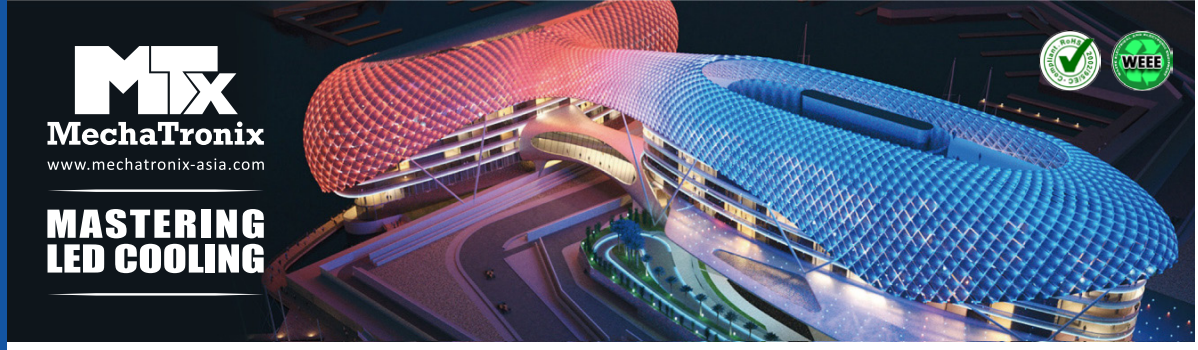
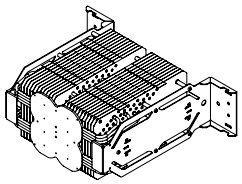


CoolCube® Giga



W200 - L575 - H417 (mm)
Rth 0.1 °C/W - Power Pd 500W

MORE PRODUCT DETAILS

CoolCube® Giga - High Power heat pipe LED Cooler with stack fins

Thermal Data

The thermal performance of a LED cooler, expressed as Thermal Resistance Rth in K/W (or °C/W) tells you how many degrees Kelvin (or Celsius) the base of the LED cooler will incline per Watt of dissipated power Pd.
This dissipated power Pd is the heat loss a LED package or LED COB/LOB will create besides the efficient light generation.
Typically for white LED packages the efficiency varies with the color CCT and the CRI – values here below can be taken as a rule of thumb for white LED packages (phosphor corrected blue light)

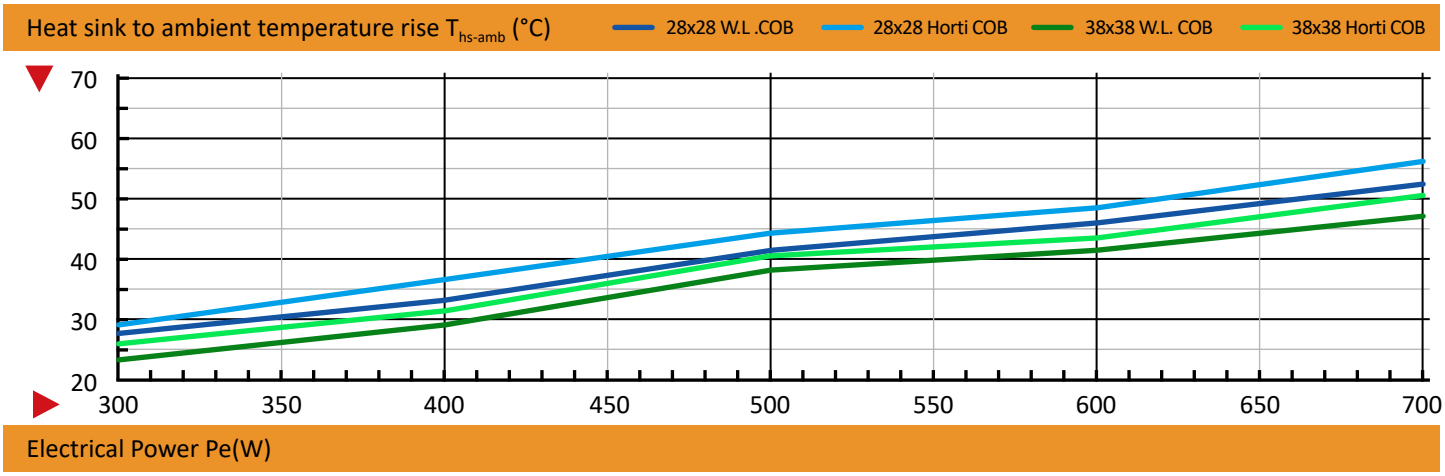
CCT 4000 - 7000 and CRI 70 - 80 –> 35% efficiency –> 65% heat loss
CCT 2700 - 3000 and CRI 85 - 97 –> 30% efficiency –> 70% heat loss

For other LED packages like horticulture specific wave lengths or UV, we recommend you to look up the thermal efficiency in the datasheet or contact the supplier.
Keep in mind that for horticulture LED packages, example 660nm Deep Red, the thermal losses are drastically lower and can be as low as 40%, meaning you could almost use double the electrical power Pe on the same LED cooler for the same temperature rise dT.

Next the Thermal Resistance Rth is not a fix value – the nominal value we declare corresponds with a 50°C temperature rise – The table below explains the thermal resistance Rth for various dissipated power values.
In this way you can completely predict the temperature you are going to get in your LED luminaire.

Difficulties figuring it out – just let us know and our engineers will do the math for you.

Pd = Pe x (1-ηL)						Heat sink to ambient thermal resistance R_{hs-amb} (°C/W)		Heat sink to ambient temperature rise T_{hs-amb} (°C)			
						28x28 COB	38x38 COB	28x28 W.L .COB	28x28 Horti COB	38x38 W.L. COB	38x38 Horti COB
Electrical Power Pe(W)	300	White light COB Dissipated Power Pd(W)	225	Horticulture COB Dissipated Power Pd(W)	240	0.123	0.108	27.7	29.5	24.3	25.9
	400		300		320	0.113	0.098	33.9	36.2	29.4	31.4
	500		375		400	0.111	0.101	41.6	44.4	37.9	40.4
	600		450		480	0.101	0.091	45.5	48.5	41.0	43.7
	700		525		560	0.1	0.09	52.5	56	47.3	50.4



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