

## FLAT HEAT PIPE / MHP-2550A150A

### General Specification

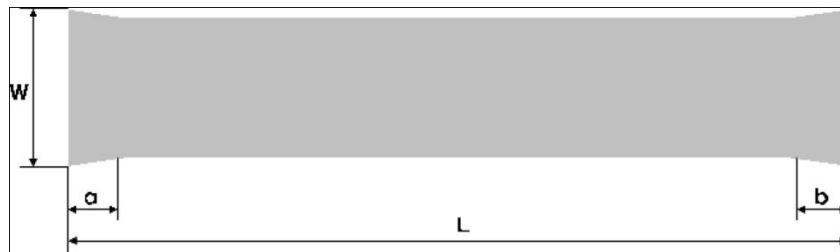
Item		Description
Part Number		MHP-2550A150A
Material of Container		Aluminium 1070
Wick Structure		Groove
Working Fluid		Acetone
Dimension	Thickness	2.5 mm
	Width	50.0 mm
	Length	150 mm
Weight		25 g (Unit Weight)
Qmax	Horizontal	75.0 W (at 50°C)
	Vertical	270.0 W (at 50°C)
Typical Thermal Resistance		<0.2°C / W (Average)
Operating Inclination, $\phi$		0 ~ 90°
Leak Temperature Criterion		170°C

### Scope

This specification details the requirements and applications for 2.5 mm x 50.0mm x 150.0mm.

### Dimensions

The dimensional attributes of this shall conform to the following figure.



Thickness (t)	Width (W)	Length (L)	Ineffective Length (a)	Ineffective Length (b)
2.5 mm	50.0 mm	150.0 mm	2.5 mm	2.5 mm

### [Material]

Container	Aluminium 1070
Working Fluid	Acetone
Surface Treatment	None

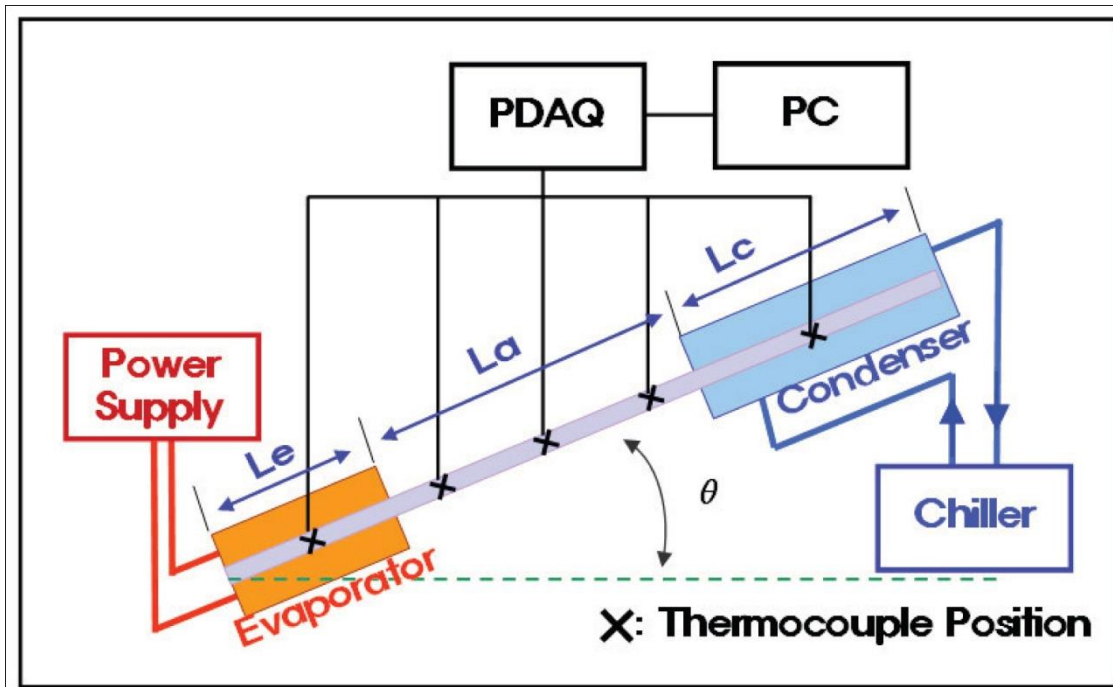
### AMEC Thermasol

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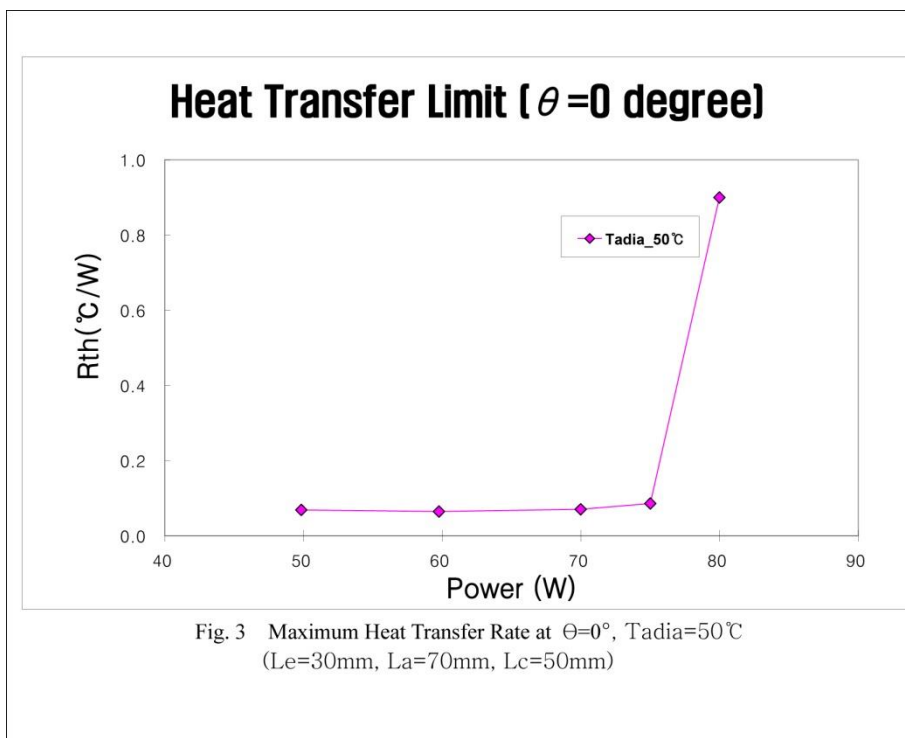
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**FLAT HEAT PIPE / MHP-2550A150A**



*Qmax Test Apparatus*



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## FLAT HEAT PIPE / MHP-2550A150A

### Heat Transfer Limit ( $\theta = 90$ degree)

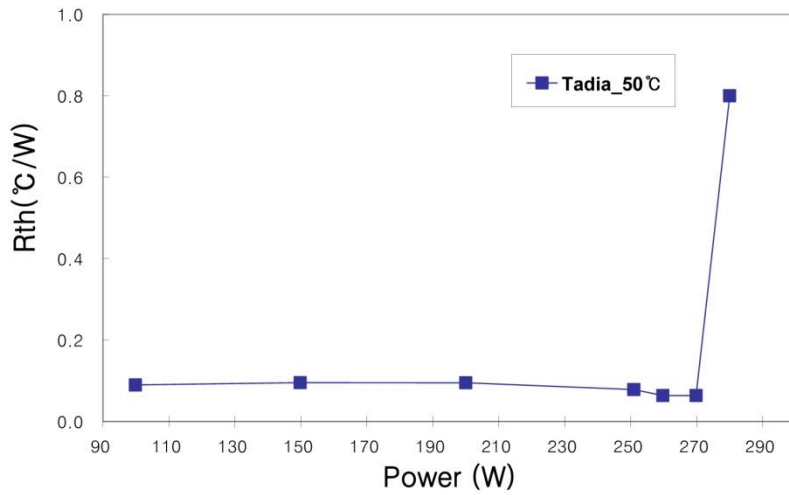


Fig. 4 Maximum Heat Transfer Rate at  $\theta=90^\circ$ ,  $T_{adia}=50^\circ\text{C}$   
( $L_e=30\text{mm}$ ,  $L_a=70\text{mm}$ ,  $L_c=50\text{mm}$ )

### Qmax v.s. Tilt

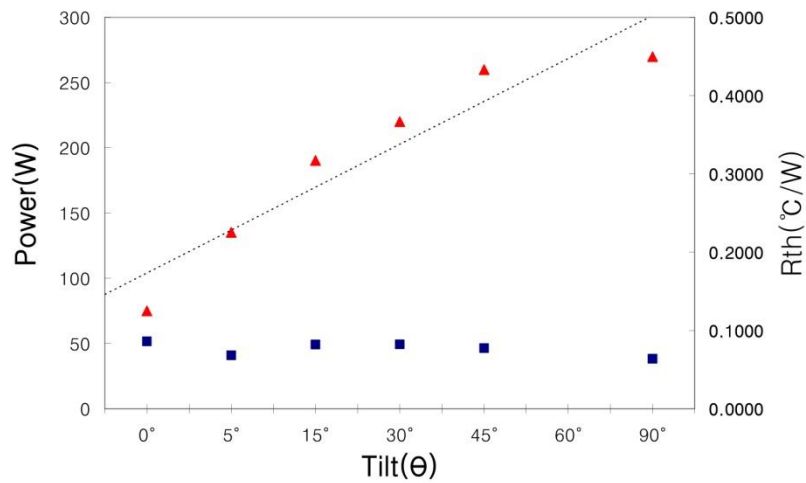


Fig. 5 Maximum Heat Transfer Rate vs. Inclination at  $T_{adia}=50^\circ\text{C}$   
( $L_e=30\text{mm}$ ,  $L_a=70\text{mm}$ ,  $L_c=50\text{mm}$ )

### High Temperature Leak Test

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## FLAT HEAT PIPE / MHP-2550A150A

Every manufactured component is sealed with a mechanical pinch system. The mechanical pinch of container results in a cold weld seal. The average leak temperature is about 170°C.

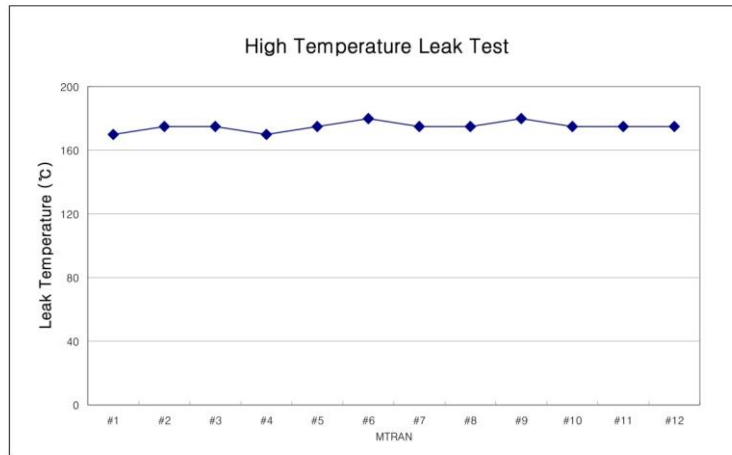


Fig. 6 Leak Test at High Temperature

### Thermal Response Test

A thermal response test and vacuum leakage check are carried out to ensure its operation. The experimental test bench is schematically shown in Fig.6. Water bath temperature, ( $T_w$ ) is set at 50°C and the temperature of other end, ( $T_t$ ) is measured immediately after it is placed vertically into the water bath. The criterion for acceptance is 5°C ( $T_w - T_t$ ).

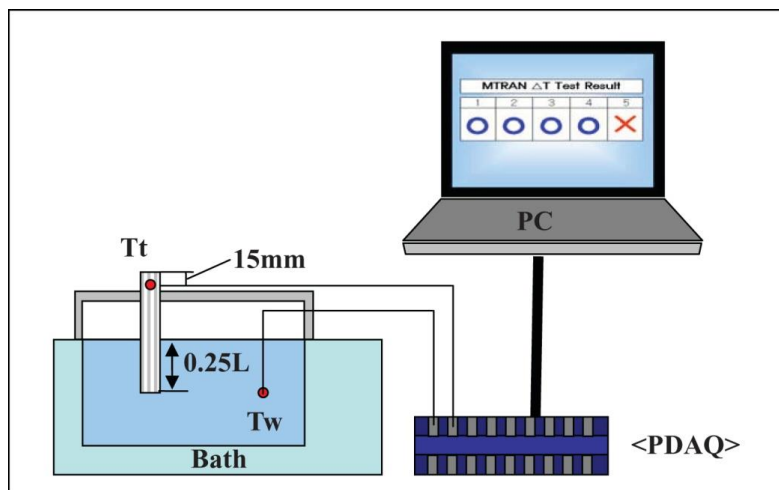


Fig. 7 Thermal Response Test Apparatus

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