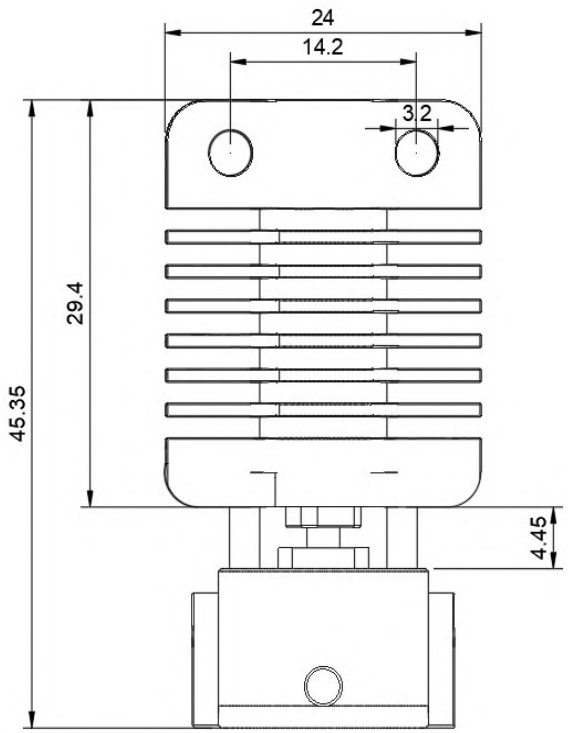
ZODIAC x PHAETUS BMS


**Some special features :**

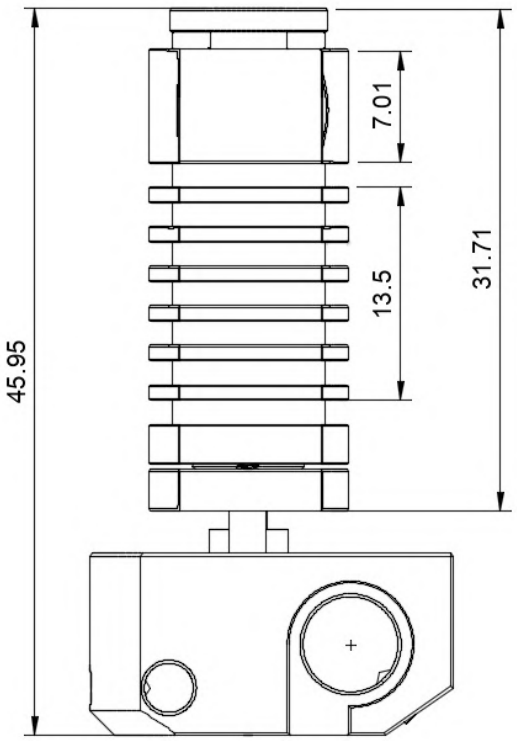
- The core parts of the Heatblock are mainly composed of diamond coated copper alloy, which has the advantage of better heat conduction, insulation and anti stick abilities
- More precise temperature control due to re-positioning of the thermistor and heater cardridge.
- Tighten and unscrew nozzle with one handed at (285°C @ 1.5Nm) or (260°C @ 2Nm)
- Overall temperature resistance up to 500°C.
- Heat sink and heat break adapt conical surface fitting design.
- Close fitting increase heat dissipation contact area.
- Low roughness of heat break.
- High printing precision, no filament plugging.
- Better dimensional accuracy.
- Comes with a Zodiac CRB or additionally PRO series nozzle.

## DIMENSIONS

ZODIAC x PHAETUS BMS




PHAETUS BMS



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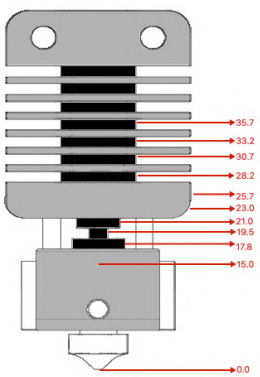
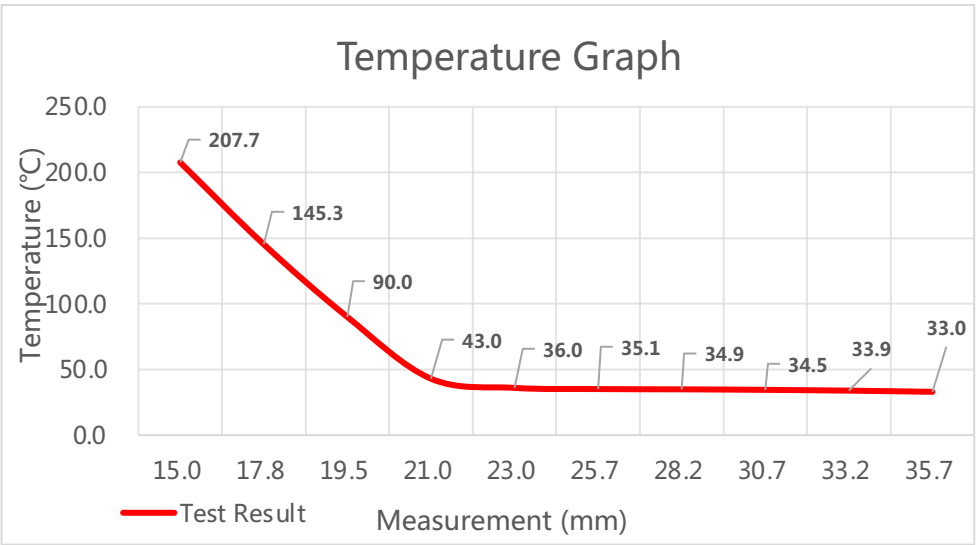
|---|---|---|---|---|---|
| **Test Items:** | **Hot-End Temperature Performance Test** | | | | |
| **Site:** | Laboratory | **Samples:** | 1 | | |
| **Platform:** | Low temperature test platform RLS-0-ME003 | | | | |
| **Tools:** | Hima instrument thermometer AS877 | | | | |
| **Purpose:** | Test the temperature value of each key point | | | | |
| **Method:** | The K-type thermocouple fits the surface and the inner surface | | | | |
| | | | | | |
| **Test Object:** | Dragonfly BMS-Zodiac | **Performance Features:** | | | |
| **Ambient Temperature:** | 21℃ | **Ambient Humidity:** | 42.5 %RH | **Duration of temperature stabilization:** | 1min |
| **Fan model:** | DC 12V 3010 | **Air duct structure:** | Direct Blowing | **Temperature Setting:** | 220℃ |

| **Measuring Point (mm)** | 15.0 | 17.8 | 19.5 | 21.0 | 23.0 | 25.7 | 28.2 | 30.7 | 33.2 | 35.7 |
|---|---|---|---|---|---|---|---|---|---|---|
| **Measurement Value 1 (℃)** | 207.7 | 145.3 | 90.0 | 43.0 | 36.0 | 35.1 | 34.9 | 34.5 | 33.9 | 33.0 |

| | |
|---|---|
| **Remark:** | The position of the temperature measuring point is the distance between the measuring point and the nozzle tip, as shown in figure 1. |

Fig. 1

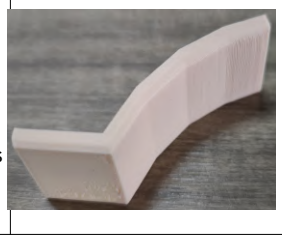



| | |
|---|---|
| **Conclusion Analysis:** | Good heat insulation effect of heatbreak ; 220℃ printing temperature, the temperature at the root of the cooling end of the heatbreak is about 43.0 ℃. |
| | The first fin temperature of the heatsink is about 36.0 ℃, and the overall temperature difference is about 3.0℃. |

## Print Comparison

Printer used: Creality Ender3 V2

| Test Type | Print Parameters | Dragonfly BMS-Zodiac | Origin CR10 | Conclusion |
|---|---|---|---|---|
| **Surface Features** | Filament: PLA<br>Temperature: 200°<br>Layer Thickness: 0.2mm<br>Printing speed: 60mm/s<br>Retraction Speed: 50mm/s<br>Retraction Distance: 3mm |  |  | The prints of Origin CR10 Hotend is badly drawn; while the drawn of printing with Dragonfly BMS-Zodiac is very small |
| **Bridging** | Filament: PLA<br>Temperature: 200°<br>Layer Thickness: 0.2mm<br>Printing speed: 60mm/s<br>Retraction Speed: 50mm/s<br>Retraction Distance: 3mm |  |  | Serious material hanging with origin CR10 hotend during long span printing; little material hanging with BMS-Zodiac |
| **Dimension Accuracy** | Filament: PLA<br>Temperature: 200°<br>Layer Thickness: 0.2mm<br>Printing speed: 60mm/s<br>Retraction Speed: 50mm/s<br>Retraction Distance: 3mm |  |  | The prints with Dragonfly BMS-Zodiac is more smooth |
| **Stringing** | Filament: PLA<br>Temperature: 200°<br>Layer Thickness: 0.2mm<br>Printing speed: 60mm/s<br>Retraction Speed: 50mm/s<br>Retraction Distance: 3mm |  |  | After adjusting the parameters, there is still slight filament stringing phenomenon with CR10 hotend; while there is no for prints with BMS-Zodiac |
| **Tolerance Testing** | Filament: PLA<br>Temperature: 200°<br>Layer Thickness: 0.2mm<br>Printing speed: 60mm/s<br>Retraction Speed: 50mm/s<br>Retraction Distance: 3mm |  |  | Dragonfly BMS-Zodiac is with more printing accuracy |
| **Over-hanging** | Filament: PLA<br>Temperature: 200°<br>Layer Thickness: 0.2mm<br>Printing speed: 60mm/s<br>Retraction Speed: 50mm/s<br>Retraction Distance: 3mm |  |  | The filament hanging is very small when printing 60degree angle with BMS-Zodiac |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