ARCHES LED
PENDANT - SURFACE

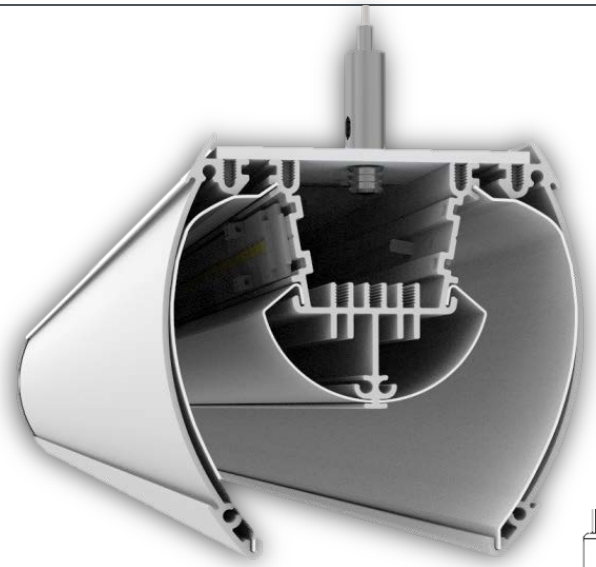
Metalumen

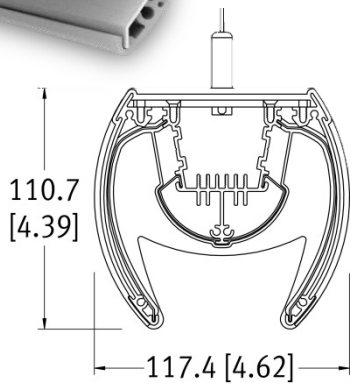
Arches A4 Series

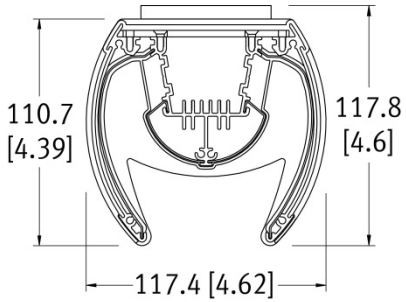
A4P & A4S

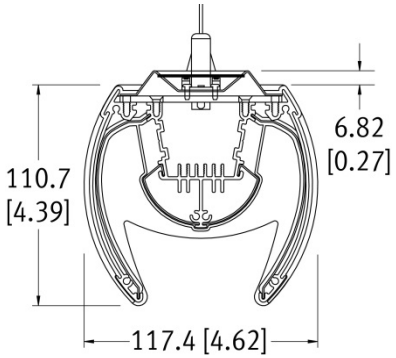
LED Pendant D/DI and Surface

- Floating-Optic® Design
- **No lens = Higher efficacy**
- **Batwing distribution pattern for optimal spacing**
- Quick disconnect wiring for easy maintenance.
- 3 Macadam Ellipses binning.
- **100 % concealed source & Brightness Control – No glare**
- **Controls compatible with 0-10V dimming, Lurton, and DALI**
- Efficacy up to **105 LPW**
- **16 different light levels aside from dimming and Bi-level switching**
- **Interchangeable graphics w/ side panels**
- 2, 4, 8ft & Continuous runs
- **3000k, 3500K & 4000K CCT & Tunable White option**
- LM79 & LM80 compliant
- **L90 ≥ 60,000h by IESNA TM-21**
- UL/CSA
- Suitable for dry locations only
- DLC pending qualifications



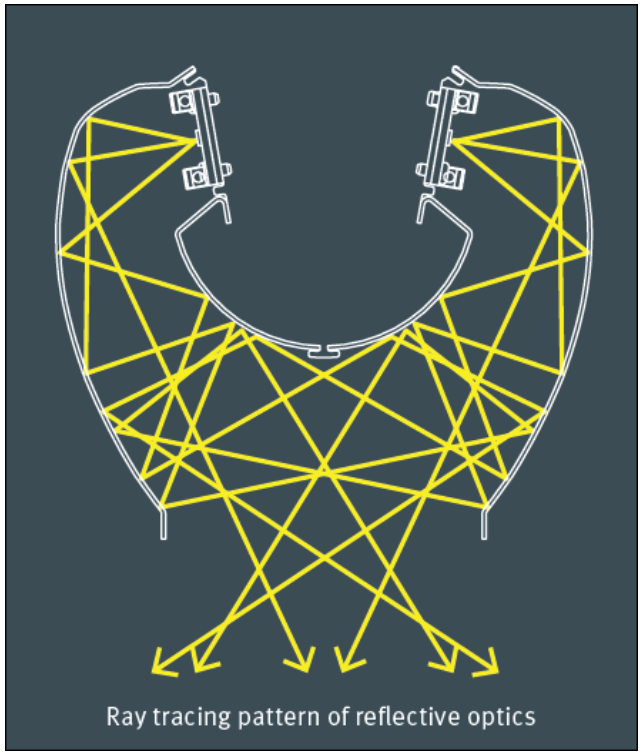






Floating Optic LED

FLOATING OPTIC®



- Eliminates the ‘lens barrier’ in luminaire design
- Designed around the LED engine and high efficient optical system.
- Shapes, bends, and controls the light beam.
- Carefully designed to shape the Batwing Distribution.
- Efficacy improves dramatically.

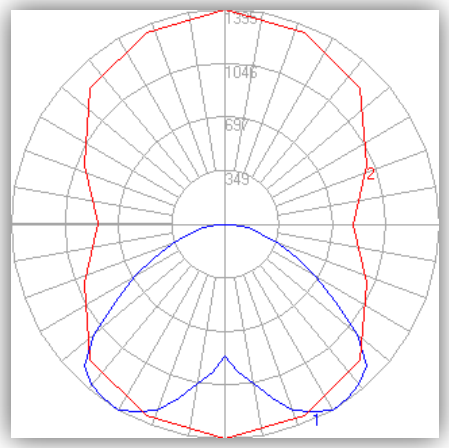
Metalumen

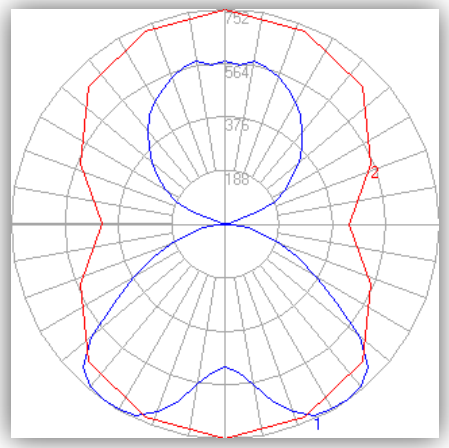
Arches A4 Photometry

A4P, A4PI & A4S

LED Pendant D/DI and Surface

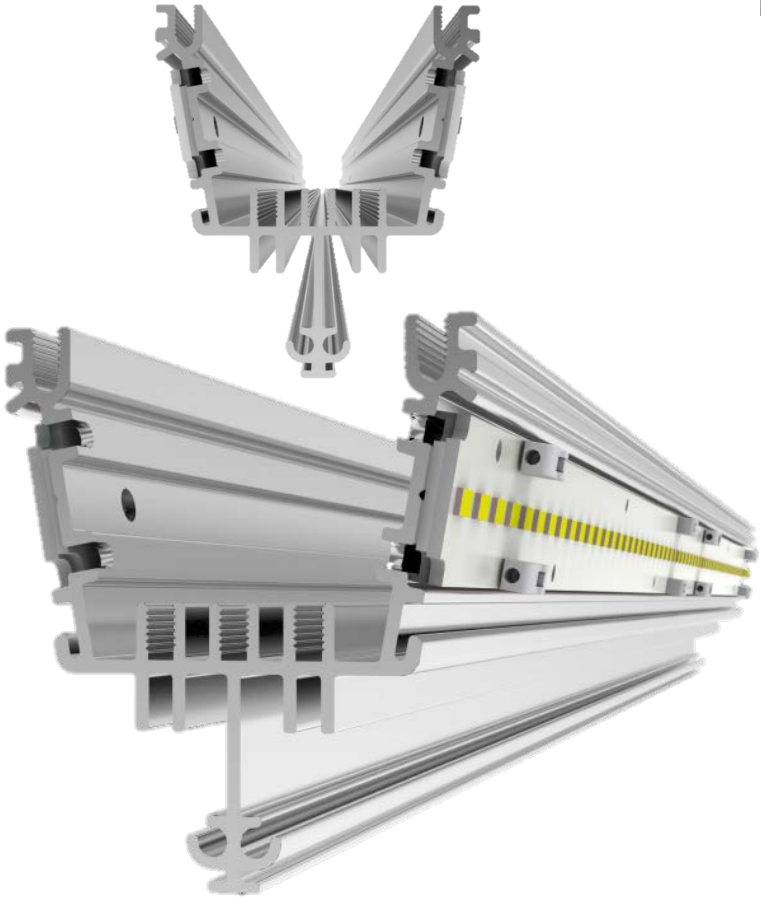
Model Config.	Output (Lumens)	Wattage	Efficacy (L/W)	Down/up (%)
UL/L1	3738	38	98	65/35
UM/L1	4093	41	100	60/40
UH/L1	4810	46	105	50/50
UL/L2	4406	46	96	70/30
UM/L2	4760	49	98	65/35
UH/L2	5480	54	102	57/43
UL/L3	5761	59	98	77/23
UM/L3	6115	62	99	73/27
UH/L3	6834	67	102	65/35
UL/L4	9845	108	91	86/14
UM/L4	10194	110	92	83/17
UH/L4	10918	115	95	78/22
L1	2437	27.7	88	100% Down
L2	3101	35.4	88	100% Down
L3	4457	48.6	92	100% Down
L4	8523	97.2	88	100% Down



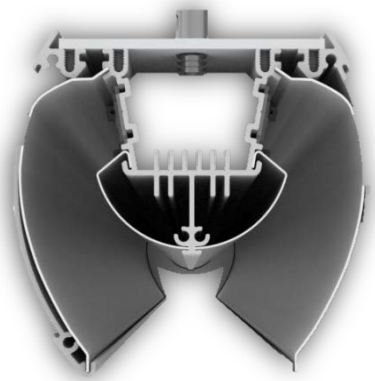


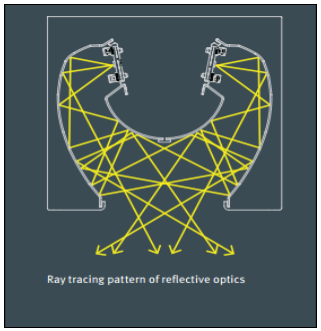
Innovation in Design

Extrusion and LED-Engine coupling design engineered for maximum Heat dissipation



Interchangeable graphics w/ side panels





Optical system perfected for optimal Bat-wing wide distribution with high efficacy and efficiency design

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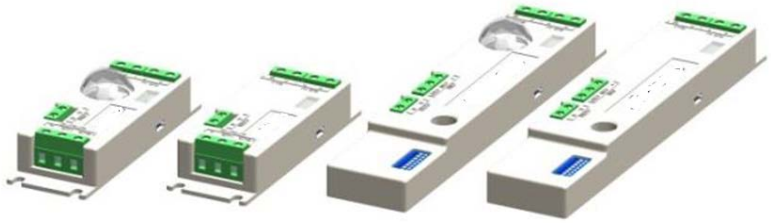
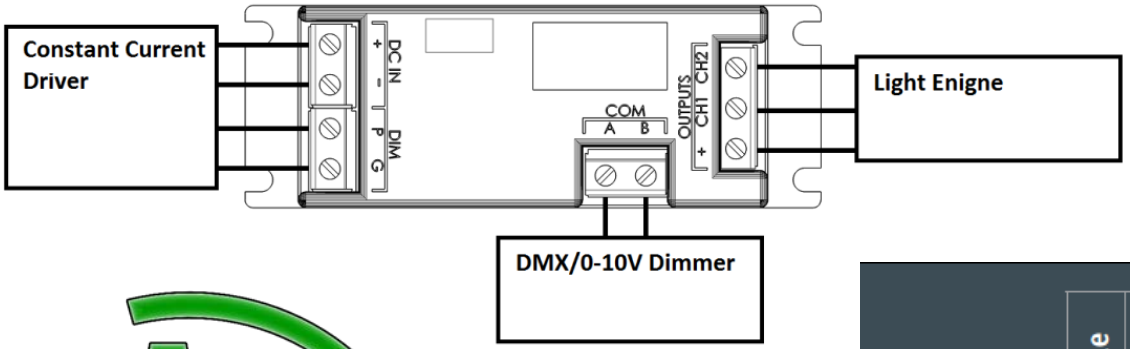
Tunable white Controls

- Tunable white option from 2700K-6500K
- Tunable white with controls via DMX controls
- Remote 0-10V dimming Driver standard
- Max Current Output of 2A & 120W per channel





Available October 2015

OPTION CODES	In-Field Addressable	Max Output Channels	Control over Driver Dim	CCT Channel Mix	0-10V Dim	Daylight Harvest	IR Control	DMX	Zigbee	Bluetooth	LED COMM
X	●	2	●	●	○	●	●	●			●

○ = 0-10V dim available only directly through constant current driver for DMX module

Metalumen

FL vs. LED

Room Size: 80' X 60' Ceiling Height: 9' w/ 18" suspension Reflectance: 80/50/20 Target Horizontal Avg. FC: 40fc

Space Application
57% less energy
30% less Luminaires

A4PI-3L35K-4-U-N-UL-L2

Settings
Units: Feet - Footcandles

Room Dimensions

Length [X]	80	ft
Width [Y]	60	ft
Height [Z]	9	ft
Workplane	2.5	ft
Ceiling Type	Open	

Room Reflectances

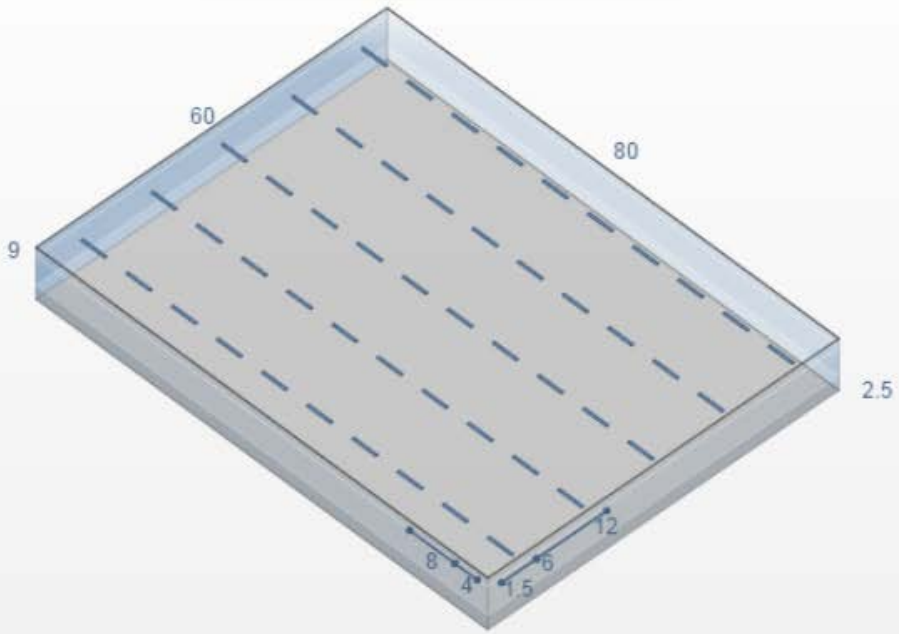
Ceiling	80	%
Walls	50	%
Floor	20	%

Criteria

Illuminance	40	fc
Power Density		W/ft²
Quantity		

Constraints

Spacing X [SC=10.4]		ft
Spacing Y [SC=15.2]		ft
Rows	5	
Columns		



Calculation Results [A4PI]

Illuminance	41 fc
Power Density	0.48 W/ft²
Quantity	50

Spacing Results [A4PI]

Spacing	8 x 12 ft
Arrangement	10 x 5
Outside Spacing X	1.9 ft
Outside Spacing Y	5.82 ft

Comparison

Luminaire	FC	W/FT²	Count
A4PI	41	0.48	50
2T5	42	0.84	65

Display

Dimensions Room ☑ Layout ☑

Hide Zonal Cavity Info [-]

Coefficient of Utilization 0.99

Floor Cavity

Height	2.5	ft
Cavity Ratio	0.37	
Form Factor	0.93	
Effective Reflectance	19.7	%

Room Cavity

Height	5	ft
Cavity Ratio	0.73	
Form Factor	0.87	

Ceiling Cavity

Height	1.5	ft
Cavity Ratio	0.22	
Form Factor	0.96	
Effective Reflectance	76.6	%

4' A4S/A4p Lens-free Luminaire

Light Level	Wattage	Lumens Delivered	Efficacy (LPW)	Fluorescent Equivalent	Energy Savings*
		A4	A4		
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 standrad lamp/ballast combination using an equivilant high efficent FL system

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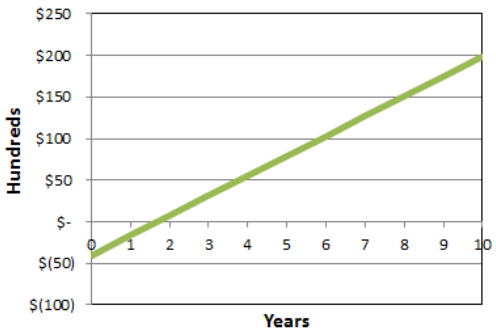
System Energy & Maintenance Savings

LED Payback (Years)



Payback = 1.69 Years

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	

	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

	Savings
10 Year Total	$23,937

Cost	
LED	Traditional
$10,494	$34,431

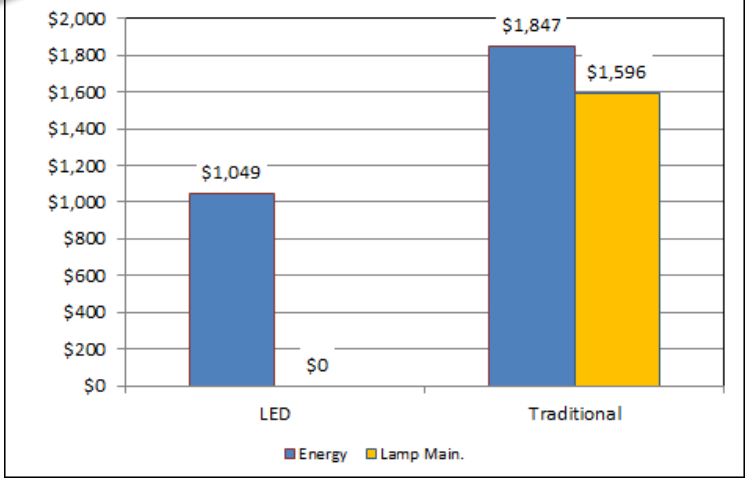
70%
Avg. savings including Energy & maintenance over 5 years

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 Main.)	$ 19,882

Annual Operating Cost: Energy & Lamp Maintenance



***** 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.**

Metalumen

Room Size: 60' X 60'
Ceiling Height: 9' w/ 18" suspension
5 runs X 8 Columns with 13' OC, LLF=0.9
# of fixtures: 40

A4 vs. Competitor

Metalumen A4PI
A4PI-3L35K-4-U-N-UL-L1

vs.

LumenWerx CAVA
CAV-RLO-LED-80-350-500-35-4ft

Settings

Units: Feet - Footcandles

Room Dimensions

Length [X]	60	ft
Width [Y]	60	ft
Height [Z]	9	ft
Workplane	2.5	ft
Ceiling Type	Open	

Room Reflectances

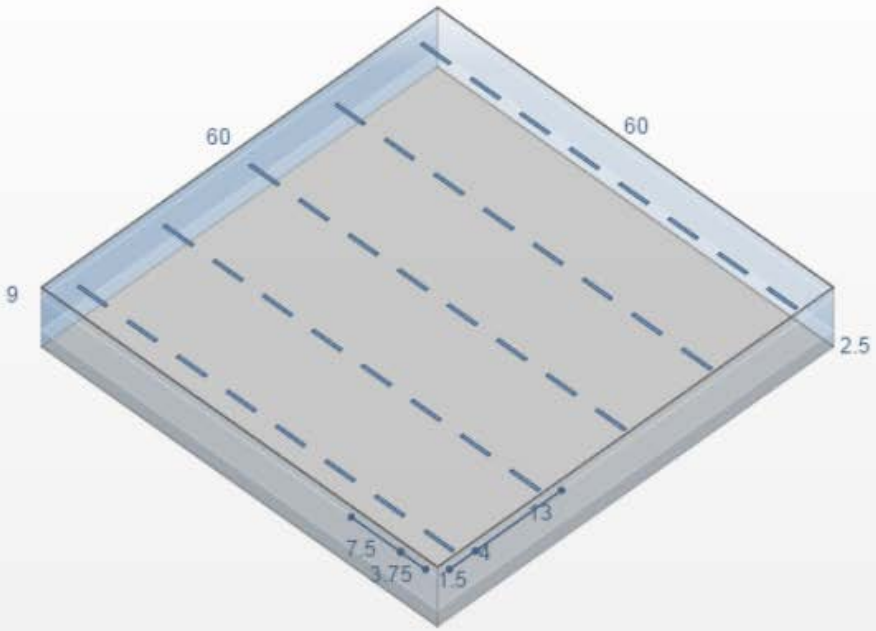
Ceiling	80	%
Walls	50	%
Floor	20	%

Criteria

Illuminance		fc
Power Density		W/ft²
Quantity		

Constraints

Spacing X [SC=10.4]	0	ft
Spacing Y [SC=15.2]	13	ft
Rows	5	
Columns	8	



Calculation Results [A4PI]

Illuminance	36 fc
Power Density	0.42 W/ft²
Quantity	40

Spacing Results [A4PI]

Spacing	7.5 x 13 ft
Arrangement	8 x 5
Outside Spacing X	1.65 ft
Outside Spacing Y	3.82 ft

Comparison

Luminaire	FC	W/FT²	Count
A4PI	36	0.42	40
CAVA	30	0.37	40

Display

Dimensions Room ☑ Layout ☑

Hide Zonal Cavity Info [-]

Coefficient of Utilization	0.96	
Floor Cavity		
Height	2.5	ft
Cavity Ratio	0.42	
Form Factor	0.92	
Effective Reflectance	19.7	%
Room Cavity		
Height	5	ft
Cavity Ratio	0.83	
Form Factor	0.85	
Ceiling Cavity		
Height	1.5	ft
Cavity Ratio	0.25	
Form Factor	0.95	
Effective Reflectance	76.1	%

Room Size: 60' X 60'
Ceiling Height: 9' w/ 18" suspension
5 runs X 8 Columns with 13' OC, LLF=0.9
# of fixtures: 40

A4 vs. Competitor

Metalumen A4PI
A4PI-3L35K-4-U-N-UH-L1
(Dimmed*)

VS.

FluxWerx Profile
PR1-AD35
(Highest Output)

Settings

Units: Feet - Footcandles

Room Dimensions

Length [X]	60	ft
Width [Y]	60	ft
Height [Z]	9	ft
Workplane	2.5	ft
Ceiling Type	Open	

Room Reflectances

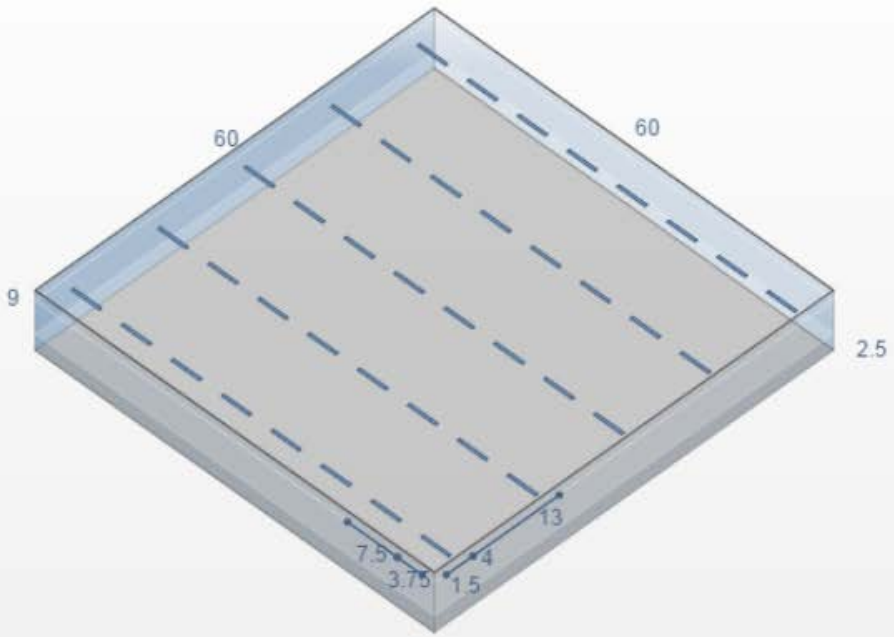
Ceiling	80	%
Walls	50	%
Floor	20	%

Criteria

Illuminance		fc
Power Density		W/ft²
Quantity		

Constraints

Spacing X [SC=10.5]	0	ft
Spacing Y [SC=15.3]	13	ft
Rows	5	
Columns	8	



You can now click and drag to rotate the room

Calculation Results [A4PI]

Illuminance	44 fc
Power Density	0.51 W/ft²
Quantity	40

Spacing Results [A4PI]

Spacing	7.5 x 13 ft
Arrangement	8 x 5
Outside Spacing X	1.65 ft
Outside Spacing Y	3.82 ft

Comparison

Luminaire	FC	W/FT²	Count
A4PI	44	0.51	40
PROFIL	38	0.55	40

Display

Dimensions Room ☑ Layout ☑

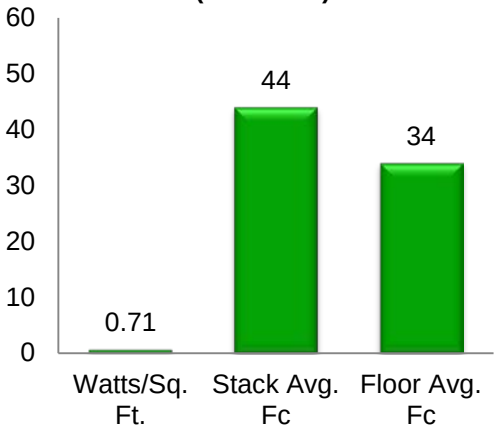
Hide Zonal Cavity Info [-]

Coefficient of Utilization	0.92
Floor Cavity	
Height	2.5 ft
Cavity Ratio	0.42
Form Factor	0.92
Effective Reflectance	19.7 %
Room Cavity	
Height	5 ft
Cavity Ratio	0.83
Form Factor	0.85
Ceiling Cavity	
Height	1.5 ft
Cavity Ratio	0.25
Form Factor	0.95
Effective Reflectance	76.1 %

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

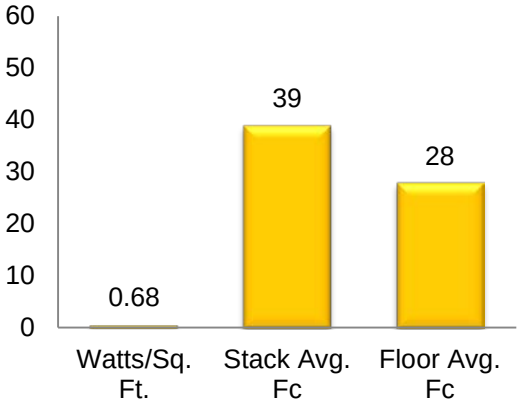
A4 vs. Competitor

Metalumen A4P
A4P-2L35K-4-U-N-UL-L1
(Dimmed*)

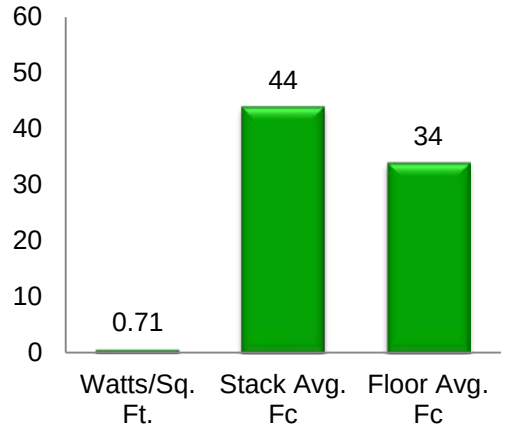


3299	Delivered Lumens	3400
35	Input Power (Watts)	33.5
95	Delivered LPW	101
0.71	Watts/Sq. Ft.	0.68
44	Horizontal Avg. Fc	39
62	Horizontal Max Fc	58
1	Horizontal Min Fc	1.79
1.41	Max/Avg	1.49
34	Vertical Avg. Fc	28

LumenWerx CAVA
CAV-RLO-LED-80-350-500-35-4ft

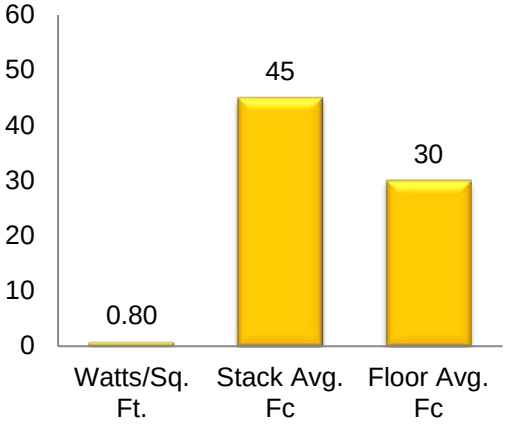


Metalumen A4P
A4P-2L35K-4-U-N-UL-L1
(Dimmed*)



3299	Delivered Lumens	3322
35	Input Power (Watts)	39
95	Delivered LPW	85
0.71	Watts/Sq. Ft.	0.80
44	Horizontal Avg. Fc	45
62	Horizontal Max Fc	71
1	Horizontal Min Fc	1.39
1.41	Min/Max	1.58
34	Vertical Avg. Fc	30

FluxWerx Profile
PR1-AC35
(Low Output)



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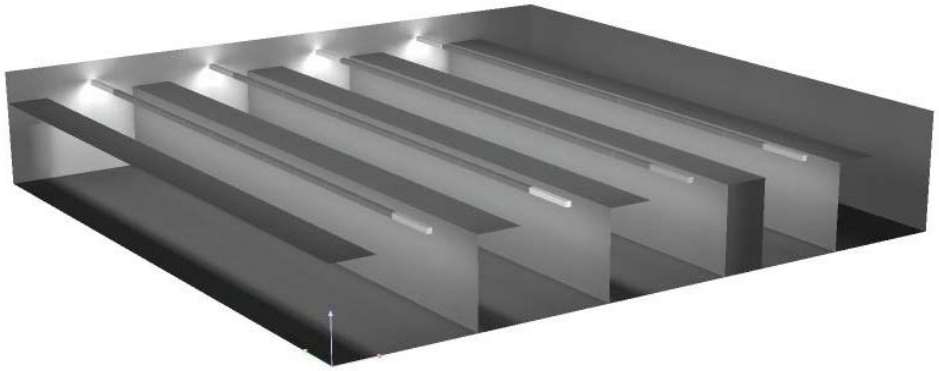
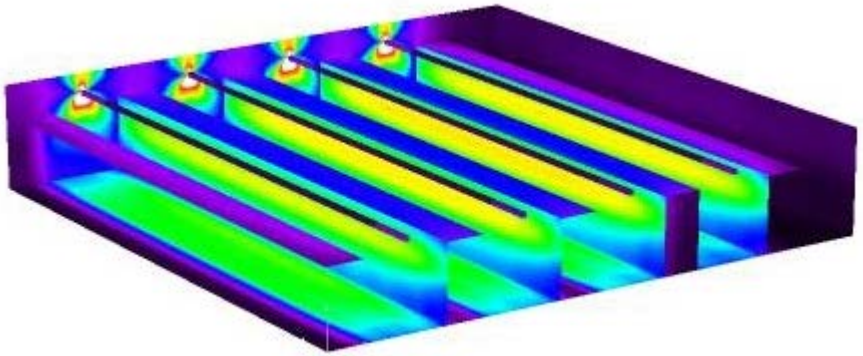
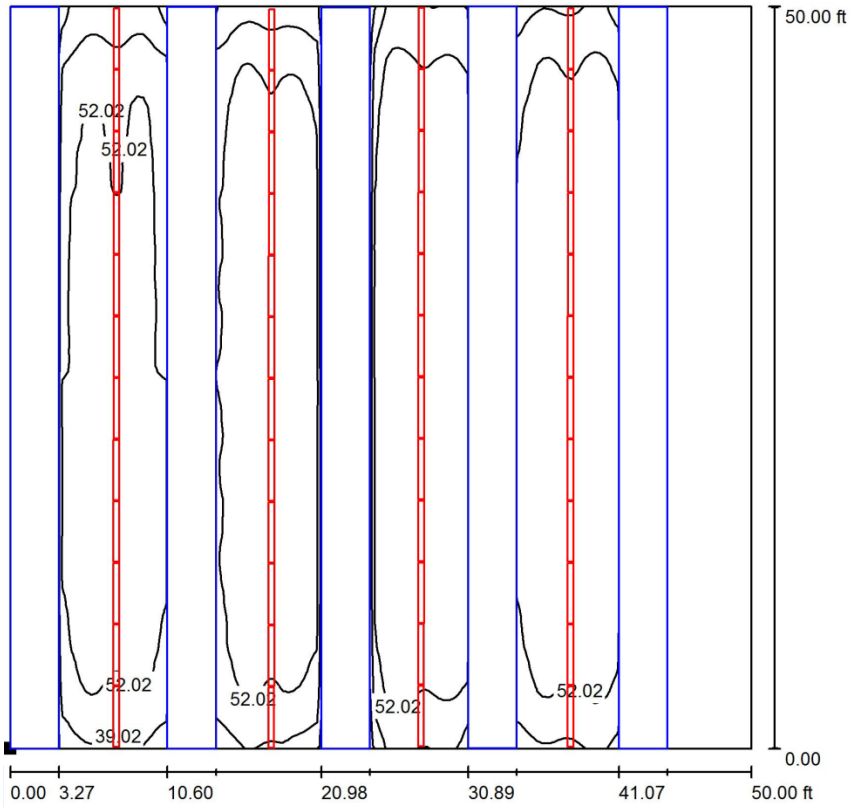
Public Library Calculation



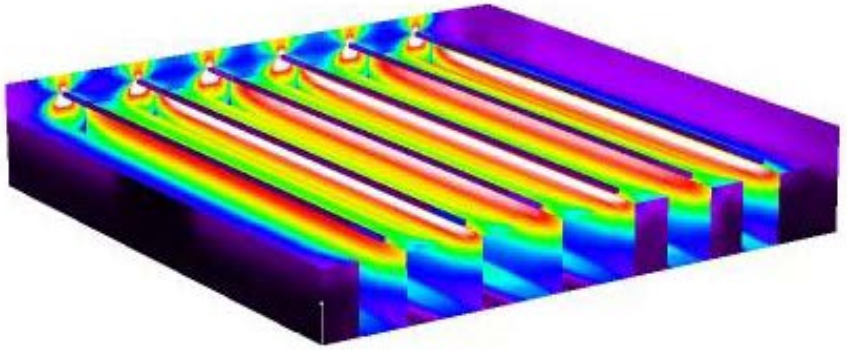


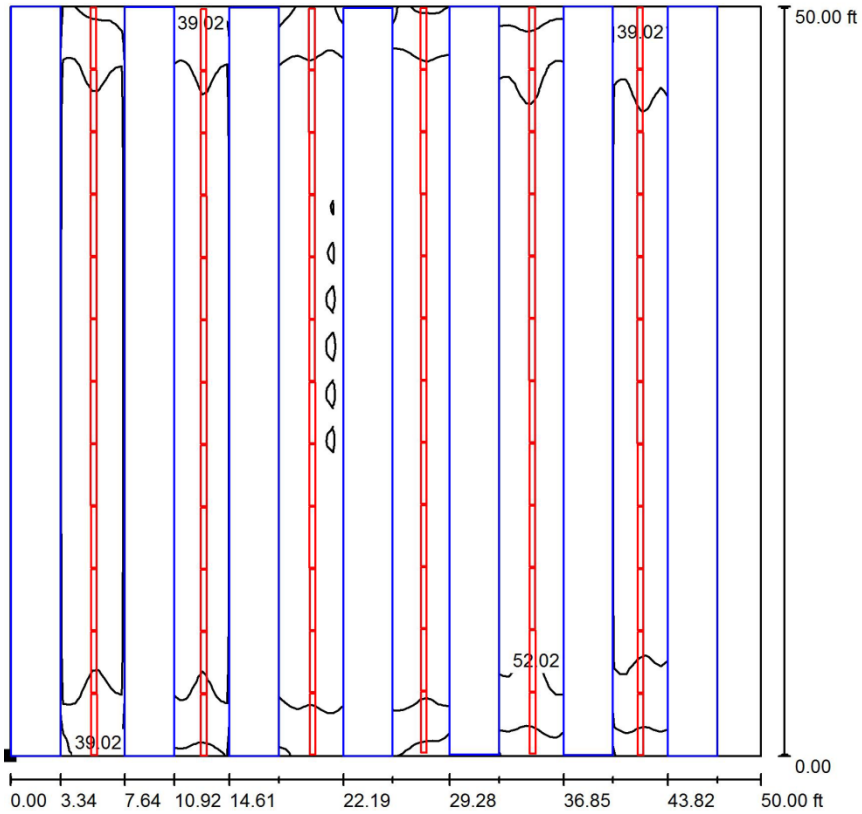


Min IES Recommendation (Stack reading):
Work-plane: 46fc
Stack.: 18fc

Public Library Calculation Summary Isle size: 12' X 6.5' Room Size: 50' X 50' Ceiling Height: 9’ w/ 18” suspension	
Catalogue Number	A4PI-3L35K
Number of Luminaires	4 runs @ 12'
Watts/ 4’ Luminaires	36.6W
Lumens/ 4’ Luminaires	3536
Avg. Work-plane Horizontal Light Level	46 FC
Avg. Stack Vertical Light Level	38 FC
Spacing	9’ OC
Lighting Power Density	0.7 W/SF

Retail Space Calculation





Min IES Recommendation (General retail/Circulation):
Horizontal: 47fc
Vertical: 19fc

Public Library Calculation Summary Isle size: 12' X 6' Room Size: 50' X 50' Ceiling Height: 9’ w/ 18” Suspension	
Catalogue Number	A4PI-3L35K
Number of Luminaires	6 runs @ 12'
Watts/ 4’ Luminaires	34W
Lumens/ 4’ Luminaires	3299
Avg. Horizontal Light Level	50 FC
Avg. Stack Vertical Light Level	37 FC
Spacing	8.5’ OC
Lighting Power Density	0.9 W/SF

Standard Lead time:
Ships in 4-6 weeks

First 4 months of production:
Ships in 8-10 weeks

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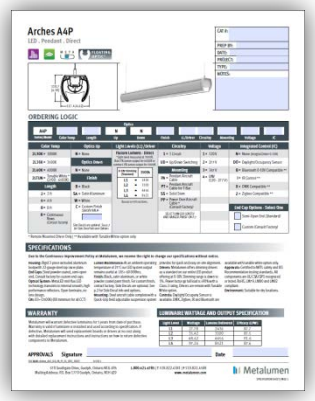
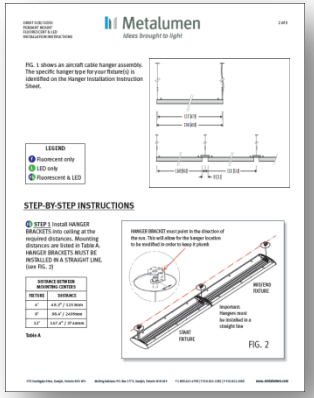
Sales Tools

Brochure

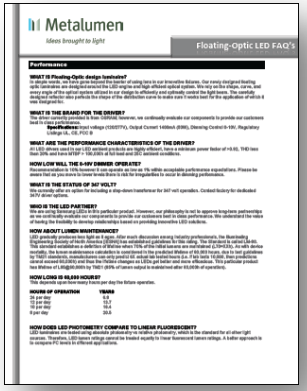


Spec Sheet



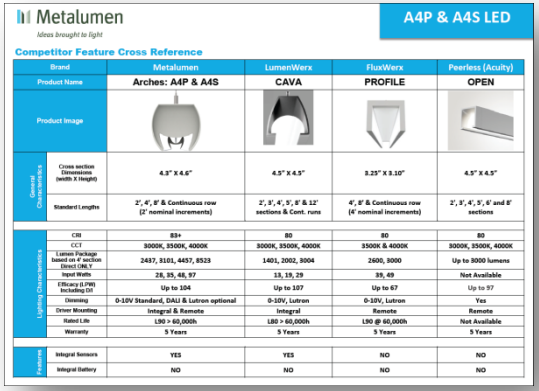
Installation Instructions

IES Files



FAQ Sizzle Sheet

New Product Intro



Competitive Analysis (Agent Portal)

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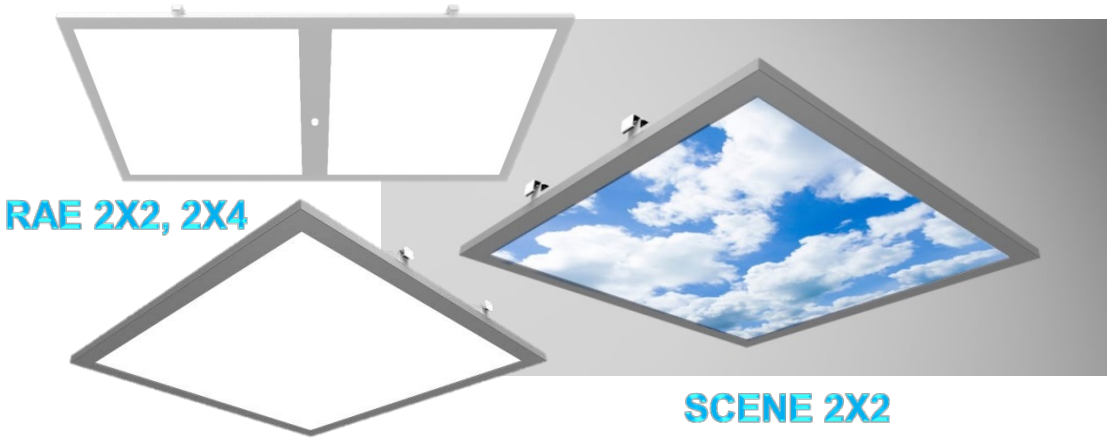
Sales Samples

MODEL	Catalog Logic	Description
DIRECT RECESSED	SMCP-DR25-2L35K-2-N-N-W-L31-T-4	DR25, 3500K, 2FT, L3 DOWNLIGHT, WHITE, T-BAR RECESSED, UNV with C&P.
ARCHES Pendant	SMCP-A4P-2L35K-2-U2-N-B-L21-PA-4	ARCHES, 3500K, 2FT, LEVEL2 UPLIGHT, LEVEL2 DOWNLIGHT, BLACK, PENDANT, UNV with C&P.

MEGA

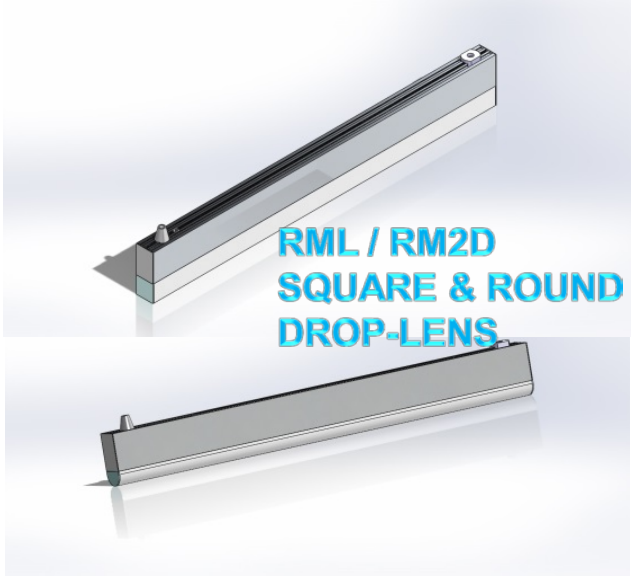
KARV RD & SQ WALL / CELIING

Overview of New fixtures to expect in the upcoming weeks



RAE 2X2, 2X4

SCENE 2X2



RML / RM2D SQUARE & ROUND DROP-LENS

Metalumen