



# COLD TEST

## ZAURAC 4-30



VTT Expert Services Ltd

Requested by: Five Watts Oy

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**Order** 1.7.2013, Ville Schütt

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## Cold test for ZAURAC 4-30

**Summary** The cold start was performed successfully at each temperature, -45 °C, -55 °C, -65 °C and -67,5 °C.  
The test does not belong to the field of accredited testing (T001).

Espoo, July 19, 2013

Jari Heikkinen  
Expert

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## 1 General

The test place was VTT Expert Services Ltd and the test was carried out 2.7.2013. The specimen consisted of two ZAURAC 4-30 units (SN: 03 and 08).

The test equipment:

- Cold / heat chamber ESPEC ENZ28-15CW, IDN TL04107
- HP 6643A DC power supply, IDN TL04141
- Fluke 179 universal meter, IDN EX79

The performance of the specimen was verified on the visual basis.

## 2 Cold, IEC 60068-2-1, Test Ad (2007-03), generally as

### 2.1 Test procedure

The test was carried out generally according to the publication IEC 60068-2-1, Test Ad. The test temperatures were -45 °C, -55 °C, -65 °C and -67,5 °C ( $\pm 2$  °C). At each temperature the specimen were allowed to stabilize and then were switched on. Otherwise the specimen were non-operational.

The temperatures measured from the casing are presented in figure 1.

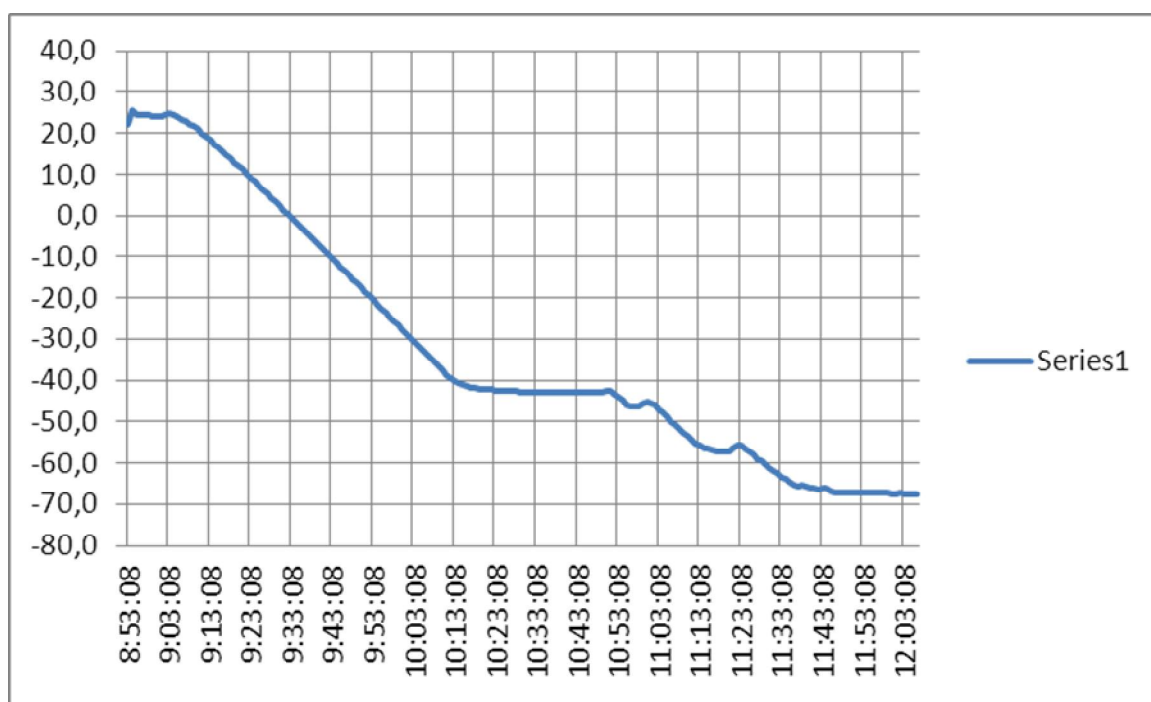


Figure 1. The measured temperatures during the cold test.

### 2.2 Test results

The cold start was performed successfully at each temperature.

The test does not belong to the field of accredited testing (T001).