**ORDER DESCRIPTION**

1. **Object of the contract**

The subject of the contract is a thermoelectric cooler in the amount of

* thermoelectric cooler 3TE on TO8 – 12 pin – 3MC04-044-10-M – 50 pcs

1. **The scope of the subject of the contract**

A detailed description of the subject of the contract is provided in section 5 of this document.

1. **Criterion**

Offers will be evaluated according to a point scale with a maximum number of points of 100.

| Criterion | Maximum number of points S | Method of awarding points |
| --- | --- | --- |
| Net Price (P) | 100 | S x Pmin/Pi |

Where:

* Pi – the net price of goods - for the given offer
* Pmin - the minimum delivery net price for the ordered goods from all offers submitted
* S – number of points

The final score will be calculated by adding up the partial components and then rounded to two decimal places (rounded from "5" up).

1. **Deadline for completing the order**

**As soon as possible, no later than 10 weeks from the date of placing the order.**

**Deadline for completion of the order includes readiness to hand over the goods to the Ordering Party, which complies with application of the EXW Incoterms2020 principle.**

**According to the EXW (ex works) principle, the moment of delivery of the goods is considered to be the moment of placing the goods at the disposal of the buyer at place indicated by the supplier (factory, plant etc.).**

**The Ordering Party shall accept application of other Incoterms2020 principle (such as FCA, DAP etc.), on condition that the Contractor will meet the deadline for completion, as referred to above.**

1. **Parameters**

**5.1 Detailed scope of the subject**

| Product name | | Parameter | Specification |
| --- | --- | --- | --- |
| Thermoelectric cooler 3TE on TO8 – 12 pin – 3MC04-044-10-M | Cooler Parameters (measurement conditions - 300 K, vacuum) | Ceramics material | Al2O3, top ceramics of the cooler polished |
| Assembly of the TEC | RoHS lead-free solder  Tmelt (melting temperature) not lower than 230 ° C |
| Electrical connections of the cooler | One uninsulated AWG-32 wire soldered per each terminal of the TEC |
| Top stage dimensions | Not less than 2.4 x 2.4 mm |
| Bottom stage dimensions | 6,4±0,1 mm x 6,4±0,1 mm |
| Height of the cooler | 5,3±0,15 mm |
| ΔTmax K (measurement in a vacuum, 300K) | Not less than 114 K |
| Qmax W  (measurement in vacuum, 300K) | Not less than 0,27 W |
| Imax A  Umax V (measurement in vacuum, 300K) | 0,6±0,06 A  3,6±0,4 V |
| Header TO-8 12 pin parameters | Header type | TO8 |
| Number of the pins | 12 pin, including 1 ground pin (pin 11) |
| Header material | Kovar (alloy complying with ASTM F-15) |
| Metallization of the header | 1.Ni layer - metallization thickness 1.27-3.8 μm  2. Au layer - metallization thickness> 1.27 μm |
| Pin material | Kovar (alloy complying with ASTM F-15) |
| Metallization of the pins | 1.Ni layer - metallization thickness 1.27-3.8 μm  2. Au layer - metallization thickness> 1.27 μm |
| Mounting screw | Screw material - CRS (cold rolled steel)  Bolt thread - 4-40 UNC  Screw length - 6.4 ± 0.2 mm |
| Header sealing | Electrically non-conductive, non-transparent, helium leakage of a sealing material less than  10-8 mbar \* l / s - e.g. Corning 7052 or equivalent |
| The internal length of the pins (from the mounting surface of the cooler) | 2,54±0,1 mm |
| Pin surface roughness | Ra 0.8 or better |
| The outer length of the pins (from the surface with the thread mounted) | 7,9±0,25 mm |
| Features of the set: cooler on the header | The method of mounting the TEC to the header | Soldering, RoHS lead-free solders, melting point >200C |
| The connection between TEC wires and pins | TEC terminal wires soldered to pins 2 (+) and 8 (-) of the header  RoHS lead-free solders with a melting point >200C |
| Position tolerance between TEC and header | The error in the position of the centre of the top stage of the TEC relative to the axis defined by the rim of a 13,4 mm diameter have to be less than 200 μm |
| ACR (cooler mounted to a header, measurement under vacuum, 300K) | 5,75±0,58 Ω |