



Flux Characteristics

Shape	White	Base Part Number	Luminous Flux, Φ_v [1, 2] (lm)		Typ Power [3]
			Min	Typ	Watt
Rectangle	Warm	DDHB-W104	-	250	4.0
Rectangle	Cool	DDHB-C104	-	400	4.0

Notes:

1. Φ_v is the total luminous flux output as device is tested at DSEM flux tester setup. For tester detail, please contact DSEM sales representatives.
2. Flux measurement tolerance is $\pm 7\%$
3. Parts are tested in pulsed conditions, $T_j = 25^\circ\text{C}$. Test current at 0.52A.

Absolute Maximum Ratings

Parameter	Rating	Units
DC Forward Current @ $T_j = 115^\circ\text{C}$ [1]	150	mA
LED Junction Temperature	115	$^\circ\text{C}$
Operating Temperature	-40 to +85	$^\circ\text{C}$
Storage Temperature	-40 to +105	$^\circ\text{C}$
ESD Sensitivity (HBM Class 2)	TBD	V

Notes:

1. Proper current derating must be observed to maintain junction temperature below the maximum rating.

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Electrical Characteristics @Thermal Pad Temperature, T_c = 25°C

Base Part Number	Forward Voltage, V _F (Volts)		Thermal Resistance R _{θj-s} (°C/W) ^[1]	Test Current (mA)
	typ	Max		
DDHB-W104	9.6	10.8	TBD	420
DDHB-C104	9.6	10.8	TBD	420

Note:

1. R_{θj-s} is Thermal Resistance from LED junction to substrate.

Optical Characteristics @Thermal Pad Temperature, T_c = 25° C^[1]

P/N	White	ANSI CCT (Kelvin) ^[2]			Color Rendering Index	Viewing Angle 2θ _½ ^[3] (Degrees)
		Min	Nominal	Max		
DDHB-W104	Warm	2580	3000	3700	80	120
DDHB-C104	Cool	4750	5600	7000	60	120

Note:

1. Test current as per absolute maximum ratings table.
2. CCT ±5% tester tolerance.
3. Viewing angle is the off axis angle from lamp centerline where the luminous intensity is ½ of the peak value.

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Luminous Flux Binning

The table below lists the standard photometric luminous flux bins. All production testing and binning is conducted under pulsed test conditions at $T_j = 25^\circ\text{C}$.

Code	Min Flux (lm)	Max Flux (lm)
M	220	240
N	240	265
P	265	295
Q	295	320
R	320	360
S	360	400
T	400	440
U	440	500

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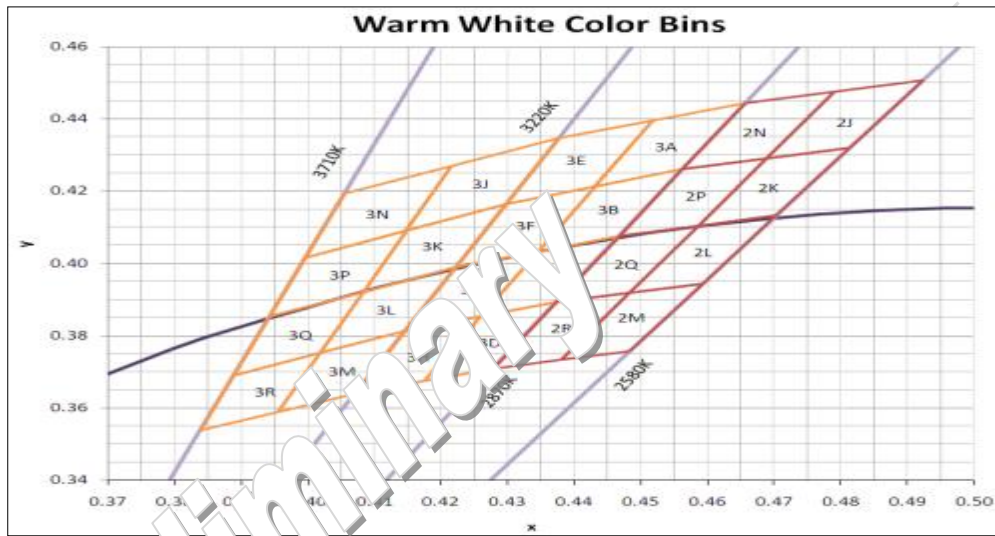
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Color Binning

Note: Tolerance for chromaticity coordinates is ± 0.01 .



Bin	x	y	CCT (K)
3J	0.4216	0.4270	3500
	0.4378	0.4346	
	0.4299	0.4165	
	0.4148	0.4090	
3K	0.4083	0.3921	3500
	0.4148	0.4090	
	0.4299	0.4165	
	0.4223	0.3990	
3L	0.4018	0.3752	3500
	0.4083	0.3921	
	0.4223	0.3990	
	0.4147	0.3814	
3M	0.4018	0.3752	3500
	0.4147	0.3814	
	0.4071	0.3639	
	0.3955	0.3589	
3N	0.4055	0.4194	3500
	0.4216	0.4270	
	0.4148	0.4090	
	0.3996	0.4015	
3P	0.3943	0.3853	3500
	0.3996	0.4015	
	0.4148	0.4090	
	0.4083	0.3921	
3Q	0.3889	0.3690	3500
	0.3943	0.3853	
	0.4083	0.3921	
	0.4018	0.3752	
3R	0.3889	0.3690	3500
	0.4018	0.3752	
	0.3955	0.3589	
	0.3840	0.3539	

Bin	x	y	CCT (K)
3A	0.4517	0.4395	3000
	0.4657	0.4444	
	0.4562	0.4260	
	0.4431	0.4213	
3B	0.4345	0.4033	3000
	0.4431	0.4213	
	0.4562	0.4260	
	0.4468	0.4077	
3C	0.4260	0.3854	3000
	0.4345	0.4033	
	0.4468	0.4077	
	0.4373	0.3893	
3D	0.4260	0.3854	3000
	0.4373	0.3893	
	0.4279	0.3710	
	0.4175	0.3674	
3E	0.4378	0.4346	3000
	0.4517	0.4395	
	0.4431	0.4213	
	0.4299	0.4165	
3F	0.4223	0.3990	3000
	0.4299	0.4165	
	0.4431	0.4213	
	0.4345	0.4033	
3G	0.4147	0.3814	3000
	0.4223	0.3990	
	0.4345	0.4033	
	0.4260	0.3854	
3H	0.4147	0.3814	3000
	0.4260	0.3854	
	0.4175	0.3674	
	0.4071	0.3639	

Bin	x	y	CCT (K)
2J	0.4790	0.4475	2700
	0.4923	0.4507	
	0.4813	0.4319	
	0.4688	0.4290	
2K	0.4586	0.4104	2700
	0.4688	0.4290	
	0.4813	0.4319	
	0.4703	0.4132	
2L	0.4483	0.3919	2700
	0.4586	0.4104	
	0.4703	0.4132	
	0.4593	0.3944	
2M	0.4483	0.3919	2700
	0.4593	0.3944	
	0.4483	0.3757	
	0.4381	0.3733	
2N	0.4657	0.4444	2700
	0.4790	0.4475	
	0.4688	0.4290	
	0.4562	0.4260	
2P	0.4468	0.4077	2700
	0.4562	0.4260	
	0.4688	0.4290	
	0.4586	0.4104	
2Q	0.4373	0.3893	2700
	0.4468	0.4077	
	0.4586	0.4104	
	0.4483	0.3919	
2R	0.4373	0.3893	2700
	0.4483	0.3919	
	0.4381	0.3733	
	0.4279	0.3710	

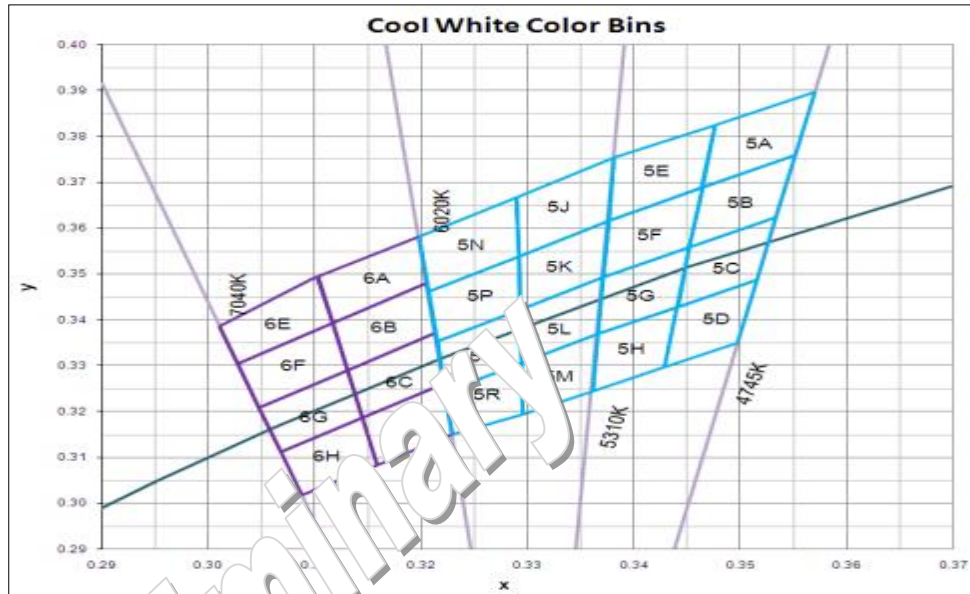
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Bin	x	y	CCT (K)
6A	0.3103	0.3458	6500
	0.3198	0.3581	
	0.3205	0.3711	
	0.3117	0.3393	
6B	0.3145	0.3187	6500
	0.3221	0.3261	
	0.3213	0.3371	
	0.3131	0.3290	
6C	0.3145	0.3187	6500
	0.3221	0.3261	
	0.3229	0.3151	
	0.3159	0.3084	
6D	0.3103	0.3385	6500
	0.3103	0.3495	
	0.3117	0.3393	
	0.3028	0.3304	
6E	0.3048	0.3209	6500
	0.3131	0.3290	
	0.3117	0.3393	
	0.3028	0.3304	
6F	0.3068	0.3113	6500
	0.3145	0.3187	
	0.3131	0.3290	
	0.3048	0.3209	
6G	0.3068	0.3113	6500
	0.3145	0.3187	
	0.3159	0.3084	
	0.3088	0.3018	
6H	0.3290	0.3668	5700
	0.3382	0.3754	
	0.3376	0.3616	
	0.3292	0.3539	
5J	0.3292	0.3539	5700
	0.3293	0.3423	
	0.3371	0.3493	
	0.3376	0.3616	
5K	0.3294	0.3306	5700
	0.3366	0.3369	
	0.3371	0.3493	
	0.3293	0.3423	
5L	0.3294	0.3306	5700
	0.3366	0.3369	
	0.3371	0.3493	
	0.3293	0.3423	
5M	0.3198	0.3582	5700
	0.3290	0.3668	
	0.3292	0.3539	
	0.3207	0.3462	
5N	0.3222	0.3243	5700
	0.3294	0.3306	
	0.3293	0.3423	
	0.3215	0.3353	
5P	0.3215	0.3353	5700
	0.3293	0.3423	
	0.3292	0.3539	
	0.3207	0.3462	
5Q	0.3222	0.3243	5700
	0.3294	0.3306	
	0.3293	0.3423	
	0.3215	0.3353	
5R	0.3222	0.3243	5700
	0.3294	0.3306	
	0.3295	0.3194	
	0.3229	0.3151	
5A	0.3476	0.3825	5000
	0.3569	0.3897	
	0.3551	0.3760	
	0.3464	0.3688	
5B	0.3464	0.3688	5000
	0.3551	0.3760	
	0.3533	0.3624	
	0.3452	0.3558	
5C	0.3452	0.3558	5000
	0.3533	0.3624	
	0.3515	0.3487	
	0.3441	0.3428	
5D	0.3441	0.3428	5000
	0.3515	0.3487	
	0.3497	0.3351	
	0.3429	0.3298	
5E	0.3382	0.3754	5000
	0.3476	0.3825	
	0.3464	0.3688	
	0.3376	0.3616	
5F	0.3371	0.3493	5000
	0.3452	0.3558	
	0.3441	0.3428	
	0.3366	0.3369	
5G	0.3376	0.3616	5000
	0.3464	0.3688	
	0.3452	0.3558	
	0.3371	0.3493	
5H	0.3366	0.3369	5000
	0.3441	0.3428	
	0.3429	0.3298	
	0.3361	0.3246	

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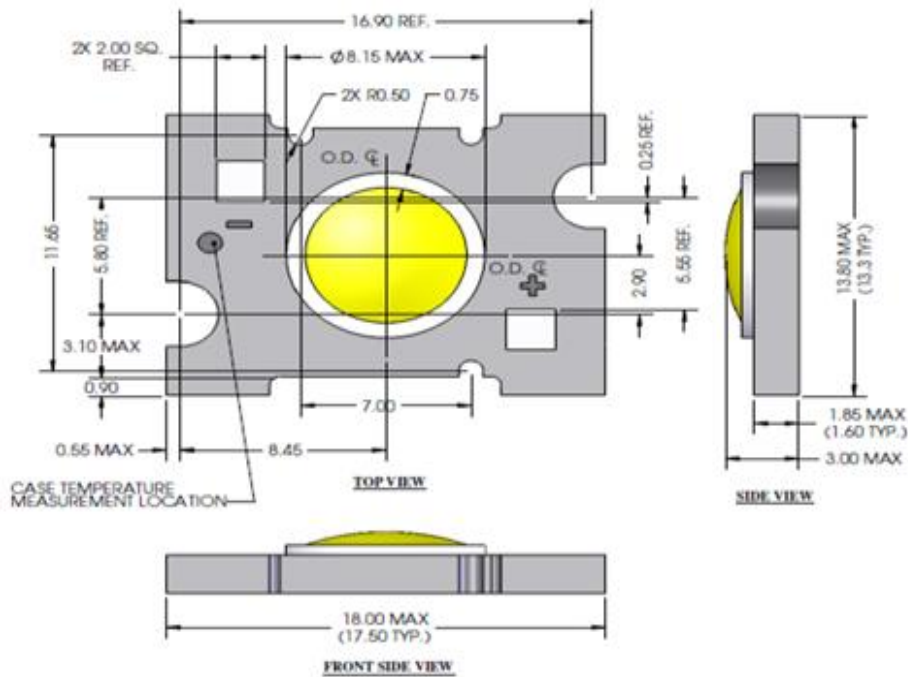
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Mechanical Drawing



Note:

1. Drawing for DDHB-W104 & DDHB-C104 product options.
2. Drawings are not to scale.
3. Drawing dimensions are in mm.

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Product Packaging and Labeling

All DSEM LEDs are 100% tested, binned and labeled.
 Products are labeled by printing information on the back side of the unit.
 The following format is used for labeling:

X X X X
 A B C D – E F G H
 M N O P Q – Y Y W W

Where:

- X X X X – designates the bin code (G02K, etc.)
- A B C D – E F G H – designates the base part number (DDAL-U010, etc.)
- M N O P Q – designates the production lot code (12345, etc.)
- Y Y W W – designates the date code (production year and production week, 1020, etc.)

Individual units are packaged in tubes for shipment. All products packaged within a single tube are of the same flux and color bin combination (or bin code). Each tube is labeled with the information required for effective inventory management. An example of the tube label and is included below:



Tube Label

Where:

- X X X X – designates the bin code (G02K, etc.)
- A B C D – E F G H – designates the base part number (DDAL-U010, etc.)
- M N O P Q – designates the production lot code (12345, etc.)
- Y Y W W – designates the date code (production year and production week, 1020, etc.)
- Z Z – designates the quantity

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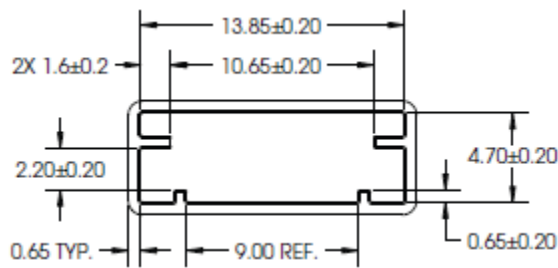
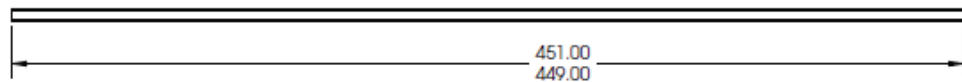
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Packaging Tube Design



Note:

- 1. Drawing for DCHB-W104 & DCHB-C104 product options.
- 2. Drawings are not to scale.
- 3. Drawing dimensions are in mm.

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Tubes are packaged in bags prior to loading into boxes for shipment. One tube is loaded per bag. All products packaged within a single bag are of the same flux and color bin combination (or bin code). Each bag is labeled with the information required for effective inventory management. An example of the bag label is included below.



Bag Label

Where:

- XXXX – designates the bin code (G02K, etc.)
- ABCD – EFGH – designates the base part number (DDAL-U010, etc.)
- MNOPQ – designates the production lot code (12345, etc.)
- YYWW – designates the date code (production year and production week, 1020, etc.)
- ZZZ – designates the unit quantity in one bag

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