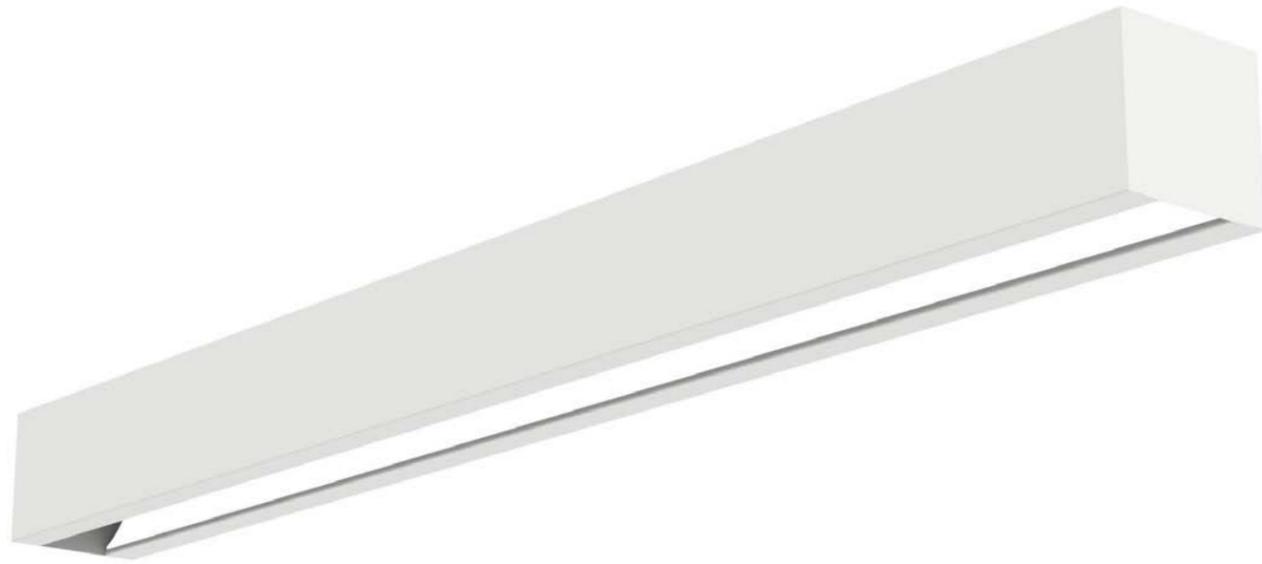


## LINE YOUR DESIGN

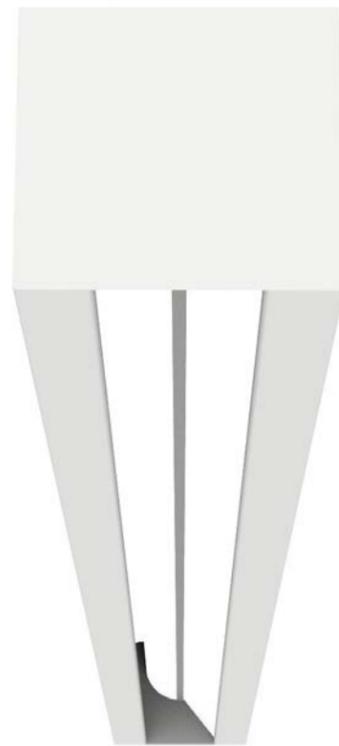
The DR & DP series characterizes the ultimate in simplicity and design by providing pure, uniform, floating lines of illumination in any architectural environment. Powered by Metalumen's innovative patent-pending Floating Optic®, the DR/DP series delivers outstanding lumen output and efficacy exceeding current competitive fluorescent and LED systems in a variety of profile lengths. 2', 4', 8' and continuous rows are all specifiable in symmetric and asymmetric distribution. Optical accuracy and design perfected to complement almost any décor in any environment. Solid extrusion construction and modular components make installation simple and ensure perfectly straight runs. The DR & DP series empowers the design beyond the limitation of current lighting luminaires.



The DR25 & DP25 are recessed, linear LED luminaires engineered for supreme functionality, high efficacy and leading edge design. They are completely designed optically and aesthetically with innovation and accuracy in mind. The carefully constructed interior curved reflector allows light to continuously bounce creating a smooth, consistent glow with wide Bat-wing distribution all the while completely concealing the LED source for excellent glare-free brightness control.

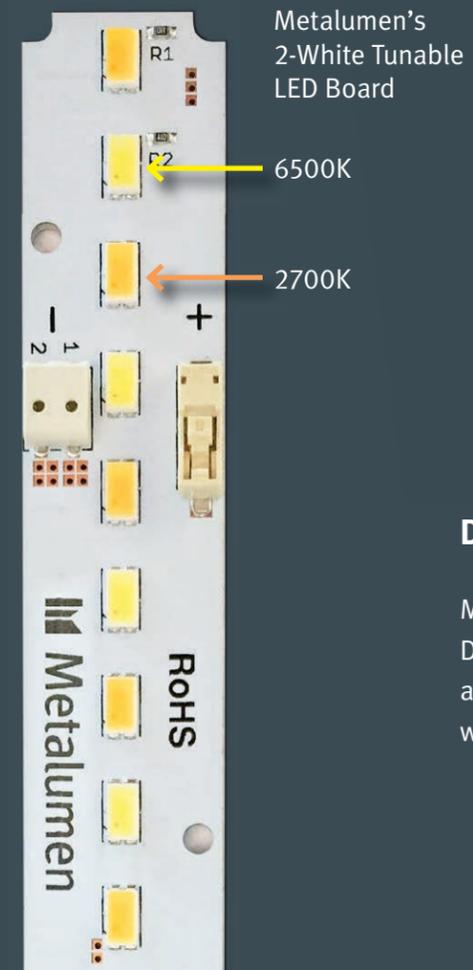
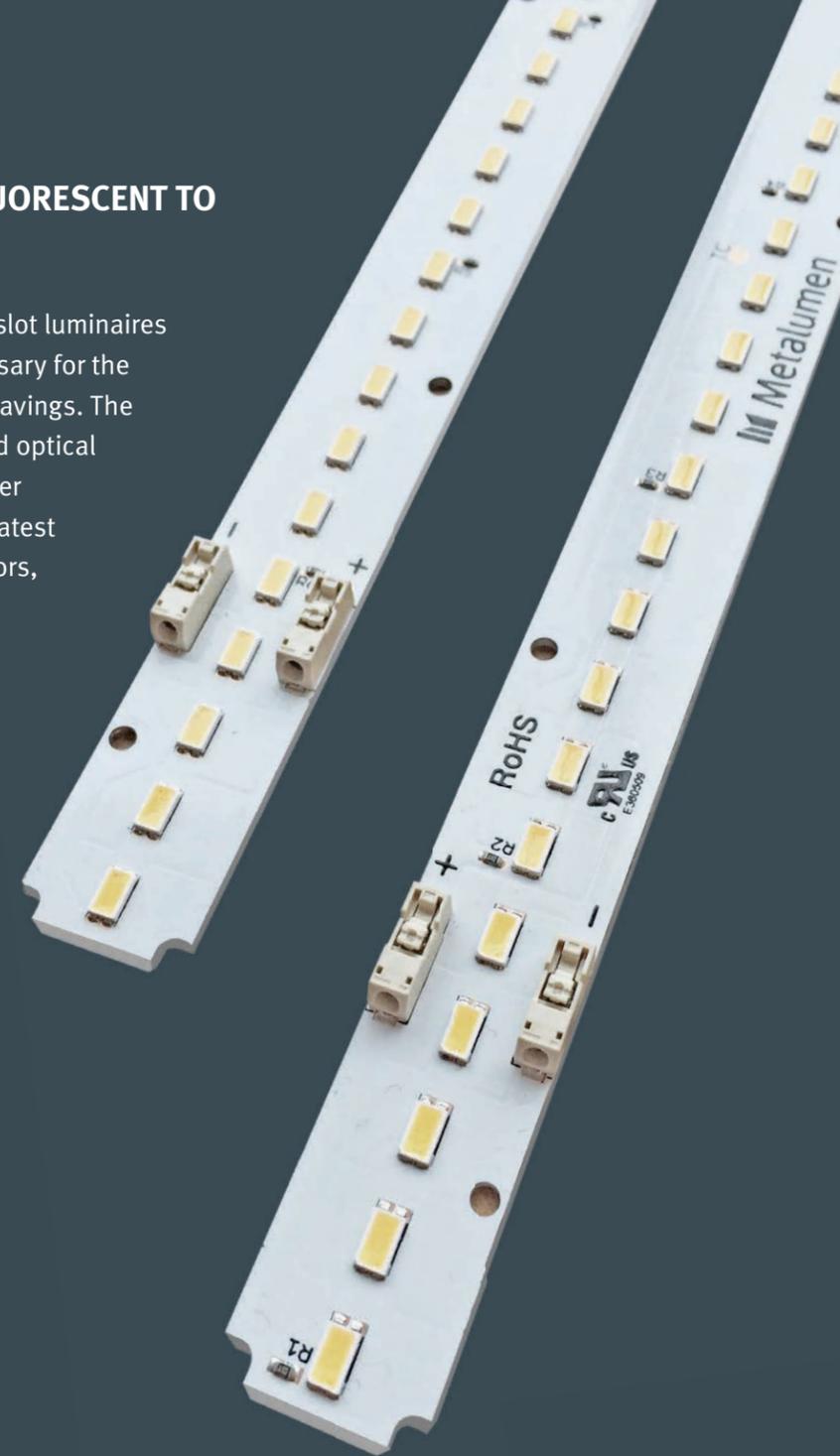
The exterior floating look and feel lifts up your space to a floating linear slot experience that perfectly combines ideal lighting with the feel of light-pipe technology - complex system design with clean and simple exterior look. These 2.3" aperture open cavity luminaires will look astonishing in any office environment, library, retail space, classroom or health facility. DR25 & DP25 are available in T-Bar recessed symmetric and asymmetric distribution for ideal performance including perimeter and wall-wash applications.

Simple elegance that is architecturally breathtaking.



## BEYOND “SWITCHING FROM FLUORESCENT TO LED” APPROACH

With Building code standard improving, slot luminaires today struggle to meet the criteria necessary for the modern office environment and energy savings. The DR25/DP25 high efficacy LED system and optical design coupled with standard 0-10V driver allow easy and flexible integration with latest lighting control system, occupancy sensors, and daylight harvesting controls. Not only is it a logical transition from FL to LED, but from current LED to the high efficacious and efficient DR/DP luminaire series.



Metalumen's 2-White Tunable LED Board

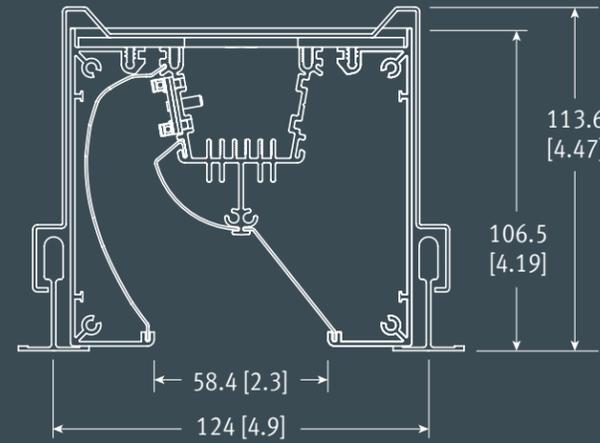
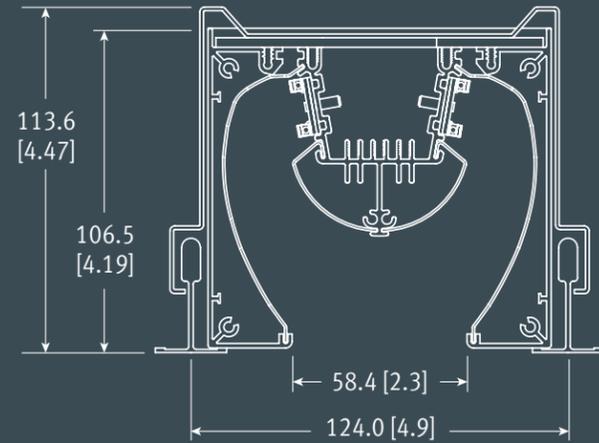
6500K

2700K

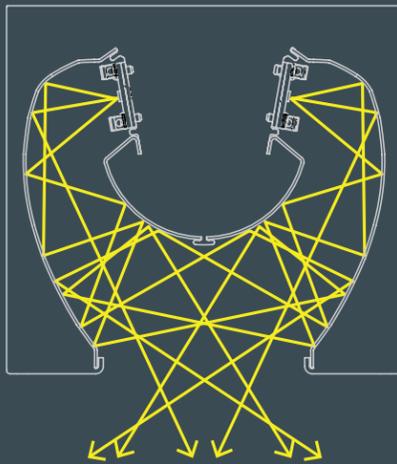
## DRIVER

Metalumen offers 0-10V dimming drivers as standard. Dimming range is down to 10%. Dimming drivers are available down to 1%. Power factor @ full load is >90% with a Class 2 rating. Drivers are remote mounted.

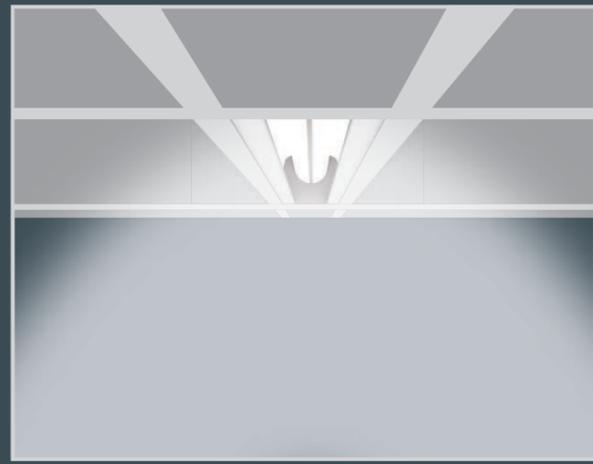
# DR25



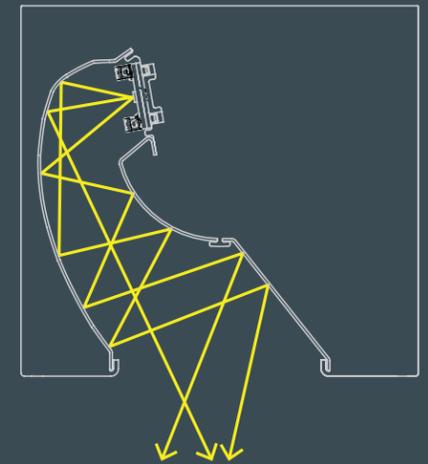
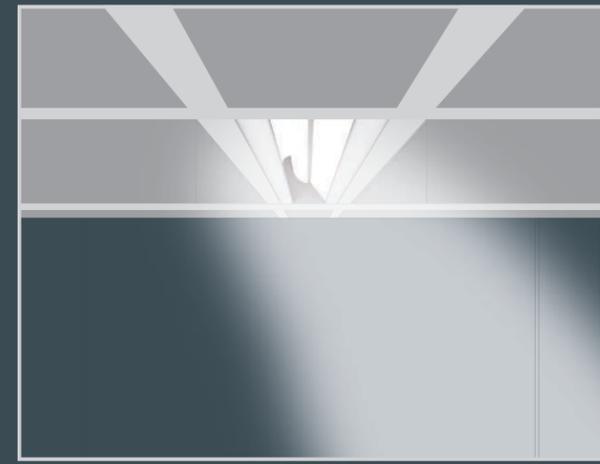
# DP25



Ray tracing pattern of reflective optics



DR25-2L35K-4-N-N-L3  
 Wattage: 48  
 Lumens: 4431  
 Efficacy: 92 LPW



Ray tracing pattern of reflective optics

DP25-2L35K-4-N-N-L3  
 Wattage: 24  
 Lumens: 2316  
 Efficacy: 97 LPW



We have gone beyond the barrier of using lenses in our innovative fixtures. Our newly designed Floating Optic® luminaires are designed around the LED engine and high efficient optical system. We rely on every angle of the optical system utilized in our design to efficiently and optimally control the light beam. The carefully designed reflector also perfects the shape of the distribution curve to make sure it works best in the application for which it was designed.

**OPTICAL SYSTEM PERFECTED FOR  
 OPTIMAL WIDE BAT-WING DISTRIBUTION  
 WITH HIGH EFFICACY AND EFFICIENCY DESIGN**

## CONTROL OPTIONS

### 2-White Tunable Module by Metalumen



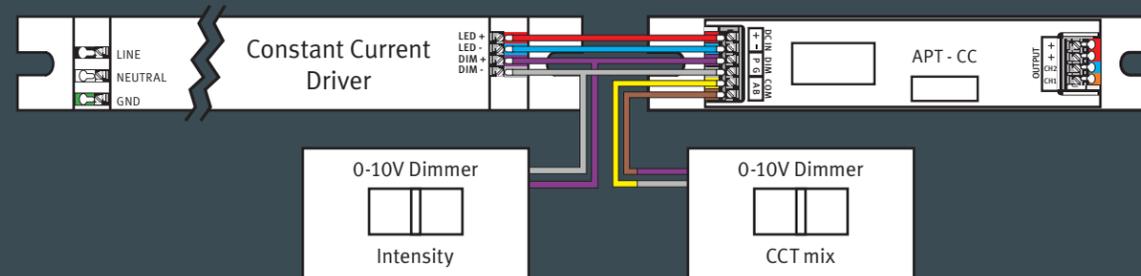
- DMX wired communication via COM ports with up to 512 addresses
- Dimming using a 0-10V dimmer connected to the COM ports

OPTION CODES	Max Output Channels	Max Output Power [W]	Max Channel Power [W]	Control over Driver Dim	0-10V Dim	Dim Minimum %	0-10V-CCT/Intensity
V	2	100	100	•	*		•
X	2	100	100	•	1%	•	

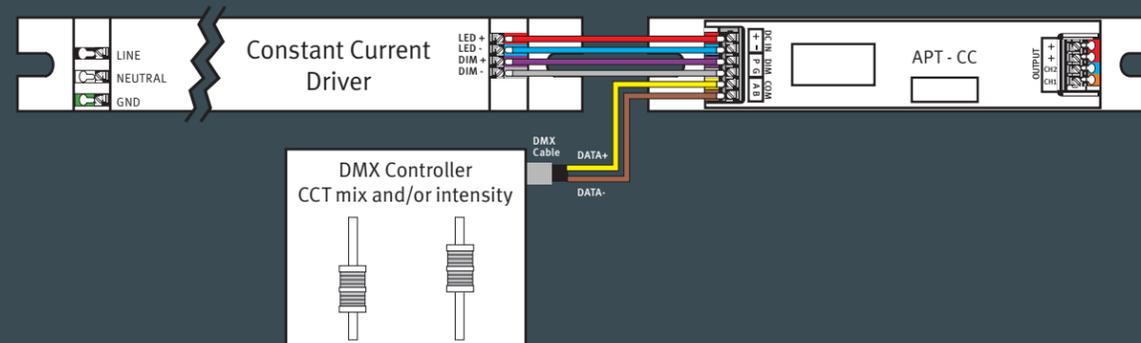
\* = Dim minimum limited by driver specs

## WIRING DIAGRAM

### Dual 0-10V Dimmer Configuration



### DMX Configuration



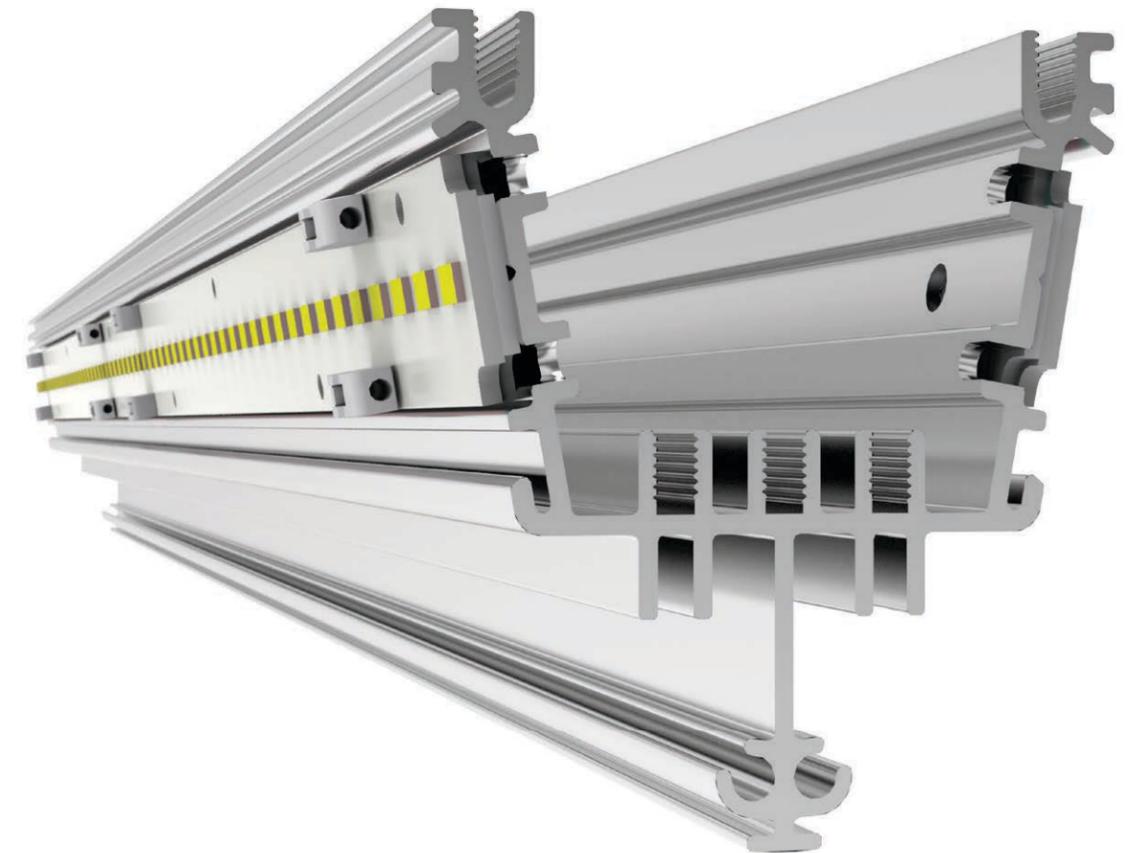
### 2-White Tunable Control Options (By Others):

- Standard 512 channel DMX system by Lutron, Fulham, etc... (requires complete DMX system)
- Standard 0-10V dimmers: one for Intensity and another for CCT mix.



## EXTRUSION

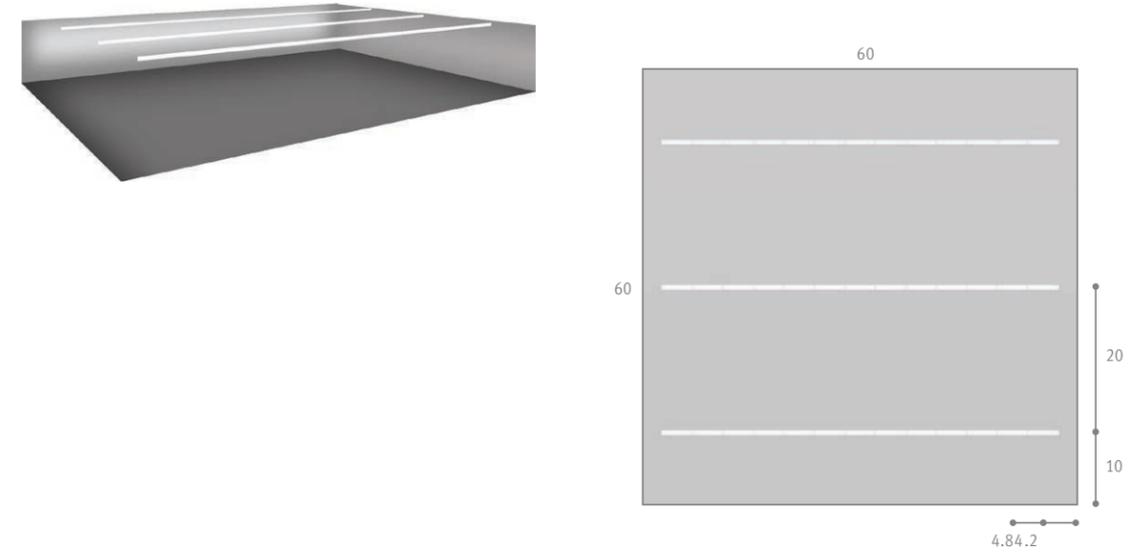
Extrusion and LED-Engine coupling design is engineered for maximum heat dissipation. The finned surface at different angles optimally keep the LED array at low operating temperature maintaining consistent lumen output performance, wattage consumption and long life. Our fixture design puts this small form luminaire with a beast of a performer attitude at  $L85 \geq 60,000h$ .



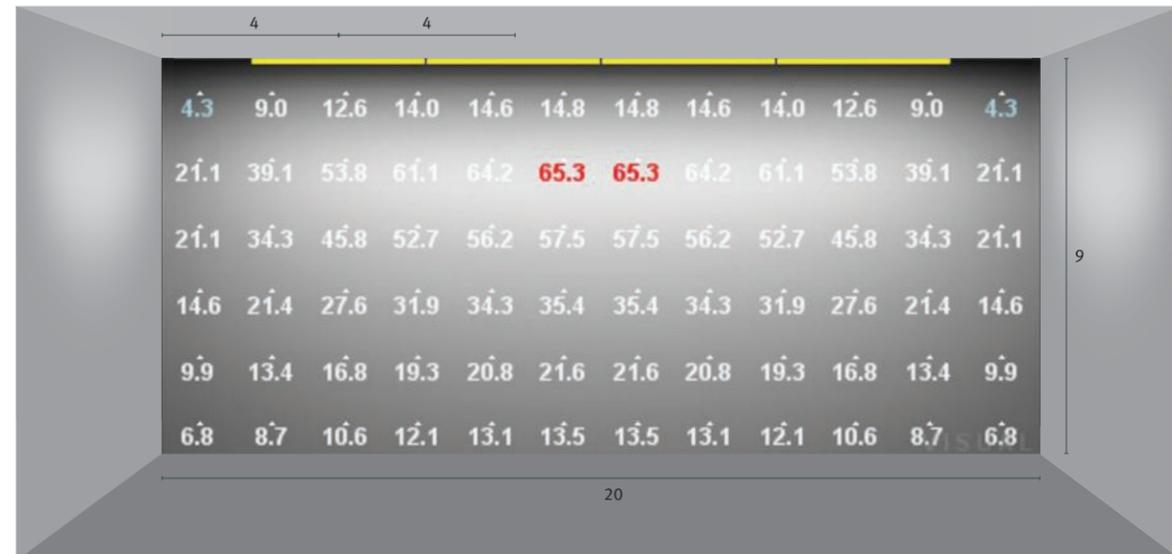
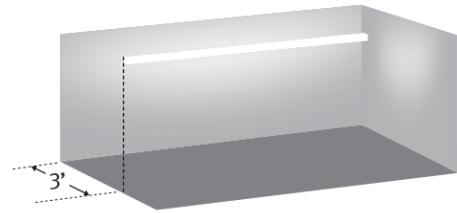
## CALCULATION SUMMARIES

Room Type	Wall-Washer	Open Office	Public Library
Wall Size	20 x 9'	-	-
Isle Size	-	-	14 x 7.4'
Set Back	3'	-	3.35'
Room Size	20 x 20'	60 x 60'	14 x 14'
Ceiling Height	9'	9'	9'
Catalogue Number	DP25-1L35K-4-L3	DR25-2L35K-4-L2	DR25-2L35K-4-L2
Number of 4' Luminaires	1 run @ 16'	3 runs @ 52'	1 run @ 12'
Watts/4' luminaires	24W	38W	35W
Lumens/4' luminaires	2316	3738	3086
Avg. Vertical/Stack/Wall Light Level	27 FC	18 FC	21.2 FC
Avg. Horizontal/Floor Light Level	-	35 FC	31 FC
Spacing	-	20' OC	-
Lighting Power Density	0.24 W/ft <sup>2</sup>	0.41 W/ft <sup>2</sup>	0.54 W/ft <sup>2</sup>

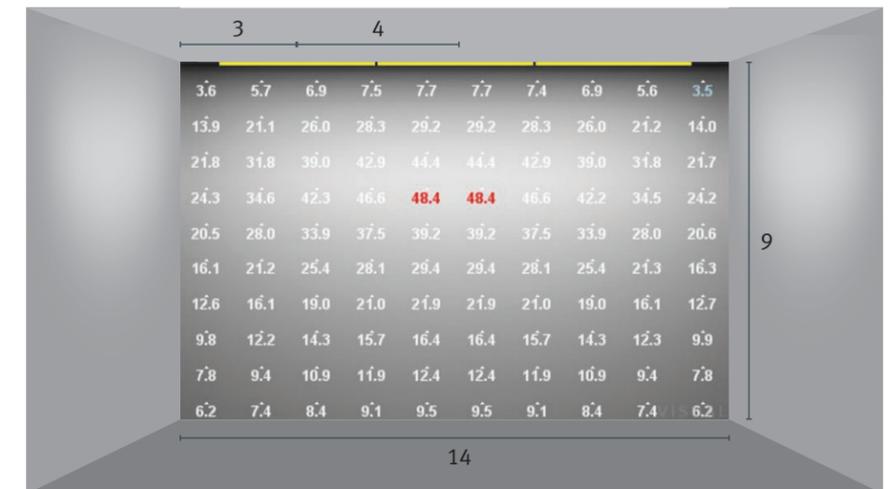
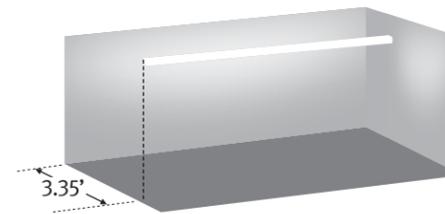
Open Office



Wall Washer



Public Library



## LED VS. FLUORESCENT ENERGY SAVINGS

### 4' DR25 Lens-Free Luminaire

Light Level	Wattage	Lumens Delivered	Efficacy (LPW)	Fluorescent Equivalent	Energy Savings*
L1	28	2423	87	1T8/1T5	29%
L2	35	3086	87	2T8/2T5	43%
L3	48	4431	92	1T5HO	20%
L4	97	8482	87	2T5HO	19%

### 4' DP25 Lens-Free Luminaire

Light Level	Wattage	Lumens Delivered	Efficacy (LPW)	Fluorescent Equivalent	Energy Savings*
L1	14	1267	91	1T8	64%
L2	17	1613	93	1T8/1T5	55%
L3	24	2316	97	2T5/1T5HO	61%
L4	48	4434	92	2T5HO	60%

\* Energy Savings based upon standard lamp/ballast combination using an equivalent high efficient FL system.



## SYSTEM ENERGY & MAINTENANCE SAVINGS

### Annual Operating Cost Energy & Lamp Maintenance



### System Energy & Maintenance Cost Summary

	LED	Traditional
Total Initial Fixture/Installation Cost	\$27,300	\$22,230
Total System kW	2.76	4.68
Annual kWh	10,078	17,082
Cost of Energy per kWh	\$0.120	\$0.120
kWh Inflation Rate (%/yr)	0.00%	0.00%
Average Annual Energy Cost	\$1,209	\$2,050
Average Annual Maintenance Cost	\$0	\$1,916
Average Annual Energy & Maintenance Costs	\$1,209	\$3,966
Average Annual Energy & Maintenance Savings	\$2,756	

### Payback Analysis

#### Average Annualized Savings Per Year

Annual Energy Savings	\$840
Annual Lamp Maintenance Savings	\$1,916
Annual Combined Savings	\$2,756
Cost of Waiting (Monthly)	\$230
Simple Payback (years)	1.84
IRR (%)	54%
10 Year Cash Flow (Energy & Lamp Maintenance)	\$22,491

	Savings		Cost/year	
	Annual	Cumulative	LED	Traditional
1st Year	\$840	\$840	\$1,209	\$2,050
5th Year	\$2,756	\$8,711	\$1,209	\$3,966
10th Year	\$2,756	\$22,491	\$1,209	\$3,966

10 Year Total	Savings	Cost	
	\$27,561	LED	Traditional
		\$12,094	\$39,655

Study Perimeters: Room Size: 60' X 60' | Ceiling Height: 9' | 6 runs @ 52' with 10' OC | Reflectance: 80/50/20 | # of fixtures: 78 | LLF is 0.8

\*\*\* Calculation is based on actual LED fixture used in comparison to a 2-T5 FL fixture. Assumptions are \$0.12 per kWh and 10 operating Hours/day (10h @ full power). These are estimated savings only. Annual and monthly savings are based on a number of variables and assumptions that could change over time. The actual savings derived by our firm may be higher or lower. Metalumen's business does not imply a warranty of performance or savings as calculated and shown within this document.

## COMPETITION COMPARISONS

Open Office Space  
Room Size: 60 X 60'  
Ceiling Height: 9'  
6 runs @ 52' with 10' OC

	Metalumen DR25 DR25-2L35K-4-L1	Competitor A
Delivered Lumens	2423	2002
Input Power (Watts)	28	19.2
Delivered LPW	87	104
Watts/Sq.Ft.	0.60	0.42
Horizontal Avg. Fc	43	34
Horizontal Max Fc	57	45
Horizontal Min Fc	13	11
Min/Max	0.23	0.24
Vertical Avg. Fc	21	16

	Metalumen DR25 DR25-2L35K-4-L2	Competitor B
Delivered Lumens	3086	2919
Input Power (Watts)	35.4	49.1
Delivered LPW	87	59
Watts/Sq.Ft.	0.77	1.06
Horizontal Avg. Fc	55	52
Horizontal Max Fc	72	72
Horizontal Min Fc	17	15
Min/Max	0.24	0.21
Vertical Avg. Fc	27	23

Whiteboard/Art Piece: 12 x 4'  
Room Size: 20 x 20'  
Ceiling Height: 9'  
# of fixtures: (4) 1 run @ 16'

	Metalumen DP25 DP25-2L35K-4-L1	Competitor C
Delivered Lumens	1267	1510
Input Power (Watts)	14	23.8
Delivered LPW	91	63
Watts/Sq.Ft.	0.14	0.24
Vertical Avg. Fc	24	24
Vertical Max Fc	32	27
Vertical Min Fc	13	16
Min/Max	0.41	0.59
CRI	83	80

	Metalumen DP25 DP25-2L35K-4-L2	Competitor D
Delivered Lumens	1613	1869
Input Power (Watts)	17.5	29.9
Delivered LPW	92	63
Watts/Sq.Ft.	0.18	0.30
Vertical Avg. Fc	31	30
Vertical Max Fc	41	34
Vertical Min Fc	17	20
Min/Max	0.41	0.59
CRI	83	80





**DR25 & DP25 Series  
LED Linear Recessed Luminaire**

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Guelph, Ontario, Canada  
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