with square, conical, and hyperbolic louver treatments (not shown), which sit below the primary reflector.



FLD 25° · 200 LM · 3.3W



SPT 15° · 1600 LM · 21.5W



Recessed clusters with sharp optics -
2700, 90 CRI

CLUSTERS FEATURED

20 www.lumenwerx.com

SHARP-EDGE BEAM SPREAD

Defined beams create contrast and
dramatic effects



SPT: 15°



2'-8"
59 FC



FLD: 30°



5'-4"
35 FC



WFL: 45°



8'-3"
18 FC

Data based on CL05 3500K at 90CRI with nominal luminaire
output of 1000 lumens at 10ft mounting height and can be
scaled for other cell configurations and lumen output.



FLD 35° • 600 LM • 7.8W	<input type="checkbox"/> <input type="checkbox"/>
NFL 25° / FLD 35° • 400 LM • 6.1W	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
FLD 35° • 1000 LM • 11.8W	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
NFL 25° • 200 LM • 3.3W	<input type="checkbox"/>

Recessed millwork installation -
3000K, 90 CRI

CLUSTERS FEATURED



WALL WASH

Light distributed smoothly on vertical surfaces defines space. The Clusters wall wash optics use an angled lens with an optical diffusing film to provide a gentle wash of light with excellent uniformity from top to bottom.

Wall wash Clusters are available in white and black finish; Thin mullions compartment the lens to match the rhythm of linear downlights.



WALL WASH APPLICATION GUIDELINES

An angled lens with an optical diffusing film provides a gentle wash of light on vertical surfaces.



WW

WW WALL WASH • 400 LM • 6.35W

Recessed clusters - 2700K, 90 CRI

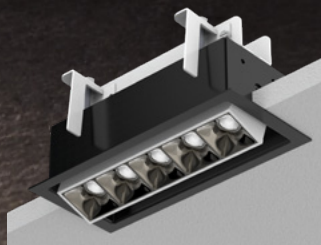
CLUSTERS FEATURED



WW (wall wash) - 800 LM - 12.05W

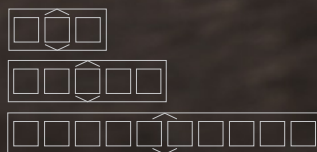
Recessed clusters - 3500K, 90 CRI

CLUSTERS FEATURED



ADJUSTABLE

Adjustable Clusters provide up to 30° tilt to either side to illuminate material on vertical or horizontal planes. Adjustables feature the same optical elements and louver treatments as Cluster downlights, with a narrow reveal to accommodate the tilt. Choose from parabolic, soft-edge, and wall wash optics. Pre-tensioned trunnion mounting maintains aiming. See pages 17 and 21 for application data on beam spread and center beam illuminance.



Arrows indicate adjustability direction



FLD 35° · 200 LM · 3.3W

FLD 35° · 1000 LM · 11.8W

Recessed clusters - 2700K, 90 CRI

CLUSTERS FEATURED



3X [WFL 55° · 900 LM · 12W]

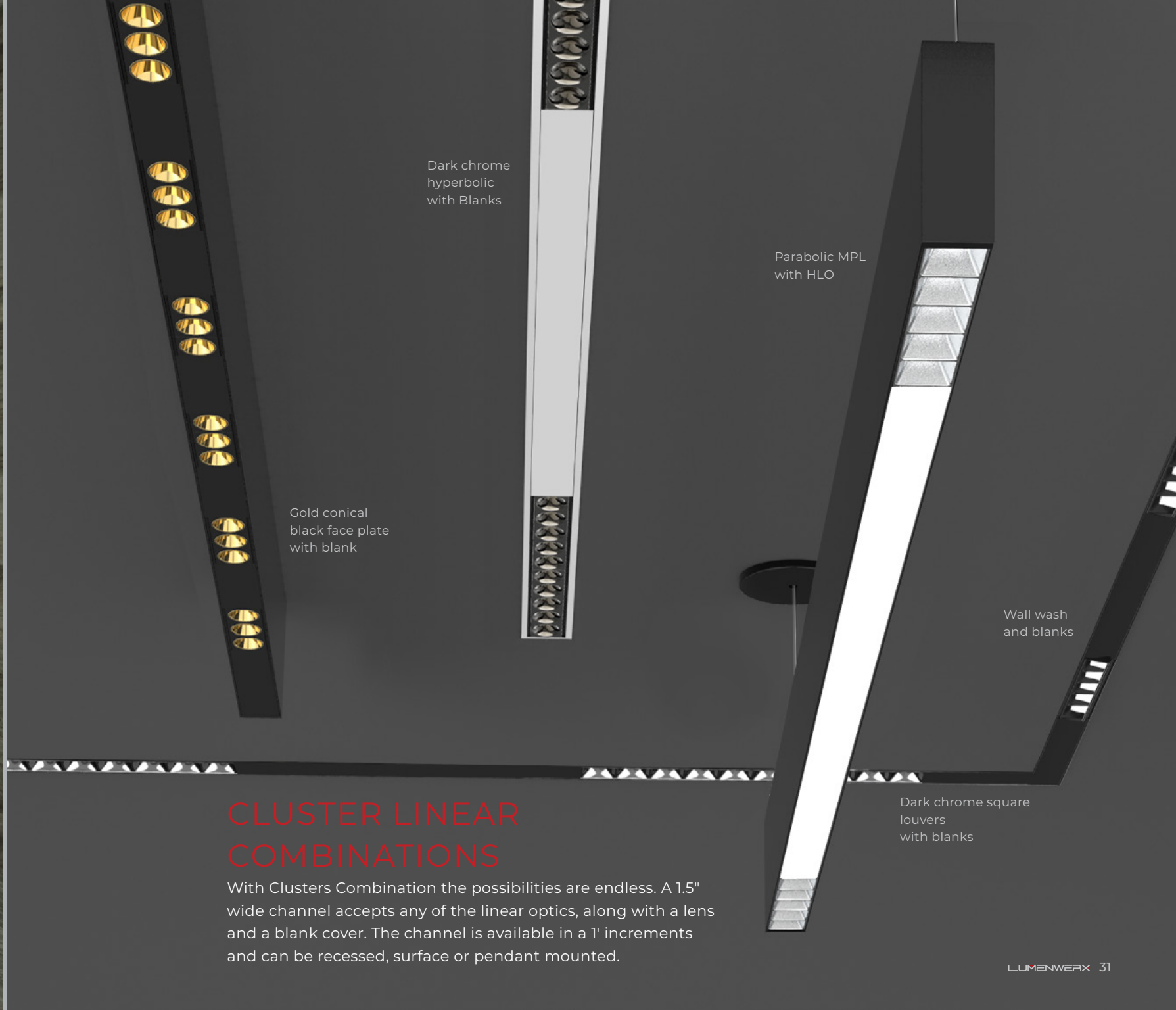


4X [WFL 55° · 870 LM · 12W]



Recessed clusters combination -
4000K, 90 CRI

CLUSTERS FEATURED



Dark chrome
hyperbolic
with Blanks

Gold conical
black face plate
with blank

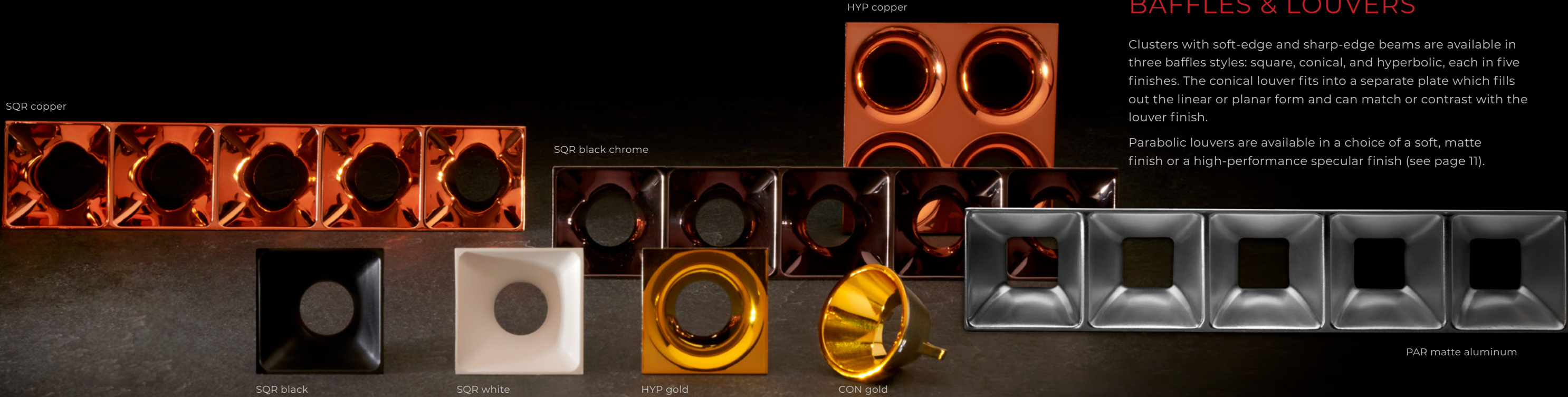
Parabolic MPL
with HLO

Wall wash
and blanks

Dark chrome square
louvers
with blanks

CLUSTER LINEAR COMBINATIONS

With Clusters Combination the possibilities are endless. A 1.5" wide channel accepts any of the linear optics, along with a lens and a blank cover. The channel is available in a 1' increments and can be recessed, surface or pendant mounted.



BAFFLES & LOUVERS

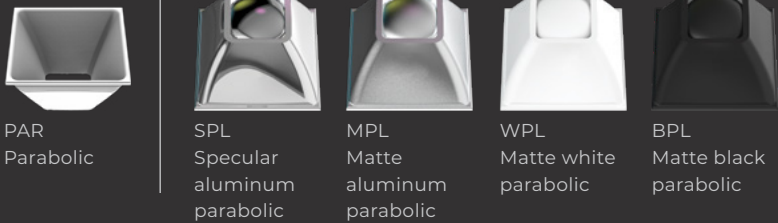
Clusters with soft-edge and sharp-edge beams are available in three baffles styles: square, conical, and hyperbolic, each in five finishes. The conical louver fits into a separate plate which fills out the linear or planar form and can match or contrast with the louver finish.

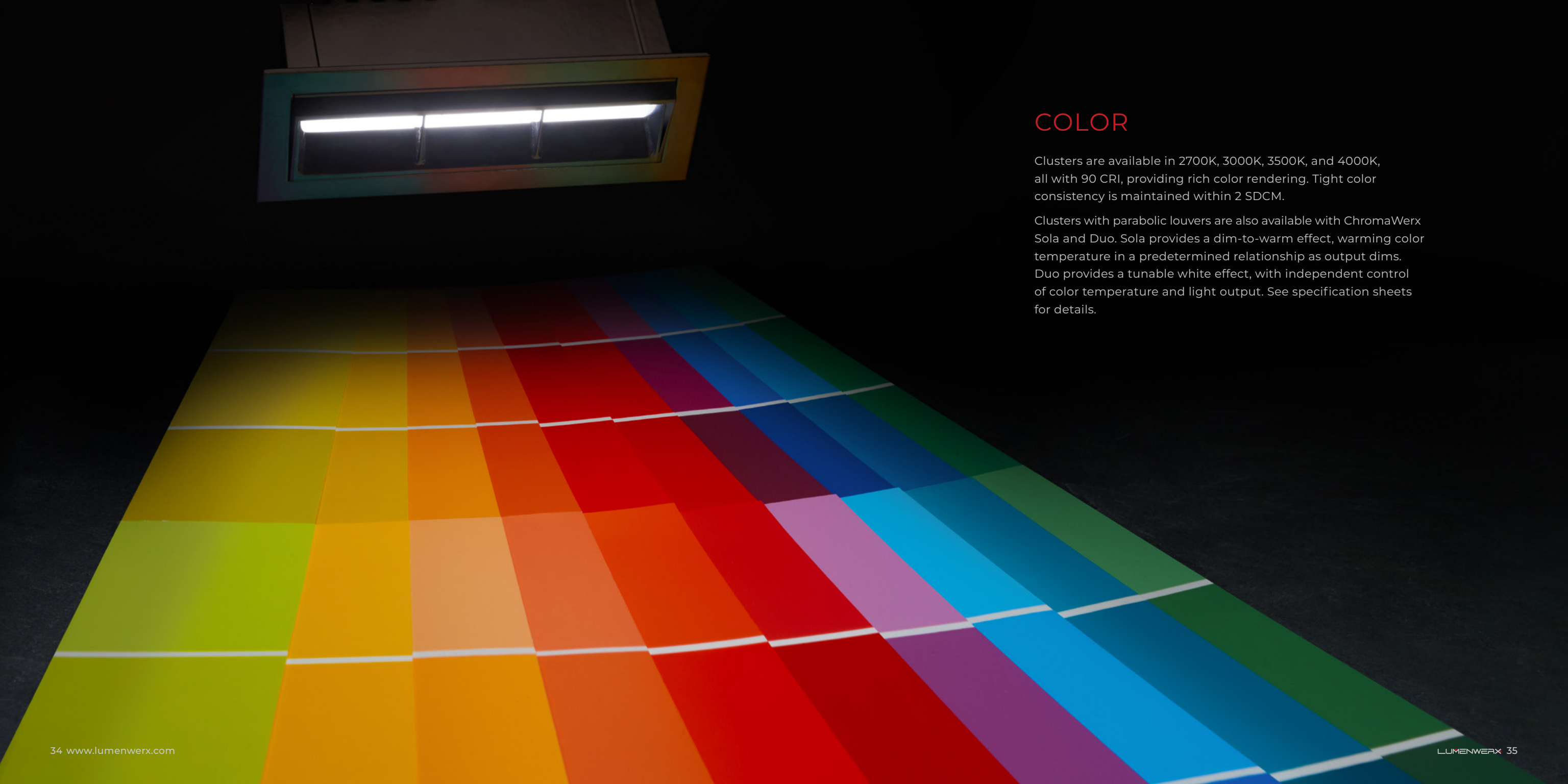
Parabolic louvers are available in a choice of a soft, matte finish or a high-performance specular finish (see page 11).

BAFFLE SHAPES AND FINISHES



PARABOLIC LOUVER SHAPE AND FINISHES





COLOR

Clusters are available in 2700K, 3000K, 3500K, and 4000K, all with 90 CRI, providing rich color rendering. Tight color consistency is maintained within 2 SDCM.

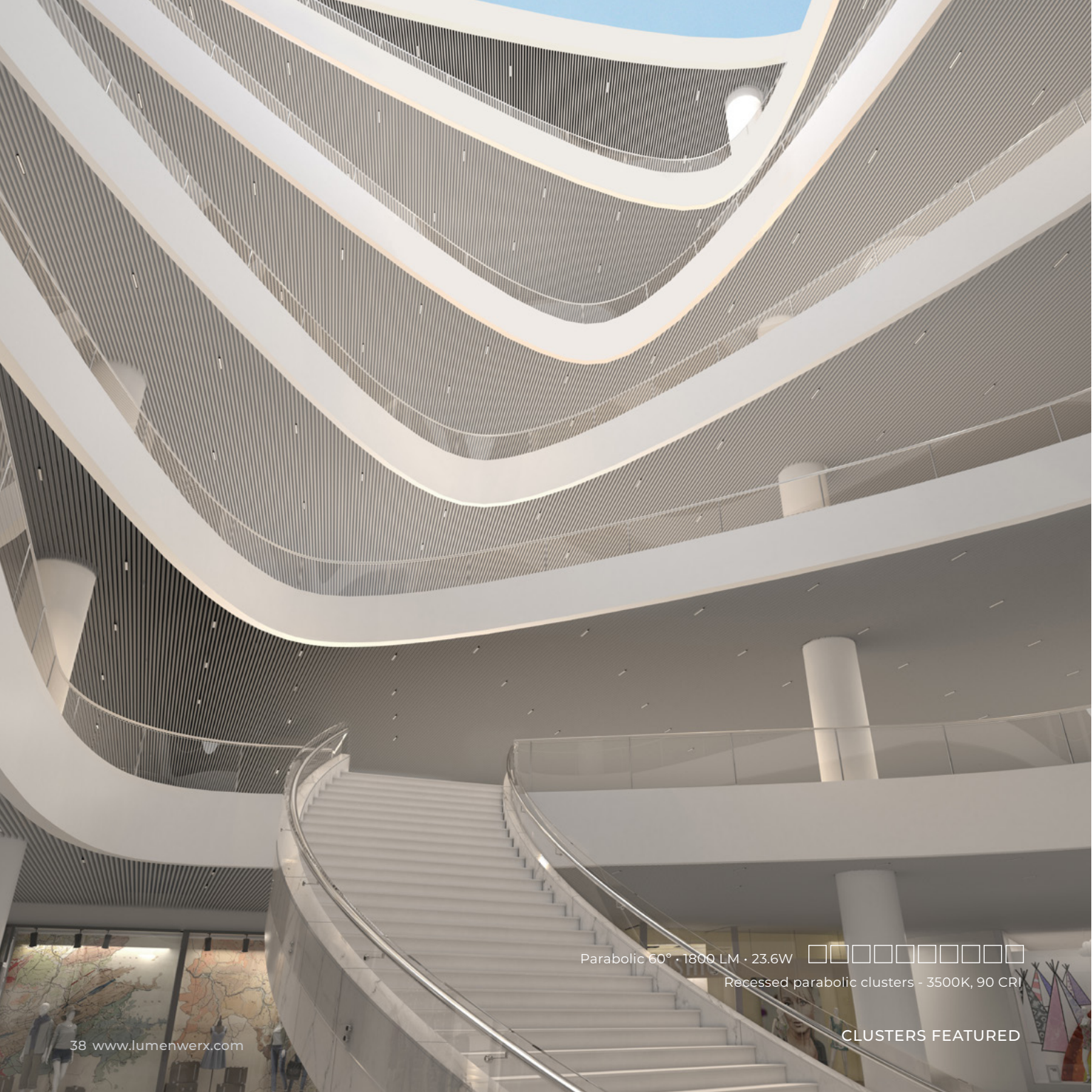
Clusters with parabolic louvers are also available with ChromaWerx Sola and Duo. Sola provides a dim-to-warm effect, warming color temperature in a predetermined relationship as output dims. Duo provides a tunable white effect, with independent control of color temperature and light output. See specification sheets for details.



- WFL 55° · 200 LM · 3.3W ☐
- WFL 55° · 300 LM · 6.1W ☐
- WFL 55° · 450 LM · 7.8W ☐
- WFL 55° · 750 LM · 11.8W ☐

Recessed clusters - 3500K, 90 CRI

CLUSTERS FEATURED



CLUSTERS TECHNICAL INFORMATION

The information provided on this brochure is for general reference only.
For the full Clusters collection and additional and up-to-date configurations,
please visit: www.lumenwerx.com/clusters-downlights.

Parabolic 60° • 1800 LM • 23.6W



Recessed parabolic clusters - 3500K, 90 CRI

CLUSTERS FEATURED

CLUSTERS TECHNICAL INFORMATION

There's more information online! For additional and up-to-date product offerings, configurations, and options, please visit: www.lumenwerx.com/clusters-downlights and consult our specification sheets.

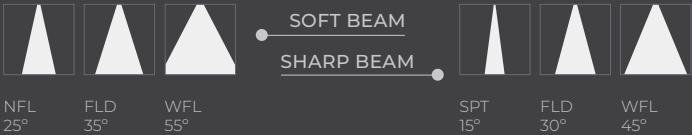


FIXED DOWNLIGHT

PERFORMANCE & OPTIONS

LINEAR & PLANAR CLUSTERS	OUTPUT AT 3500K ³	WATTS AT 3500K ³	COLOR TEMP.	OPTICS ²			RECESSED TRIM DIMENSIONS	
				SOFT	SHARP	PARABOLIC ²		
01	200 lm	3.3 W	2700K 3000K 3500K 4000K Duo ¹ Sola ¹	•	•	•	1 ¹³ / ₁₆ "L x 1 ¹³ / ₁₆ "W	1 ³ / ₈ "L x 1 ³ / ₈ "W
02	380 lm	6.1 W		•	•	•	3"L x 1 ¹³ / ₁₆ "W	2 ⁹ / ₁₆ "L x 1 ³ / ₈ "W
03	578 lm	7.8 W		•	•	•	4 ³ / ₁₆ "L x 1 ¹³ / ₁₆ "W	3 ¹³ / ₁₆ "L x 1 ³ / ₈ "W
05	923 lm	11.8 W		•	•	•	6 ⁹ / ₁₆ "L x 1 ¹³ / ₁₆ "W	6 ³ / ₁₆ "L x 1 ³ / ₈ "W
10	1791 lm	23.6 W		•	•	•	12 ⁹ / ₁₆ "L x 1 ¹³ / ₁₆ "W	12 ³ / ₁₆ "L x 1 ³ / ₈ "W
2x2	811 lm	10.4 W	2700K 3000K 3500K 4000K	•	•	•	3"L x 3"W	2 ⁹ / ₁₆ "L x 2 ⁹ / ₁₆ "W
3x3	1743 lm	21.5 W		•	•	•	4 ³ / ₁₆ "L x 4 ³ / ₁₆ "W	3 ¹³ / ₁₆ "L x 3 ¹³ / ₁₆ "W
5x5	4670 lm	59 W		•	•	•	6 ⁹ / ₁₆ "L x 6 ⁹ / ₁₆ "W	6 ³ / ₁₆ "L x 6 ³ / ₁₆ "W

¹ Duo: Tunable white, 2 channel control (27K - 65K); Sola: Dim to warm, Single channel control (22K - 35K); Duo and Sola only available with PAR in SPL and MPL finish
² Parabolic louver only available in SPL, MPL, MF01 and MF04 finishes. ³ Calculated with soft-edge 25° beam, black square louver.



WALL WASHER & ADJUSTABLE DOWNLIGHT

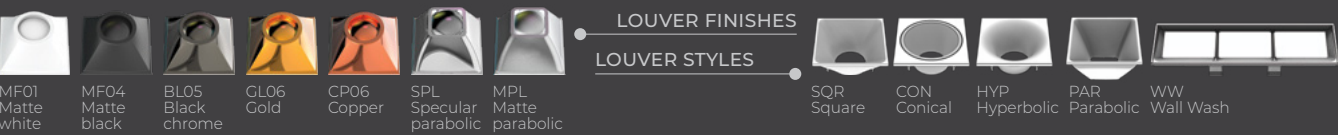
PERFORMANCE & OPTIONS

WALL WASHER LINEAR CLUSTERS	OUTPUT AT 3500K	WATTS AT 3500K	COLOR TEMP.	OPTICS ²				RECESSED TRIM DIMENSIONS	
				SOFT	SHARP	PARABOLIC ²	WALL WASH ⁴		
03	400 lm	6.35 W	2700K 3000K 3500K 4000K				•	4 ³ / ₁₆ "L x 1 ¹³ / ₁₆ "W	3 ¹³ / ₁₆ "L x 1 ³ / ₈ "W
05	800 lm	12.7 W					•	6 ⁹ / ₁₆ "L x 1 ¹³ / ₁₆ "W	6 ³ / ₁₆ "L x 1 ³ / ₈ "W
10	1200 lm	18.2 W					•	12 ⁹ / ₁₆ "L x 1 ¹³ / ₁₆ "W	12 ³ / ₁₆ "L x 1 ³ / ₈ "W




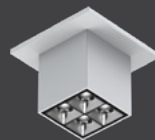

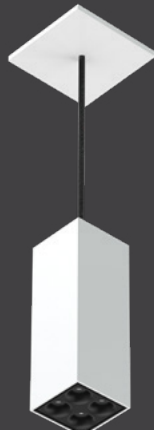
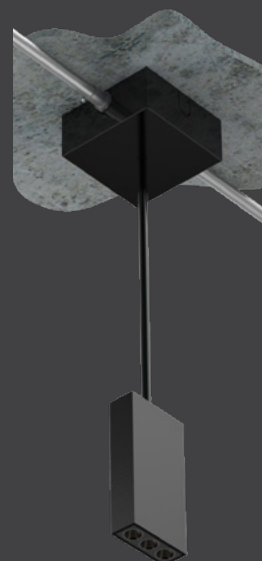
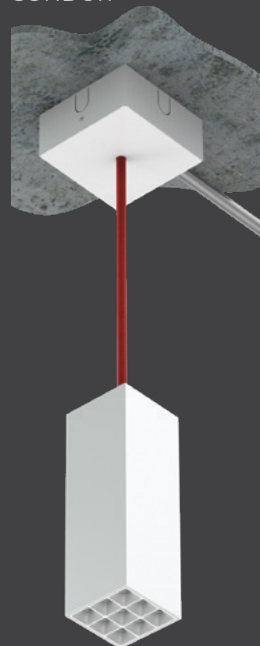
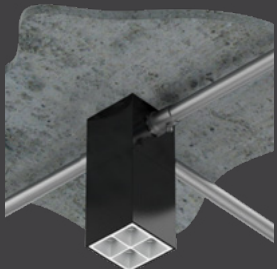
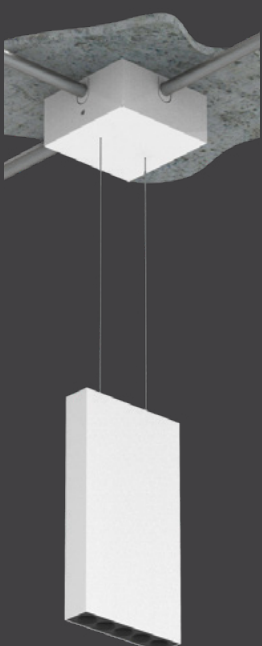


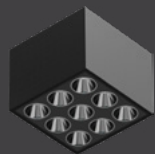









ADJUSTABLE DOWNLIGHT³

LINEAR CLUSTERS									
03	578 lm	7.8 W	2700K 3000K 3500K 4000K Duo ¹ Sola ¹	•	•	•	•	4 ⁷ / ₈ "L x 3 ¹ / ₄ "W	4 ¹ / ₈ "L x 2 ¹¹ / ₁₆ "W
05	923 lm	11.8 W		•	•	•	•	7 ¹ / ₄ "L x 3 ¹ / ₄ "W	6 ⁹ / ₁₆ "L x 2 ¹¹ / ₁₆ "W
10	1791 lm	23.6 W		•	•	•	•	13 ¹ / ₄ "L x 3 ¹ / ₄ "W	12 ⁹ / ₁₆ "L x 2 ¹¹ / ₁₆ "W

¹ Duo: Tunable white, 2 channel control (27K - 65K); Sola: Dim to warm, Single channel control (22K - 35K); Duo and Sola only available with PAR in SPL and MPL finish
² Parabolic louver only available in SPL, MPL, MF01 and MF04 finishes ³ Calculated with soft-edge 25° beam, black square louver.
⁴ Wall Wash only available in MF01 & MF04



PENDANT & SURFACE MOUNT 3", 8" & 12" HEIGHT*

LINEAR & PLANAR CLUSTERS	DOWNLIGHT	WALL WASH	PARABOLIC	DIRECT FEED			J-BOX			CANOPY + POWER CORD			POWER CORD + CONDUIT			STEM + CONDUIT			CONDUIT			CONDUIT + POWER OVER CABLE		
01 	•		•			2X2 																		
03 	•	•	•																					
03 				03 					01 		2X2													
05 	•	•	•																					
05 																								
	•		•																					
2x2 																								
	•																							
3x3 																								

*Refer to fixed downlight and wall wash performance & options chart for output, wattage, color temperature and beam options.

Dimensions:

1x1: 1⅞"W x 1⅞"D | 1x3: 1⅞"W x 4"D | 1x5: 1⅞"W x 6⅜"D

2X2: 2⅜"W x 2⅜"D | 3X3: 4"W x 4"D