

MHP-1220A100A

[General Specification]

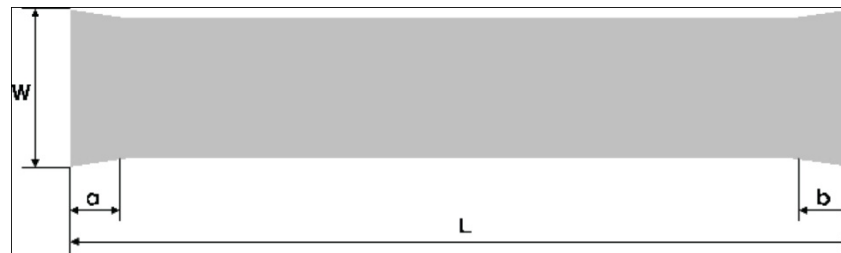
| Item | | Description |
|-------------------------------|------------|----------------------|
| Part Number | | MHP-1220A100A |
| Material of Container | | Aluminium 1050 |
| Wick Structure | | Groove |
| Working Fluid | | Acetone |
| Dimension | Thickness | 1.2 mm |
| | Width | 20.0 mm |
| | Length | 100.0 mm |
| Weight | | 5.7 g (Average) |
| Qmax | Horizontal | 5 W (at 50°C) |
| | Vertical | 18 W (at 50°C) |
| Typical Thermal Resistance | | <0.4°C / W (Average) |
| Operating Inclination, ϕ | | 0 ~ 90° |
| Operating Temperature | | -40 ~ 100°C |

[Scope]

This specification details the requirements and applications for 1.2mm x 20.0mm x 100.0mm.

[Dimensions]

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



| Thickness (t) | Width (W) | Length (L) | Ineffective Length (a) | Ineffective Length (b) |
|---------------|-----------|------------|------------------------|------------------------|
| 1.2 mm | 20.0 mm | 100.0 mm | 1.5 mm | 1.5 mm |

[Material]

| | |
|-------------------|----------------|
| Container | Aluminium 1050 |
| Working Fluid | Acetone |
| Surface Treatment | None |

AMEC Thermasol

1-2 Steam Mill Lane, Great Yarmouth, Norfolk, NR31 0HP

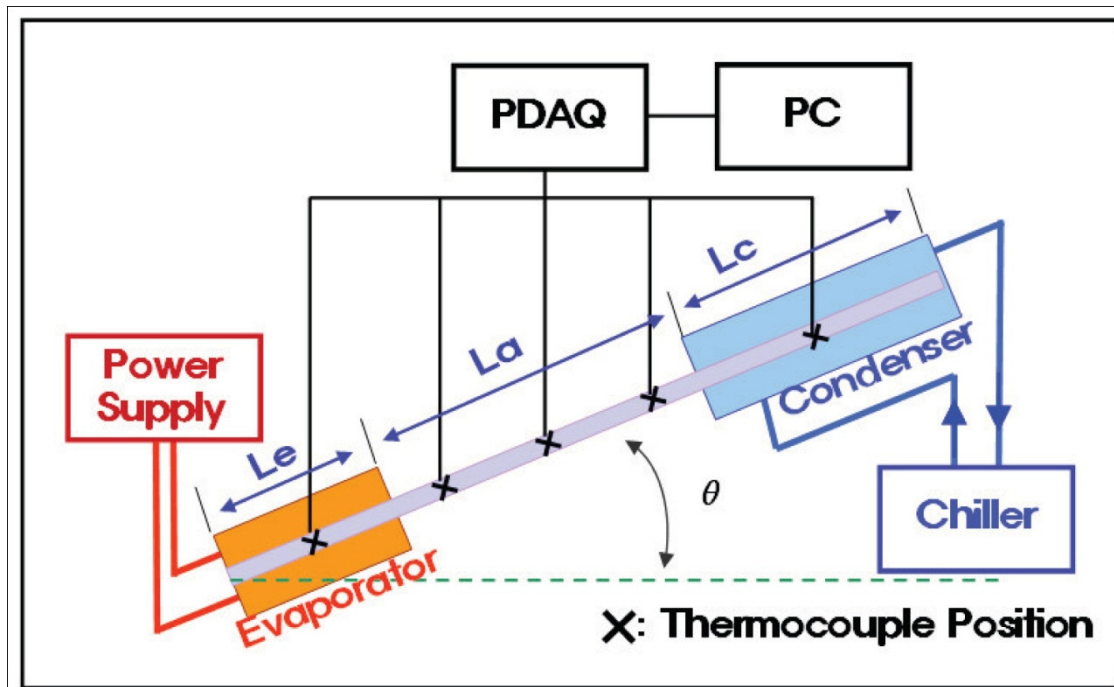
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Test Data - MHP-1220B125A

[Performance]

The experimental test bench is composed of support that assumes the inclination of MHP. The MHP is electrically heated at a section of length L_e , and cooled at an opposite section of a length L_c . K type thermocouples are placed along the MHP to display the temperature variations. To obtain the operating temperature for a MHP, usually a length of L_a insulates a middle section of the tested MHP. Temperatures are measured through a data acquisition (YOKAGAQA DAQSTATION DX2000). Evaporator section has been made of heat block with cartridge heater. The condenser section has been made of water jacket in which cooling water circulates. A cooling bath is used to control the cooling fluid temperature.



Qmax Test Apparatus

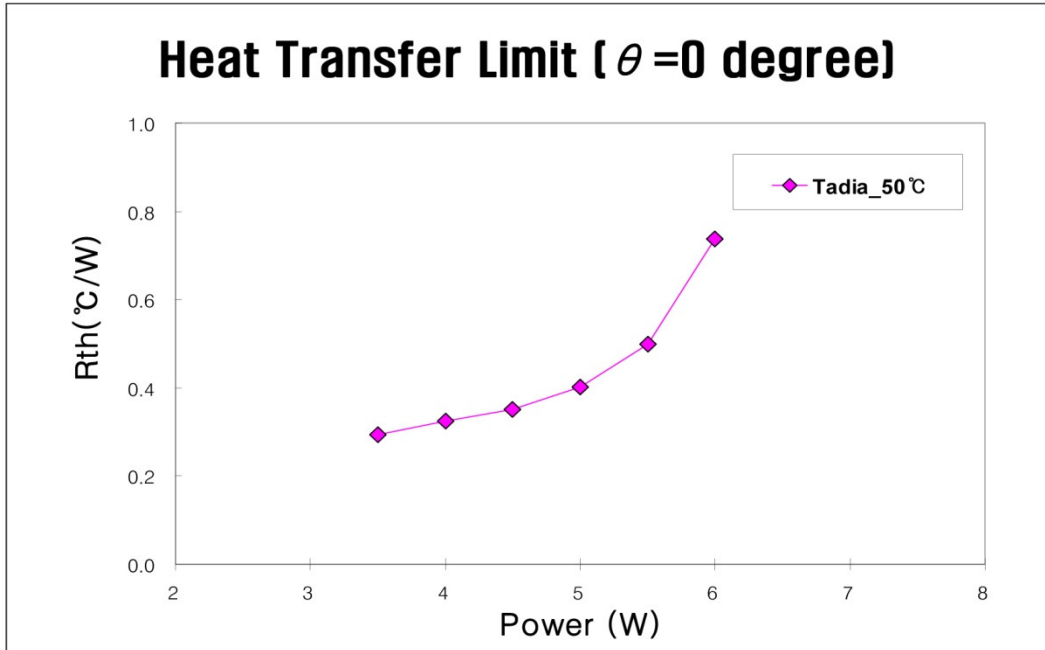
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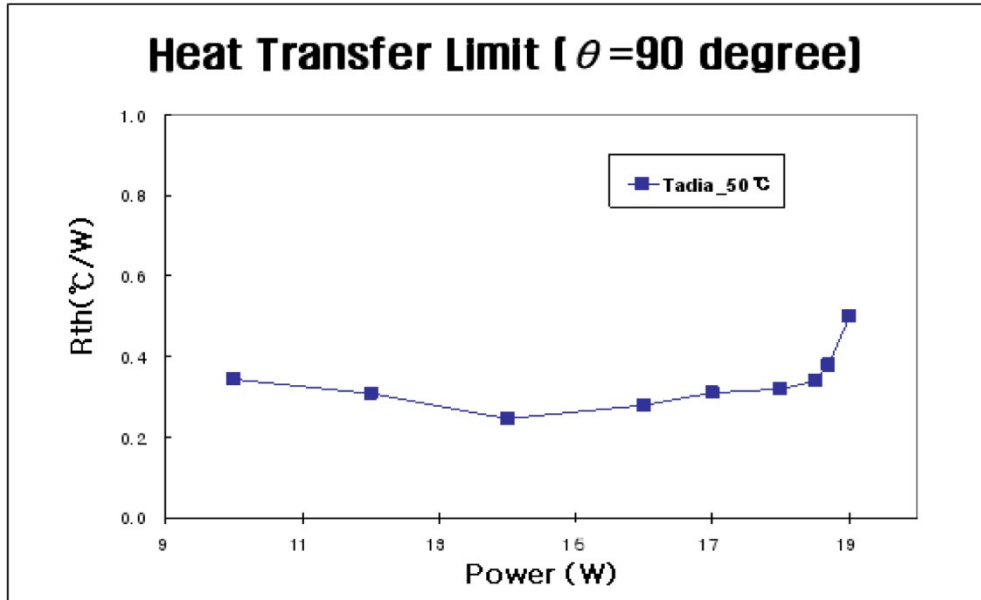
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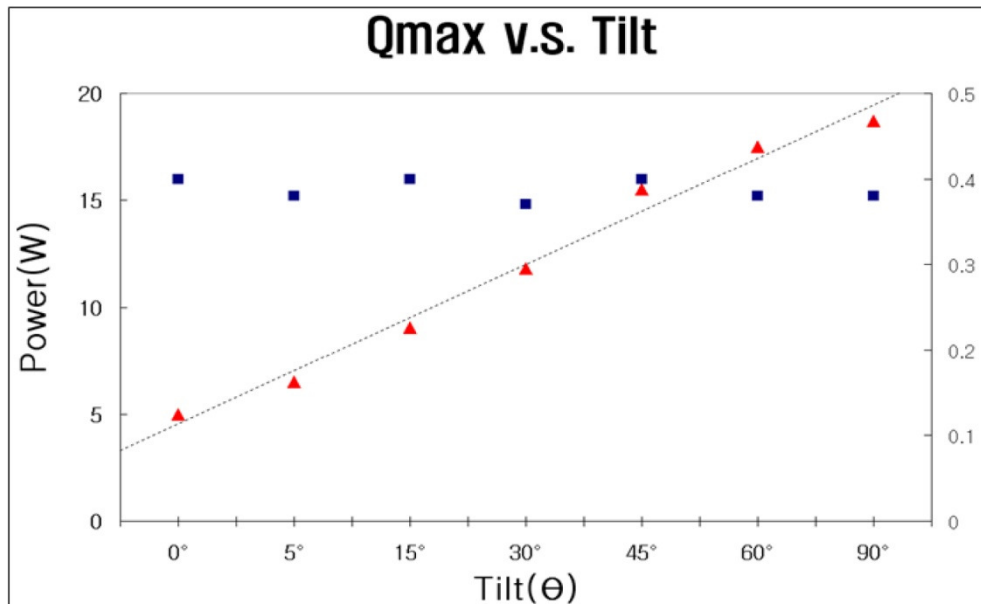
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Maximum Heat Transfer Rate at $\theta=90^\circ$, Tadia=50°C
 (Le=28mm, La=30mm, Lc=67mm)



Maximum Heat Transfer Rate vs. Inclination at Tadia=50°C
 (Le=28mm, La=30mm, Lc=67mm)

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[High Temperature Leak Test]

Every manufactured MHP 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.

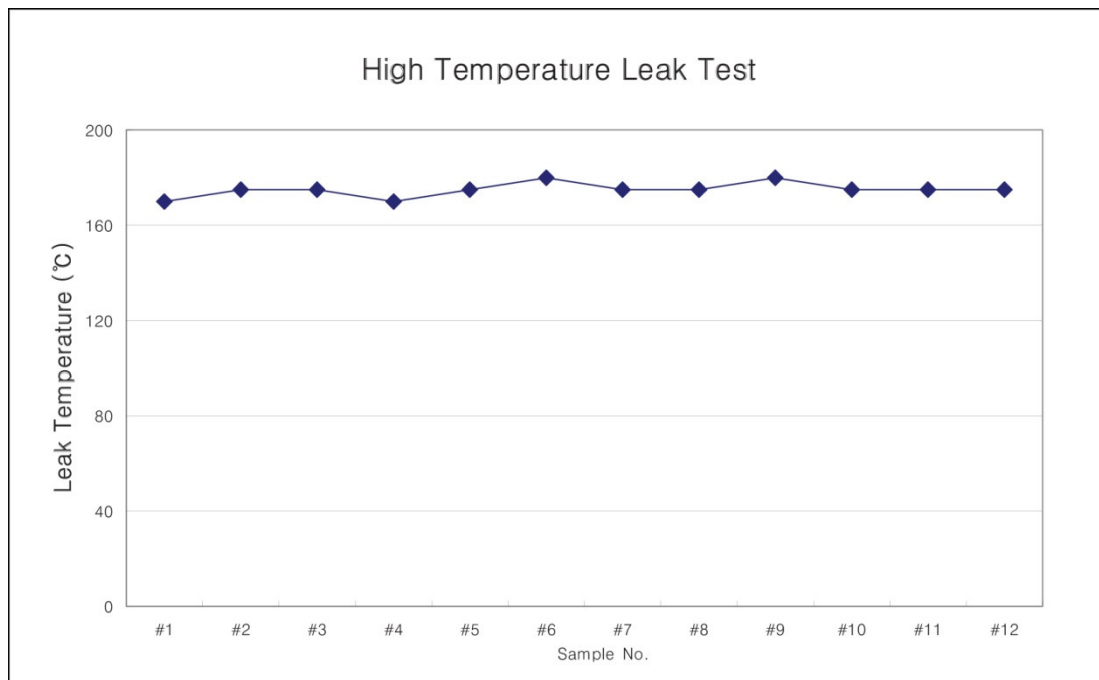


Fig. 6 Leak Test at High Temperature

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[Thermal Response Test]

Every manufactured must pass the thermal response test to ensure its operation and Vacuum and leakage check. 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 ($T_w - T_t$).

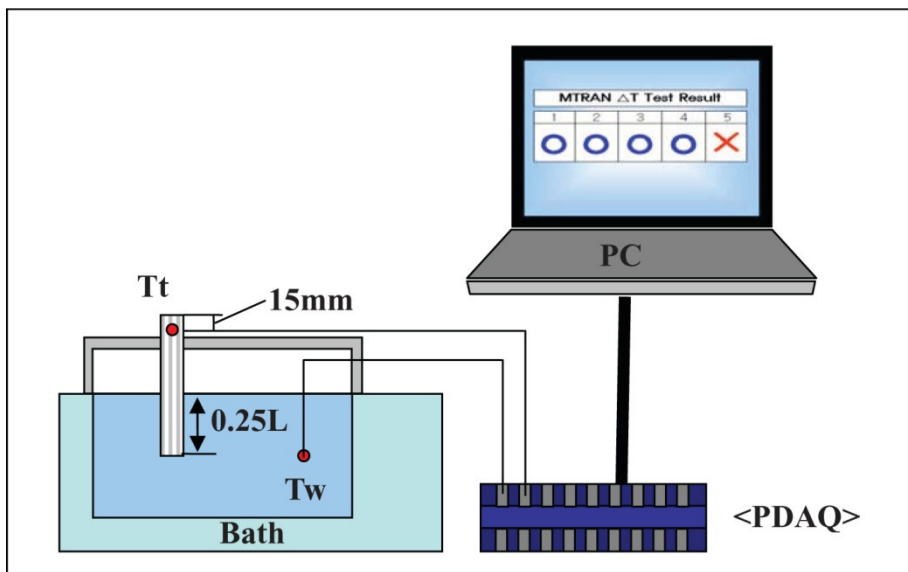


Fig. 7 Thermal Response Test Apparatus

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