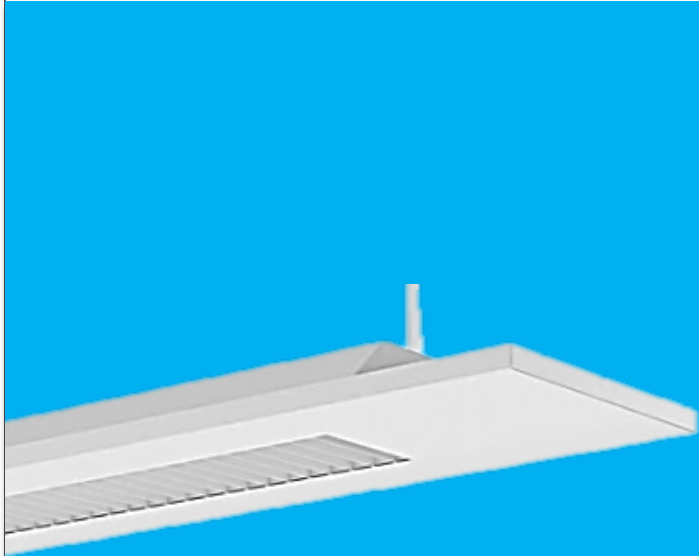


# Planar LED Product introduction

## NOV 2014



## ➤ Breadth of Line

- Pendant: 4', 8', and continuous rows

## ➤ Light Engine Choices

- four Lumen Package Options
- 3 CCTs: (3000K, 3500K, 4000K)
- 83+ CRI
- Binning: 3-step
- L85 at 60,000 hours

## ➤ High Efficacy (4ft)

- Up to 113 LPW
- Ease of Installation
- Quick-Grip field adjustable suspension system

## ➤ Control Flexibility

- Standard 0-10V Dimming Driver
- Occupancy sensor
- Button PC Daylight sense
- Motion sensor
- DALI protocol

## ➤ New warranty

**NEW**

- 5 year Warranty

## ➤ Listings/Compliances

- cULus – 1598
- cULus - Damp Location
- IC Rated
- DLC pending



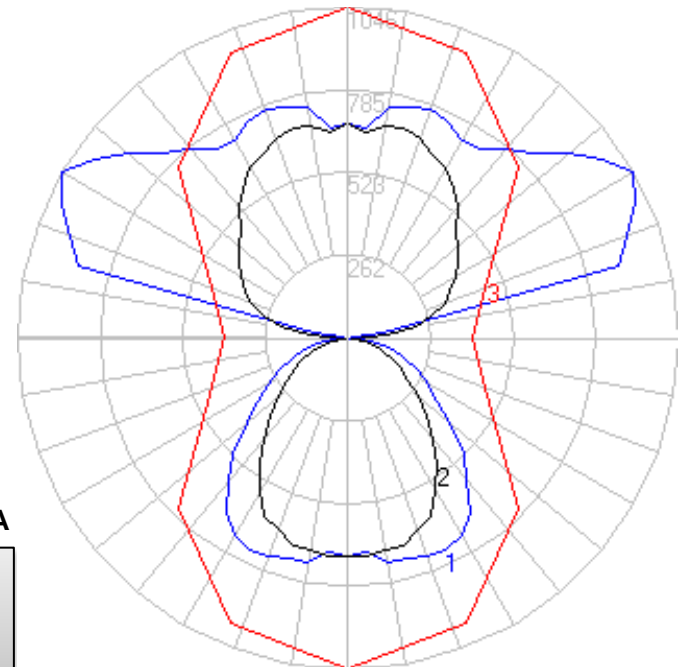
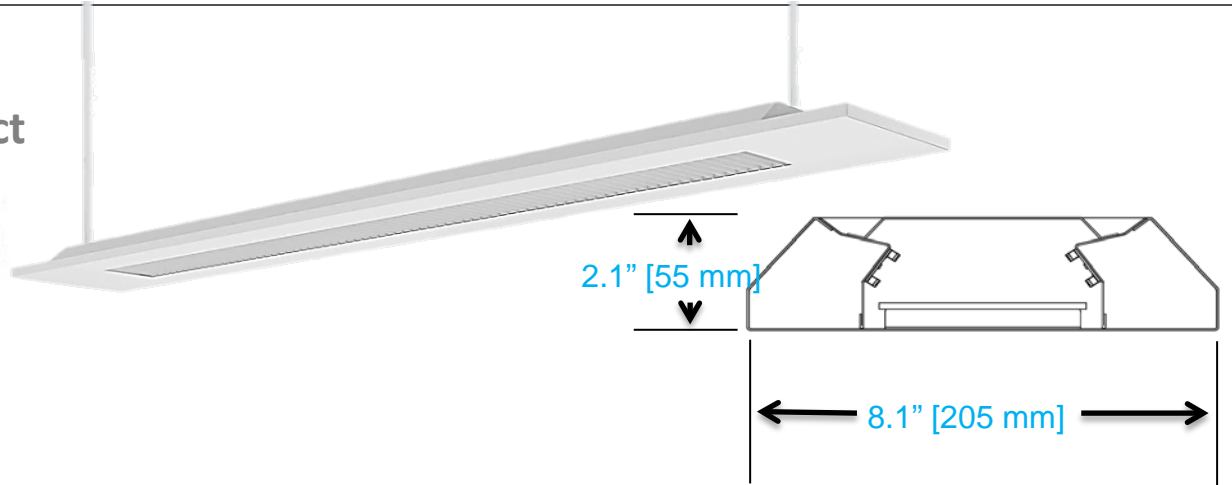
Ideal for Office, Education, Healthcare

# PLANAR S<sub>2</sub>E LED

LED . Pendant . Indirect/Direct



- Architectural Commercial application
- Slim sleek profile
- MetaLED Optical System
- 4', 8' or continuous row.
- 83+ CRI
- White finish (custom finish available)
- 3000, 3500K & 4000K CCT
- Four lumen packages
- Up to 113 L/W
- Pendant application
- 120-277V or 347V
- Class 2 Standard 0-10V Dimming (Down to 10%)
- LM79 & LM80 compliant.
- L85 @ 60,000h By TM21
- cULus certified
- Suitable for dry locations.



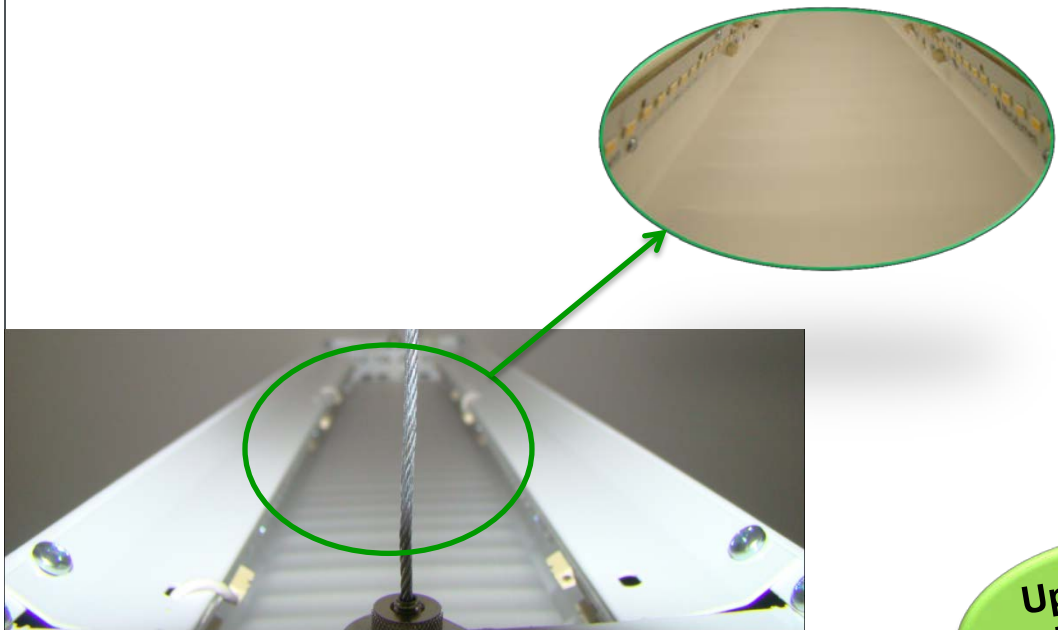
**S2EL35K-4-CSB0-W-L31-PA**

Luminaire Lumens:	5419
Input Watts:	48W
Efficacy (LPW):	113

# Planar S2E Series Suspended, Integral Driver

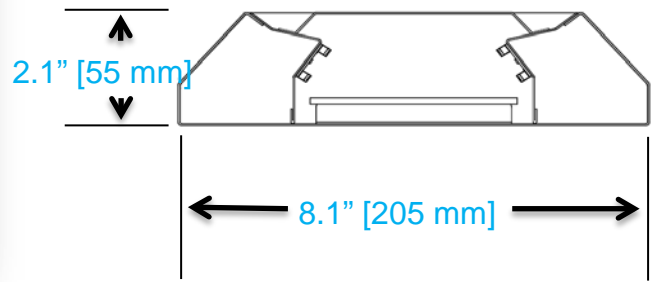
- 4', 8' and Continuous
- Efficacy
  - Up to 113 LPW
- Lumen Packages
  - 2967, 3780, 5419, 10386
- Integral Controls

**Up to 50%  
Energy  
Savings**



4' Planar Suspended and surface LED light Level Outputs					
Light Level	Wattage	Lumens Delivered	Efficacy (LPW)	Fluorescent Equivalent	Energy Savings *
L1	27	2967	109	1T8/T5	48%
L2	35	3780	109	2T8/T5HO	36%
L3	48	5419	113	3T8/2T5/T5HO	50%
L4	96	10386	109	3T5HO	46%

\* Energy Savings based upon stabdrad lamp/ballast combination using an equivalent S2E series with Opal inlay

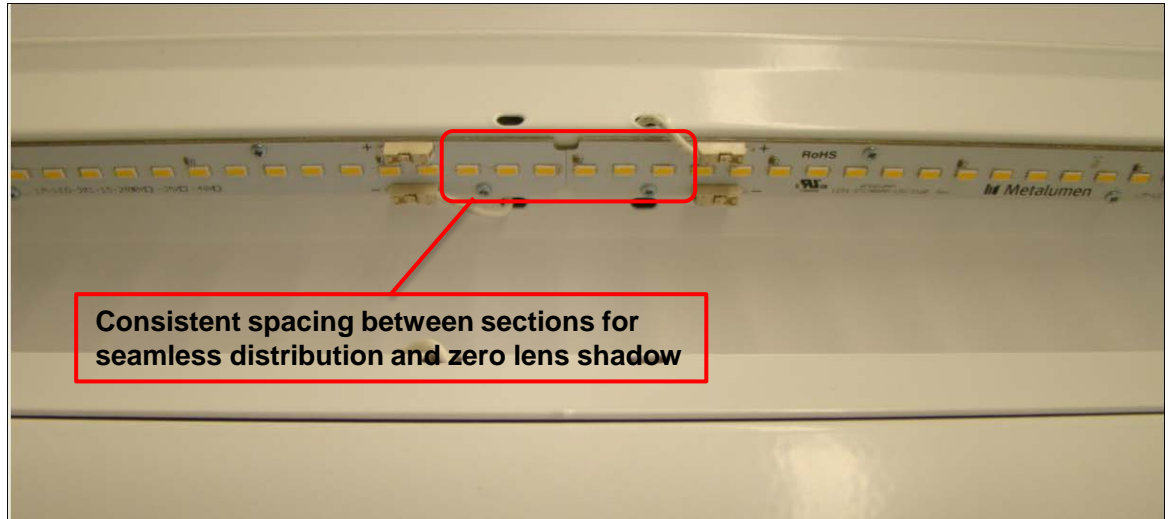


# Metalumen's *NEW* LED Light Engine

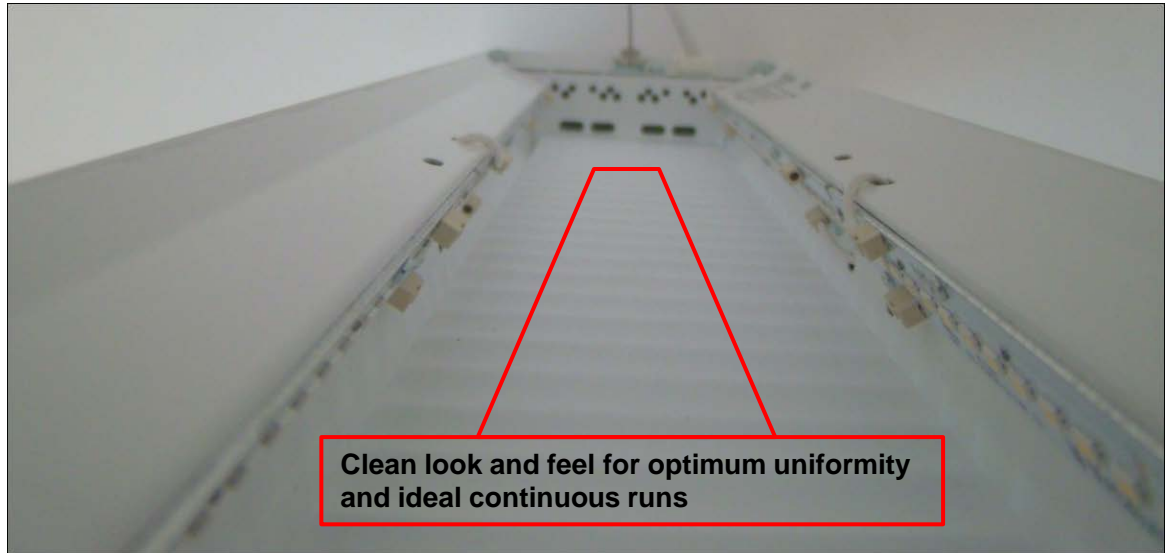


**New Boards with individual metal backing for better thermal management**

**Identification # for exact match of size and function**

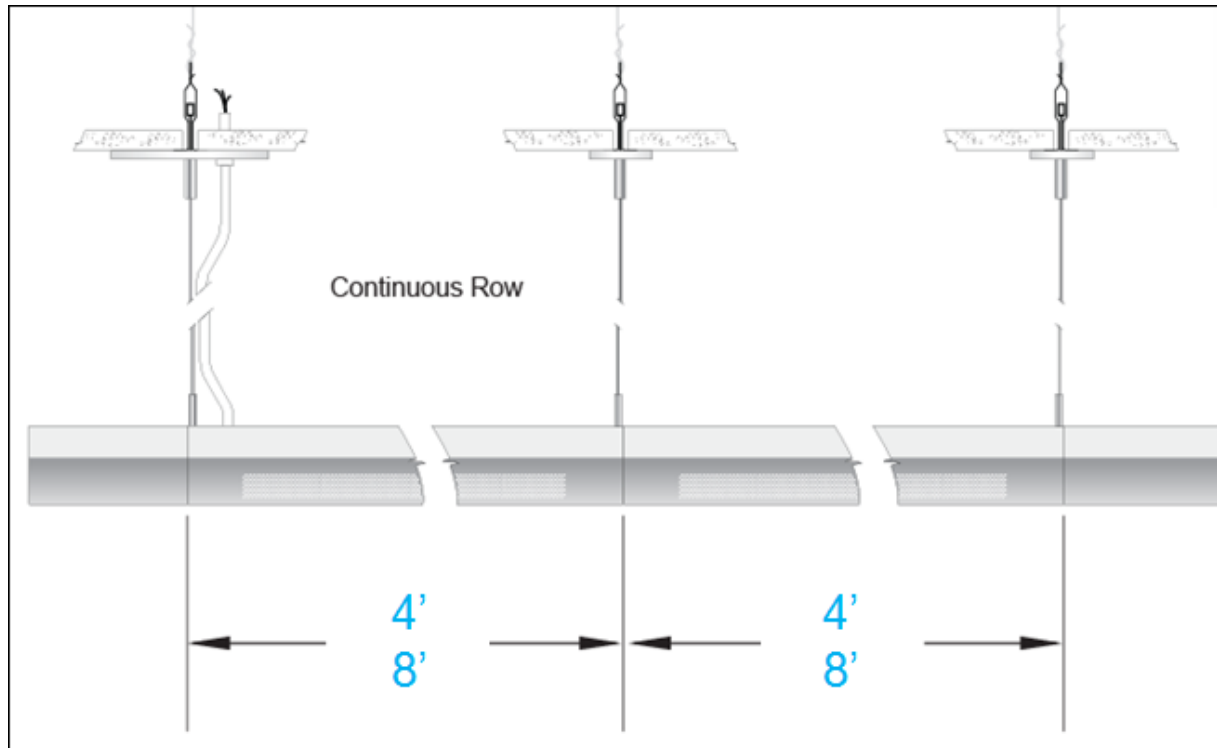


**Consistent spacing between sections for seamless distribution and zero lens shadow**



**Clean look and feel for optimum uniformity and ideal continuous runs**

# Simple for the Contractor – Modular for Client



# Planar S2E LED/FL Comparison

Room Size: 26' x 44'  
 Ceiling Height: 10'  
 Work Plane: 2.5'  
 Reflectance: 80/50/20  
 # of fixtures: 15

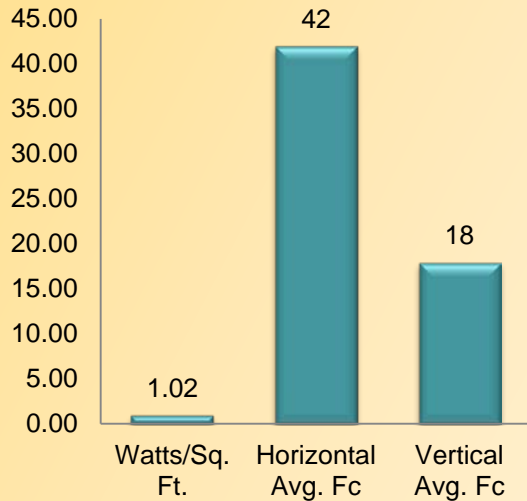
## S2E-2T8-4-SB

(2) 32W F32T8/TL841 lamps,  
 15 Fixtures, Electronic Ballast  
 78 watts per fixture

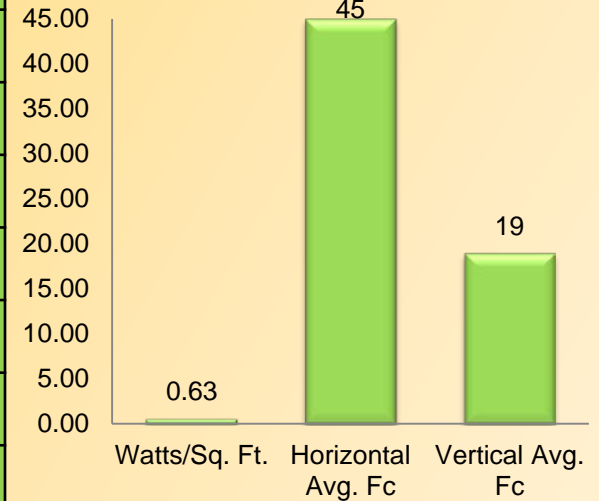
## Planar LED S2E S2EL35K-4-CSBO-L3

15 Fixtures, Dimming Driver,  
 48 watts per fixture

**38% Energy Savings**



5125	Delivered Lumens	5416
78	Input Power (Watts)	48
66	Delivered LPW	113
1.02	Watts/Sq. Ft.	0.63
42	Horizontal Avg. Fc	45
59	Horizontal Max Fc	62
17	Horizontal Min Fc	18
3	Max/Min	3
18	Vertical Avg. Fc	19
80	CRI	83



# System energy Analysis

## Lighting System Energy Analysis



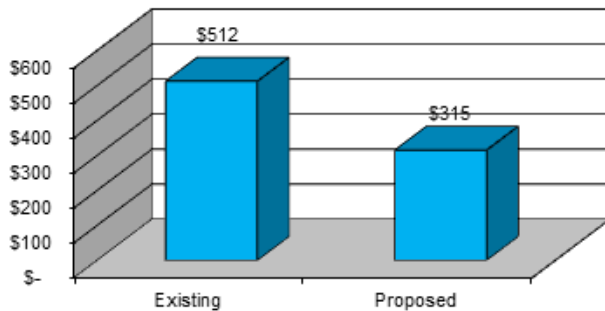
Ideas brought to light

Input  
Output

Customer Information	Facility Information
Project Name:	
Contact:	Cost Per kWh \$ 0.120 Annual Operating Hrs 3,650

System Information	Existing	Proposed
Luminaire Description	(2) 32W T8	S2EL35K-4-L3
Input Watts Per Luminaire	78	48
Quantity	15	15
System Watts	1,170	720
System kW	1.17	0.72
Annual kWh	4,271	2,628
Annual Energy Costs	\$ 512	\$ 315
Monthly Costs	\$ 43	\$ 26
Annual Energy Savings (\$)		\$ 197
Annual Energy Savings (%)		38%
Cost of Waiting (Monthly)		\$ 16

Annual Energy Costs per Lighting Systems



Note: These are estimated savings only. These annual and monthly savings are based on a number of variables and assumptions that could change over time. The actual savings derived by your firm may be higher or lower.

## Annual Maintenance Cost Estimator: 5 Year Breakdown

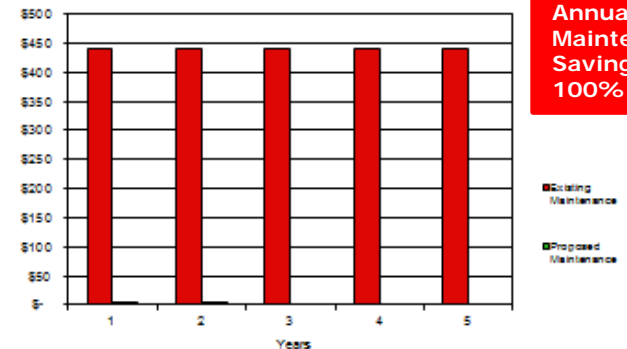


Ideas brought to light

Input  
Output

Customer Information	Facility Information	
Project Name:		
Contact:	Annual Operating Hours	3,650
System Information	Existing System	Proposed System
Description of System	(2) 32W T8	S2EL35K-4-L3
Quantity	15	15
Type of Lamp	Fluorescent, T8	LED
Lamp Life (hrs)	20000	60000
Cost of Lamp	\$ 6.00	\$ -
Number of Lamps Per Fixture	2	8
Labor Cost to Spot Relamp per Lamp	\$ 10.00	\$ -
Annual Lamp Maintenance Cost	\$ 112.00	\$ -
Quantity of Lamps Replaced Annually	7	0
Ballast Type	High Reactance	High Reactance
Ballast Life (hrs)	60000	100000
Cost of Ballast	\$ 45.00	\$ 30.00
Number of Ballasts Per Fixture	1	1
Labor Cost Change a Ballast	\$ 10.00	\$ 10.00
Annual Ballast Maintenance Cost	\$ 330.00	\$ -
Quantity of Ballasts Replaced Annually	6	0
Annual Maintenance Cost of System at Maturity	\$ 442.00	\$ -
Summarized 5 Year Cost	\$ 2,210.00	\$ -
5 Year Savings Summary		\$ 2,210.00
5 Year Average Annual Savings		\$ 442.00

5 Year Maintenance Cost

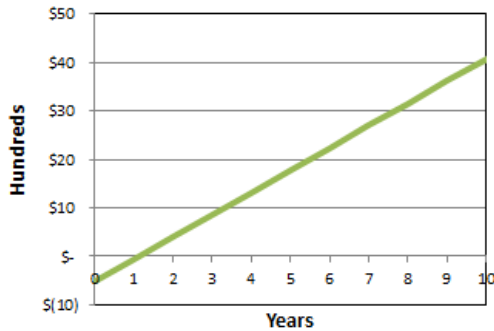


Annual Maintenance Savings of 100%



# System Energy & Maintenance Savings

LED Payback (Years)



**Payback = 1.14 Years**

System Energy & Maintenance Cost Summary

	LED	Traditional
Total Initial Fixture/Installation Cost	\$4,275	\$3,750
Total System kW	0.72	1.17
Annual kWh	2,628	4,271
Cost of Energy per kWh	\$0.120	\$0.120
kWh Inflation Rate (%/yr)	0.00%	0.00%
Average Annual Energy Cost	\$315	\$512
Average Annual Maintenance Cost	\$0	\$263
Average Annual Energy + Maintenance Costs	\$315	\$775
Average Annual Energy & Maintenance Savings	\$460	

	Savings		Cost/Year	
	Annual	Cumulative	LED	Traditional
1st Year	\$197	\$197	\$315	\$512
5th Year	\$372	\$1,337	\$315	\$688
10th Year	\$460	\$4,074	\$315	\$775

10 Year Total	Savings		Cost	
	LED	Traditional	LED	Traditional
	\$4,599		\$3,154	\$7,753

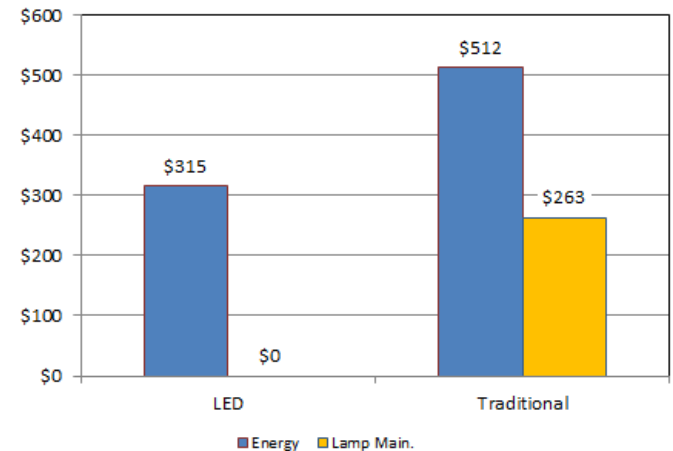
**+54% Savings including Energy & maintenance over 5 years**

## PAYBACK ANALYSIS

### AVERAGE ANNUALIZED SAVINGS PER YEAR

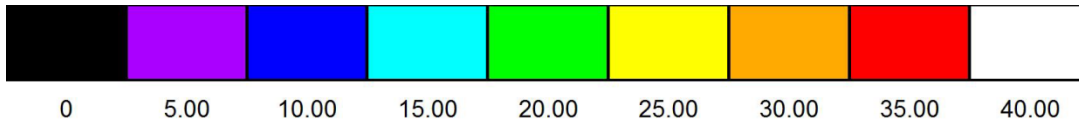
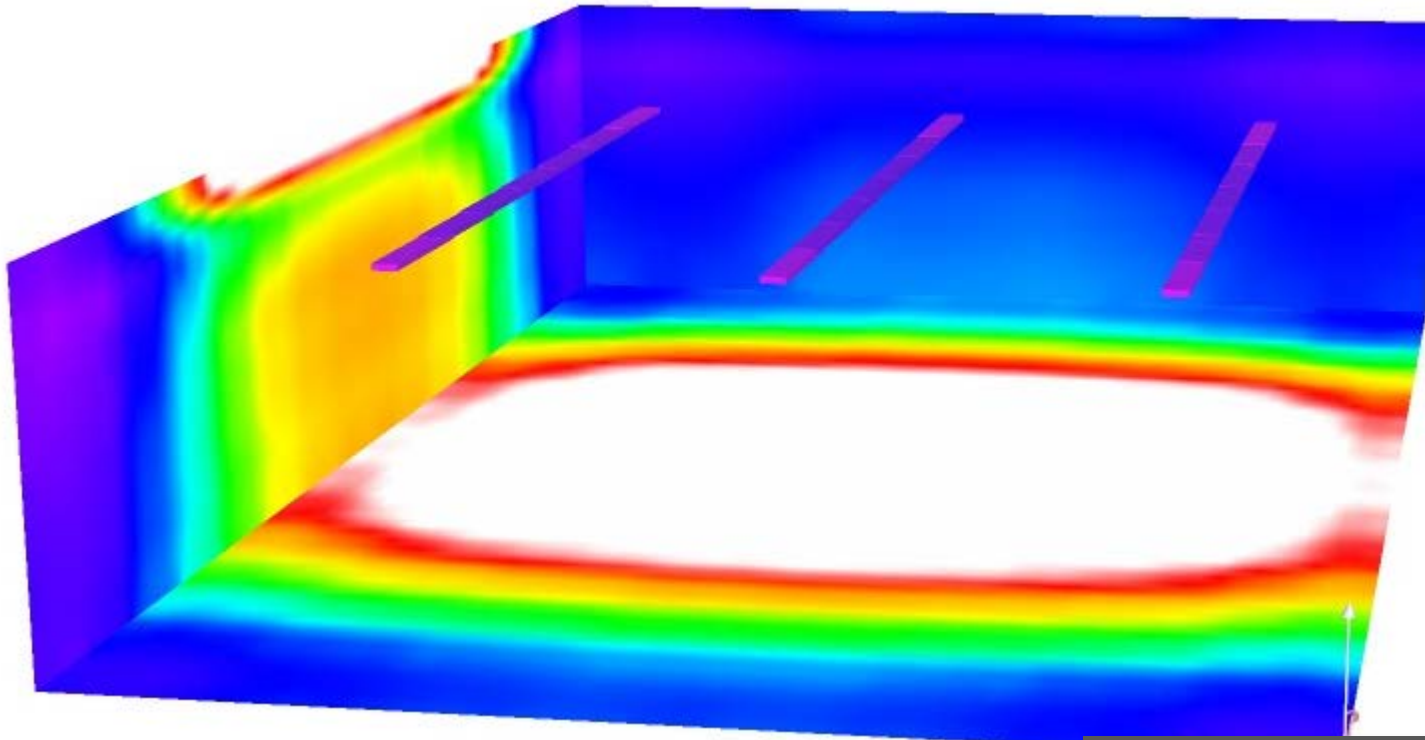
Annual Energy Savings	\$ 197
Annual Lamp Maintenance Savings	\$ 263
Annual Combined Savings	\$ 460
Cost of Waiting (Monthly)	\$ 38
Simple Payback (years)	1.14
IRR (%)	87%
10 Year Cash Flow (Energy & Lamp Main.)	\$ 4,074

Annual Operating Cost: Energy & Lamp Maintenance



\*\*\* Calculation is based on actual LED fixture used in comparison to a 2-T8 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.

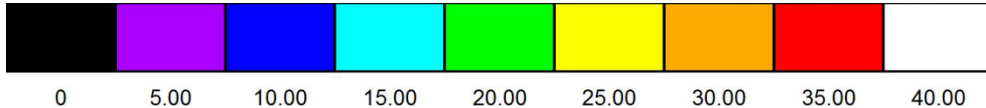
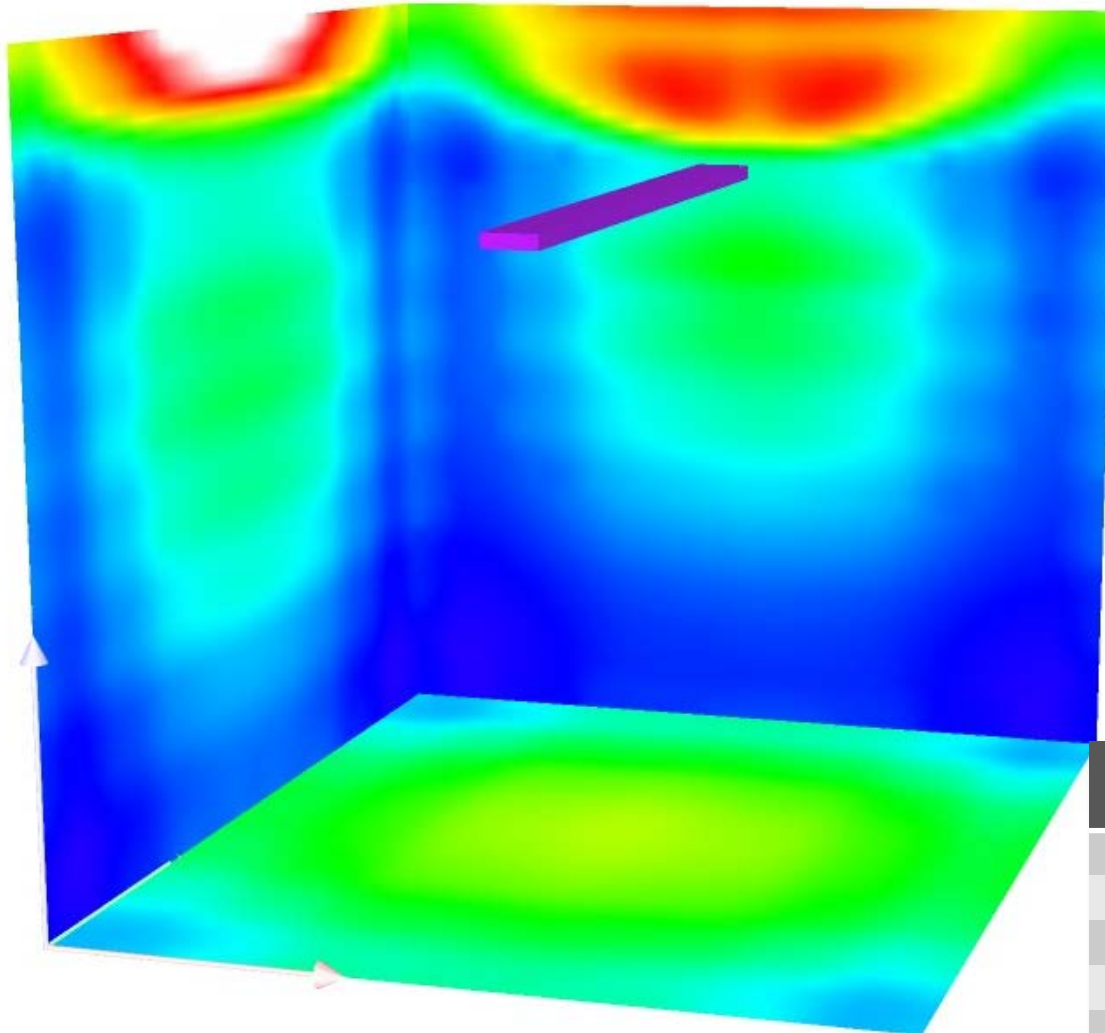
# Typical Classroom Calculation



## Typical Classroom Calculation Summary (50'L x 30'W x 10'H)

Catalogue Number	S2EL35k-4-L2
Number 4' of Luminaires	21
Watts/ 4' Luminaires	35W
Lumens/ 4' Luminaires	3778
Horizontal Light Level	34 FC
Vertical Light Level	15 FC
Spacing	28' Runs / 10' Spacing
Lighting Power Density	0.49 W/SF
% Better Than IECC 2012	51 %

# Typical Enclosed Office Calculation



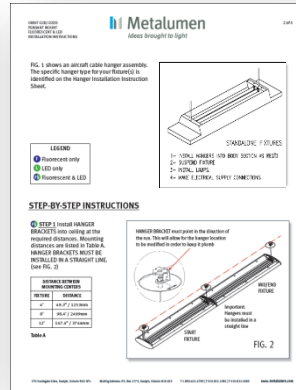
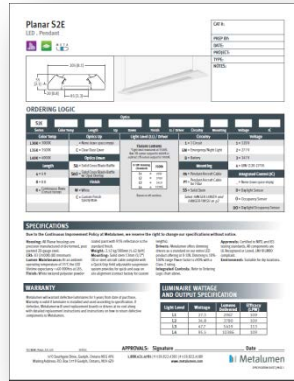
## Typical Enclosed Office Calculation Summary (10'L x 12'W x 10'H)

Catalogue Number	S2EL35k-4-L2
Number 4' of Luminaires	2
Watts/ 4' Luminaires	35W
Lumens/ 4' Luminaires	3778
Horizontal Light Level	24 FC
Vertical Light Level	9 FC
Spacing	8' Runs Centered
Lighting Power Density	0.58 W/SF
% Better Than IECC 2012	42 %

**Standard Lead time:**  
Ships in 4-6 weeks

**First 4 months of production:**  
Ships in 8 weeks





Brochure

Spec Sheet

Installation Instructions

IES Files

Price Guide (Agent Portal)



FAQ Sizzle Sheet (Agent Portal)



New Product Intro

Metalumen		Planar S2E LED					
Competitor Feature Cross Reference		Brand	Manufacturer	Fixture Lighting Levels	IC	Lenses	Lighting
		Product Name	Planar S2E	Circle Suspended	Luminaires Series	Series 17	Recessed
Product Image							
	Circle Suspended Depth x Length		4' 0" x 2' 0"	12' x 2' 0"	15.0" x 1.50"	4' x 1.50"	5.6" x 1.60"
	Standard 4' Length	Yes	Yes	Yes	Yes	Yes	Yes
	Standard 12' Length	Yes	Yes	Yes	Yes	Yes	Yes
Product Features	CEC	NO	NO	NO	NO	NO	NO
	UL	NO	NO	NO	NO	NO	NO
	Energy Star	NO	NO	NO	NO	NO	NO
	Light Output	2000, 3000, 4000	2000, 3000, 4000	2000, 3000, 4000	2000, 3000, 4000	2000, 3000, 4000	2000, 3000, 4000
	Light Output (lm)	2000, 3000, 4000	2000, 3000, 4000	2000, 3000, 4000	2000, 3000, 4000	2000, 3000, 4000	2000, 3000, 4000
	Input Watts	22, 30, 40, 50	22, 30, 40, 50	22, 30, 40, 50	22, 30, 40, 50	22, 30, 40, 50	22, 30, 40, 50
	Efficiency (lm/w)	80 to 110	80 to 110	80 to 110	80 to 110	80 to 110	80 to 110
	Beaming	0.5° Beamwidth, 0.75° Beamwidth	0.5° Beamwidth, 0.75° Beamwidth	0.5° Beamwidth, 0.75° Beamwidth	0.5° Beamwidth, 0.75° Beamwidth	0.5° Beamwidth, 0.75° Beamwidth	0.5° Beamwidth, 0.75° Beamwidth
	Driver Mounting	Integral or Remote	Integral or Remote	Integral or Remote	Integral or Remote	Remote Only	Remote Only
	Stand Life	50,000	50,000	50,000	50,000	50,000	50,000
Warranty	5 Years	5 Years	5 Years	5 Years	5 Years	5 Years	
Product Details	Dimmable	Yes	Yes	Yes	Yes	Yes	Yes
	Integral Drivers	Yes	Yes	No	No	No	Yes
	Integral Ballasts	Yes	Yes	No	No	No	Yes

Competitive Analysis (Agent Portal)