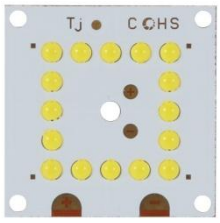
L-HP20CW / L-HP20WW — DATASHEET

CW: HIGH POWER COHS LED – 20 W – COLD WHITE – 1940 LM
WW: HIGH POWER COHS LED – 20 W – WARM WHITE – 1385 LM



Note: This power LED is delivered without heat sink. Take care of proper heat dissipation when using this LED.

Technical Datasheet

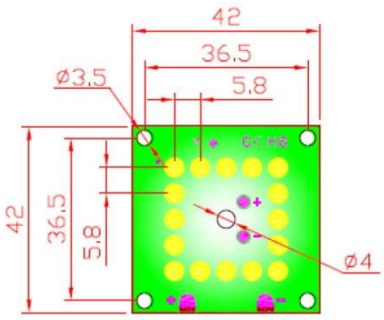
Features

- COHS high power LED: Chip On Heat Sink
- heat sink assembly: screws or thermal conductive double-sided tape
- optional power supply: order code LET10
- super high-flux output and high luminance
- very long operating life
- low thermal resistance
- superior ESD protection.

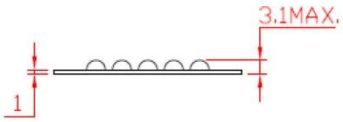
Specification Summary

	L-HP20CW	L-HP20WW
colour	cold white	warm white
luminous flux	1940 lm	1385 lm
colour temperature	5200 K	2900 K
CRI	> 70	> 80
thermal resistance	0.16 °C/W	
forward current	1400 mA	
power dissipation	20 W	
forward voltage	12 – 15.2 V	
LED junction temperature (T_j)	< 85 °C	
LED substrate temperature (T_s)	< 80 °C	
dimensions	42 x 42 x 3.1 mm	

Dimensions



Top view

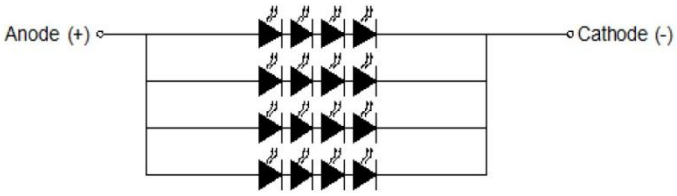


Front view

Notes:

1. Solder pads are labelled "+" (positive) and "–" (negative).
2. Drawings are not to scale.
3. All dimensions are in millimetres.
4. Unless otherwise specified, tolerances are ± 0.20 mm.
5. The optical centre of the LED array is defined by the mechanical centre of the array.

Circuit Layout



Absolute Maximum Ratings

The table below shows the absolute maximum ratings.

Parameter	Symbol	Value	Unit
LED junction temperature	T_j	< 85	°C
Operating temperature		-40 to +100	°C
Storage temperature		-40 to +120	°C
LED substrate temperature (heat sink)	T_s	< 80	°C
DC forward current[1]	I_F	1400	mA
DC forward voltage	V_F	13.2	V
Reverse voltage[2]	V_R	—	V

Notes

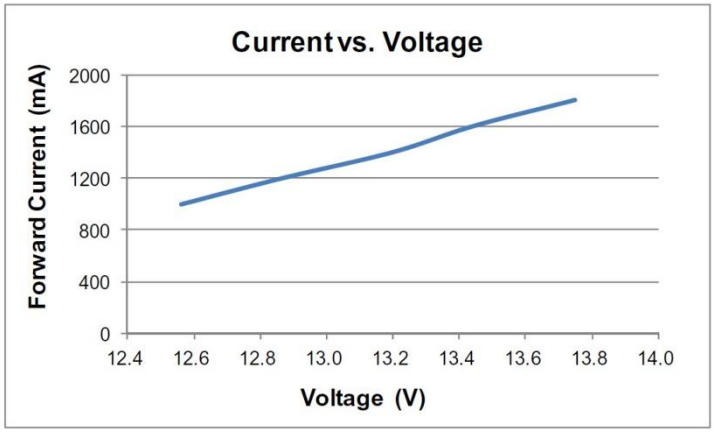
1. DC forward current shall not exceed LED's operating current.
2. LEDs are not designed to be driven in reverse bias.

Forward Voltage Characteristics

The table below describes the forward voltage characteristics. Note that all forward voltage values are based on constant current driving. Do not use the values below to design a constant voltage system.

Min. voltage (V_F)	Typ. voltage (V_F)	Max. voltage (V_F)	Unit
12	13.2	15.2	V

Note: Forward voltage is measured with an accuracy of ± 10 %.



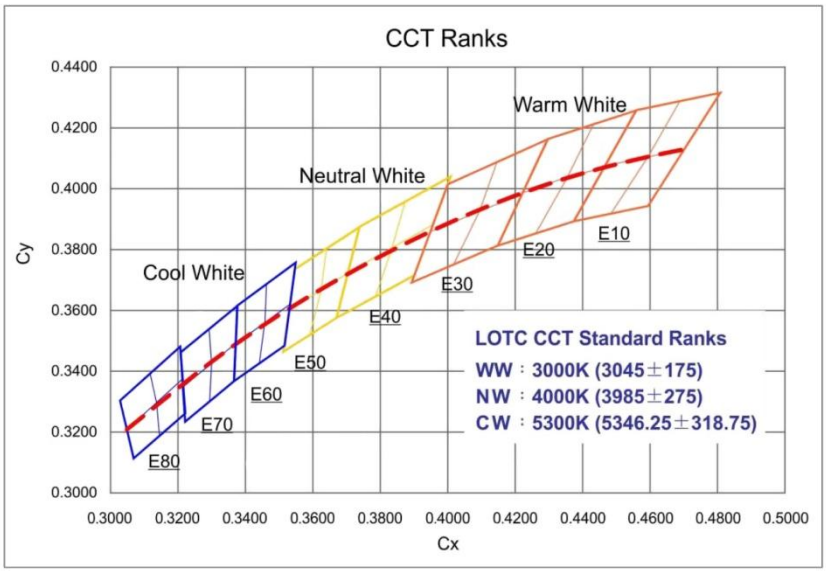
Operating Current and Luminous Flux Characteristics

The table below describes typical luminous flux at T_j = 25 °C and T_j = 70 °C at DC forward currents of 1000 mA, 1200 mA, 1400 mA, and 1800 mA.

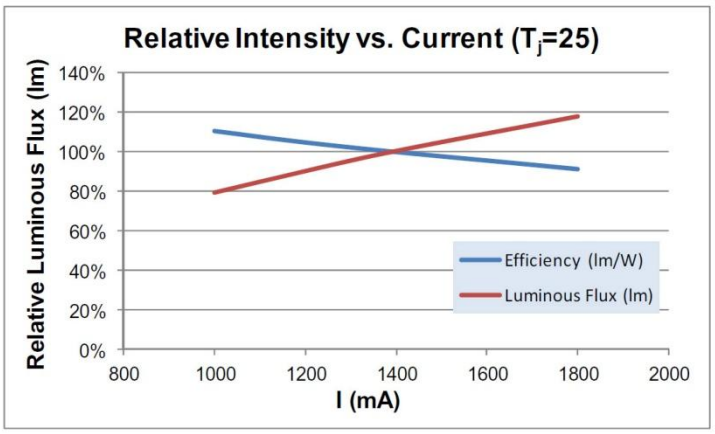
The CCT (Correlated Colour Temperature) values are according to LOTC (Light Ocean Technology Corp.) standard CTT rankings (see CCT Ranks chart below).

Product No.	ANSI CCT (K)	CRI	Luminous flux (lm)		Test current (mA)	Power (W) (Typ.)	Efficacy (lm/W) (Typ. @ Tj 25 °C)	Lumen depreciation
			Tj = 25 °C	Tj = 70 °C				
L-HP20CW	5200 K	> 70	1530	1445	1000	13.20	116	5.6 %
			1740	1645	1200	15.84	110	5.5 %
			1940	**1830**	**1400**	**18.48**	**105**	**5.7 %**
			2280	2150	1800	23.76	96	5.7 %
L-HP20WW	2900 K	> 80	1080	1040	1000	13.20	82	3.7 %
			1250	1200	1200	15.84	79	4.0 %
			1385	**1330**	**1400**	**18.48**	**75**	**4.0 %**
			1640	1575	1800	23.76	69	4.0 %

Note: Luminous flux is measured with an accuracy of ± 10 %.



Current vs. Efficiency



Trend chart for relative intensity versus current.

Input current (mA)	**1000**	**1200**	**1400**	**1800**
Actual Watt	13.20	15.84	**18.48**	23.76
Total typical lm for CW	1530	1740	**1940**	2280
Total typical lm for WW	1080	1250	**1385**	1640
Suggested application			**Downlight**	