

# DATA SHEET

## AC Direct CSP Series

## AC Direct CSP SERIES

The AC Direct CSP series of products do not need the standard converter essential for conventional general lighting products. This will also allow for a much smaller form factor from an overall fixture design allowing for higher creativity in the fixture; It is made up of flip chip LEDs and has small LES, more flexible when design and can meet various requirement from mechanical.

## PRODUCT DESCRIPTION

Connects directly to AC line voltage

Multiple CCTs available (2700K-6500K)

CRI80&90 options

3 step MacAdam color binning

Small light emitting surface

Flicker Percent<30%

Triac Dimming

UL file number: E476040

5 year warranty at  $T_p \leq 70^\circ\text{C}$

## TARGET APPLICATIONS

Down light

Spot Light

Ceiling lighting

...

## APPLIED STANDARDS

EN 62031

EMC: EN 55015    EN 61547    EN 61000-3-2    EN 61000-3-3    EN 61000-4-4    EN 61000-4-5

EMI: EN55015    EN61000-3-2    EN61000-3-3

EMS: EN61547

EMF: EN62493

UL 8750

Energy Star surge protection requirements

Note: All specifications are subject to change without notice.

## GLV74CD0D01/CW-DA60TSE172 WHITE SERIES

PARAMETER	CONDITIONS
PCB	MCPCB with $\Phi$ 130mm
	UL component file number: E213009
Emitter Type	72 x CSP emitter 1.34*1.34mm LEDs
	UL component file number: E347623
Circuit Layout	3P24S
Connector Type	Wago connector: 2060-451/998-404
Thermal Resistance (p-n junction to chip point)	Rth= 2 K/W
Thermal Resistance (Ts to Tp)	Approx. 0.0085°C/W
Thermal Resistance (Ts to the back of Tp)	Approx. 0.0203°C/W

## PRODUCT SELECTION GUIDE

PART NUMBER (without cover)	PART NUMBER (with cover)	CCT	CRI (min.)
GLV74CD0D01/CW-DA60TSE172827	GLV74CD0D01/CW-DA60TSE172827P	2700K	80
GLV74CD0D01/CW-DA60TSE172927	GLV74CD0D01/CW-DA60TSE172927P		90
GLV74CD0D01/CW-DA60TSE172830	GLV74CD0D01/CW-DA60TSE172830P	3000K	80
GLV74CD0D01/CW-DA60TSE172930	GLV74CD0D01/CW-DA60TSE172930P		90
GLV74CD0D01/CW-DA60TSE172835	GLV74CD0D01/CW-DA60TSE172835P	3500K	80
GLV74CD0D01/CW-DA60TSE172840	GLV74CD0D01/CW-DA60TSE172840P	4000K	80
GLV74CD0D01/CW-DA60TSE172850	GLV74CD0D01/CW-DA60TSE172850P	5000K	80
GLV74CD0D01/CW-DA60TSE172857	GLV74CD0D01/CW-DA60TSE172857P	5700K	80
GLV74CD0D01/CW-DA60TSE172865	GLV74CD0D01/CW-DA60TSE172865P	6500K	80

Note: All specifications are subject to change without notice.

## BOARD OPTICAL CHARACTERISTICS (Ts=25 °C)

BOARD	CCT	CRI	FLUX (lm)		EFFICACY (lm/W)	
			MIN.	TYP.	MIN.	TYP.
GLV74CD0D01/C W-DA60TSE172 Series	2700K	80	4737	5136	79	86
		90	3939	4737	66	79
	3000K	80	4737	5136	79	86
		90	3939	4737	66	79
	3500K	80	5136	5535	86	92
	4000K	80	5136	5535	86	92
	5000K	80	5535	5934	92	99
	5700K	80	5136	5535	86	92
	6500K	80	5136	5535	86	92

## BOARD OPTICAL CHARACTERISTICS (Ts=25 °C)\*

BOARD	CCT	CRI	FLUX (lm)		EFFICACY (lm/W)	
			MIN.	TYP.	MIN.	TYP.
GLV74CD0D01/C W-DA60TSE172 Series	2700K	80	4339	4705	72	78
		90	3608	4339	60	72
	3000K	80	4339	4705	72	78
		90	3608	4339	60	72
	3500K	80	4705	5070	78	84
	4000K	80	4705	5070	78	84
	5000K	80	5070	5435	84	91
	5700K	80	4705	5070	78	84
	6500K	80	4705	5070	78	84

\* The data is based on plastic protective cover efficiency 91.6%

## BOARD ELECTRICAL CHARACTERISTICS

	Min.	Typ.	Max.
Voltage (V)	108	120	132
Total Board Power (W)	-	60±10%	-

## TECHNICAL CHARACTERISTICS\*

Input Frequency	Vac(V)	Iin(A)	PF	THD (%)	Pin(W)	Flicker Percent (%)	Flicker Index	Surge Protection
50/60Hz	108	0.495	0.971	20.6	51.91	29.7	0.10	1KV
	115	0.510	0.983	13.7	57.63	30.29	0.10	
	120	0.504	0.988	10.7	59.83	28.83	0.09	
	125	0.495	0.990	9.4	61.3	28.32	0.09	
	132	0.475	0.989	10.8	61.99	26.82	0.08	

\* sample testing data.

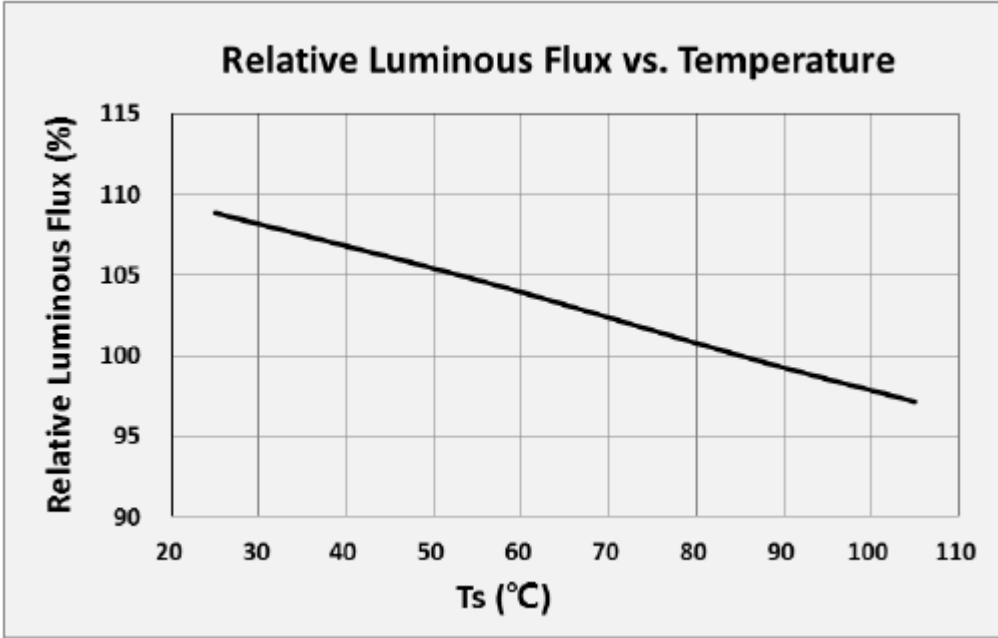
## TECHNICAL CHARACTERISTICS

Input Frequency	PFC	THD	Surge Protection
50/60Hz	>0.95	<30%	1KV

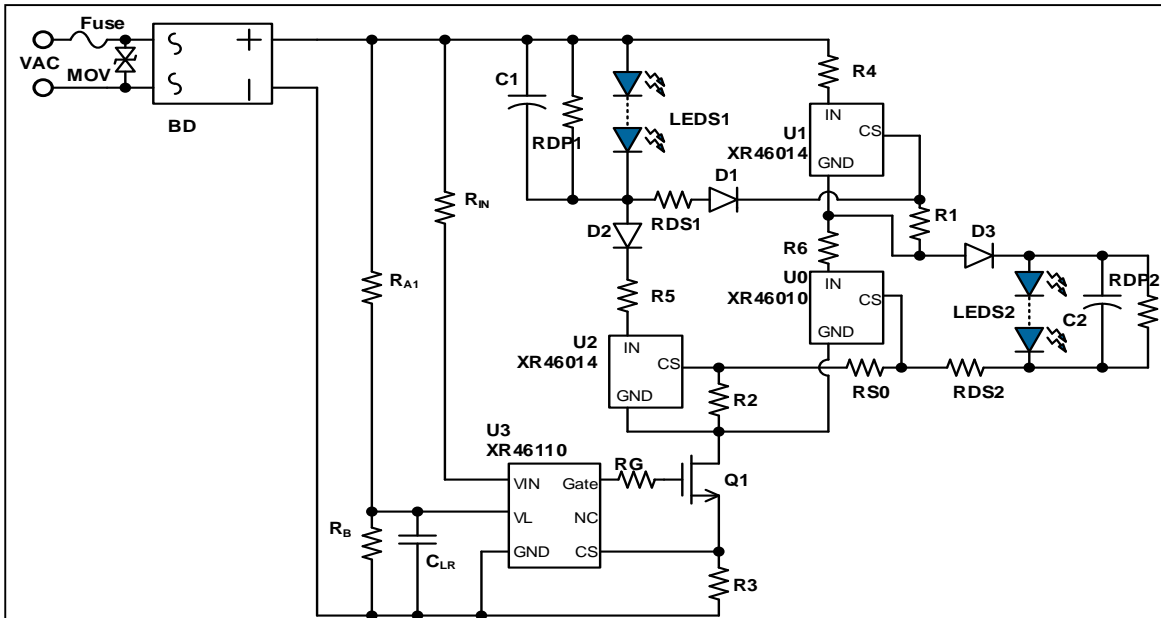
## ENVIRONMENTAL CHARACTERISTICS

	Storage Temperature	PCB Temperature (T <sub>p</sub> )
Min.	-40°C	-40°C
Max.	85°C	80°C

# TEMPERATURE CHARACTERISTICS

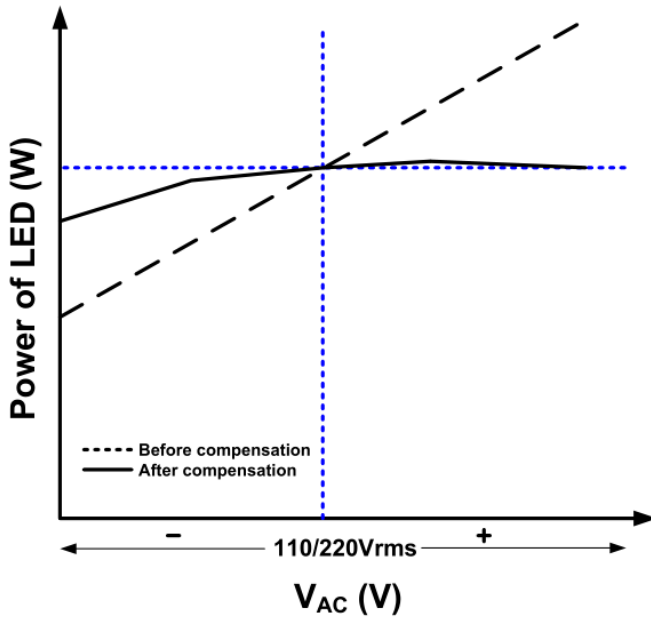


# ELECTRICAL CIRCUIT DIAGRAM



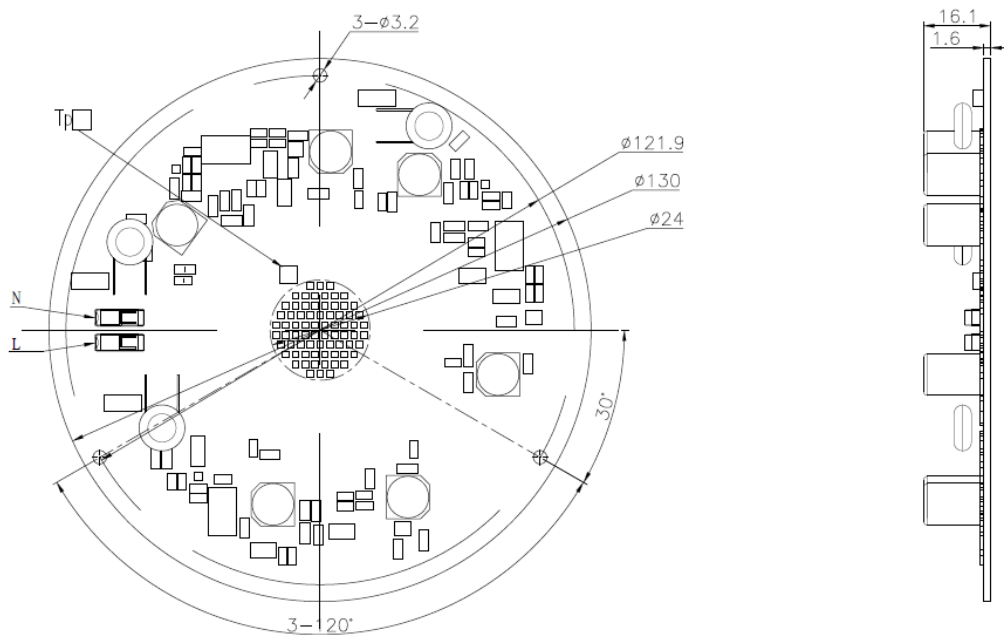
Note: All specifications are subject to change without notice.

# POWER CHARACTERISTICS



# MECHANICAL DIMENSIONS OF BOARD

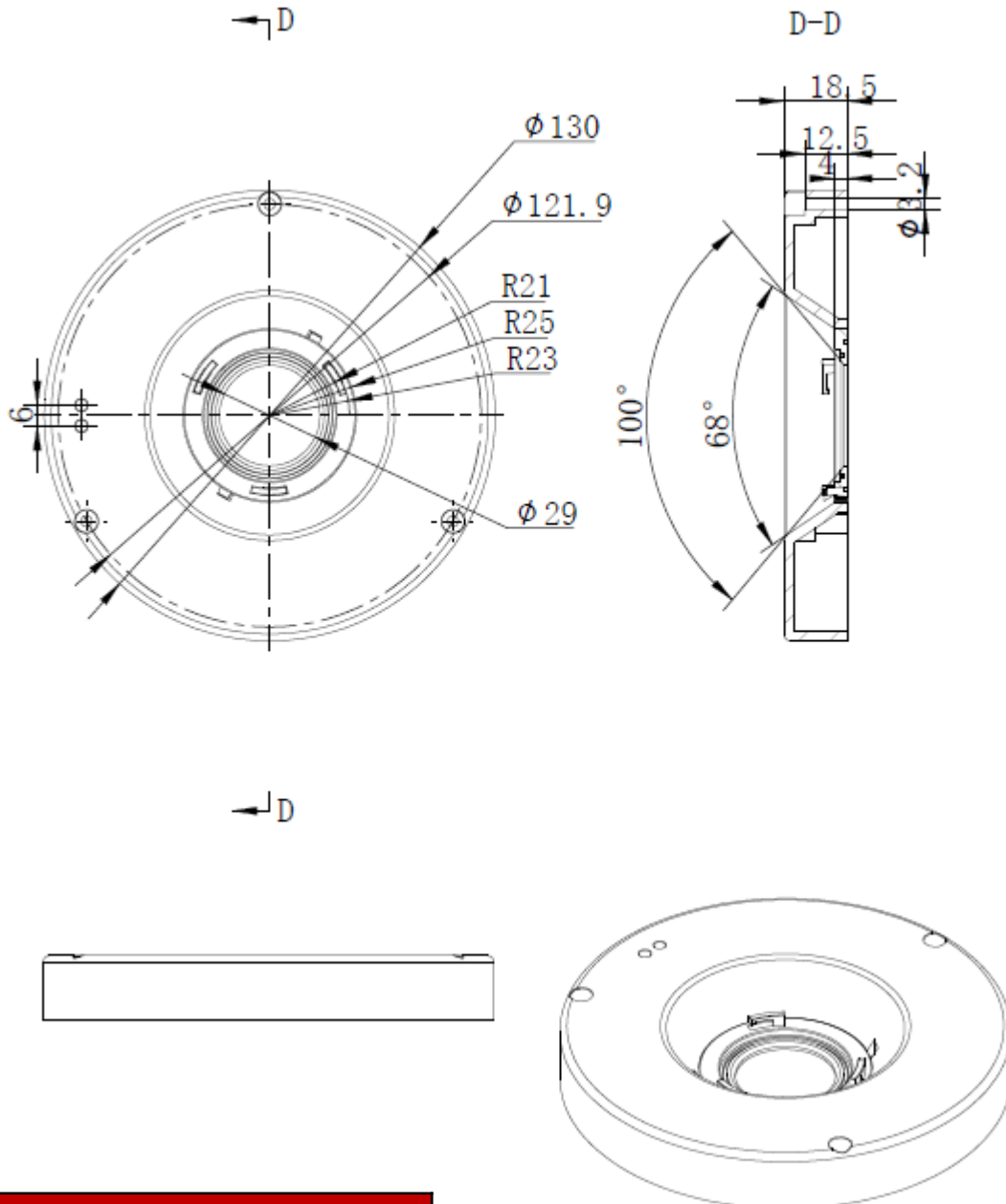
All dimensions are in millimeters



Note: All specifications are subject to change without notice.

# MECHANICAL DIMENSIONS OF COVER

All dimensions are in millimeters



GLVA1PCD02	
Size	$\phi 130\text{mm}$
Efficiency	91.6%

Note: All specifications are subject to change without notice.



## ADDITIONAL INFORMATION

Installation by qualified electrician only

For safety reasons, the AC light engine must be operated with protection cover or safety glass

Suitable only for operation with line voltages

Suitable for luminaire of protection class 1, grounding is mandatory to comply with safety standards

The AC light engine needs to be mounted to a heat sink

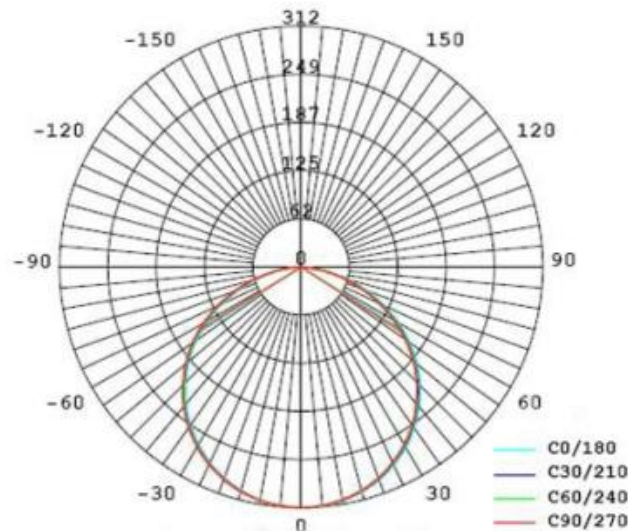
For optimal cooling a thermal interface material should be applied between AC light engine and heat sink

It is highly recommended to use **an electrically isolated** thermal interface material (TIM\*). The TIM needs to enable adequate heat transfer, during installation it has to be taken care not to create air inclusions between surfaces. For this purpose it is recommended to use a heat sink with even and clean surfaces.

\* 3M 8810 Thermal Conductive Adhesive Tapes are recommended

## RADIATION CHARACTERISTICS (120VAC 60W Module )

luminous intensity unit: cd



Average beam angle(50%): 115.4°

Note: All specifications are subject to change without notice.

## PART NUMBERING & ORDERING INFORMATION

<p>1. PRODUCT SERIES GLV74CD0D01 – Circular MCPCB dia.130mm</p>	<p>4. PRODUCT WATTAGE 60– 60W</p>	<p>7. LED NUMBER 72– 72 LEDs</p>
<p>2. CONNECTOR TYPE CW – Wago connector 2060-451/998-404</p>	<p>5. DIMMING T – Triac dimming</p>	<p>8. CCT 827 – CRI80 2700K ANSI 927 – CRI90 2700K ANSI 830 – CRI80 3000K ANSI 930 – CRI90 3000K ANSI 835 – CRI80 3500K ANSI 840 – CRI80 4000K ANSI 850 – CRI80 5000K ANSI 857 – CRI80 5700K ANSI 865 – CRI80 6500K ANSI</p>
<p>3. INPUT VOLTAGE DA - IML low flicker solution for 120Vac ± 10%</p>	<p>6. LED TYPE SE1 – LM102A LED, 3P</p>	
<p>9. COVER P – Protective cover</p>		

Part Number :

**GLV74CD0D01/ CW – DA 60 T SE1 72 827 P**

|            |            |            |            |            |            |            |            |  
 1            2            3            4            5            6            7            8            9

Note: All specifications are subject to change without notice.

## DIMMER COMPATIBILITY

Brands	Model	Dimmer Type	Min Flux(%)
Cooper	DAL06P	Leading	0.98
Cooper	TAL06P	Leading	0.00
Cooper	SAL06P	Leading	0.40
Leviton	IP106-1LZ	Leading	2.16
Leviton	6602	Leading	0.00
Leviton	6633	Leading	0.00
Leviton	6681	Leading	0.00
Leviton	6683	Leading	0.00
Leviton	6672	Leading	2.18
Leviton	6674	Leading	2.63
Leviton	6631	Leading	0.00
LUTRON	DV-600P-IV	Leading	0.00
LUTRON	AY-600P-IV	Leading	0.00
LUTRON	DV-600PR-WH	Leading	0.00
LUTRON	DV-600PR-LA	Leading	0.00
LUTRON	TG-600PR-LA	Leading	0.50
LUTRON	CTCL-153P	Leading	0.00
LUTRON	MACL-153MH-WH	Leading	2.69
LUTRON	DVELV-300P	Trailing	3.14

## LEDiL REFLECTOR COMPATIBILITY

Product Number	Family	Diameter (mm)	Height (mm)
F13839_ANGELINA-XW-B	ANGELINA	82	31
C11979_LENA-S	Lena	111	80
C11980_LENA-W	Lena	111	80
C12154_LENA-M	Lena	111	80
C12597_LENINA-S	Lenina	74	40
C12598_LENINA-M	Lenina	/	/
C12599_LENINA-W	Lenina	74	40
C12948_LENA-WAS	Lena	111	37
C12958_LENINA-XW	Lenina	74	40
C13101_LENA-X-WAS	Lena	111	37
C14346_ANGELETTE-WAS	Angelette	97.2*83.4	84.1
CN12293_LENA-S	Lena	111	85.6
CN12294_LENA-M	Lena	111	85.6
CN12295_LENA-W	Lena	111	85.6
CN12296_LENA-S-DL	Lena	111	85.6
CN12297_LENA-M-DL	Lena	111	85.6
CN12298_LENA-W-DL	Lena	111	85.6
CN12644_LENINA-S	Lenina	74	45.6
CN12645_LENINA-M	Lenina	74	45.6

## LEDiL REFLECTOR COMPATIBILITY

Product Number	Family	Diameter (mm)	Height (mm)
CN12646_LENINA-W	Lenina	74	45.6
CN12647_LENINA-S-DL	Lenina	74	47.7
CN12648_LENINA-M-DL	Lenina	74	47.7
CN12649_LENINA-W-DL	Lenina	74	47.7
CN12706_LENINA-S	Lenina	74	46.3
CN12707_LENINA-M	Lenina	74	46.3
CN12708_LENINA-W	Lenina	74	46.3
CN12709_LENINA-S-DL	Lenina	74	48.4
CN12710_LENINA-M-DL	Lenina	74	48.4
CN12711_LENINA-W-DL	Lenina	74	48.4
CN12716_LENINA-M	Lena	111	86.3
CN12717_LENINA-W	Lena	111	86.3
CN12721_LENINA-S-DL	Lena	111	87.6
CN12722_LENINA-M-DL	Lena	111	87.6
CN12723_LENINA-W-DL	Lena	111	87.6
CN12962_LENINA-XW	Lenina	74	45.6
CN12965_LENINA-XW	Lenina	74	46.3
CN12975_LENINA-XW-DL	Lenina	74	47.7
CN12979_LENINA-XW-DL	Lenina	74	48.4
CN13162_LENINA-WAS	Lena	111	38.2

## LEDiL REFLECTOR COMPATIBILITY

Product Number	Family	Diameter (mm)	Height (mm)
CN13164_LENA-WAS	Lena	111	/
CN13172_LENA-WAS-DL	Lena	111	40.3
CN13174_LENA-WAS-DL	Lena	111	/
CN13370_LENA-X-WAS	Lena	111	39.1
CN13372_LENA-X-WAS-DL	Lena	111	42
CN13457_LENA-X-WAS-DL	Lena	111	40.3
CN13461_LENA-X-WAS	Lena	111	38.2
CN13649_LENA-SS	Lena	111	87.6
CN13650_LENA-SS-DL	Lena	111	87.6
CN14060_LENA-S	Lena	/	/
CN14061_LENA-M	Lena	111	84.4
CN14063_LENA-WAS	Lena	111	37.01
CN14064_LENA-SS	Lena	111	84.4
CN14065_LENA-S-DL	Lena	111	86
CN14066_LENA-M-DL	Lena	111	86
CN14078_LENA-WAS-DL	Lena	111	39.11
CN14079_LENA-X-WAS	Lena	111	37.01
CN14080_LENA-X-WAS-DL	Lena	111	39.11
CN14081_LENA-SS-DL	Lena	111	86
CN14093_LENINA-S	Lenina	74	44.4

## LEDiL REFLECTOR COMPATIBILITY

Product Number	Family	Diameter (mm)	Height (mm)
CN14094_LENINA-M	Lenina	74	44.4
CN14095_LENINA-W	Lenina	74	44.4
CN14096_LENINA-XW	Lenina	74	44.4
CN14097_LENINA-XW-DL	Lenina	74	46.15
CN14098_LENINA-W-DL	Lenina	74	46.15
CN14099_LENINA-M-DL	Lenina	74	46.15
CN14100_LENINA-S-DL	Lenina	74	46.15
CN14421_ANGELETTE-WAS	Angelette	97.2*83.4	/
CN14577_LENINA-S-DL	Lena	/	/
CN14578_LENINA-M-DL	Lena	/	/
CN14579_LENINA-W-DL	Lena	/	/
CN14580_LENINA-WAS-DL	Lena	/	/
CN14581_LENINA-X-WAS-DL	Lena	/	/
CN14582_LENINA-S-DL	Lenina	/	/
CN14583_LENINA-M-DL	Lenina	/	/
CN14584_LENINA-W-DL	Lenina	/	/
CN14585_LENINA-XW-DL	Lenina	/	/
F13325_ANGELINA-S	ANGELINA	82	31
F13379_ANGELA-S	ANGELINA	119.5	74.27
	ANGELA		

## LEDiL REFLECTOR COMPATIBILITY

Product Number	Family	Diameter (mm)	Height (mm)
F13380_ANGELA-M	ANGELINA	119.5	74.5
	ANGELA		
F13381_ANGELA-W	ANGELINA	119.5	74.5
	ANGELA		
F13401_ANGELINA-M	ANGELINA	82	31
F13402_ANGELINA-W	ANGELINA	82	31
F13659_ANGELINA-S-B	ANGELINA	82	31
F13660_ANGELINA-M-B	ANGELINA	82	31
F13661_ANGELINA-W-B	ANGELINA	82	31
F13662_ANGELA-S-B	ANGELINA	119.5	74.5
	ANGELA		
F13663_ANGELA-M-B	ANGELINA	119.5	74.5
	ANGELA		
F13664_ANGELA-W-B	ANGELINA	119.5	74.5
	ANGELA		
F13839_ANGELINA-XW-B	ANGELINA	82	31
F13840_ANGELA-XW	ANGELINA	119.5	74.5
	ANGELA		
F13841_ANGELA-XW-B	ANGELINA	119.5	74.5
	ANGELA		



## LEDiL REFLECTOR COMPATIBILITY

Product Number	Family	Diameter (mm)	Height (mm)
F14532_ ANGELETTE-S	Angelette	110	57.3
F14533_ ANGELETTE-M	Angelette	110	57.3
F14534_ ANGELETTE-WW	Angelette	110	57.3
F14616_ ANGELETTE-S-B	Angelette	110	57.3
F14617_ ANGELETTE-M-B	Angelette	110	57.3
F14618_ ANGELETTE-WW-B	Angelette	110	57.3
F14619_ ANGELETTE-S-PLAIN	Angelette	110	57.3
F14620_ ANGELETTE-M-PLAIN	Angelette	110	57.3
F14621_ ANGELETTE-M-B-PLAIN	Angelette	110	57.3
F14622_ ANGELETTE-WW-PLAIN	Angelette	110	57.3
F14623_ ANGELETTE-WW-B-PLAIN	Angelette	110	57.3
F14624_ ANGELETTE-S-B-PLAIN	Angelette	110	57.3
FC13977_ ANGELINA-RZ-S-B	ANGELINA	82	31
FC13978_ ANGELINA-RZ-M-B	ANGELINA	82	31
FC13979_ ANGELINA-RZ-W-B	ANGELINA	82	31
FC13980_ ANGELA-RZ-S-B	ANGELA	119.5	74.5
FC13982_ ANGELINA-RZ-XW-B	ANGELINA	82	31
FC13983_ ANGELA-RZ-XW-B	ANGELA	119.5	74.5
FC13987_ ANGELA-RZ-M-B	ANGELA	119.5	74.5
FC13988_ ANGELA-RZ-W-B	ANGELA	119.5	74.5

## LEDiL REFLECTOR COMPATIBILITY

Product Number	Family	Diameter (mm)	Height (mm)
FC13991_ANGELA-RZ-S	ANGELINA	119.5	74.5
FCN13691_ANGELINA-S	ANGELINA	82	36.04
FCN13692_ANGELINA-M	ANGELINA	82	36.04
FCN13693_ANGELINA-W	ANGELINA	82	36
FCN13697_ANGELA-S	ANGELA	119.5	79.31
FCN13698_ANGELA-M	ANGELA	119.5	79.31
FCN13704_ANGELA-W	ANGELA	119.5	79.31
FCN13912_ANGELINA-XW	ANGELINA	/	/
FCN14691_ANGELA-XW	ANGELA	119.5	/
FN13323_STELLA-A	STELLA	70	22
FN14074_STELLA-HB	STELLA	90	19.5
FN14253_STELLA-A	STELLA	90	22
FN14637_OLIVIA-S	Olivia	70	22.6
FN14645_STELLA-T4	STELLA	90	26.9
FN14720_STELLA-FRESNEL	STELLA	90	23
FN14828_OLIVIA-M	Olivia	70	22.6
FN14976_STELLA-DWC2	STELLA	90	19.25
FN15186_STELLA-HB	STELLA	90	19.5
FN15187_STELLA-T4	STELLA	90	26.9
FN15188_STELLA-FRESNEL	STELLA	90	23
FP15073_ZORYA-SC-50	Zorya	56	29.1

## THERMAL CONSIDERATIONS

The LED module must be operated in environmental conditions where the ambient air temperature does NOT exceed a value which would cause the LEDs to exceed their maximum junction temperature (per the LED Supplier datasheet ) or cause the maximum board temperature ( $T_p$ ) to be exceeded.

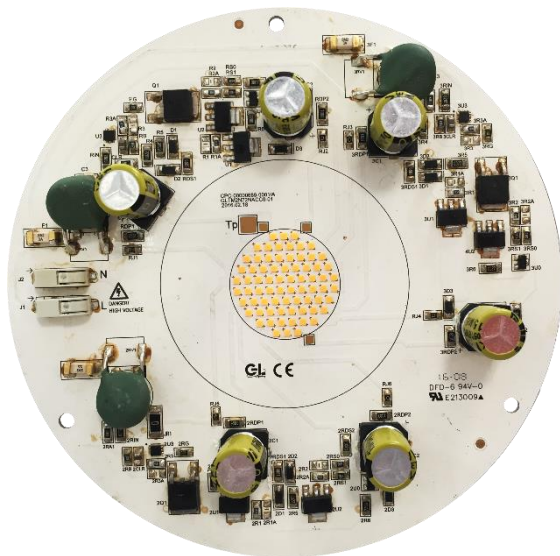
A heat sink can be used with the LED module in order to maintain the LED junction temperature and the PCB temperature below their maximum ratings however, the following recommendations should be followed:

- The mounting surface for the LED module must be flat;
- Avoid bending of the PCB to avoid damaging the LEDs and the solder connections;
- Use a thermal interface material between the PCB and the heat sink.

For optimal lifetime performance, the LED module must be placed in an environment where air can flow freely around the luminaire, promoting heat transfer from conduction to the heat sink and from radiation to the air. It is not recommended to expose the module to direct sunlight or any other heat source.

### Thermal Measurement

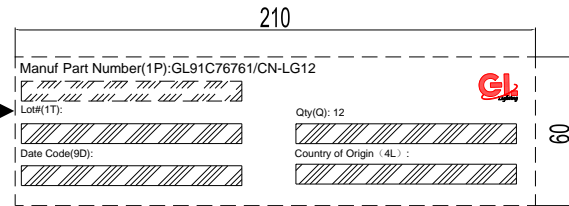
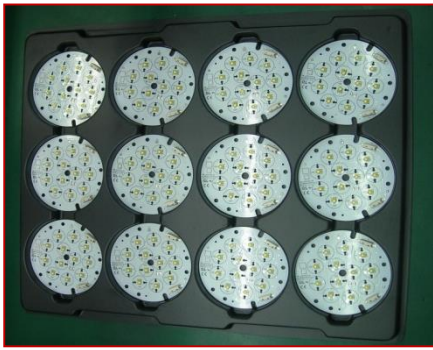
The maximum allowed temperature at the  $T_p$  point of the board is 70°C. This temperature is not based on the LM-80 standard but is for warranty purposes only.



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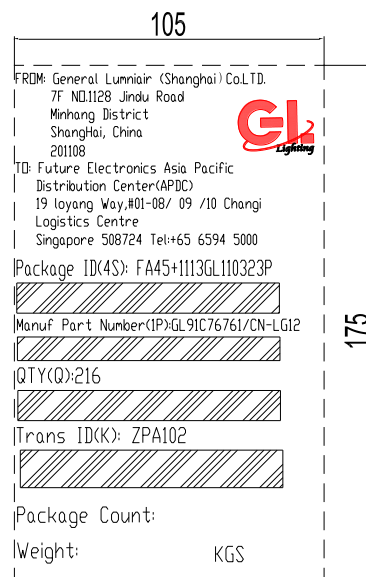
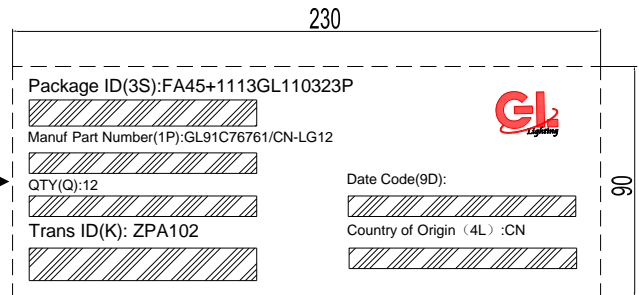
# PACKAGING INFORMATION

INNER PACKING	SIZE	TRAY	QTY
TYPE	345*295*11mm	1	20



INNER PACKING	SIZE	TRAY	QTY
TYPE 1	350*300*250mm	15	300

# PRODUCT LABELLING



Note: All specifications are subject to change without notice.