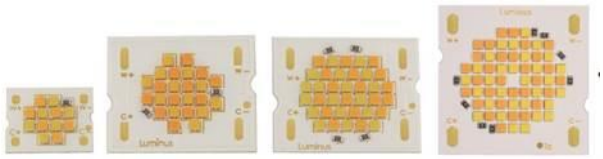
Luminus Dynamic COB
Two Channel CCT Tunable
Datasheet

CCT Tunable LED Spot Modules



Features:

- Two channel cool and warm 90+ CRI MP-1616 XNOVA Cube LEDs on metal PC board
- 95 CRI typical with both channels powered on
- High lumen density for directional lighting
- Enables system beam angles from 10 to 40 degrees
- 4000K to 1800K CCT range for residential and hospitality lighting
- 6500K to 2700K CCT range for commercial lighting
- Robust design with LM-80 tested MP-1616 series LEDs
- Consistent white light <3 SDCM
- Specified "hot" performance and 100% factory tested at T_j=85°C

Applications:

- Human centric lighting
- Hospitality / hotel / restaurant lighting
- Residential lighting
- Museum and high-end retail lighting
- Circadian lighting in hospitals, offices, or schools
- Public, commercial buildings
- Ceiling and wall mounted lights
- Multi-function space lighting

Products Families

- CTM-9-XXXX-YY-36-TW01: Typical 7W per channel, 9.5mm LES
- CTM-14-XXXX-YY-36-TW01: Typical 15W per channel, 14.5mm LES
- CTM-18-XXXX-YY-36-TW01: Typical 20W per channel, 17.5mm LES
- CTM-22-XXXX-YY-36-TW01: Typical 32W per channel, 22mm LES
    - XXXX: CCT range ("4018" = 4000K to 1800K)
    - YY: minimum CRI
    - "36" = 36V typical voltage
    - TW01 = standard configuration

Technical Data

Electrical data @ T_j=85°C

Part number	Nominal forward current per channel	Nominal input power per channel	Nominal voltage per channel	Maximum voltage per channel	Maximum forward current per channel*	Maximum input power per channel*
CTM-9-4018-90-36-TW01	200mA	7W	37V	39V	220mA	9W
CTM-9-6527-90-36-TW01	200mA	7W	37V	39V	220mA	9W
CTM-14-4018-90-36-TW01	400mA	15W	37V	39V	440mA	18W
CTM-14-6527-90-36-TW01	400mA	15W	37V	39V	440mA	18W
CTM-18-4018-90-36-TW01	550mA	20W	37V	39V	660mA	27W
CTM-18-6527-90-36-TW01	550mA	20W	37V	39V	660mA	27W
CTM-22-4018-90-36-TW01	875mA	32W	37V	39V	1100mA	45W
CTM-22-6527-90-36-TW01	875mA	32W	37V	39V	1100mA	45W

* Note that the maximum current and maximum power per channel also serve as guidelines for maximum current and maximum power for both channels combined. Luminaire thermal system capability and power derating curves on page 6 must be considered, and most 2 channel drivers will limit or should limit the combined maximum forward current of both channels per the values in the table above.

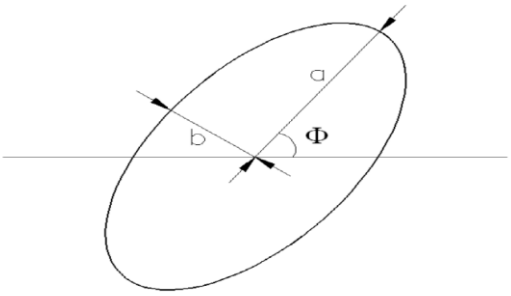
Photometric Data @ T_j=85°C and Nominal Forward Current:

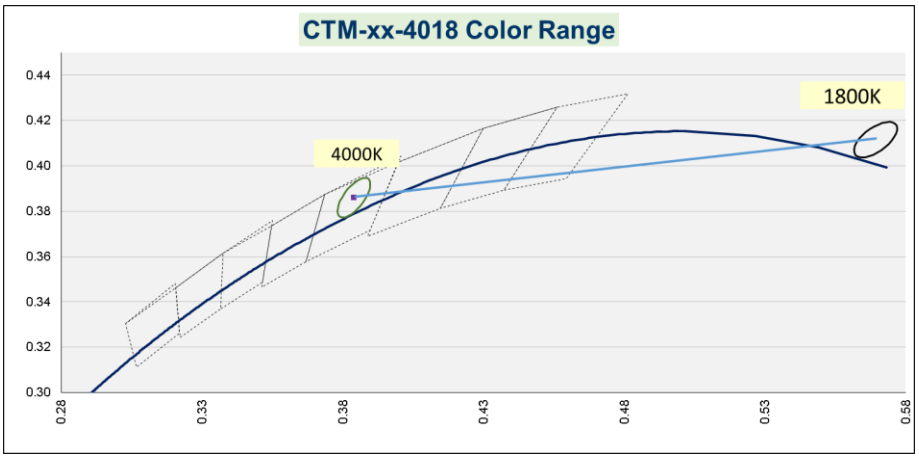
Part number	CRI (min)	CCT of cool white	Minimum flux (lumens)	Nominal flux (lumens)		CCT of warm white	Minimum flux (lumens)	Nominal flux (lumens)
CTM-9-4018-90-36-TW01	90	4000K	635	685		1800K	375	405
CTM-9-6527-90-36-TW01	90	6500K	660	710		2700K	570	615
CTM-14-4018-90-36-TW01	90	4000K	1300	1370		1800K	785	825
CTM-14-6527-90-36-TW01	90	6500K	1350	1420		2700K	1190	1255
CTM-18-4018-90-36-TW01	90	4000K	1850	1950		1800K	1120	1180
CTM-18-6527-90-36-TW01	90	6500K	1900	2000		2700K	1700	1785
CTM-22-4018-90-36-TW01	90	4000K	2945	3100		1800K	1780	1875
CTM-22-6527-90-36-TW01	90	6500K	3000	3160		2700K	2700	2840

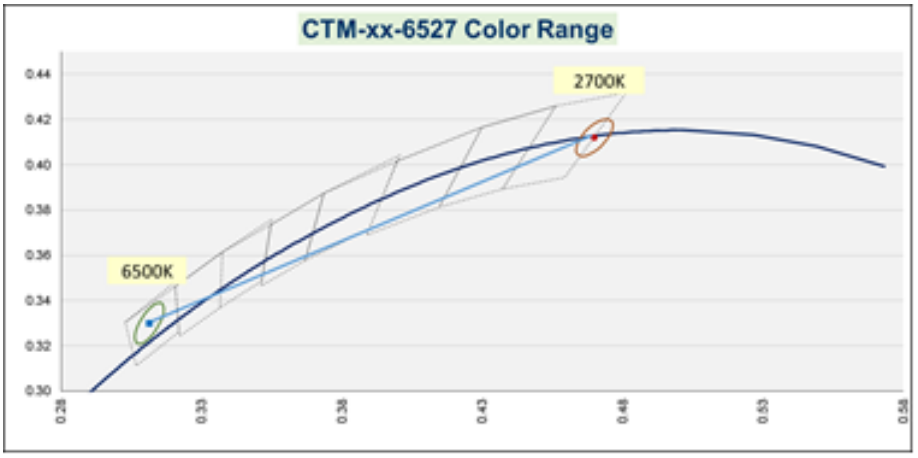
Chromaticity Bins @ T_j=85°C:

	Center point		Angle	3-step Bin	
Nominal CCT	**CIEx**	**CIEy**	**Θ(°)**	**a**	**b**
1800K	0.5656	0.4136	46.51	0.00989	0.00476
2700K	0.4700	0.4120	54.39	0.00964	0.00421
4000K	0.3860	0.3870	60.58	0.00979	0.00385
6500K	0.3108	0.3300	65.23	0.00992	0.00341

Ellipse Definition:







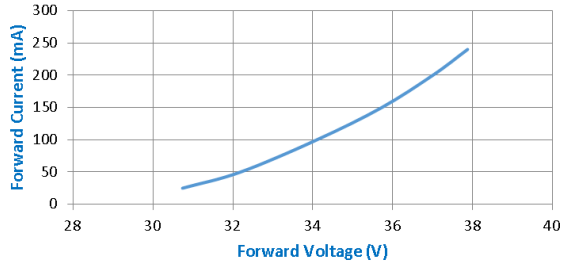
Absolute Maximum Ratings & Optical/Electrical Characteristics:

Parameter	Symbol	Minimum	Typical	Maximum	Unit
Operating case temperature	Tc			105	°C
Junction temperature	Tj			125	°C
Viewing angle	2(Θ1/2)		130		degrees
Reverse voltage	Vr			5	volts
Ambient operating temperature	Topr	-40		+85	°C
Storage temperature	Tsto	-40		+85	°C
Electrostatic Discharge	ESD			4000V	HBM

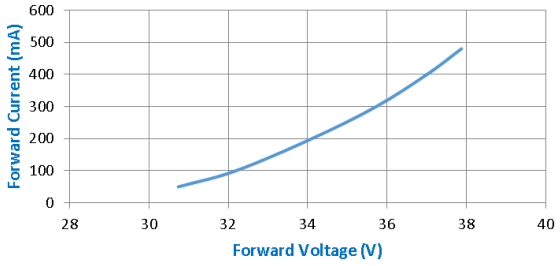
Mechanical Dimensions & Thermal Resistance:

Part Number	Light Emitting Surface (LES) Diameter	Board Size	Typical Thermal Resistance (Rthj-c)	PCB Thickness
CTM-9-4018-90-36-TW01	9.5mm	12x15mm	1.8 K/W	1mm
CTM-9-6527-90-36-TW01	9.5mm	12x15mm	1.8 K/W	1mm
CTM-14-4018-90-36-TW01	14.5mm	20x24mm	0.67 K/W	1mm
CTM-14-6527-90-36-TW01	14.5mm	20x24mm	0.67 K/W	1mm
CTM-18-4018-90-36-TW01	17.5mm	20x24mm	0.5 K/W	1mm
CTM-18-6527-90-36-TW01	17.5mm	20x24mm	0.5 K/W	1mm
CTM-22-4018-90-36-TW01	22mm	28x28mm	0.4 K/W	1mm
CTM-22-6527-90-36-TW01	22mm	28x28mm	0.4 K/W	1mm

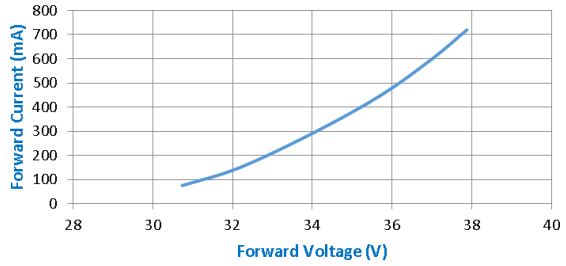
CTM-9 (each channel) @ T_j=85°C
Forward Current vs. Forward Voltage



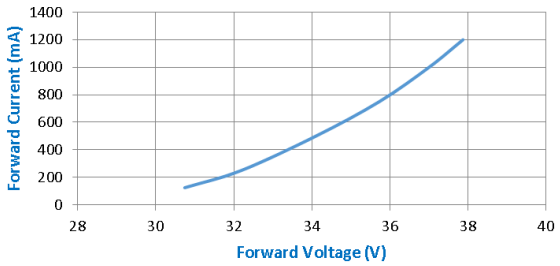
CTM-14 (each channel) @ T_j=85°C
Forward Current vs. Forward Voltage



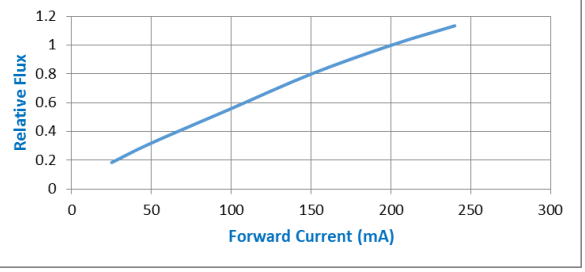
CTM-18 (each channel) @ T_j=85°C
Forward Current vs. Forward Voltage



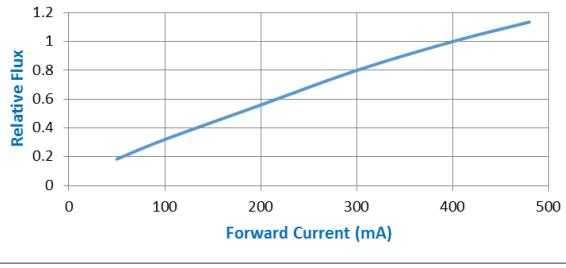
CTM-22 (each channel) @ T_j=85°C
Forward Current vs. Forward Voltage



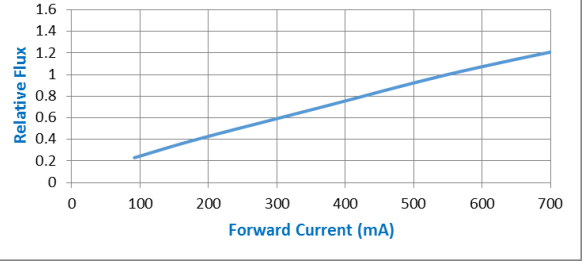
CTM-9 Relative Luminus Flux vs.
Forward Current per Channel



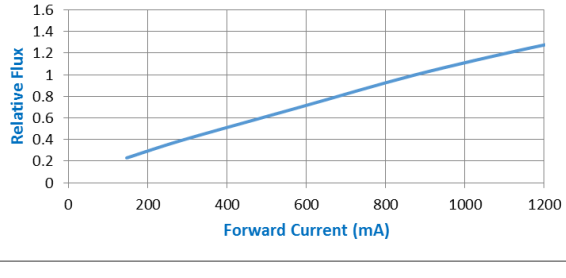
CTM-14 Relative Luminus Flux vs.
Forward Current per Channel

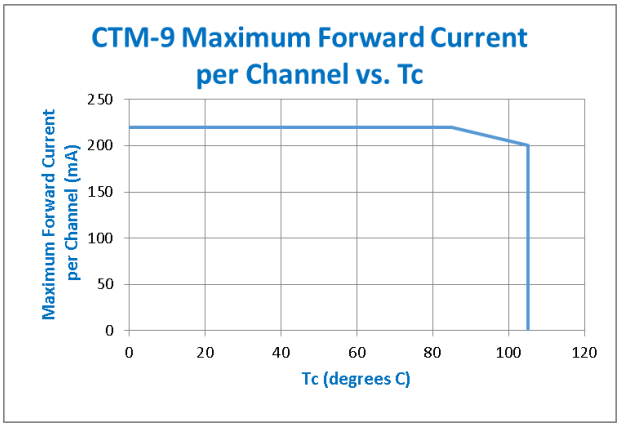


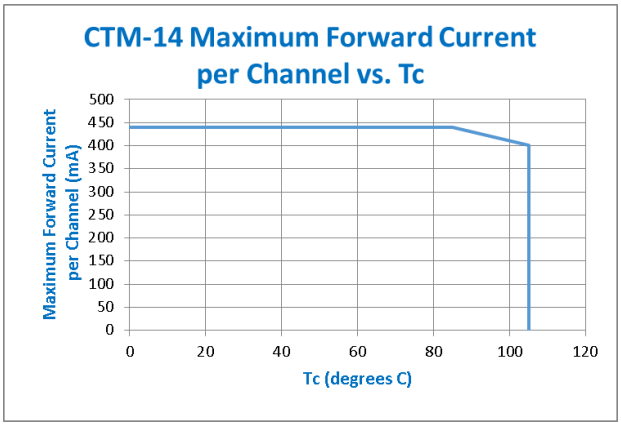
CTM-18 Relative Luminus Flux vs.
Forward Current per Channel

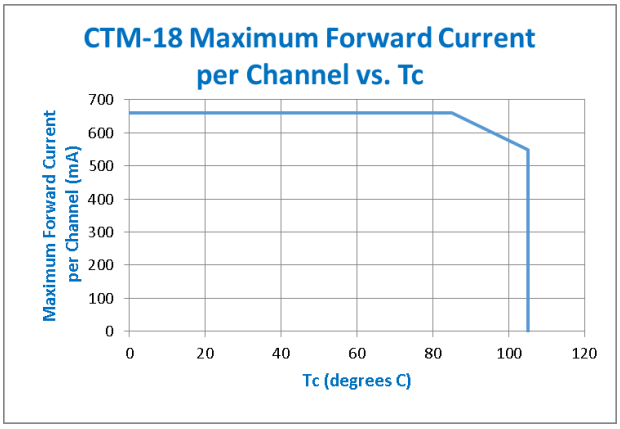


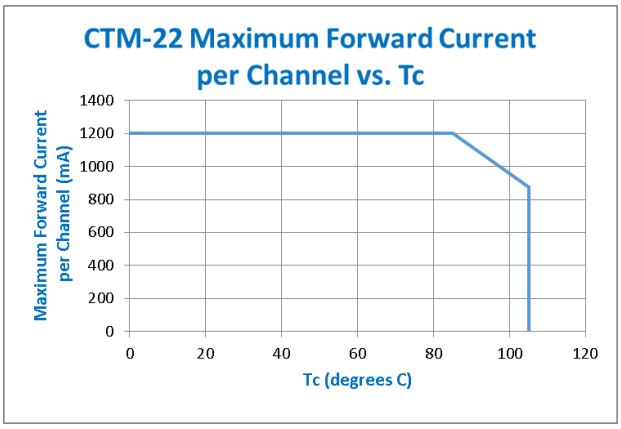
CTM-22 Relative Luminus Flux vs.
Forward Current per Channel

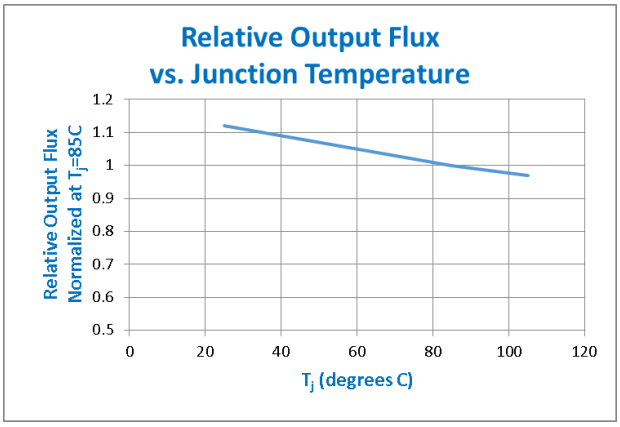


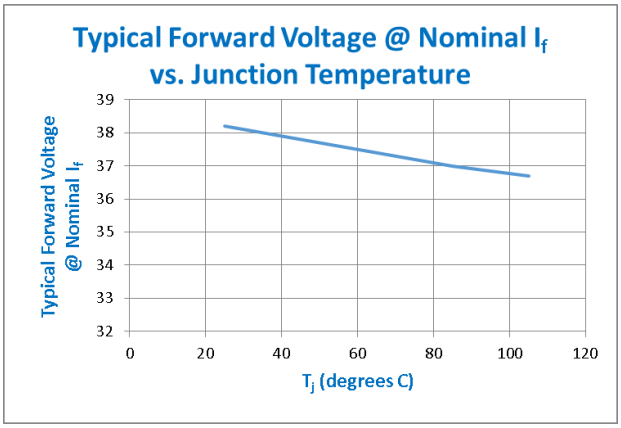

CTM-9 Maximum Forward Current per Channel vs. Tc
Maximum Forward Current per Channel (mA)
250
200
150
100
50
0
0
20
40
60
80
100
120
Tc (degrees C)


CTM-14 Maximum Forward Current per Channel vs. Tc
Maximum Forward Current per Channel (mA)
500
450
400
350
300
250
200
150
100
50
0
0
20
40
60
80
100
120
Tc (degrees C)

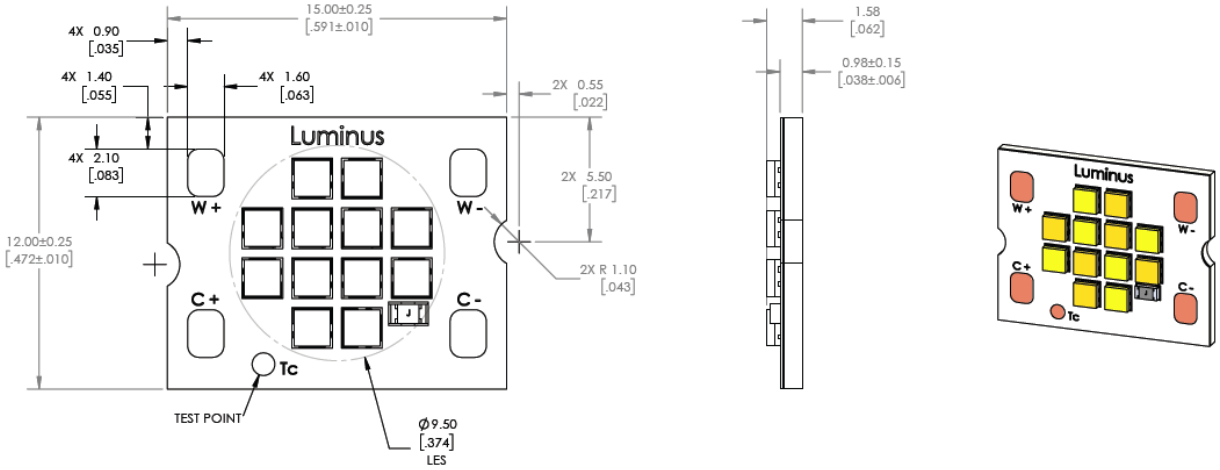

CTM-18 Maximum Forward Current per Channel vs. Tc
Maximum Forward Current per Channel (mA)
700
600
500
400
300
200
100
0
0
20
40
60
80
100
120
Tc (degrees C)


CTM-22 Maximum Forward Current per Channel vs. Tc
Maximum Forward Current per Channel (mA)
1400
1200
1000
800
600
400
200
0
0
20
40
60
80
100
120
Tc (degrees C)

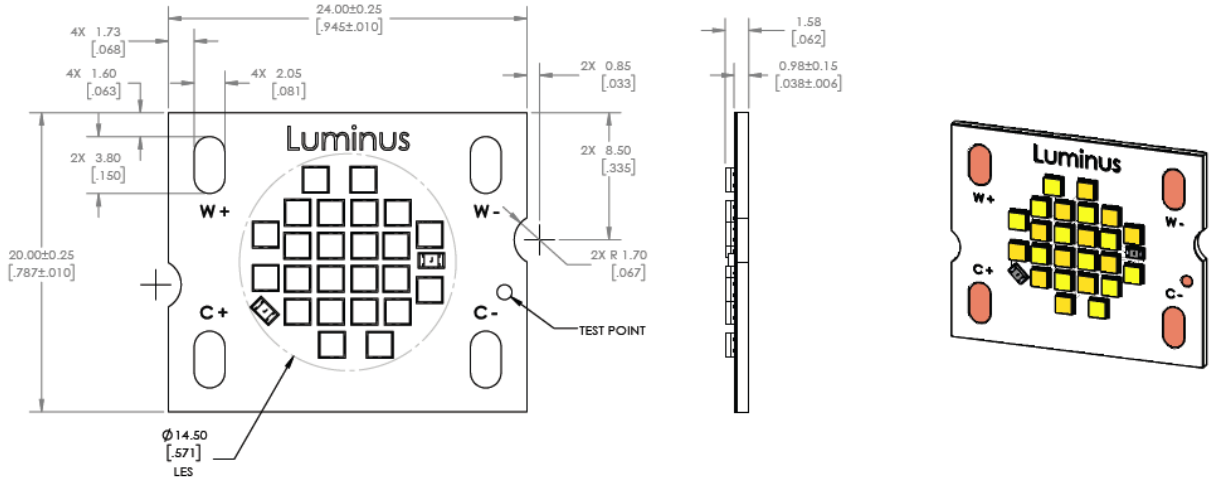

Relative Output Flux vs. Junction Temperature
Relative Output Flux Normalized at Tj=85C
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
0
20
40
60
80
100
120
Tj (degrees C)


Typical Forward Voltage @ Nominal If vs. Junction Temperature
Typical Forward Voltage @ Nominal If
39
38
37
36
35
34
33
32
0
20
40
60
80
100
120
Tj (degrees C)

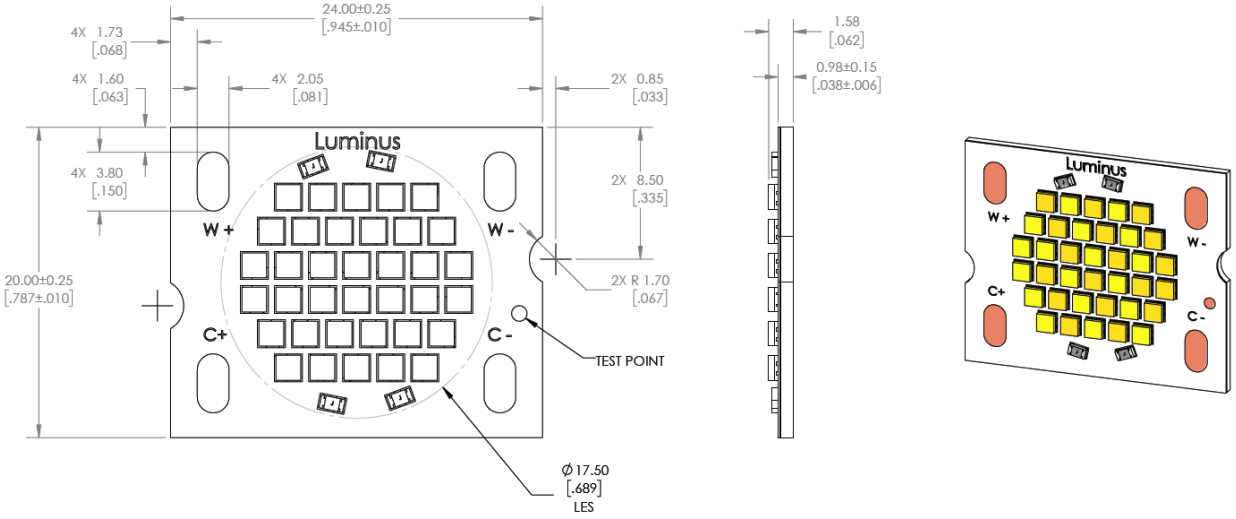
CTM-9 Series Package Dimensions



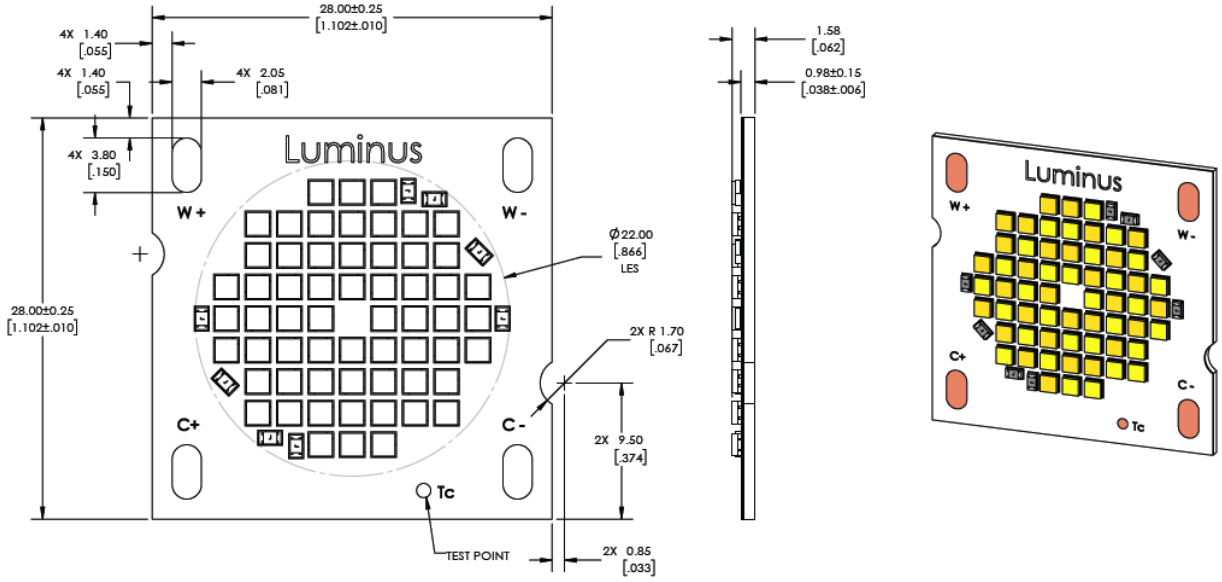
CTM-14 Series Package Dimensions



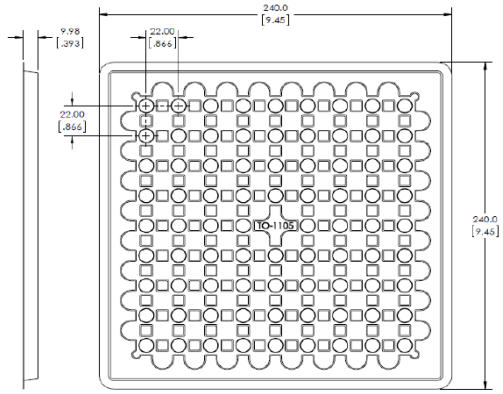
CTM-18 Series Package Dimensions

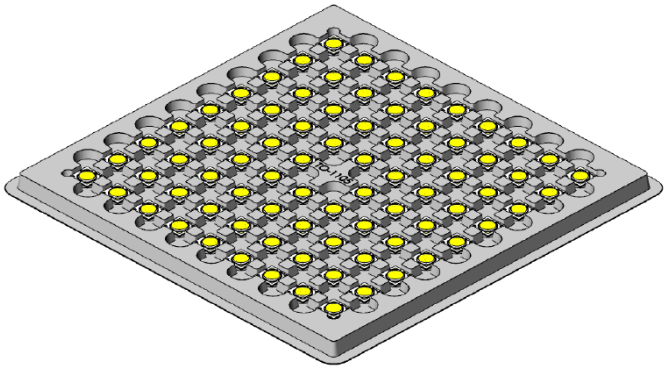


CTM-22 Series Package Dimensions



Shipping Container (CTM-9)





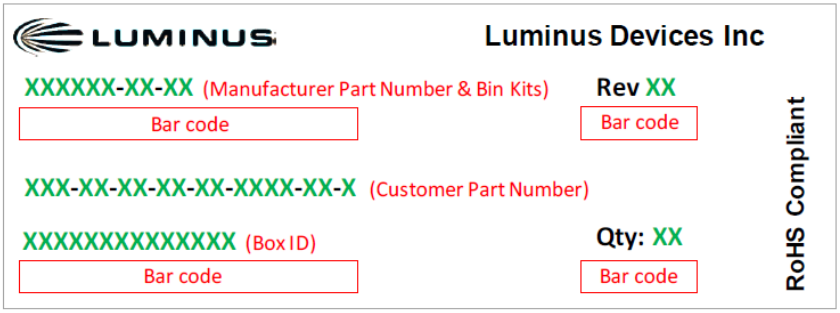
Shipping Container (CTM-14 and CTM-18)

Similar to above but 30 pcs per tray and 150 pcs per box

Shipping Container (CTM-22)

Similar to above but 20 pcs per tray and 100 pcs per box

Luminus Label Model:



Handling Notes for Luminus COBs

Luminus products are designed for robust performance in general lighting applications; however, care must be taken when handling and assembling the LEDs into their fixtures. To avoid damaging Luminus COBs, please follow these guidelines. The following is an overview of the application notes detailing some of the practices to follow hen working with these devices. More detailed information is available on the Luminus website at www.luminus.com

General Handling

Devices are made to be lifted or carried with tweezers on two "mouse bite" locations. At no time should the devices be handled by or should anything come in contact with the light emitting surface (LES) area. There are electrical connections under the LES which, if damaged, will cause the device to fail.

Static Electricity

LEDs are electronic devices which can be damaged by electrostatic discharge (ESD). Please use appropriate measures to assure the devices do not experience ESD during their handling and/or storage. ESD protection guidelines should be used at all times when working with LEDs.
Storage: Luminus products are delivered in ESD shielded bags and should be stored in these bags until used.
Assembly: Individuals handling LEDs during assembly should be trained in ESD protection practices. Assemblers should maintain constant conductive contact with a path to ground by means of a wrist strap, ankle straps, mat, or other ESD protection system.
Transporting: When transporting the devices from one assembly area to another, ESD shielded carts and carriers should be used.

Electrical Contact

Luminus COBs are designed with electrical contact pads on their top surface. These pads are clearly marked with "+" and "-" polarity. Wires can be soldered to the contact pads for electrical connections or other solderless connector products are available. If wires are being soldered to the COB product, we recommend attaching these wires prior to mounting the devices to a heat sink. Please contact Luminus for specific recommendations on how to solder wires if not familiar with the standard practice. Luminus can also offer design recommendations for jigs to enable easy soldering of multiple products in rapid succession.

Chemical Compatibility

The resin material used to form the emitters inside the LES can getter hydrocarbons from the surrounding environment. As a result, certain chemical compounds are not recommended for use with Luminus products. Use of these compounds can cause damage to the light output of the device and may permanently damage the device. Please refer to www.luminus.com for a list of the compounds not recommended for use with Luminus COB products.

Thermal Interface Material (TIM)

Proper thermal management is critical for successful operation of any LED system. Excess operating temperature can reduce the light output of the device, and excessive heating can cause permanent damage to the device. Proper TIM material is a crucial component for effective heat transfer away from the LED during normal operation. Please refer to www.luminus.com for specific recommendations for TIM solutions.

Human Eye Safety

Caution must be taken not to stare at the light emitted from Luminus LEDs, as severe eye damage may occur.

Общество с ограниченной ответственностью «МосЧип» ИНН 7719860671 / КПП 771901001
Адрес: 105318, г.Москва, ул.Щербаковская д.3, офис 1107

Данный компонент на территории Российской Федерации

Вы можете приобрести в компании MosChip.

Для оперативного оформления запроса Вам необходимо перейти по данной ссылке:

http://moschip.ru/get-element

Вы можете разместить у нас заказ для любого Вашего проекта, будь то серийное производство или разработка единичного прибора.

В нашем ассортименте представлены ведущие мировые производители активных и пассивных электронных компонентов.

Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

Офис по работе с юридическими лицами:

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