

EDCON-COMPONENTS



The Power of LED Light



Specifications

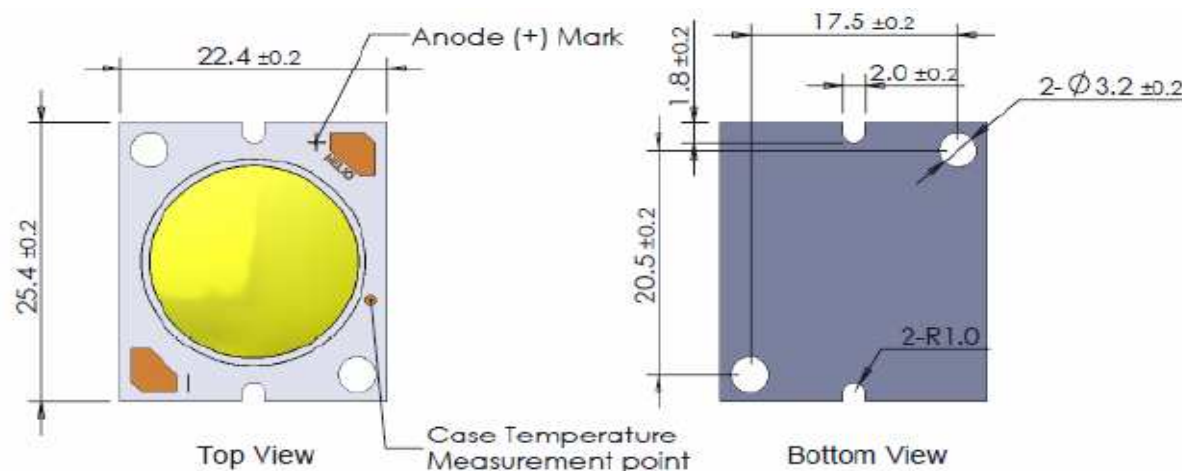
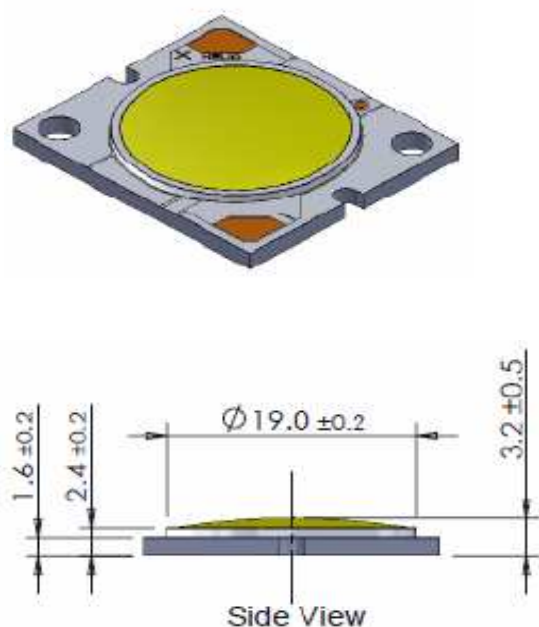
Diamond LED ARRAY is a chip-on-board based solid state lighting device, provides high luminous flux output with high efficiency for the illumination applications. Diamond LED Array has characteristics of excellent thermal management capacity long operating life, optimized CRI and cost.

Structure 4x3 LED

Features

Down Light	Compact high flux density light source
Spot Light	Energy star / ANSI compliant bin
Par Light	Low Voltage DC Operation
General Lightning	Instant Light
Par Lamp	Long Operating Life
Arctitectural Lighting	Superior thermal performance
Stage lighting	

Dimensions (mm)



Mounting holes are for M2,4 or # 4 screws
Solder pads are labeled + and - to denote positive and negative, respectively
Drawings are not to scale
All dimensions are all in millimeter
All dimensions without tolerance are for reference only
Specifications are subject to change without notice

13 Watt Diamond LED ARRAY

Part No.: **M15004**

DRW:	Jason	CHKD	Wilson	MATL:	Wilson	TOLERANCE	Mason	DATE	10.04.2009	Customer:
APPD:	Schumi			FINISH	Jamy		Sheet No.	1 from 11		

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Characteristics

Absolute Maximum Ratings

Peak Forward Current (1/10 Duty Cycle at 1KHz)	2100mA
Continuous Forward Current (1)	1050mA
LED Junction Temperature	150°C
Operating Temperature	-40°C ~ +105°C
Storage Temperature	-40°C ~ +105°C
Soldering Temperature	JEDEC 020C 260°C

Note:

1. Strongly recommended the case temperature shall not exceed 70°C

Luminous Flux Characteristics

Luminous Flux Characteristics at test current junct. Temp at 25°C

Color	Luminous Flux (1) (lm)			Remark
	Min	Type	Max.	
Cool White		900		(1000mA)
Warm White		650		(1000mA)

1. Minimum luminous flux performance guaranteed within published operating conditions. DIAMOND LED ARRAY maintains a tolerance of +/-10% on luminous flux measurement.

Optical Characteristics

Optical Characteristics at Test Current, Junction Temperature at 25°C

Color	Color Temperature (1)			Color Rendering Index	Typical View Angles
	Min	Type	Max.		
Cool White	4745	5700	7040	70	120
Warm White	2580	3000	3710	80	120

1. The tester tolerance of CCT is +/-5%
2. Ø 1/2 is the off axis angle from emitter centerline where the radiometric intensity is 1/2 of the peak value.

Electrical Characteristics

Electrical Characteristics at Test Current, Junction Temperature at 25°C

Color Temp.	Forward Voltage Vf (1) V			Typical Temperature Coefficient of Forward Voltage (mV/°C)	Typical Thermal Resistance Junction to Case (°C/W)
	Min	Typ	Max.		
Cool White				$\Delta V_f / \Delta T(2)$	R θ J-c
Warm White	12,0		16,0	-4 ~ -12	< 1

1. Diamond Array maintains a tolerance forward voltage measurements.
2. The temperature a tolerance of +/-0,1V on forward voltage are measured between Tj=30°C and Tj=120°C

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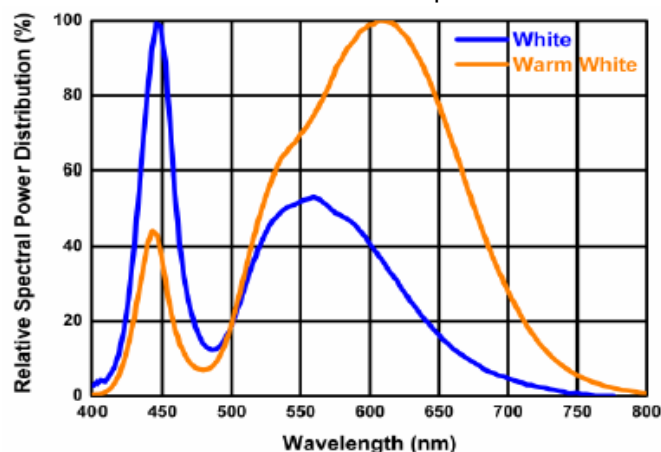
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Characteristics Curve

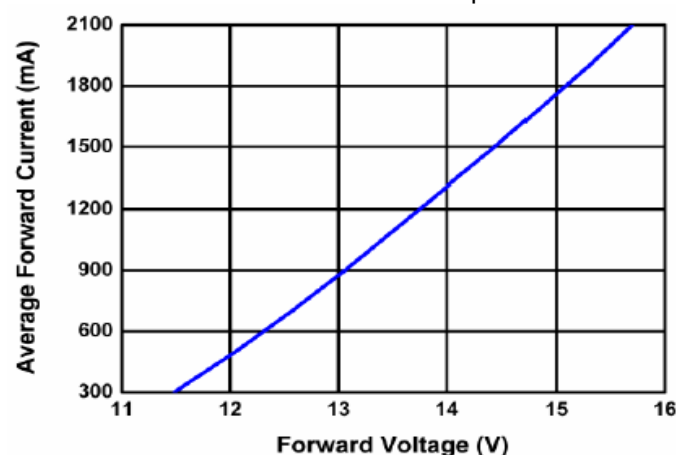
Wavelength Characteristics

White and Warm White Color Spectrum at 25°C



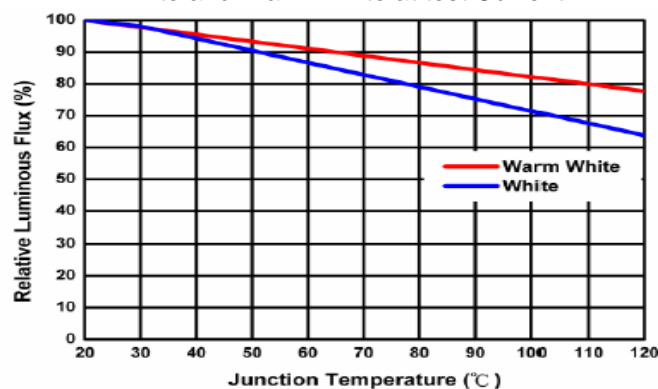
Typical Forward Current Characteristics

White and Warm White Junction Temperature at 25°C



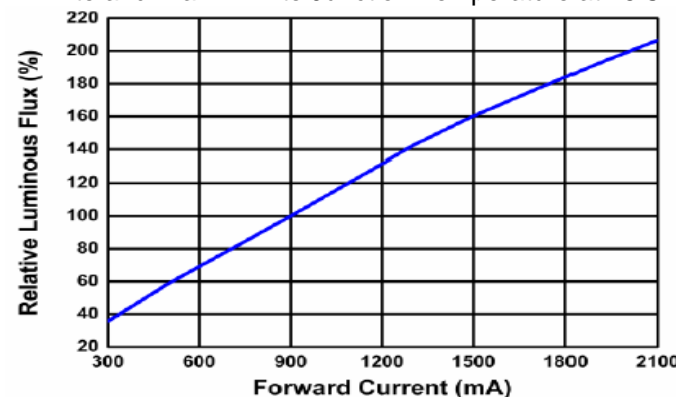
Typical Light Output Characteristics over Temper.

White and Warm White at test Current



Typical Light Output Characterit over Forward C.

White and Warm White Junction Temperature at 25°C



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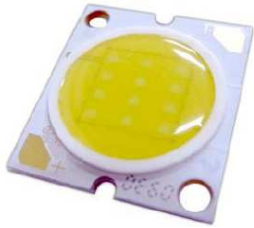
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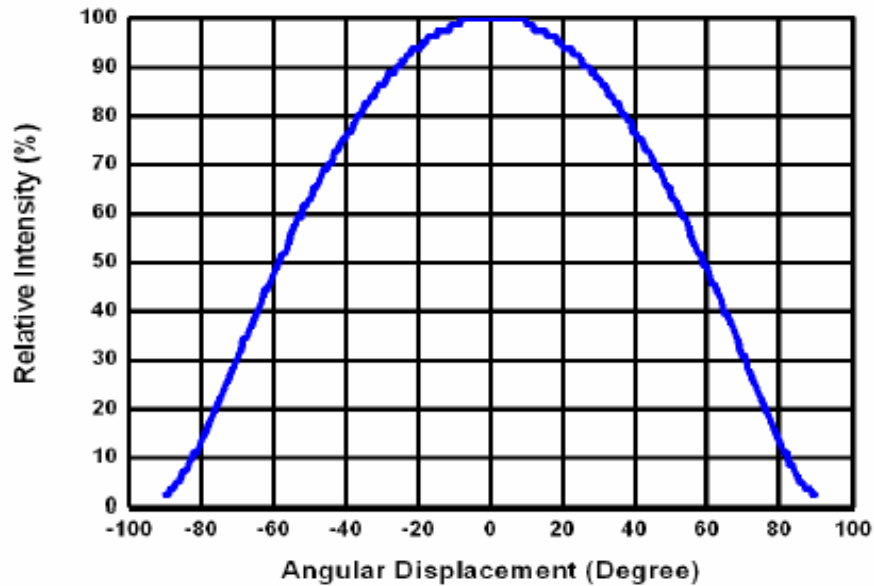


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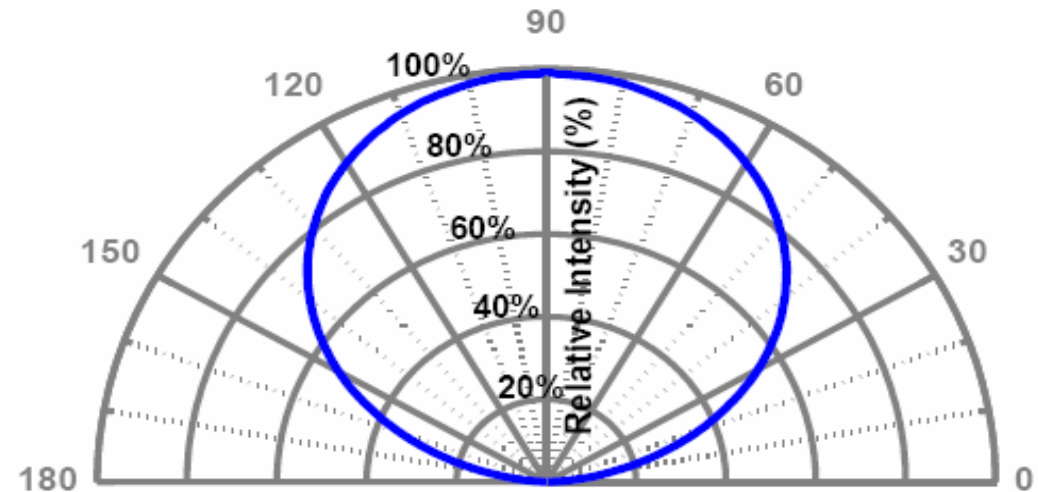


Characteristics Curve

Typical Radiation Patterns



Typical Polar Radiation Pattern



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Product Binning

Diamond Array Series are labeled with four alphanumeric codes. The formats are explained as follows.

AB CD

AB= Luminous flux bin (K0, M0 etc.)

CD= CCT bin (2A, 7C etc.)

Luminous Flux Bin Structure (Code: AB)

BIN Code	Minimum Photometric Flux (lm)	Maximum Photometric Flux (lm)
F0	500	600
G0	600	700
H0	700	800
J0	800	900
K0	900	1000
L0	1000	1200
M0	1200	1400
N0	1400	1600
P0	1600	1800
Q0	1800	2000
R0	2000	2200

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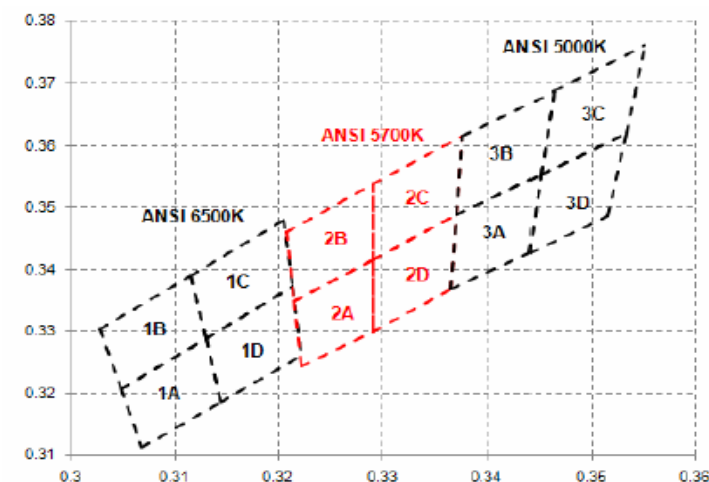


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LED Handling Informations

Bin Code		x	y	Bin Code		x	y	Bin Code		x	y
1X	1A	0.3048	0.3207	2X	2A	0.3215	0.335	3X	3A	0.3371	0.349
		0.313	0.329			0.329	0.3417			0.3451	0.3554
		0.3144	0.3186			0.329	0.33			0.344	0.3427
		0.3068	0.3113			0.3222	0.3243			0.3366	0.3369
	1B	0.3028	0.3304		2B	0.3207	0.3462		3B	0.3376	0.3616
		0.3115	0.3391			0.329	0.3538			0.3463	0.3687
		0.313	0.329			0.329	0.3417			0.3451	0.3554
		0.3048	0.3207			0.3215	0.335			0.3371	0.349
	1C	0.3115	0.3391		2C	0.329	0.3538		3C	0.3463	0.3687
		0.3205	0.3481			0.3376	0.3616			0.3551	0.376
		0.3213	0.3373			0.3371	0.349			0.3533	0.362
		0.313	0.329			0.329	0.3417			0.3451	0.3554
	1D	0.313	0.329		2D	0.329	0.3417		3D	0.3451	0.3554
		0.3213	0.3373			0.3371	0.349			0.3533	0.362
		0.3221	0.3261			0.3366	0.3369			0.3515	0.3487
		0.3144	0.3186			0.329	0.33			0.344	0.3427



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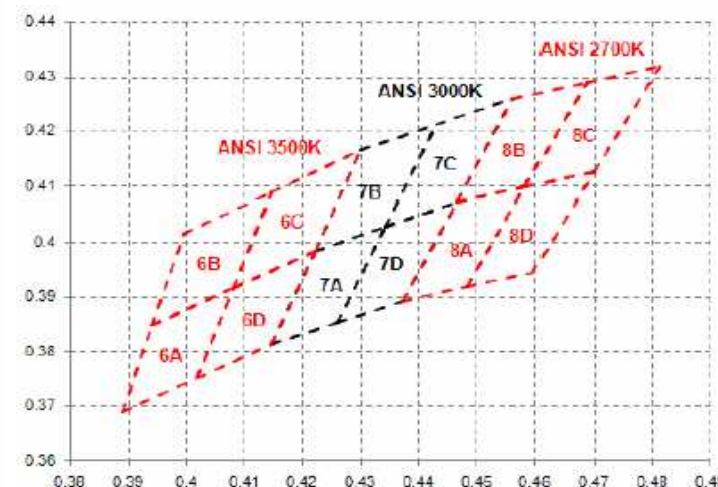


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LED Handling Informations

Bin Code		x	y	Bin Code		x	y	Bin Code		x	y
6X	6A	0.3889	0.369	7X	7A	0.4147	0.3814	8X	8A	0.4373	0.3893
		0.3941	0.3848			0.4221	0.3984			0.4465	0.4071
		0.408	0.3916			0.4342	0.4028			0.4582	0.4099
		0.4017	0.3751			0.4259	0.3853			0.4483	0.3919
	6B	0.3941	0.3848		7B	0.4221	0.3984		8B	0.4465	0.4071
		0.3996	0.4015			0.4299	0.4165			0.4562	0.426
		0.4146	0.4089			0.443	0.4212			0.4687	0.4289
		0.408	0.3916			0.4342	0.4028			0.4582	0.4099
	6C	0.408	0.3916		7C	0.4342	0.4028		8C	0.4582	0.4099
		0.4146	0.4089			0.443	0.4212			0.4687	0.4289
		0.4299	0.4165			0.4562	0.426			0.4813	0.4319
		0.4221	0.3984			0.4465	0.4071			0.47	0.4126
	6D	0.4017	0.3751		7D	0.4259	0.3853		8D	0.4483	0.3919
		0.408	0.3916			0.4342	0.4028			0.4582	0.4099
		0.4221	0.3984			0.4465	0.4071			0.47	0.4126
		0.4147	0.3814			0.4373	0.3893			0.4593	0.3944



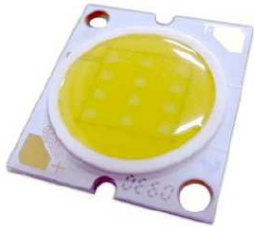
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LED Handling Informations

Please follow the guideline to grab LEDs

Use tweezers to grab LEDs

Do not touch lens with tweezers

Do not touch lens with fingers

Do not apply more than 2000gr. Impact or pressure on the silicone molding lens



Correct



Wrong

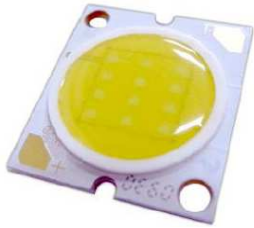
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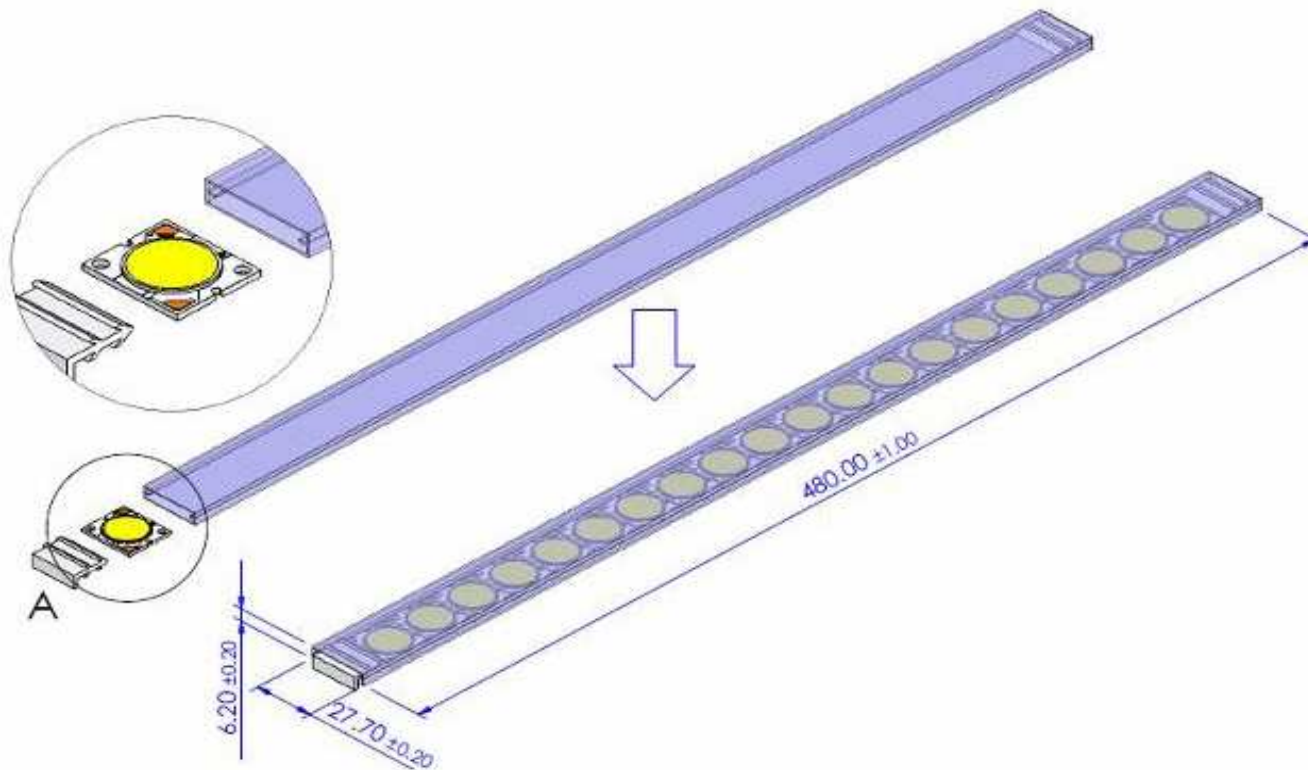


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Package Specifications

1. Drawings are not to scale
2. Drawing Dimensions are in millimeters
3. There are 20PCS DIAMOND ARRAYS in a tube.
4. An Antistatic bag Contains tubes and a drying agent



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Ordering Informations

Serie	Color Tone	ROHS	Packing							
-------	------------	------	---------	--	--	--	--	--	--	--

M15004	CW	R	TR							
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CW = Cool White	R = ROHS Conform	TR = Tape Reel
NW = Neutral White	N = NON ROHS	
WW = Warm White		

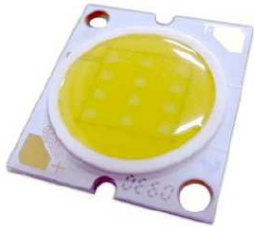
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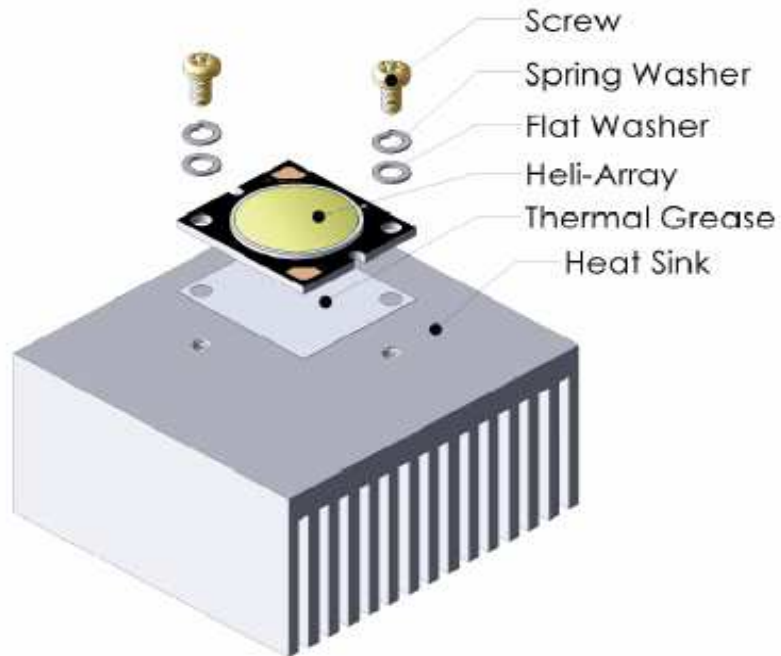
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Mechanical Assembly and Handling



Recommended assembly is illustrated below.

This Product should be secured firmly by fastening an M2,5 screw on both sides.

Please be careful not to apply any stress to the resin area.

DIAMOND ARRAYS recommends the use of hard non-electrically conductive flat washers with spring washers.

A thin layer of thermal grease should be applied to the surfaces of the DIAMOND ARRAY and heat sink.

All air gaps and voids between the heat sink and array should be eliminated.

This product would be bent during the clamping operation if heat grease in sheet form is used.

Thus, it is recommended that grease in past form is used.

Lens cleaning

In the case where a minimal level of dirt and dust particles can not be guaranteed, a suitable cleaning solutions can be applied to the lens surface.

Try a gentle swabbing using a lint-free swab

If needed, the use of lint-free swab and isopropyl alcohol used gently removes dirt from the lens surface.

Do not use other solvents as they may directly react with the LED assembly.

Do not use ultrasonic cleaning that the LED will be damaged.

Carrier Tape Handling

The following items are recommended when handling the Carrier tape of LEDs

Do not twist the carrier tape

The inward bending radius should not smaller than 3cm for carrier tape.

Do not bend the tape outward.

Storage temperature should not exceed 60°C.

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