

illuminate your space



Tyco Electronics introduces the all new NEVALO SSL System Configuration Product Selection Guide

Tyco Electronics' NEVALO SSL System simplifies the design process for light fixture/luminaire manufacturers. It is an integrated approach for developing solid-state lighting systems. The NEVALO system is a plug-and-play solution including all the components required to convert from incandescent or fluorescent lighting to solid-state (SSL) lighting design.

Using Tyco Electronics' NEVALO methodology, this guide helps in selecting the optimum components that meet design objectives -- while avoiding the extensive engineering and qualification involved to embrace new SSL technology.

Step 1 : SELECT YOUR LED LIGHT MODULE (LLM)

	TYP LLM Lumen (lm) (Includes Optics) LED Tc = 25 deg C	TYP LLM Lumen (lm) (Includes Optics) LED Tc = 60 deg C	LLM Dimensions	LED Type Drive Current (mA)	SSL System Budget	TYP LLM Efficacy Tc= 25 deg C (l/w)	Color Consistency (SDCM)	CRI	Beam Distribution	Distribution Beam Angle	Part Number		
Correlated Color Temperature 3000K		3060	2790	OD: 88mm H: 44.5mm	Bridgelux RS 2100mA	30	57	4	82	Narrow Flood	28	2154159-2	
										82	Wide Flood	48	2154159-3
		1330	1220	OD: 58mm H: 16.3mm	Cree (7 XP-g) 1000mA	24	56	4	80	Spot	18	2154193-1	
										80	Narrow Flood	25	2154193-2
										80	Flood	45	2154193-3
			1150	1050	OD: 58mm H: 16.3mm	Cree (6 XP-g) 1000mA	20		56	80	Spot	18	2154194-1
									80		Narrow Flood	25	2154194-2
									80		Flood	45	2154194-3
			1050	970	OD: 58mm H: 16.3mm	Cree (7 XP-g) 700mA	24		65	80	Spot	18	2154193-1
									80		Narrow Flood	25	2154193-2
									80		Flood	45	2154193-3
			900	820	OD: 58mm H: 16.3mm	Cree (6 XP-g) 700mA	20		65	80	Spot	18	2154194-1
									80		Narrow Flood	25	2154194-2
									80		Flood	45	2154194-3
			760	670	OD: 58mm H: 16.3mm	Cree (4 XP-g) 1000mA	14		56	80	Spot	18	2154196-1
						80	Narrow Flood	25	2154196-2				
						80	Flood	45	2154196-3				
	620	560	OD: 58mm H: 16.3mm	Cree (7 XP-g) 350mA	24	84	80	Spot	18	2154193-1			
						80		Narrow Flood	25	2154193-2			
						80		Flood	45	2154193-3			
	600	540	OD: 58mm H: 16.3mm	Cree (4 XP-g) 700mA	14	65	80	Spot	18	2154196-1			
						80		Narrow Flood	25	2154196-2			
						80		Flood	45	2154196-3			
	530	480	OD: 58mm H: 16.3mm	Cree (6 XP-g) 350mA	20	84	80	Spot	18	2154194-1			
						80		Narrow Flood	25	2154194-2			
						80		Flood	45	2154194-3			
	340	320	OD: 58mm H: 16.3mm	Cree (4 XP-g) 350mA	14	84	80	Spot	18	2154196-1			
						80		Narrow Flood	25	2154196-2			
						80		Flood	45	2154196-3			
	1000	900	49mm x 100mm	Intematix (4 CT109D) 350mA	44	72	4	80	Wide Flood	--	2154130-1		
	750	670	24mm x 100mm	Intematix (3 CT109D) 350mA	33	72			4	80	Wide Flood	--	2154129-1
	500	450	24mm x 100mm	Intematix (2 CT109D) 350mA	22	72					80	Wide Flood	--
Correlated Color Temperature 4000K		3420	3060	OD: 88mm H: 44.5mm	Bridgelux RS 2100mA	30	63	4	80	Narrow Flood			
										80	Wide Flood	48	1-2154159-3
		1520	1400	OD: 58mm H: 16.3mm	Cree (7 XP-g) 1000mA	24	63	4	75	Spot	18	1-2154193-1	
										75	Narrow Flood	25	1-2154193-2
										75	Flood	45	1-2154193-3
			1300	1200	OD: 58mm H: 16.3mm	Cree (6 XP-g) 1000mA	20		63	75	Spot	18	1-2154194-1
									75		Narrow Flood	25	1-2154194-2
									75		Flood	45	1-2154194-3
			1200	1100	OD: 58mm H: 16.3mm	Cree (7 XP-g) 700mA	24		75	75	Spot	18	1-2154193-1
									75		Narrow Flood	25	1-2154193-2
									75		Flood	45	1-2154193-3
			1030	940	OD: 58mm H: 16.3mm	Cree (6 XP-g) 700mA	20		75	75	Spot	18	1-2154194-1
									75		Narrow Flood	25	1-2154194-2
									75		Flood	45	1-2154194-3
			860	780	OD: 58mm H: 16.3mm	Cree (4 XP-g) 1000mA	14		63	75	Spot	18	1-2154196-1
						75	Narrow Flood	25	1-2154196-2				
						75	Flood	45	1-2154196-3				
	690	640	OD: 58mm H: 16.3mm	Cree (7 XP-g) 350mA	24	95	75	Spot	18	1-2154196-1			
						75		Narrow Flood	25	1-2154196-2			
						75		Flood	45	1-2154196-3			
	680	630	OD: 58mm H: 16.3mm	Cree (4 XP-g) 700mA	14	75	75	Spot	18	1-2154194-1			
						75		Narrow Flood	25	1-2154194-2			
						75		Flood	45	1-2154194-3			
	590	540	OD: 58mm H: 16.3mm	Cree (6 XP-g) 350mA	20	95	75	Spot	18	1-2154193-1			
						75		Narrow Flood	25	1-2154193-2			
						75		Flood	45	1-2154193-3			
	400	360	OD: 58mm H: 16.3mm	Cree (4 XP-g) 350mA	14	95	75	Spot	18	1-2154196-1			
						75		Narrow Flood	25	1-2154196-2			
						75		Flood	45	1-2154196-3			
	1230	1100	49mm x 100mm	Intematix (4 CT109D) 350mA	44	87	4	80	Wide Flood	110	1-2154130-1		
	920	820	24mm x 100mm	Intematix (3 CT109D) 350mA	33	87			4	80	Wide Flood	110	1-2154129-1
	610	540	24mm x 100mm	Intematix (2 CT109D) 350mA	22	87					80	Wide Flood	110

NOTE : Individual results may vary from the typical values

Step 2 : SELECT YOUR DRIVER

Driver #	Color Code Drive Current (mA)	Input Voltage	Voltage Range (V)	Power (W)	SSL System Budget	Control	Dimensions (mm) l x w x h	Part Number
1	Orange 350mA	108-132 VAC	8-25	10	8-25	Triac	159 x 59 x 28.7	2154092-1
2		108-132 VAC	18-42	15	18-42		159 x 59 x 28.7	2154093-1
3		108-132 VAC	33-59	22	33-55		159 x 59 x 28.7	2154094-1
4	Red 700mA	108-132 VAC	8-25	18	8-25		159 x 59 x 28.7	2154095-1
5	Green 1000mA	108-132 VAC	8-25	25	8-25		159 x 59 x 28.7	2154096-1
6	Blue 2100mA	90-305 VAC	18-36	75	18-36		Fixed	190 x 65 x 35



Step 3A : SELECT YOUR CONNECTOR(S)

	Color Code Drive Current (mA)	Part Number
OR STL (Straight, Left)	Orange 350mA	2154018-1
	Red 700mA	2154018-3
	Green 1000mA	2154018-4
	Blue 2100mA	2154018-6
	Orange 350mA	1-2154018-1
	Red 700mA	1-2154018-3
STR (Straight, Right)	Green 1000mA	1-2154018-4
	Blue 2100mA	1-2154018-6
	Orange 350mA	2154009-1
	Red 700mA	2154009-3
	Green 1000mA	2154009-4
	Blue 2100mA	2154009-6
FTL (Feed-Thru, Left)	Orange 350mA	1-2154009-1
	Red 700mA	1-2154009-3
	Green 1000mA	1-2154009-4
	Blue 2100mA	1-2154009-6
	Orange 350mA	2154009-1
	Red 700mA	2154009-3
FTR (Feed-Thru, Right)	Green 1000mA	1-2154009-4
	Blue 2100mA	1-2154009-6
	Orange 350mA	2154150-1
	Red 700mA	2154150-3
	Green 1000mA	2154150-4
	Blue 2100mA	2154150-6
RAD (Right Angle Down)	N/A	2154014-1

Step 3 : SELECT YOUR WIRING SYSTEM

	Configuration	Length	Color Code Drive Current (mA)	Part Number
Single Light Modules	STL to STR Straight Left to Straight Right			
	STL to RAD Straight Left to Right Angle Down			
	STL to STR	300mm	Orange 350mA	2154172-1
	STL to RAD	300mm	Orange 350mA	2154175-1
	STL to STR	300mm	Red 700mA	2154172-3
	STL to RAD	300mm	Red 700mA	2154175-3
	STL to STR	300mm	Green 1000mA	2154172-4
	STL to RAD	300mm	Green 1000mA	2154175-4
Multiple Light Modules	STL to FTL to FTL to TER Straight Left to Feed Thru Left to Feed Thru Left to Terminator			
	STL to FTL to FTR to FTR to TER Straight Right to Feed Thru Left to Feed Thru Right to Feed Thru Left to Feed Thru Right to Terminator			
	STL to STR	300mm	Blue 2100mA	2154172-6
	STL to RAD	300mm	Blue 2100mA	2154175-6
	STL to FTL to FTL to TER	650mm	Orange 350mA	2154173-1
	STL to FTL to FTR to FTR to TER	1250mm	Orange 350mA	2154243-1

AND
Step 3B : SELECT YOUR RIBBON CABLE





	Color Code Drive Current (mA)	Part Number
3	Orange 350mA	2154027-1
	Red 700mA	2154027-3
	Green 1000mA	2154027-4
	Blue 2100mA	2154027-6

AND
Step 3C : SELECT YOUR HAND TOOL KIT




	Part Number
3	2161090-1

Step 4 : SELECT YOUR THERMAL MANAGEMENT

HEAT SINKS



	Heat Sink Dimensions	Part Number
 LN24x100	24 x 100 x 60mm	2154168-1
 LN49x100	49 x 100 x 60mm	2154169-1
 CN58	OD: 63.4mm H: 100mm	2154170-1
 CN88	OD: 108mm H: 200mm	2154171-1

THERMAL TEST TOOLS

Thermal Test Instrument		Part Number			
<ul style="list-style-type: none"> • Software • Breakout Box • Thermal & Communication Cables 		2154265-1			
	LED Type	CCT	Color Code Drive Current (mA)	Thermal LLM Part Number	LLM Reference Part Number
Thermal LLM - Linear  <small>LN24x100 shown</small>	Intematix	3000K	Orange 350mA	2154141-1	2154128-1
				2154142-1	2154129-1
		4000K		2154143-1	2154130-1
				1-2154141-1	1-2154128-1
				1-2154142-1	1-2154129-1
Thermal LLM - Circular  <small>CN58 shown</small>  <small>CN88 shown</small>	Cree (4 XP-g)	3000K	Orange 350mA	2154210-1	2154196-x
		4000K		1-2154210-1	1-2154196-x
	Cree (6 XP-g)	3000K	Red 700mA	2154212-1	2154194-x
		4000K		1-2154212-1	1-2159194-x
	Cree (7 XP-g)	3000K	Green 1000mA	2154213-1	2154193-x
		4000K		1-2154213-1	1-2154193-x
Bridgelux RS	3000K	Blue 2100mA	2154149-1	2154159-x	
	4000K		1-2154149-1	1-2154159-x	

Step 5 : SELECT YOUR OPTIONAL PRODUCTS

REPLACEABLE OPTICS FOR CIRCULAR LED Light Module (LLM)

Dimensions (OD)	Number of LEDs	Optic Type	Beam Distribution	Distribution Beam Angle	Part Number
 OD:58mm	4	TIR	Spot	18	2154165-1
			Narrow Flood	25	2154165-2
			Flood	40	2154165-3
	6		Spot	18	2154163-1
			Narrow Flood	25	2154163-2
			Flood	40	2154163-3
7	Spot	18	2154162-1		
	Narrow Flood	25	2154162-2		
	Flood	40	2154162-3		
 OD:88mm	1	Reflector	Narrow Flood	28	2154167-1
			Wide Flood	48	2154167-2

DEVELOPMENT KITS

	Lumens at Tc=60C	Watts	Current	Part Number
Spot, Track & Down Lights	1050-1220	22-25	1000mA	2154245-1
	900-1050	15-17	700mA	2154387-1
	350-530	4-7	350mA	2154388-1
Commercial Track, High Bay & Down Lights	2790	63	2100mA	2154246-1
Wall Mount (Sconce)	1000	15	350mA	2154244-1

Build your NEVALO SSL System

Step 1 : Select your LED Light Module

Part Number: _____ QTY: _____

COLOR CODE (circle one):

Orange **Red** **Green** **Blue**

Step 2 : Select your Driver

Part Number: _____ QTY: _____

COLOR CODE (circle one):

Orange **Red** **Green** **Blue**

SSL System Budget: _____

Step 3 : Select your Cable Assembly

Part Number: _____ QTY: _____

COLOR CODE (circle one):

Orange **Red** **Green** **Blue**

OR

Step 3A : Select your Connector(s)

Driver Connector

Part Number: _____ QTY: _____

COLOR CODE (circle one):

Orange **Red** **Green** **Blue**

LLM Connector

Part Number: _____ QTY: _____

COLOR CODE (circle one):

Orange **Red** **Green** **Blue**

Terminator Yes P/N _____ No _____

AND

Step 3B : Select your Ribbon Cable

Part Number: _____ QTY: _____

COLOR CODE (circle one):

Orange **Red** **Green** **Blue**

AND

Step 3C : Select your Hand Tool

Part Number: _____ QTY: _____

Step 4 : Select your Thermal Management

Heat Sinks

Part Number: _____ QTY: _____

Thermal Test Tools

Thermal Test Instrument _____

Thermal LLM _____

Step 5 : Select your Optional Products

Replaceable Optics

Part Number: _____ QTY: _____

Design Kits

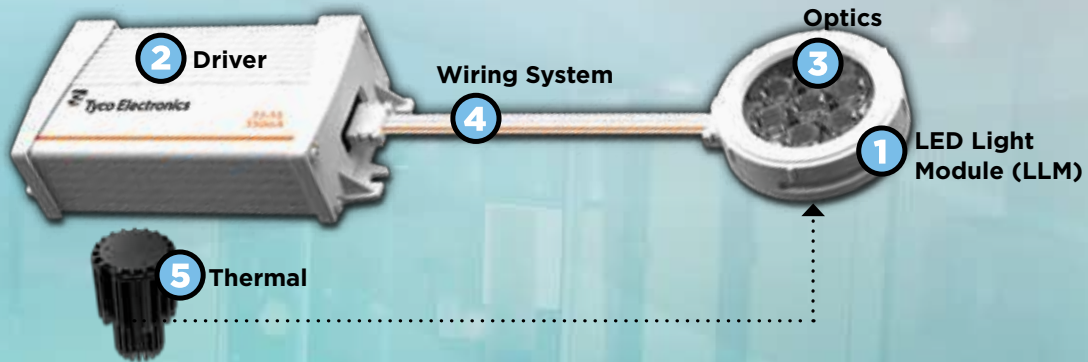
Part Number: _____

Building your NEVALO SSL System

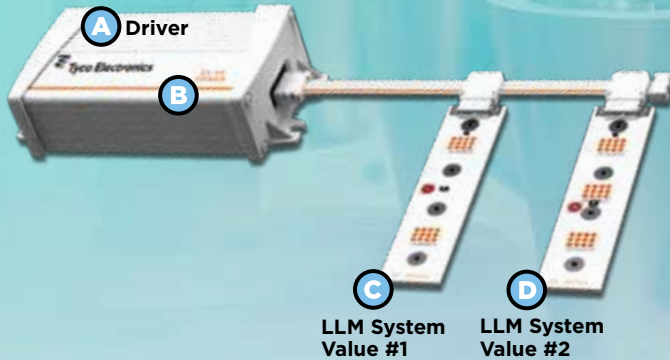
There are two parts to the NEVALO SSL System -- the products and the tools. The products will provide flexibility of choice for your applications. The tools will allow you to rapidly verify your system performance.

The configuration guide allows you to quickly and easily select all the components required to build your system. Get started by selecting an LED Light Module, by Lumen output, Color Temperature and Beam Angle.

The Complete NEVALO SSL System : Our NEVALO SSL System modules are designed as building blocks



System budget : The SSL system budget simplifies fixture design and decreases opportunities for errors. Color coding confirms that the right subassemblies have been chosen. As you build your system, you simply check that the color codes match and that the total LLM budget is within the specific driver's range.



Budget Calculation Example

B Driver Budget Range	(33-55)
C LLM #1	22
D LLM #2	33
TOTAL =	55
The total must be equal to or fall between the Driver Budget Range. System is good	

Thermal Monitor : An evaluation tool is provided to confirm the thermal performance of every LLM in your fixture design. The evaluation tool includes PC software plus a thermal test board matching the production version of the LLM.

Thermal Monitor Testing Software



Thermal LLM



Break Out Box



Light Type Comparison Charts

Incandescent Floodlights/Spots

Code	W	Lumens
50R20	50	380
50ER30	50	400
65BR30	65	635
75ER30	75	650
120BR40	120	1300
120ER40	120	1190

Halogen Floodlights/Spots

Code	W	Lumens
45PAR38	45	530
50PAR20	50	520
50PAR30	50	630
60PAR38	60	800
75PAR30	75	1050
90PAR38	90	1350

CFL

Code	W	Lumens
12R20	12	450
16R30	16	630
20PAR38	20	940

CDMH

Code	W	Lumens
25PAR38	25	850
70PAR30	70	4100
100PAR28	100	6200

MR-16 Lamp data

ANSI Code	W	Lumens
ESX	20	290
BAB	20	290
FRB	35	540
FRA	35	540
FMW	35	540
EXT	50	800
EXZ	50	800
EXN	50	800
FNV	50	800
FPA	65	1100
FPC	65	1100
FPB	65	1100
EYF	75	1320
EYJ	75	1320
EYC	75	1320

Warranty

Tyco Electronics will warrant the NEVALO SSL System for a period of 5 years. For complete warranty details, please visit our website at nevalo.com.

nevalo.com

855-NEVALO1 (855-638-2561)

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