



艾笛森光電股份有限公司
Edison Opto Corporation

A Solid-State Lighting Premium Expert

www.edison-opto.com.tw

EdiLine Series R90LUS Datasheet



Product description

- Ideal for linear and panel lights
- 4 terminals for serial wiring
- Perfectly uniform light, even if several LED modules are used
- Push in for quick and simple wiring of LED module to LED module
- Broad portfolio from extruded lenses and covers available
- Long lifetime: L70B50 > 72,000 hours
- 5 years guarantee
- ZHAGA compliant

Optical properties

- Full color temperature
- High color consistency (MacAdam 3)
- High color rendering index CRI(Ra) > 90
- Small luminous flux tolerances

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Product Nomenclature

<u>5</u>	<u>T</u>	<u>X X</u>	<u>0 1</u>	<u>X X</u>	<u>X</u>	<u>X X X</u>	<u>X X X X</u>		
X1	X2	X3-X4	X5-X6	X7-X8	X9	X10-X12	X13-X16		
X1		X2		X3-X4		X5-X6		X7-X8	
Item		LED Item		Series		Emitter Power		Emitting Color	
5	Module	T	PLCC	03	2835 Package	X8	0.8W	50/57/65	Cool White
								40	Neutral White
								18/22/27/30	Warm White

X9 Dimensions	X10-X12 Total Quantity	X13-X16 Serial Number
L	Single row type	006 6in1 xxxx -
		012 12in1 xxxx -
		024 24in1 xxxx -

Optical and Electrical Characteristics

Operating mode at CCT 1800K

Module part no.	Photo-metric code	Flux (lm) @Tc 25	Flux (lm) @Tc life	Forward Current (mA)	Typ Voltage @ Tc 25	Typ Voltage @ Tc life	Typ Power @Tc 25	Typ Power @Tc life	Typ lm/W @Tc25	Typ lm/W @Tc life	CRI (Ra)
5T03X818L0060015	918/359	117	112	150	5.54	5.50	0.83	0.83	141	136	90
	918/359	193	185	250	5.66	5.62	1.42	1.41	136	132	90
	918/359	267	257	350	5.77	5.73	2.02	2.01	132	128	90
	918/359	375	360	500	5.94	5.90	2.97	2.95	126	122	90
5T03X818L0120012	918/359	234	224	150	11.08	11.00	1.66	1.65	141	136	90
	918/359	386	370	250	11.32	11.24	2.83	2.81	136	132	90
	918/359	534	514	350	11.54	11.46	4.04	4.01	132	128	90
	918/359	750	720	500	11.88	11.80	5.94	5.90	126	122	90
5T03X818L0240015	918/359	468	448	150	22.16	22.00	3.32	3.30	141	136	90
	918/359	772	740	250	22.64	22.48	5.66	5.62	136	132	90
	918/359	1068	1028	350	23.08	22.92	8.08	8.02	132	128	90
	918/359	1500	1440	500	23.76	23.60	11.88	11.80	126	122	90

Operating mode at CCT 2200K

Module part no.	Photo-metric code	Flux (lm) @Tc 25	Flux (lm) @Tc life	Forward Current (mA)	Typ Voltage @ Tc 25	Typ Voltage @ Tc life	Typ Power @Tc 25	Typ Power @Tc life	Typ lm/W @Tc25	Typ lm/W @Tc life	CRI (Ra)
5T03X822L0060015	922/359	126	121	150	5.54	5.50	0.83	0.83	152	147	90
	922/359	209	201	250	5.66	5.62	1.42	1.41	148	143	90
	922/359	290	278	350	5.77	5.73	2.02	2.01	144	139	90
	922/359	406	390	500	5.94	5.90	2.97	2.95	137	132	90
5T03X822L0120015	922/359	252	242	150	11.08	11.00	1.66	1.65	152	147	90
	922/359	418	402	250	11.32	11.24	2.83	2.81	148	143	90
	922/359	580	556	350	11.54	11.46	4.04	4.01	144	139	90
	922/359	812	780	500	11.88	11.80	5.94	5.90	137	132	90
5T03X822L0240015	922/359	504	484	150	22.16	22.00	3.32	3.30	152	147	90
	922/359	836	804	250	22.64	22.48	5.66	5.62	148	143	90
	922/359	1160	1112	350	23.08	22.92	8.08	8.02	144	139	90
	922/359	1624	1560	500	23.76	23.60	11.88	11.80	137	132	90

Note:

1. Measurement precision $\pm 10\%$ for the flux data and $\pm 10\%$ for the efficacy data.
2. Measurement precision for CRI(Ra) ± 2
3. Luminous flux doesn't include secondary optics

Operating mode at CCT 2700K

Module part no.	Photo-metric code	Flux (lm) @Tc 25	Flux (lm) @Tc life	Forward Current (mA)	Typ Voltage @ Tc 25	Typ Voltage @ Tc life	Typ Power @Tc 25	Typ Power @Tc life	Typ lm/W @Tc25	Typ lm/W @Tc life	CRI (Ra)
5T03X827L0060015	927/359	146	140	150	5.54	5.50	0.83	0.83	176	170	90
	927/359	241	232	250	5.66	5.62	1.42	1.41	170	165	90
	927/359	334	321	350	5.77	5.73	2.02	2.01	165	160	90
	927/359	469	450	500	5.94	5.90	2.97	2.95	158	153	90
5T03X827L0120015	927/359	292	280	150	11.08	11.00	1.66	1.65	176	170	90
	927/359	482	464	250	11.32	11.24	2.83	2.81	170	165	90
	927/359	668	642	350	11.54	11.46	4.04	4.01	165	160	90
	927/359	938	900	500	11.88	11.80	5.94	5.90	158	153	90
5T03X827L0240015	927/359	584	560	150	22.16	22.00	3.32	3.30	176	170	90
	927/359	964	928	250	22.64	22.48	5.66	5.62	170	165	90
	927/359	1336	1284	350	23.08	22.92	8.08	8.02	165	160	90
	927/359	1876	1800	500	23.76	23.60	11.88	11.80	158	153	90

Operating mode at CCT 3000K

Module part no.	Photo-metric code	Flux (lm) @Tc 25	Flux (lm) @Tc life	Forward Current (mA)	Typ Voltage @ Tc 25	Typ Voltage @ Tc life	Typ Power @Tc 25	Typ Power @Tc life	Typ lm/W @Tc25	Typ lm/W @Tc life	CRI (Ra)
5T03X830L0060015	930/359	154	148	150	5.54	5.50	0.83	0.83	185	179	90
	930/359	255	244	250	5.66	5.62	1.42	1.41	180	174	90
	930/359	353	339	350	5.77	5.73	2.02	2.01	175	169	90
	930/359	495	475	500	5.94	5.90	2.97	2.95	167	161	90
5T03X830L0120015	930/359	308	296	150	11.08	11.00	1.66	1.65	185	179	90
	930/359	510	488	250	11.32	11.24	2.83	2.81	180	174	90
	930/359	706	678	350	11.54	11.46	4.04	4.01	175	169	90
	930/359	990	950	500	11.88	11.80	5.94	5.90	167	161	90
5T03X830L0240015	930/359	616	592	150	22.16	22.00	3.32	3.30	185	179	90
	930/359	1020	976	250	22.64	22.48	5.66	5.62	180	174	90
	930/359	1412	1356	350	23.08	22.92	8.08	8.02	175	169	90
	930/359	1980	1900	500	23.76	23.60	11.88	11.80	167	161	90

Note:

1. Measurement precision $\pm 10\%$ for the flux data and $\pm 10\%$ for the efficacy data.
2. Measurement precision for CRI(Ra) ± 2
3. Luminous flux doesn't include secondary optics

Operating mode at CCT 4000K

Module part no.	Photo-metric code	Flux (lm) @Tc 25	Flux (lm) @Tc life	Forward Current (mA)	Typ Voltage @ Tc 25	Typ Voltage @ Tc life	Typ Power @Tc 25	Typ Power @Tc life	Typ lm/W @Tc25	Typ lm/W @Tc life	CRI (Ra)
5T03X840L0060015	940/359	162	155	150	5.54	5.50	0.83	0.83	195	188	90
	940/359	268	257	250	5.66	5.62	1.42	1.41	189	183	90
	940/359	371	357	350	5.77	5.73	2.02	2.01	184	178	90
	940/359	521	500	500	5.94	5.90	2.97	2.95	175	169	90
5T03X840L0120015	940/359	324	310	150	11.08	11.00	1.66	1.65	195	188	90
	940/359	536	514	250	11.32	11.24	2.83	2.81	189	183	90
	940/359	742	714	350	11.54	11.46	4.04	4.01	184	178	90
	940/359	1042	1000	500	11.88	11.80	5.94	5.90	175	169	90
5T03X840L0240015	940/359	648	620	150	22.16	22.00	3.32	3.30	195	188	90
	940/359	1072	1028	250	22.64	22.48	5.66	5.62	189	183	90
	940/359	1484	1428	350	23.08	22.92	8.08	8.02	184	178	90
	940/359	2084	2000	500	23.76	23.60	11.88	11.80	175	169	90

Operating mode at CCT 5000K

Module part no.	Photo-metric code	Flux (lm) @Tc 25	Flux (lm) @Tc life	Forward Current (mA)	Typ Voltage @ Tc 25	Typ Voltage @ Tc life	Typ Power @Tc 25	Typ Power @Tc life	Typ lm/W @Tc25	Typ lm/W @Tc life	CRI (Ra)
5T03X850L0060015	950/359	159	152	150	5.54	5.50	0.83	0.83	191	184	90
	950/359	263	252	250	5.66	5.62	1.42	1.41	186	179	90
	950/359	364	349	350	5.77	5.73	2.02	2.01	180	174	90
	950/359	510	490	500	5.94	5.90	2.97	2.95	172	166	90
5T03X850L0120015	950/359	318	304	150	11.08	11.00	1.66	1.65	191	184	90
	950/359	526	504	250	11.32	11.24	2.83	2.81	186	179	90
	950/359	728	698	350	11.54	11.46	4.04	4.01	180	174	90
	950/359	1020	980	500	11.88	11.80	5.94	5.90	172	166	90
5T03X850L0240015	950/359	636	608	150	22.16	22.00	3.32	3.30	191	184	90
	950/359	1052	1008	250	22.64	22.48	5.66	5.62	186	179	90
	950/359	1456	1396	350	23.08	22.92	8.08	8.02	180	174	90
	950/359	2040	1960	500	23.76	23.60	11.88	11.80	172	166	90

Note:

1. Measurement precision $\pm 10\%$ for the flux data and $\pm 10\%$ for the efficacy data.
2. Measurement precision for CRI(Ra) ± 2
3. Luminous flux doesn't include secondary optics

Operating mode at CCT 5700K

Module part no.	Photo-metric code	Flux (lm) @Tc 25	Flux (lm) @Tc life	Forward Current (mA)	Typ Voltage @ Tc 25	Typ Voltage @ Tc life	Typ Power @Tc 25	Typ Power @Tc life	Typ lm/W @Tc25	Typ lm/W @Tc life	CRI (Ra)
5T03X857L0060015	957/359	159	152	150	5.54	5.50	0.83	0.83	191	184	90
	957/359	263	252	250	5.66	5.62	1.42	1.41	186	179	90
	957/359	364	349	350	5.77	5.73	2.02	2.01	180	174	90
	957/359	510	490	500	5.94	5.90	2.97	2.95	172	166	90
5T03X857L0120015	957/359	318	304	150	11.08	11.00	1.66	1.65	191	184	90
	957/359	526	504	250	11.32	11.24	2.83	2.81	186	179	90
	957/359	728	698	350	11.54	11.46	4.04	4.01	180	174	90
	957/359	1020	980	500	11.88	11.80	5.94	5.90	172	166	90
5T03X857L0240015	957/359	636	608	150	22.16	22.00	3.32	3.30	191	184	90
	957/359	1052	1008	250	22.64	22.48	5.66	5.62	186	179	90
	957/359	1456	1396	350	23.08	22.92	8.08	8.02	180	174	90
	957/359	2040	1960	500	23.76	23.60	11.88	11.80	172	166	90

Operating mode at CCT 6500K

Module part no.	Photo-metric code	Flux (lm) @Tc 25	Flux (lm) @Tc life	Forward Current (mA)	Typ Voltage @ Tc 25	Typ Voltage @ Tc life	Typ Power @Tc 25	Typ Power @Tc life	Typ lm/W @Tc25	Typ lm/W @Tc life	CRI (Ra)
5T03X865L0060015	965/359	159	152	150	5.54	5.50	0.83	0.83	191	184	90
	965/359	263	252	250	5.66	5.62	1.42	1.41	186	179	90
	965/359	364	349	350	5.77	5.73	2.02	2.01	180	174	90
	965/359	510	490	500	5.94	5.90	2.97	2.95	172	166	90
5T03X865L0120015	965/359	318	304	150	11.08	11.00	1.66	1.65	191	184	90
	965/359	526	504	250	11.32	11.24	2.83	2.81	186	179	90
	965/359	728	698	350	11.54	11.46	4.04	4.01	180	174	90
	965/359	1020	980	500	11.88	11.80	5.94	5.90	172	166	90
5T03X865L0240015	965/359	636	608	150	22.16	22.00	3.32	3.30	191	184	90
	965/359	1052	1008	250	22.64	22.48	5.66	5.62	186	179	90
	965/359	1456	1396	350	23.08	22.92	8.08	8.02	180	174	90
	965/359	2040	1960	500	23.76	23.60	11.88	11.80	172	166	90

Note:

1. Measurement precision $\pm 10\%$ for the flux data and $\pm 10\%$ for the efficacy data.
2. Measurement precision for CRI(Ra) ± 2
3. Luminous flux doesn't include secondary optics

Module Temperature (Tc case temperature at Tc point)

Part No.	Nominal	Life	Max	Unit
5T03X8xxL0060015	--	50	85	°C
5T03X8xxL0120015	--	50	85	°C
5T03X8xxL0240015	--	50	85	°C

Note:

Nominal value at which typical performance is specified

Life value at which life time is specified

Maximum value for safe operation, do not operate above this value

Absolute Ratings

Parameter	Min	Max	Unit
Operating Current	--	900	mA
ESD(HBM)	--	±2	KV
Case Temperature	--	85	°C
Operating ambient temperature	-40	+50	°C
Storage ambient temperature	-40	+85	°C
Storage ambient humidity	--	45	%

Note:

1. LEDs are not designed to be driven in reverse bias.

2. Both operating temperature and storage temperature are the environment temperature.

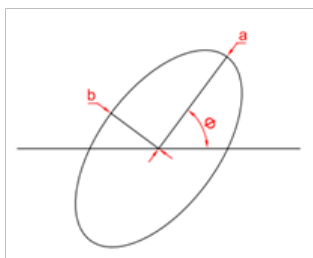
3. Maximum current = I-Max. for safety.

Standard

Item	Compliant to	Result / Remark
Certification	EN 62471	Risk Group:1
	EN 62031	Compliance
	EN 62717	Compliance
Harmful Substance & Material	RoHS	Declared
	REACH	Declared

Chromaticity Coordinates

CIE Chromaticity Diagram

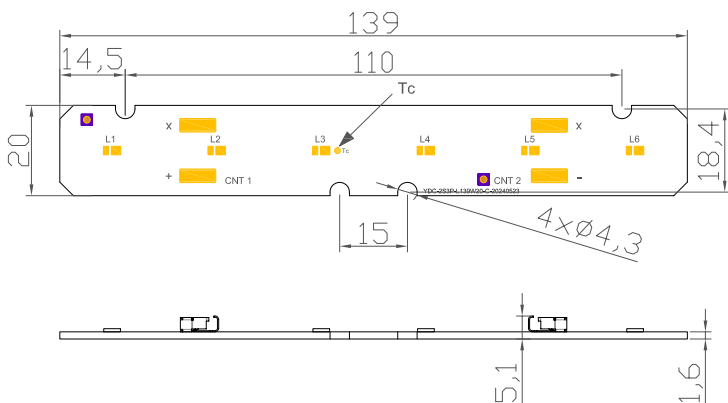


CCT	Steps	Cx	Cy	a	b	theta
6500K	3	0.3123	0.3282	0.00669	0.00285	58.57
5700K	3	0.3287	0.3417	0.00747	0.00321	59.09
5000K	3	0.3447	0.3553	0.00822	0.00354	59.62
4000K	3	0.3818	0.3797	0.00939	0.00402	53.72
3000K	3	0.4338	0.4030	0.00834	0.00408	53.22
2700K	3	0.4578	0.4101	0.00810	0.00420	53.7
2200K	3	0.5067	0.4172	0.008631	0.003981	13
1800K	3	0.5416	0.4105	0.00863	0.00398	37

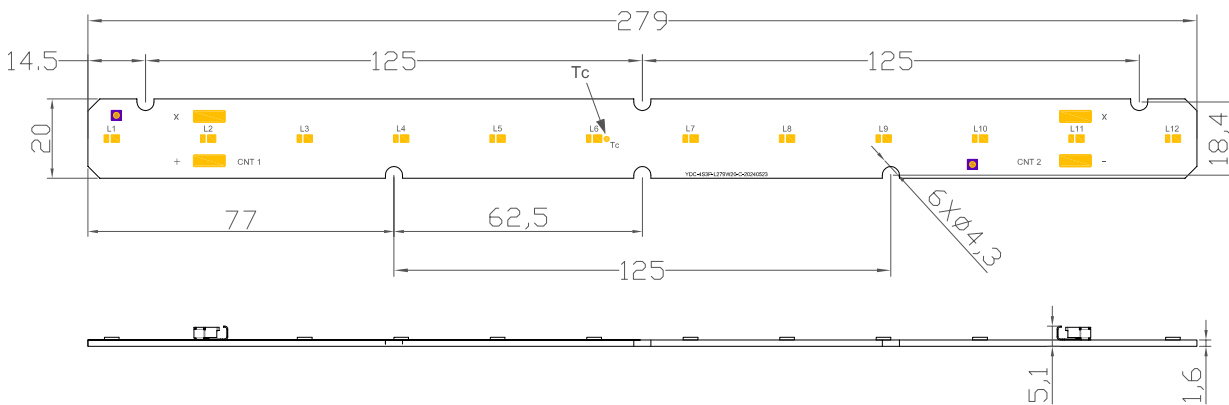
The color ranks have chromaticity ranges within 3-step MacAdam ellipse
The ambient temperature of the measurement is $t_a = 25\text{ }^{\circ}\text{C}$.
The measurement tolerance of the color coordinates are ± 0.005 .

Mechanical Characteristics

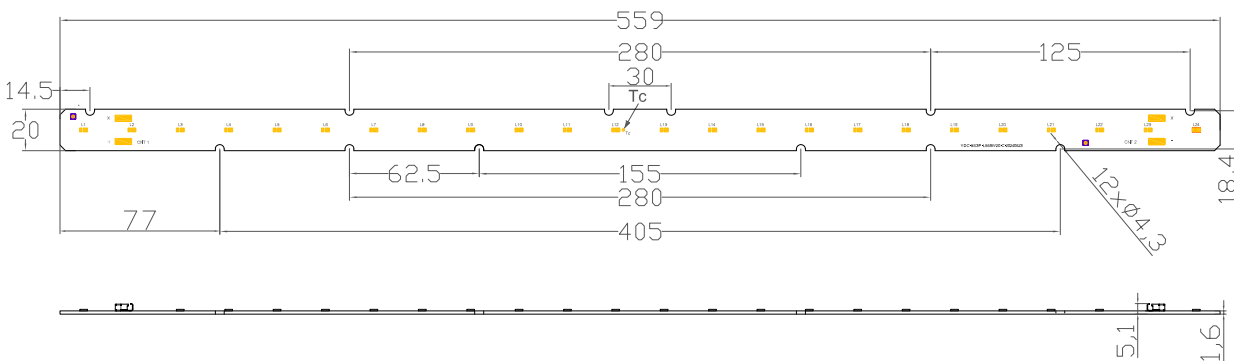
5T03X8xxL0060015



5T03X8xxL0120015



5T03X8xxL0240015

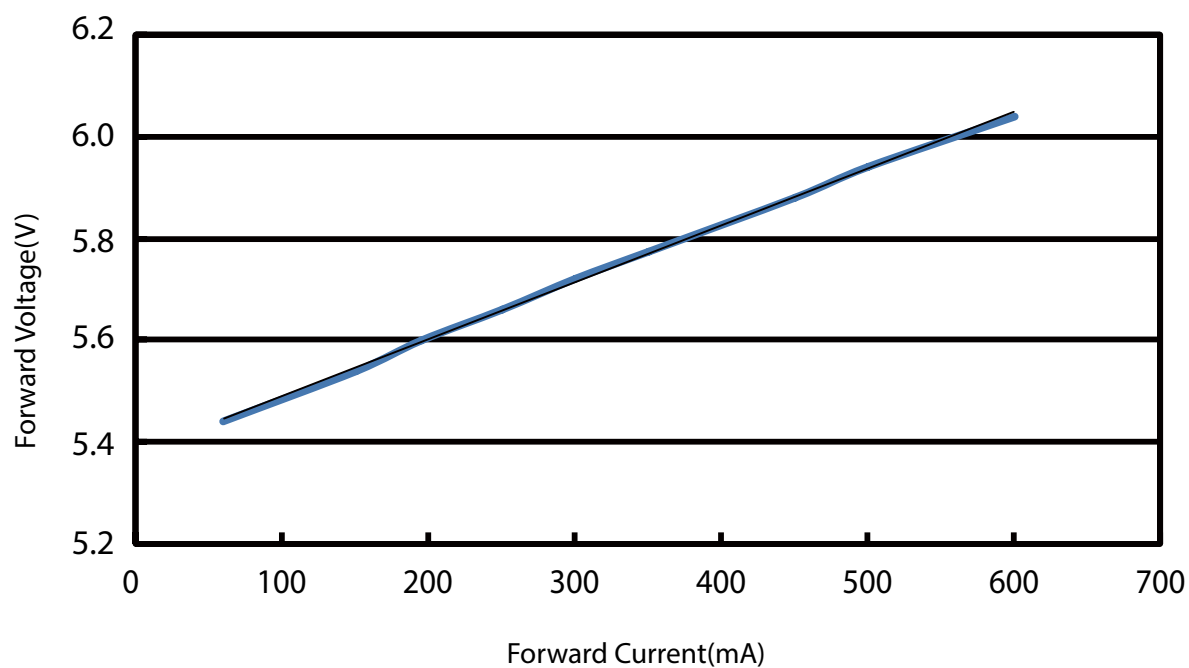


Note:
All dimensions are in millimeters.

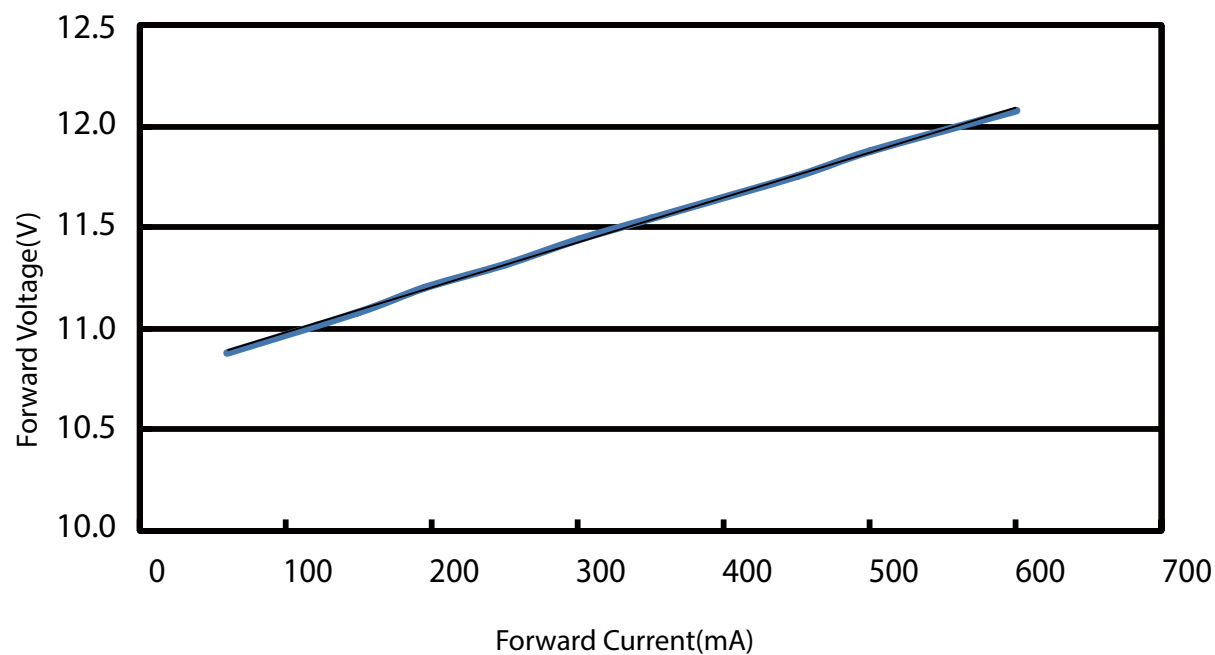
Characteristics Graph

Typ. forward voltage vs. forward current at TC=25°C

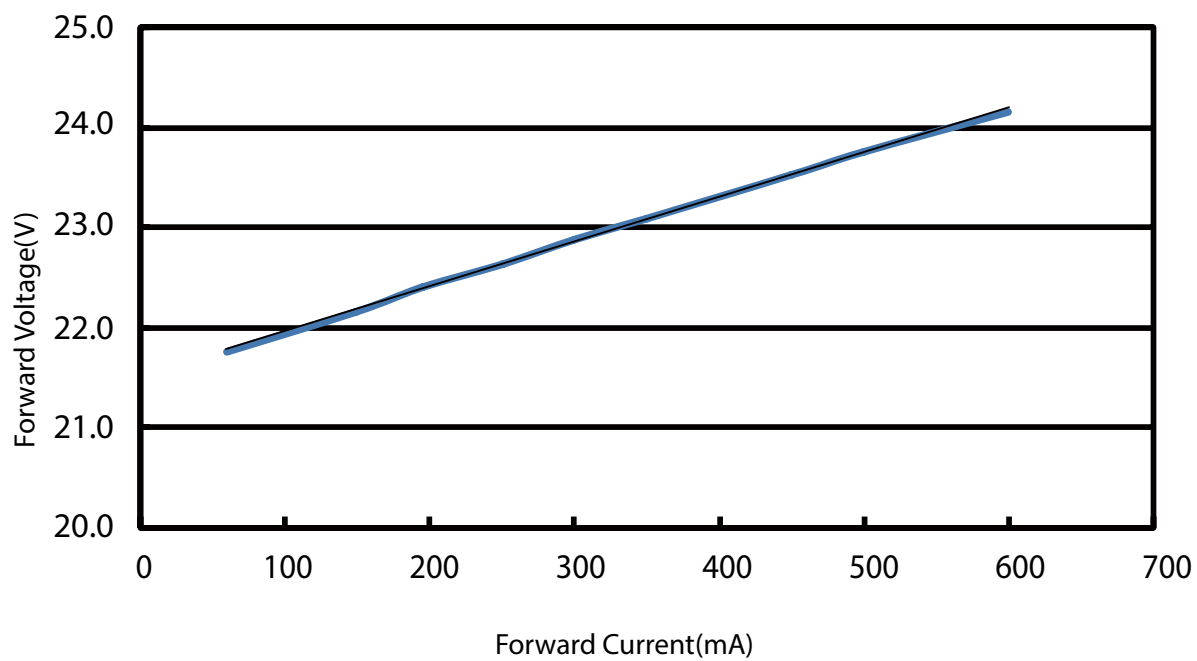
5T03X8xxL0060015



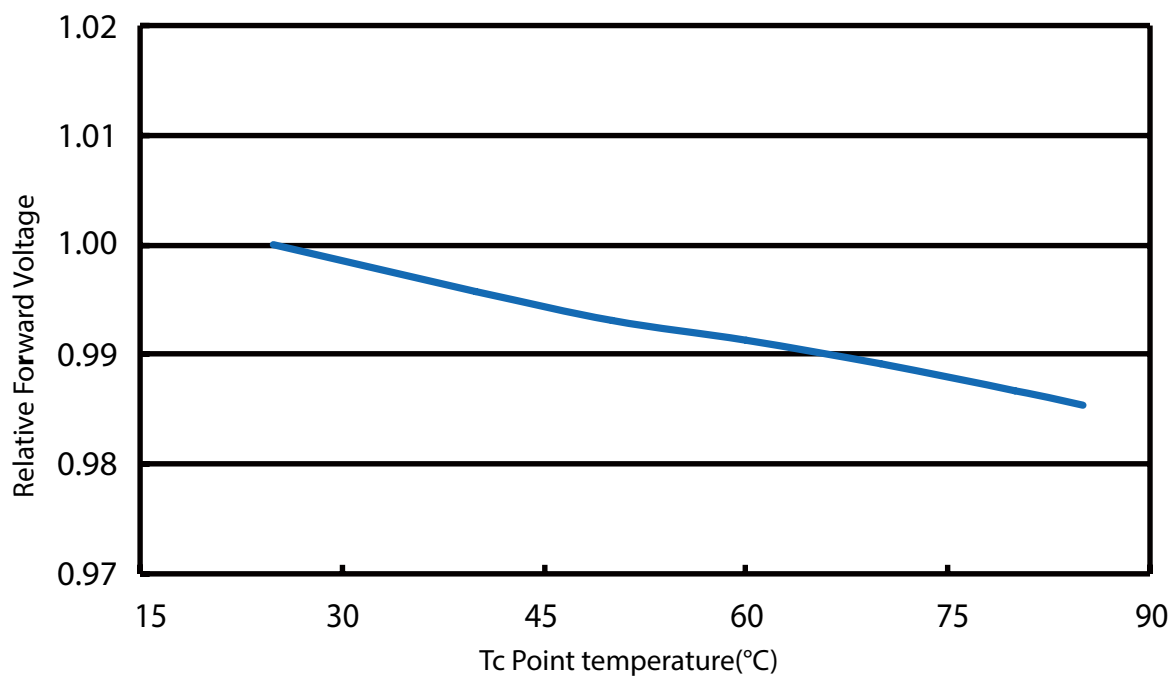
5T03X8xxL0120015



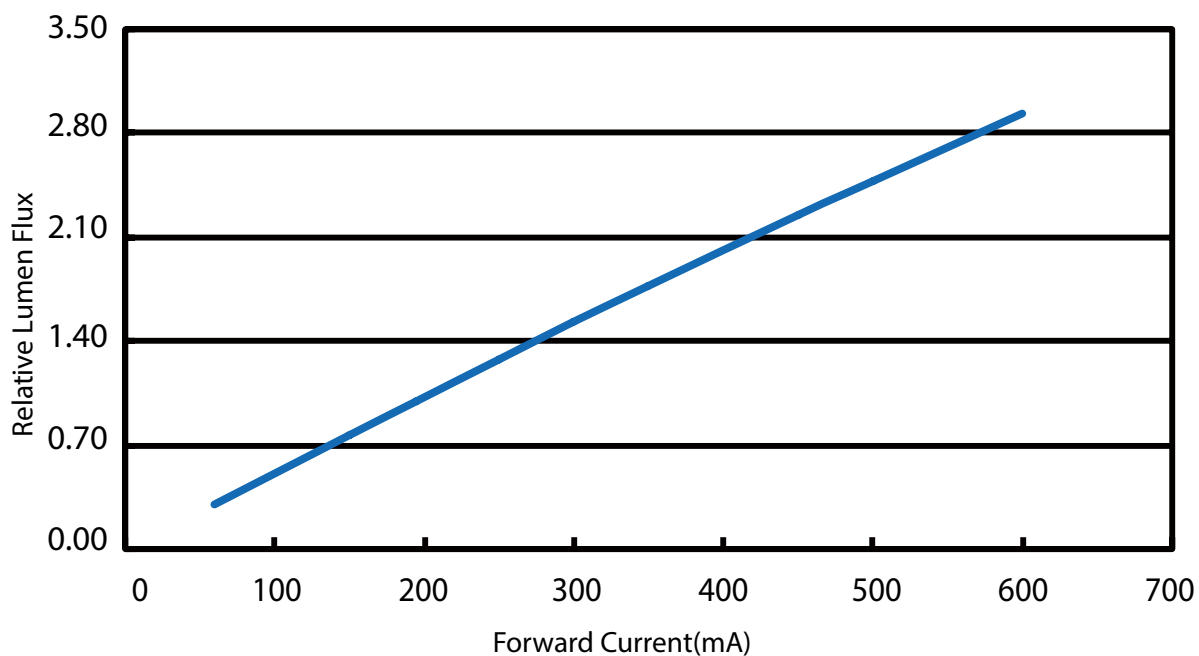
5T03X8xxL0240015



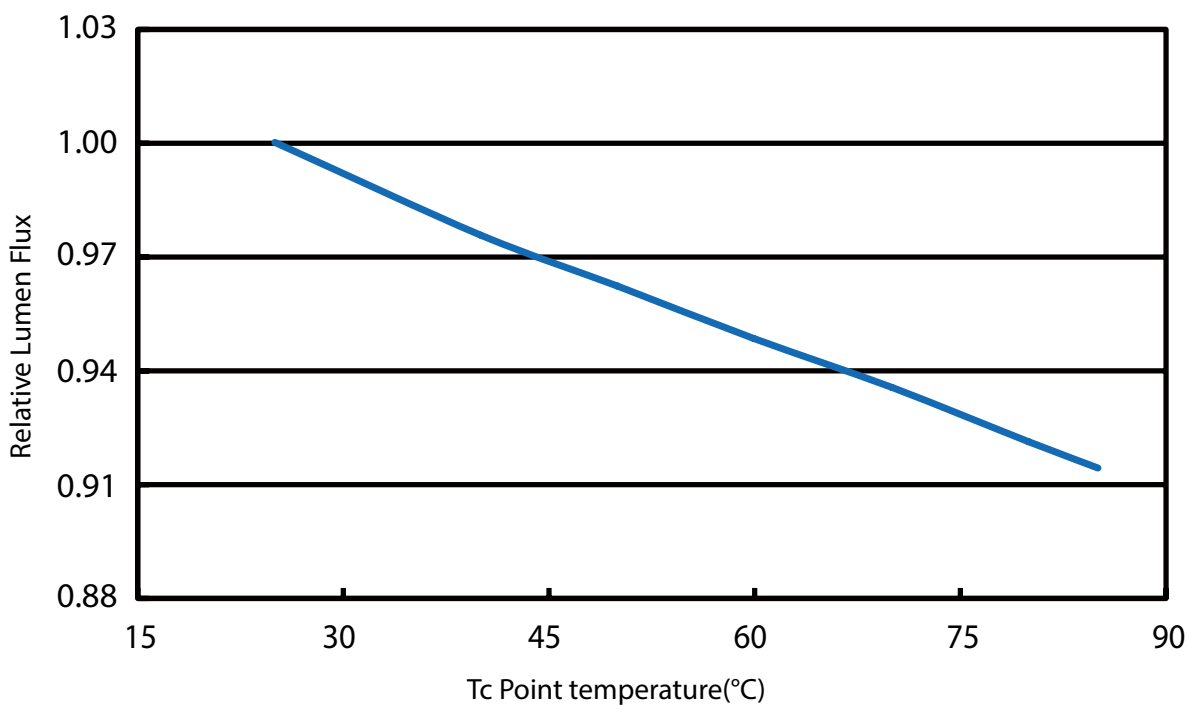
Relative Forward Voltage V.S. Tc Point temperature



Relative Lumen flux V.S. Forward Current



Relative Lumen flux V.S. Tc Point temperature

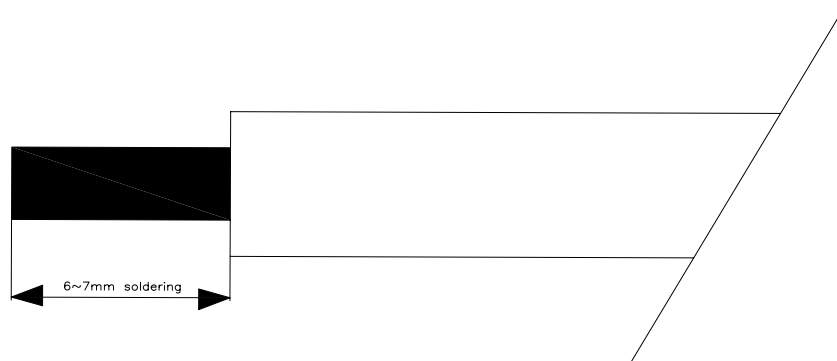


The diagrams are based on statistic values.
The real values can be different.

Wire condition

The wiring should be solid cable with a cross section of 0.4 to 0.75mm².

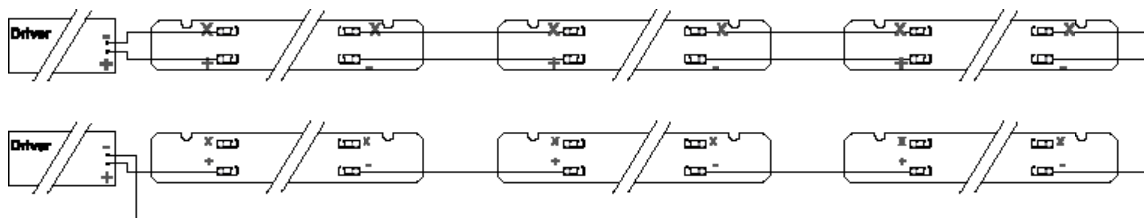
Push in-wire connection you have to strip the insulation (6-7mm)



Installation

1. The LED modules are designed for serial wiring. Parallel wiring is not permitted.
2. The LED models are basic insulated up to 300 V (if mounted with M4 screws in combination with plastic washers) against ground and can be mounted directly on earthed metal parts of the luminaire. If the max. output voltage of the LED Driver (also against earth) is above 300 V, an additional insulation between LED module and heat sink is required (for example by insulated thermal pads) or by a suitable luminaire construction.
3. The LED module must be supplied by a constant current LED Driver.
Operation with a constant voltage LED Driver will lead to an irreversible damage of the module.

Wiring examples



Product Packaging Information

Part No.	Tray	Net Weight	Outer Box	Gross Weight
5T03X8xxL00600xx	64PCS	790g	640PCS	8800g
5T03X8xxL01200xx	32PCS	770g	280PCS	8600g
5T03X8xxL02400xx	16PCS	760g	160PCS	8500g

Precaution for Use

1. DO NOT touch the circuit board, components or terminals with body or metal while the circuit is active.
2. DO NOT add or change wires while the circuit of module is active.
3. Long time exposure to sunlight or UV should be avoided; otherwise, it may cause the discoloration of lens.
4. DO NOT use adhesives to attach the LED that outgas organic vapor.
5. DO NOT use the products with materials containing Sulfur.
6. DO NOT assemble in humid environment or the conditions of containing oxidizing gas such as Cl, H₂S, NH₃, SO₂, NO_x, etc.
7. DO NOT make any modifications on the products.
8. DO NOT press the product; even a slight pressure may damage the product.
The environments such as high temperatures, high humidity or direct expose to sunlight should be avoided since the product is sensitive to these conditions.
9. Storage Precautions:
 - (1)The devices should be stored in the anti-static bag.
 - (2)If the anti-static bag has been opened, please make sure to reseal the bag to avoid air and moisture infiltrate in the bag.
10. DO NOT wear any conductive accessories (such as jewelry) which could accidentally get an electric shock.
11. DO NOT directly make the HI-POT test over 750V on the module.
12. DO NOT added or removed Module without shutting down the operating Driver system (Hot-plugging). It will generate transient voltage and damage LED.

Environmental Compliance

The ZHAGA module series are compliant to the Restriction of Hazardous Substances Directive or RoHS . The restricted materials including lead, mercury, cadmium, hexavalent chromium, polybrominated diphenyl ether (PBDE), diisobutyl phthalate (DIBP), phthalic acid (2-ethylhexyl ester) (DEHP), dibutyl phthalate (DBP) and benzyl butyl phthalate (BBP) are not used in the module series to provide an environmentally friendly product to the customers.

Datasheet History

Versions	Description	Release Date
0.1	Establish	2024/06/18

About Edison Opto

Edison Opto is a leading manufacturer of high power LED and a solution provider experienced in LDMS. LDMS is an integrated program derived from the four essential technologies in LED lighting applications- Thermal Management, Electrical Scheme, Mechanical Refinement, Optical Optimization, to provide customer with various LED components and modules. More Information about the company and our products can be found at www.edison-opto.com

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