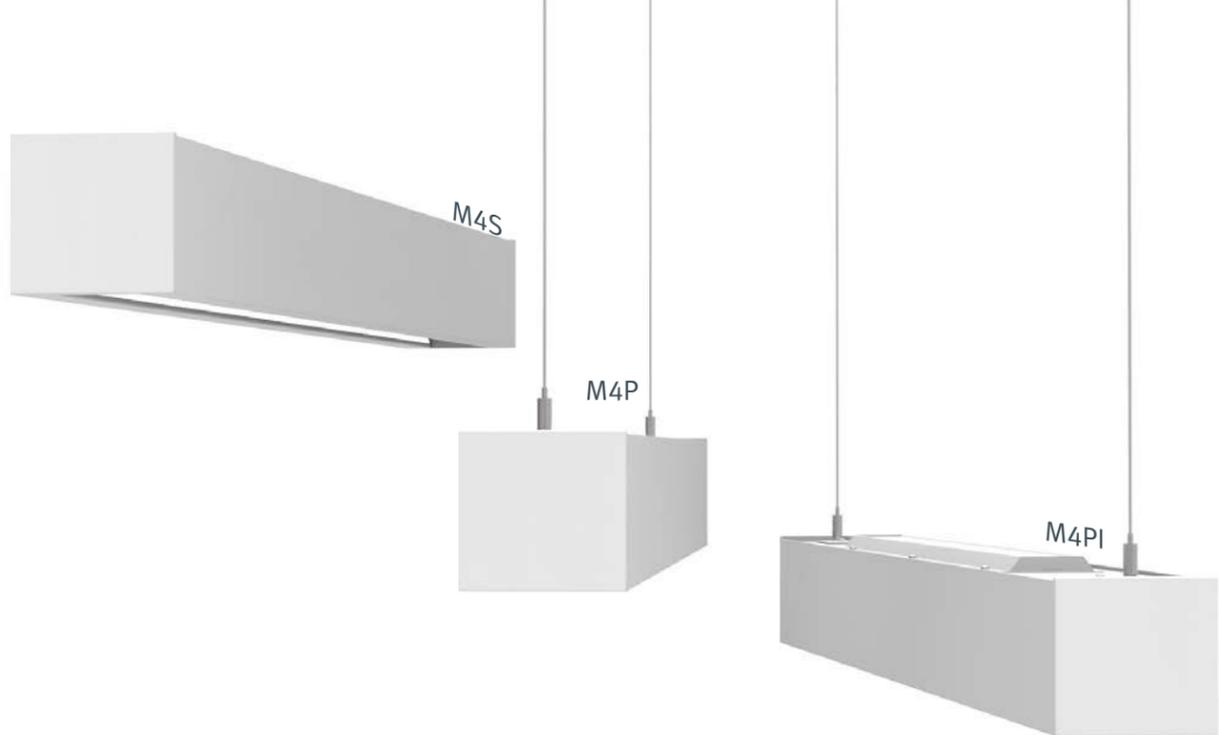






The MEGA linear LED luminaires are engineered for supreme functionality, high efficacy and leading edge design. They are completely designed optically and aesthetically with quality, purity and accuracy in mind. The carefully constructed interior curved reflector allows the light beam to bounce creating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

The purity in exterior & interior look and function is maximized in the complexity of its careful design. These open cavity luminaires look astonishing in any office environment, library, retail space, classroom or health facility. The M4 Series is available in pendant direct, pendant direct/indirect and surface mounting with symmetric distribution for ideal performance in any application.

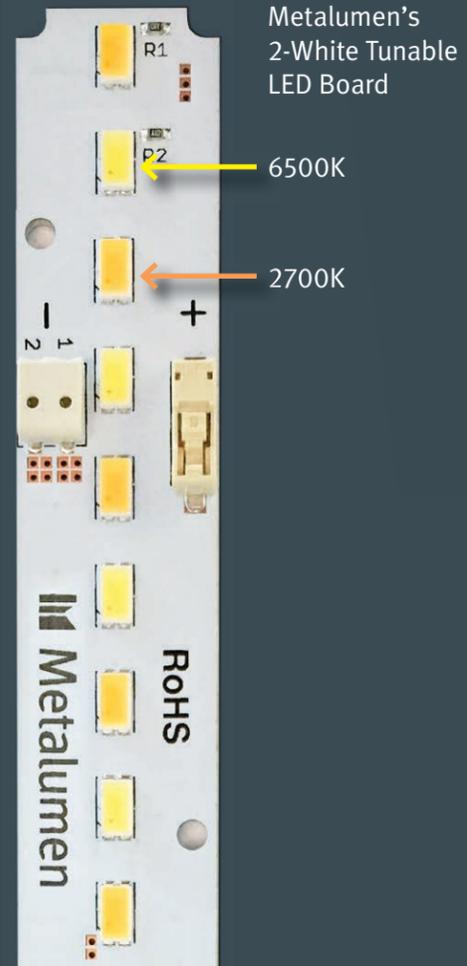
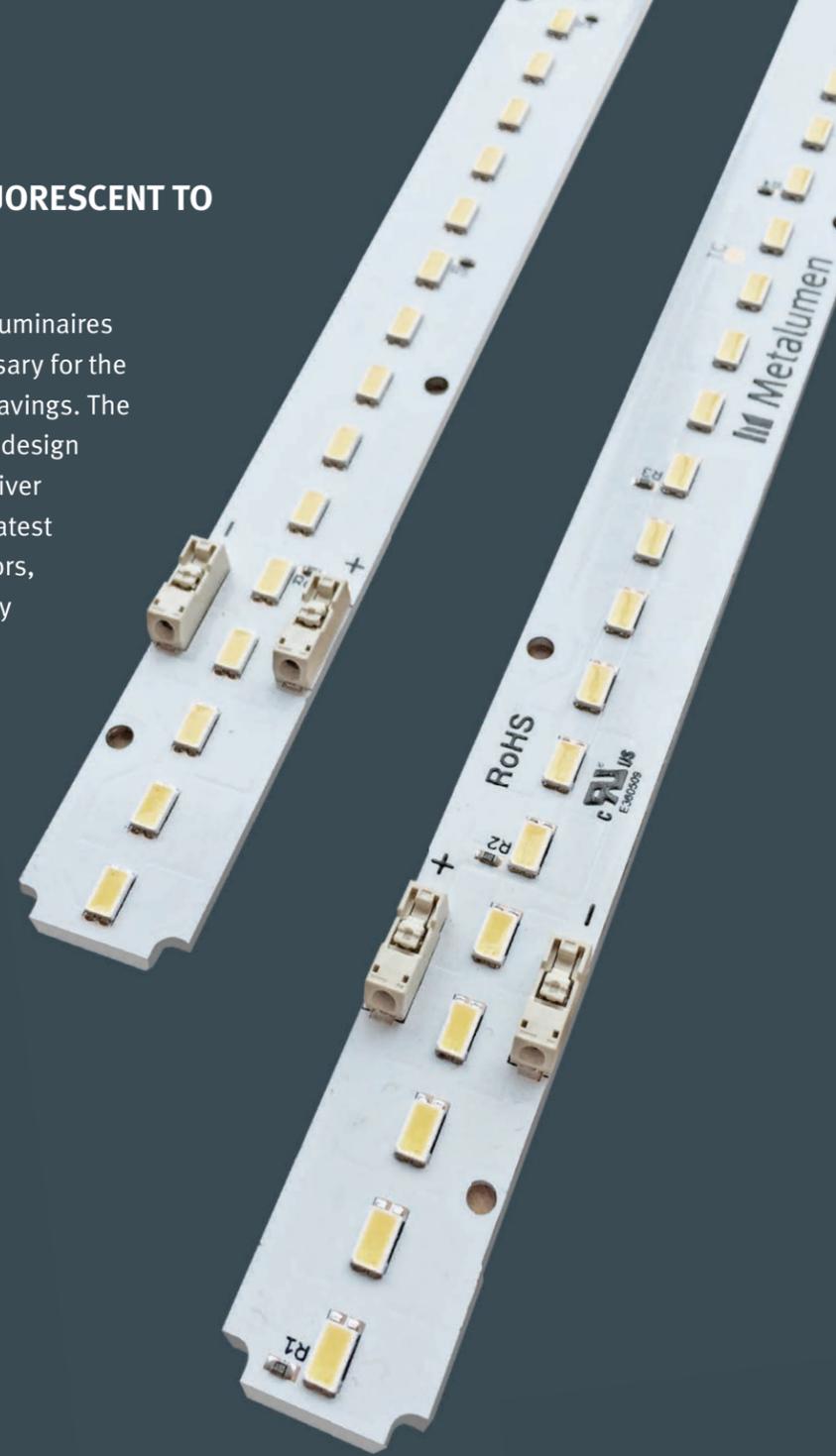


The MEGA enjoys 100% concealed linear LED arrays mounted on both sides of the upper extrusion interior. With quick disconnect wiring, installation and maintenance has never been easier. The luminaires are offered in 3 fixed CCTs (3000K, 3500K, 4000K) and 2-White Tunable (2700K-6500K). The uplight component is controlled separately by a linear LED array facing upwards to maximize efficacy. Standard 0-10V drivers are included and 2-White Tunable separate controls are compatible with any standard DMX system in the market place.

MEGA's Floating-Optic® design marries a high (98%) reflectivity surface to carefully angled series of bends. The design is then complemented with a perfectly angled LED array support to deliver a wide batwing distribution while hiding the source completely. The entire open cavity aperture is 2.3" wide creating a floating experience to a small profile that hides in the architecture of the space.

BEYOND “SWITCHING FROM FLUORESCENT TO LED” APPROACH

With building code standard improving, luminaires today struggle to meet the criteria necessary for the modern office environment and energy savings. The M4 high efficacy LED system and optical design coupled with standard 0-10V dimming 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 LED M4 Series lens-free high efficacious and efficient luminaire.



DRIVER

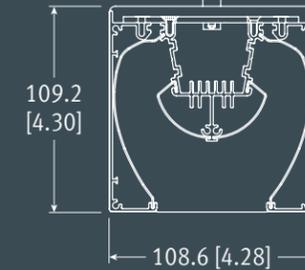
Metalumen offers 0-10V dimming drivers as a standard. Dimming range is down to 10%. Dimming drivers are available down to 1%. Power factor @ full load is >90% with a Class 2 rating.



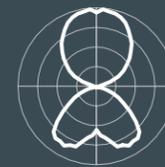
M4P



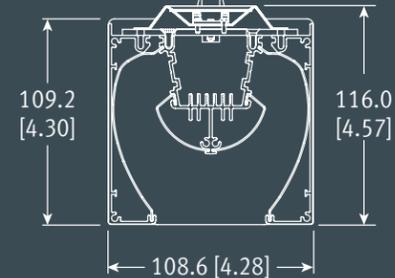
M4P-2L35K-4-N-N-L3
 Wattage: 49
 Lumens: 4457
 Efficacy: 92 LPW



M4PI



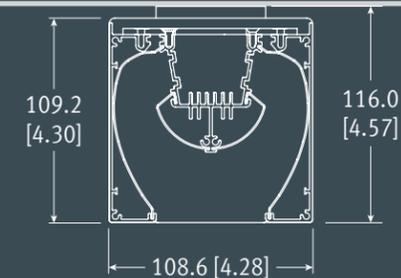
M4PI-2L35K-4-C-N-UHL1
 Wattage: 46
 Lumens: 4810
 Efficacy: 105 LPW



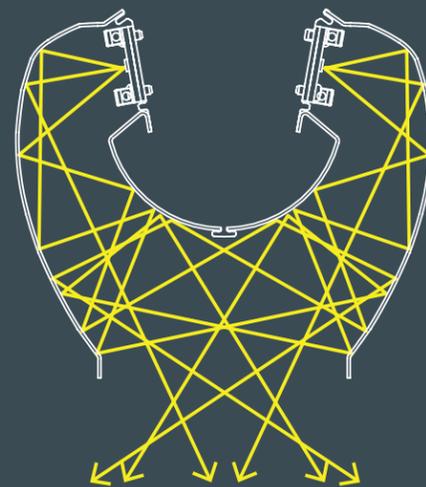
M4S



M4S-2L35K-4-N-N-L3
 Wattage: 49
 Lumens: 4457
 Efficacy: 92 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.



Ray tracing pattern of reflective optics

CONTROL OPTIONS

2-White Tunable Module by Metalumen



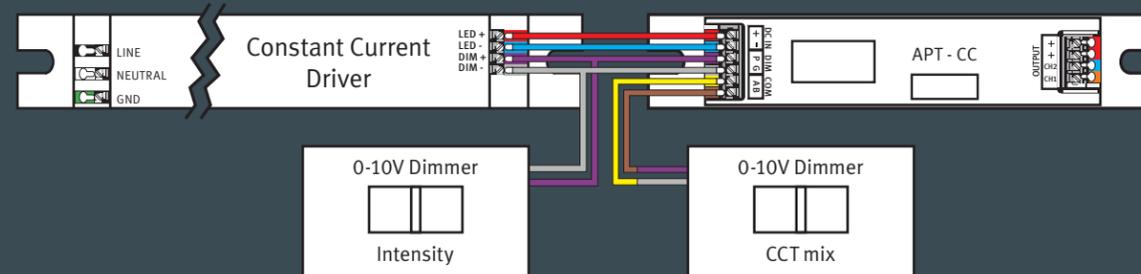
- DMX wired communication via COM ports with up to 512 addresses
- Dimming using a 0-10V dimmer connected to the COM ports

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%	•	•

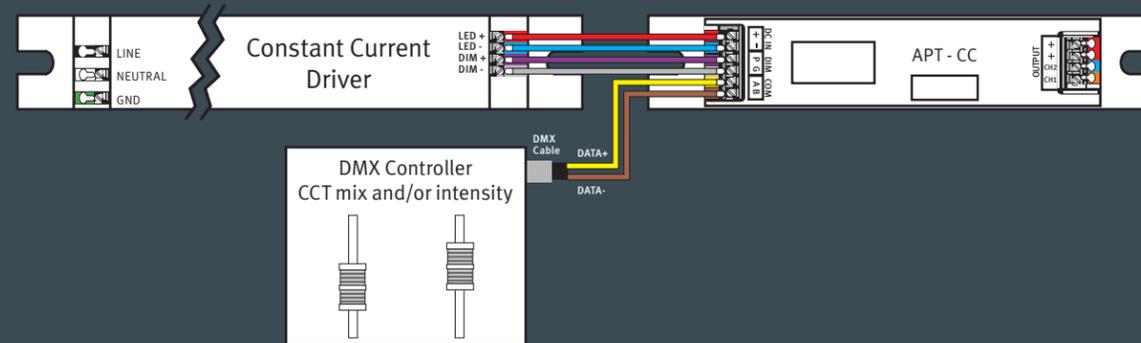
* = Dim minimum limited by driver specs

WIRING DIAGRAM

Dual 0-10V Dimmer Configuration

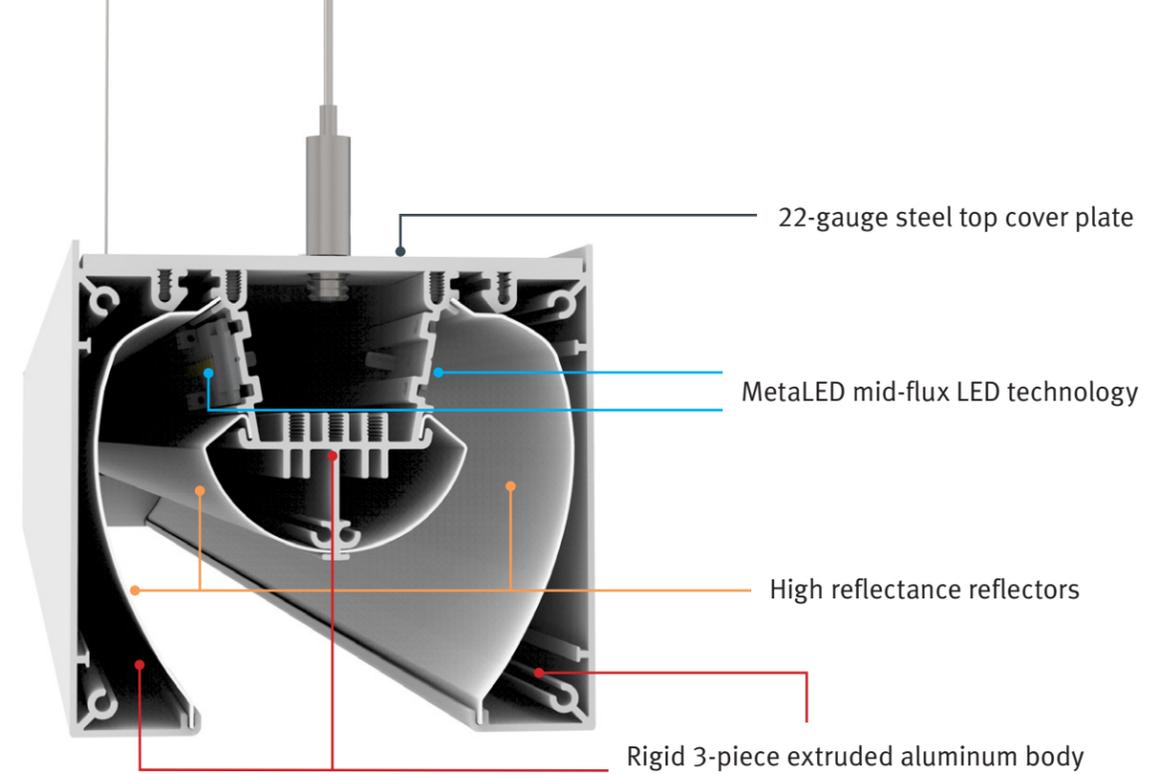


DMX Configuration



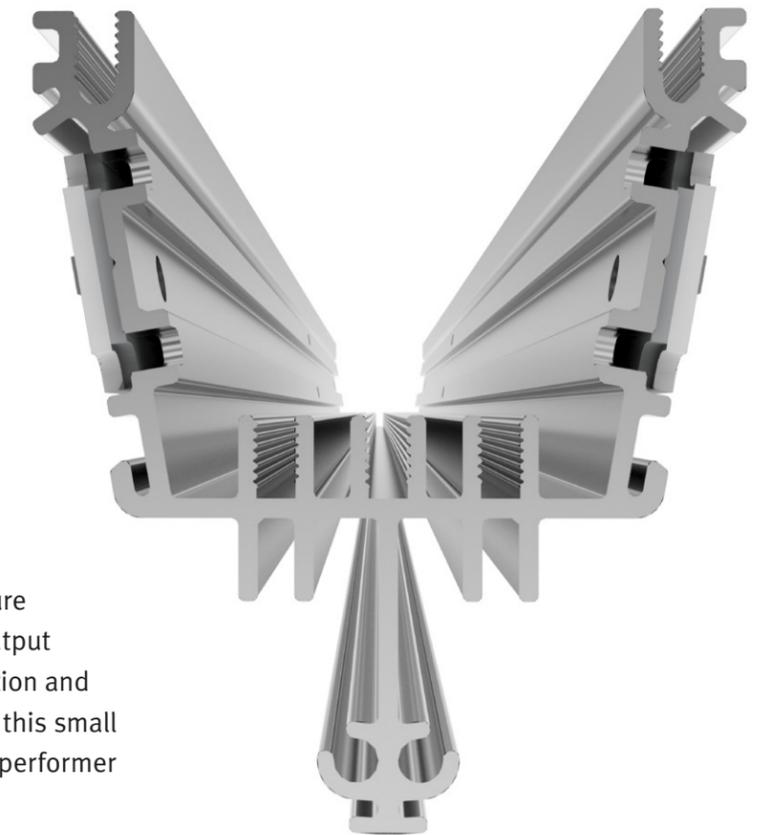
2-White Tunable Control Options (By Others):

- 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

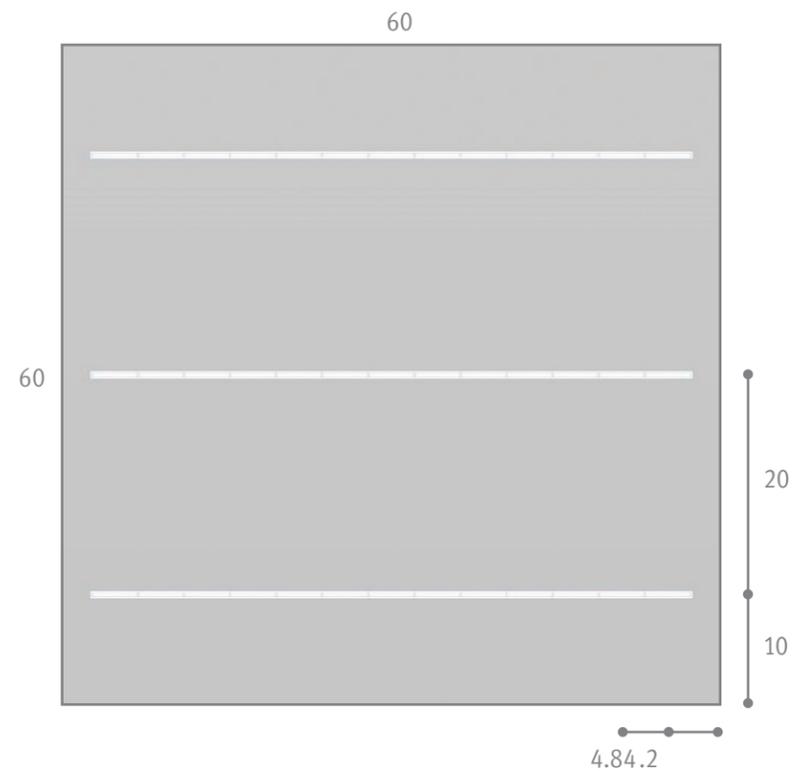
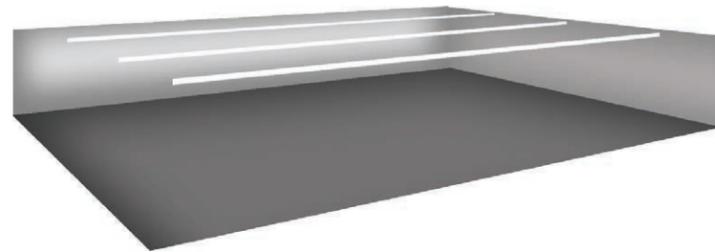
Extrusion and LED-Engine coupling design is engineered for maximum heat dissipation. The finned surface at different angles optimally keep the LED array at low operating temperature maintaining consistent lumen output performance, wattage consumption and long life. Our fixture design puts this small form luminaire with a beast of a performer attitude at L90>60,000h.



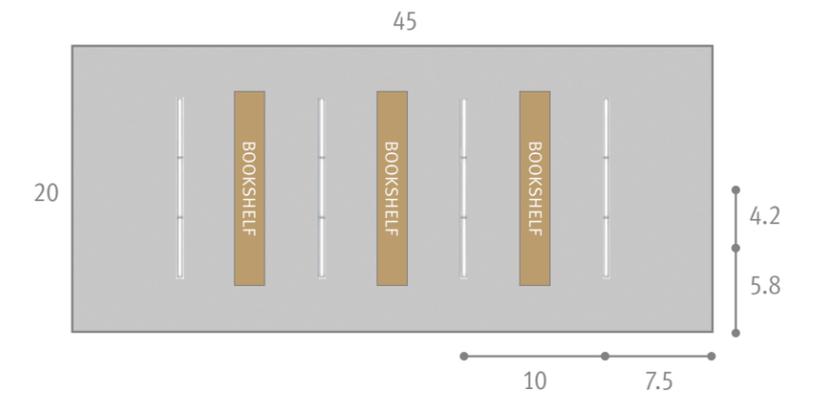
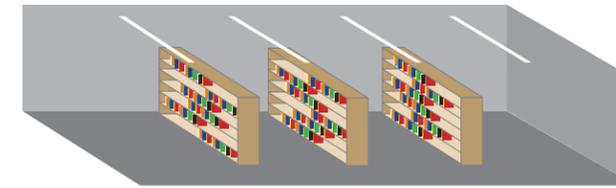
CALCULATION SUMMARIES

Room Type	Open Office	Public Library	Retail Space
Isle Size	-	12 x 6.5'	12 x 6'
Room Size	60 x 60'	20 x 45'	20 x 50'
Ceiling Height	9'	9'	9'
Suspension Height	18"	18"	18"
Catalogue Number	M4PI-3L35K-4-ULL1	M4PI-3L35K-4-ULL1	M4PI-3L35K-4-ULL1
Number of 4' Luminaires	3 runs @ 52'	4 runs @ 12'	6 runs @ 12'
Watts/4' luminaires	38W	38W	38W
Lumens/4' luminaires	3738	3738	3738
Avg. Vertical/Stack Light Level	18 FC	44 FC	40 FC
Avg. Horizontal/Floor Light Level	35 FC	36 FC	49 FC
Spacing	20' OC	9' OC	8.5' OC
Lighting Power Density	0.41 W/ ft ²	0.51 W/ft ²	0.69 W/ft ²

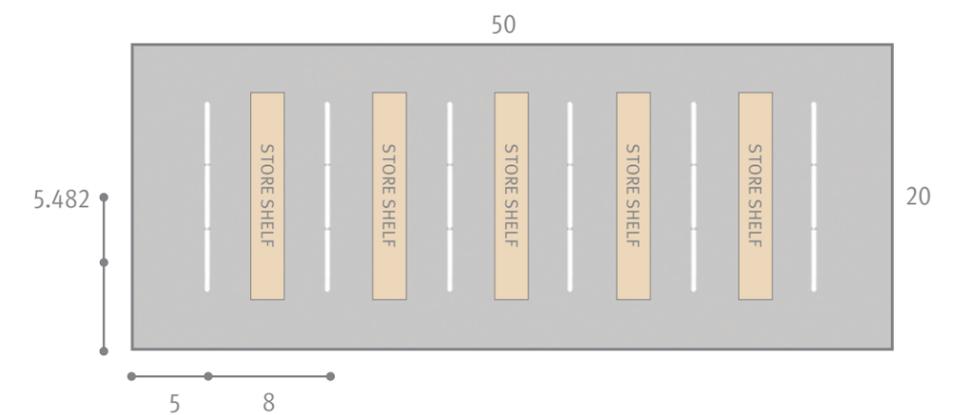
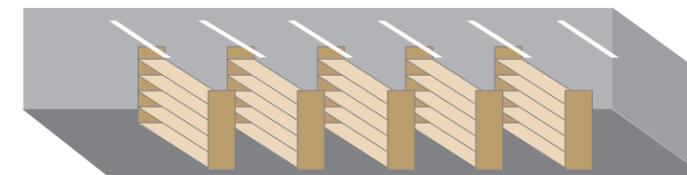
Open Office



Public Library



Retail Space



SYSTEM ENERGY & MAINTENANCE SAVINGS

Study Perimeters: Open Office 80 x 60' | Ceiling Height: 9' | 5 continuous runs | Reflectance: 80/50/20

Annual Operating Cost Energy & Lamp Maintenance



System Energy & Maintenance Cost Summary

	LED	Traditional
Total Initial Fixture/Installation Cost	\$30,900	\$26,845
Total System kW	2.29	4.03
Annual kWh	8,359	14,710
Cost of Energy per kWh	\$0.120	\$0.120
kWh Inflation Rate (%/yr)	1.00%	1.00%
Average Annual Energy Cost	\$1,049	\$1,847
Average Annual Maintenance Cost	\$0	\$1,596
Average Annual Energy & Maintenance Costs	\$1,049	\$3,443
Average Annual Energy & Maintenance Savings	\$2,394	

Payback Analysis

Average Annualized Savings Per Year

Annual Energy Savings	\$797
Annual Lamp Maintenance Savings	\$1,596
Annual Combined Savings	\$2,394
Cost of Waiting (Monthly)	\$199
Simple Payback (years)	1.69
IRR (%)	58%
10 Year Cash Flow (Energy & Lamp Maintenance)	\$19,882

	Savings		Cost/year	
	Annual	Cumulative	LED	Traditional
1st Year	\$762	\$762	\$1,003	\$1,765
5th Year	\$2,374	\$7,815	\$1,023	\$3,397
10th Year	\$2,394	\$19,882	\$1,049	\$3,443

10 Year Total	Savings	Cost	
	\$23,937	LED	Traditional
		\$10,494	\$34,431

*** Calculation is based on actual LED fixture used in comparison to a 2-T5 28W 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.



LED VS. FLUORESCENT ENERGY SAVINGS

4' M4P / M4S

Light Level	Wattage	Lumens Delivered	Efficacy (LPW)	Fluorescent Equivalent	Energy Savings*
L1	28	2437	88	1T8/1T5	29%
L2	35	3101	88	2T8/2T5	45%
L3	48	4457	93	1T5HO	23%
L4	97	8523	88	2T5HO	22%

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

COMPETITION COMPARISONS

Public Library | Room Size: 50 x 50' | Ceiling Height: 9' w/18" suspension | 4 runs @ 12'

	Metalumen M4PI M4PI-2L35K-4-C-N-ULL1	Competitor A
Delivered Lumens	3299	3400
Input Power (Watts)	35	33.5
Delivered LPW	95	101
Watts/Sq.Ft.	0.71	0.68
Horizontal Avg. Fc	44	39
Horizontal Max Fc	62	58
Horizontal Min Fc	1	1.79
Max/Avg	1.41	1.49
Vertical Avg. Fc	34	28

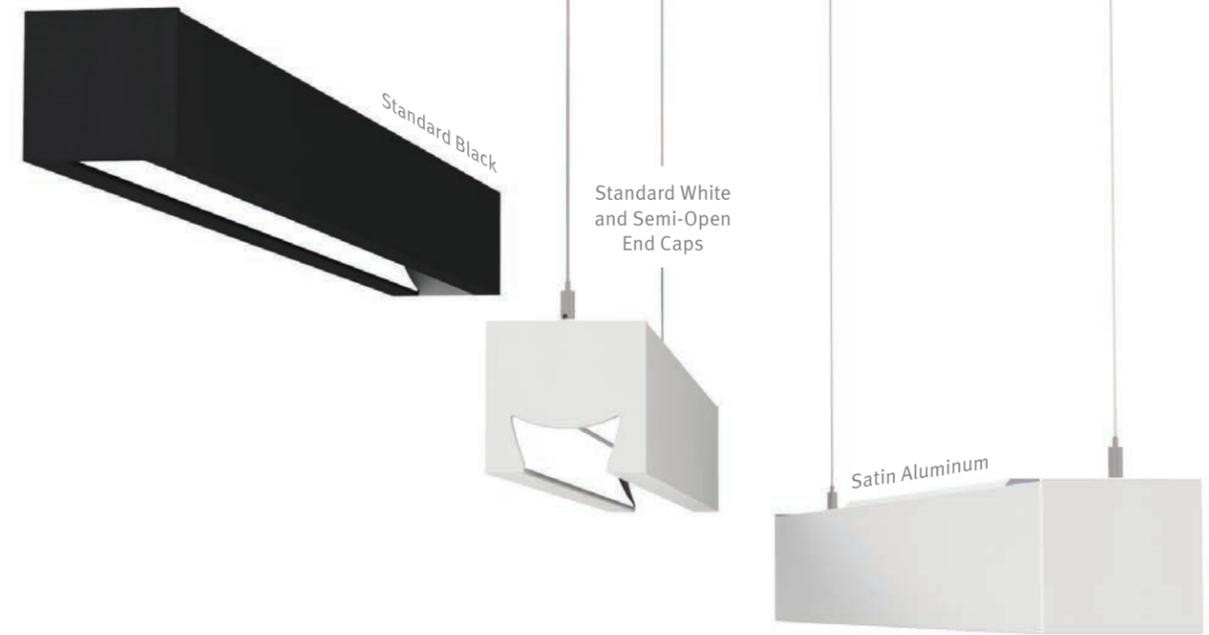
	Metalumen M4PI M4PI-2L35K-4-C-N-ULL1	Competitor B
Delivered Lumens	3299	3322
Input Power (Watts)	35	39
Delivered LPW	95	85
Watts/Sq.Ft.	0.71	0.80
Horizontal Avg. Fc	44	45
Horizontal Max Fc	62	71
Horizontal Min Fc	1	1.39
Max/Avg	1.41	1.58
Vertical Avg. Fc	34	30

ORDERING LOGIC M4P & M4S

Example Part Number

M4P - 2L35K - 4 - N N - SA - L3 1 - PA - 4 - N R - O
 Model Color Temp Length Opt. Up Opt. Down Finish LL/Driver Circuitry Mounting Voltage Control DL End Cap

Model	Length	Finish	Light Level (LL) / Driver	Mounting	Control															
M4P = Pendant	2 = 2 ft	B = Black	Fixture Lumens Light level measured at 3500K. Add 3% lumen output for 4000K or subtract 2% lumen output for 3000K. <table border="1"> <tr> <th colspan="2">0-10V Dimming (Standard)</th> <th>3500k</th> </tr> <tr> <td>L1</td> <td>=</td> <td>2437</td> </tr> <tr> <td>L2</td> <td>=</td> <td>3101</td> </tr> <tr> <td>L3</td> <td>=</td> <td>4457</td> </tr> <tr> <td>L4</td> <td>=</td> <td>8523</td> </tr> </table> Based on 4ft sections.	0-10V Dimming (Standard)		3500k	L1	=	2437	L2	=	3101	L3	=	4457	L4	=	8523	PA = Pendant Aircraft Cable (M4P)	N = None (Integral Driver 0-10V)
0-10V Dimming (Standard)		3500k																		
L1	=	2437																		
L2	=	3101																		
L3	=	4457																		
L4	=	8523																		
M4S = Surface	4 = 4 ft	SA = Satin Aluminum		PT = Pendant Aircraft Cable for T-Bar (M4P)	X = Module to DMX **															
Color Temp	8 = 8 ft	W = White		SS = Solid Stem (M4P)	V = Module to 2-dimmers **															
2L30K = 3000K	R = Continuous Rows ***	C = Custom Finish Specify RAL#:		PP = Power Over Aircraft Cable *** (M4P)	Drive Location (DL)															
2L35K = 3500K	Optics Up			S = Surface (M4S)	N = None (M4P only) (Mounted Integral)															
2L40K = 4000K	N = None			Voltage	R = Remote Driver Box ***															
2LTUN = 2-White Tunable* (2700 - 6500K)	Optics Down		Circuitry	1 = 120 V	RC = Remote Surface Canopy *** (M4P only)															
	N = None		1 = 1 Circuit	2 = 277 V	End Cap Options															
				3 = 347 V	O = Open (Standard)															
				4 = UNV (120-277 V)	C = Closed															
					X = Custom ***															



M4PI

Example Part Number

M4PI - 3L35K - 4 - C N - SA - UML3 1 - PA - 4 - N R - O
 Model Color Temp Length Opt. Up Opt. Down Finish LL/Driver Circuitry Mounting Voltage Controls DL End Cap

Color Temp	Optics Up	Light Level (LL) / Driver	Voltage	Controls																																				
3L30K = 3000K	C = Clear Dust Cover	Fixture Lumens Light level measured at 3500K. Add 3% lumen output for 4000K or subtract 2% lumen output for 3000K. <table border="1"> <tr> <th colspan="4">0-10V Dimming (Standard)</th> </tr> <tr> <th>Uplight Level</th> <th>Downlight Level</th> <th>Code</th> <th>Lumens</th> </tr> <tr> <td rowspan="3">Low Up</td> <td rowspan="3">Medium Up</td> <td>L1</td> <td>ULL1 = 3738</td> </tr> <tr> <td>3500K</td> <td>UML1 = 4093</td> </tr> <tr> <td>UHL1 = 4810</td> </tr> <tr> <td rowspan="3">Low Up</td> <td rowspan="3">Medium Up</td> <td>L2</td> <td>ULL2 = 4406</td> </tr> <tr> <td>3500K</td> <td>UML2 = 4760</td> </tr> <tr> <td>UHL2 = 5480</td> </tr> <tr> <td rowspan="3">Low Up</td> <td rowspan="3">Medium Up</td> <td>L3</td> <td>ULL3 = 5761</td> </tr> <tr> <td>3500K</td> <td>UML3 = 6115</td> </tr> <tr> <td>UHL3 = 6834</td> </tr> <tr> <td rowspan="3">Low Up</td> <td rowspan="3">Medium Up</td> <td>L4</td> <td>ULL4 = 9845</td> </tr> <tr> <td>3500K</td> <td>UML4 = 10194</td> </tr> <tr> <td>UHL4 = 10918</td> </tr> </table> Based on 4ft sections.	0-10V Dimming (Standard)				Uplight Level	Downlight Level	Code	Lumens	Low Up	Medium Up	L1	ULL1 = 3738	3500K	UML1 = 4093	UHL1 = 4810	Low Up	Medium Up	L2	ULL2 = 4406	3500K	UML2 = 4760	UHL2 = 5480	Low Up	Medium Up	L3	ULL3 = 5761	3500K	UML3 = 6115	UHL3 = 6834	Low Up	Medium Up	L4	ULL4 = 9845	3500K	UML4 = 10194	UHL4 = 10918	1 = 120 V	N = None (Integral Driver 0-10V)
0-10V Dimming (Standard)																																								
Uplight Level	Downlight Level	Code	Lumens																																					
Low Up	Medium Up	L1	ULL1 = 3738																																					
		3500K	UML1 = 4093																																					
		UHL1 = 4810																																						
Low Up	Medium Up	L2	ULL2 = 4406																																					
		3500K	UML2 = 4760																																					
		UHL2 = 5480																																						
Low Up	Medium Up	L3	ULL3 = 5761																																					
		3500K	UML3 = 6115																																					
		UHL3 = 6834																																						
Low Up	Medium Up	L4	ULL4 = 9845																																					
		3500K	UML4 = 10194																																					
		UHL4 = 10918																																						
3L35K = 3500K	Optics Down		2 = 277 V	X = Module to DMX **																																				
3L40K = 4000K	N = None		3 = 347 V *	V = Module to 2-dimmers **																																				
3LTUN = 2-White Tunable* (2700 - 6500K)	Finish		4 = UNV (120 - 277 V)	Driver Location																																				
Length	B = Black		Circuitry	N = None (mounted integral)																																				
2 = 2 ft	SA = Satin Aluminum		1 = 1 Circuit	R = Remote Driver Box ***																																				
4 = 4 ft	W = White		UD = Up/Down Switching	RC = Remote Surface Canopy ***																																				
8 = 8 ft	C = Custom Finish Specify RAL#:		Circuitry	End Cap Options																																				
R = Continuous Rows ***			PA = Pendant Aircraft Cable	O = Open (Standard)																																				
			PT = Pendant Aircraft Cable for T-Bar	C = Closed																																				
			SS = Solid Stem	X = Custom ***																																				

* Remote Mounted Driver Only. Consult factory. | **Available with 2-White Tunable option only. Standard DMX system by others required for option "X", or standard 0-10V dimmers - one for intensity and another for CCT mix required for option "V". | *** Consult factory.

Due to Metalumen's continuous improvement policy, specifications may change without notice.

STANDARD LENGTHS



Continuous rows also available. Please consult factory.

STANDARD FINISHES



Custom finishes available. Specify RAL# in spec sheet.

APPROVALS

Conforming to NRTL safety and IES recommendation testing standards. All components are UL/CSA/QPS recognized or listed. RoHS, LM79, LM80 and LM82 compliant.

ENVIRONMENT

Suitable for dry locations.

WARRANTY

Metalumen will warrant defective luminaires for 5 years from date of purchase. Warranty is valid if luminaire is installed and used according to specification. If defective, Metalumen will send replacement boards or drivers at no cost along with detailed replacement instructions and instructions on how to return defective components to Metalumen.





MEGA
M4P & M4PI Pendant Series
M4S Surface Series
LED Linear Luminaires

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