

Wednesday, December 20, 2023, Time 13:58

Wintherm32v3 Version 3.31.143 Uni

Instrument: F200s

Instrument Program Version 290

Instrument Serial Number: 2520

Sample Name: 2023\_12\_20\_W3 iz 2023\_smp 3

Thickness: 28.92mm

Rear Left : 28.96 mm

Rear Right : 29.16 mm

Front Left: 28.68 mm

Front Right: 28.91 mm

[ ]

[ ]

Thickness obtained : from instrument

## TEST RUN

Calibration used : User Type

Calibration File Id: IRMMCalibration\_sn2520

Number of transducers per plate: 1

Number of transducers used per plate: 1

Number of Setpoints: 3

Setpoint duration: 72 min

Block Averages for setpoint 1 in SI units

|      | Tupper | Tlower | Qupper | Qlower | Lambda |
|------|--------|--------|--------|--------|--------|
|      | [°C]   | [°C]   | [μV]   | [μV]   | [W/mK] |
| -ne- | 15.56  | 24.14  | -12627 | 6196   | 0.8237 |
| -ne- | 15.00  | 24.98  | -9298  | 4360   | 0.5144 |
| -te- | 15.00  | 25.01  | -8121  | 5064   | 0.4950 |
| -te- | 15.00  | 25.01  | -7513  | 5526   | 0.4895 |
| -te- | 15.00  | 25.01  | -7143  | 5811   | 0.4863 |
| -te- | 15.00  | 25.01  | -6910  | 5996   | 0.4845 |
| -te- | 15.00  | 25.01  | -6766  | 6110   | 0.4834 |
| -te- | 15.00  | 25.01  | -6672  | 6192   | 0.4828 |
| -te- | 15.00  | 25.00  | -6632  | 6209   | 0.4823 |
| -pe- | 14.99  | 25.00  | -6608  | 6244   | 0.4825 |
| -pe- | 14.99  | 25.00  | -6578  | 6274   | 0.4825 |
| -pe- | 15.00  | 25.01  | -6553  | 6297   | 0.4824 |
| -pe- | 15.00  | 25.01  | -6541  | 6307   | 0.4822 |
| -pe- | 15.00  | 25.01  | -6536  | 6310   | 0.4821 |
| -pe- | 15.01  | 25.02  | -6532  | 6311   | 0.4819 |
| -pe- | 15.01  | 25.02  | -6532  | 6307   | 0.4818 |
| -pe- | 15.01  | 25.01  | -6534  | 6303   | 0.4818 |

Wednesday, December 20, 2023, Time 15:10

Setpoint No. 1

Setpoint Upper: 15.00 °C

Setpoint Lower: 25.00 °C

Temperature Upper: 15.01 °C

CalibFactor Upper: 0.026016

Results Upper: 0.4911 W/mK

Temperature Lower: 25.02 °C

CalibFactor Lower: 0.025934

Results Lower: 0.4726 W/mK

Percent Difference: 3.84%

Thermal Equilibrium Criteria:

Temperature Equilibrium: 0.20

Between Block HFM Equil.: 49

HFM Percent Change: 2.00

Min Number of Blocks: 4

Calculation Blocks: 3

Setpoint duration: 76 min

Block Averages for setpoint 2 in SI units

|      | Tupper<br>[°C] | Tlower<br>[°C] | Qupper<br>[μV] | Qlower<br>[μV] | Lambda<br>[W/mK] |
|------|----------------|----------------|----------------|----------------|------------------|
| -ne- | 10.15          | 20.06          | -15713         | -2588          | 0.7008           |
| -te- | 9.99           | 20.00          | -10975         | 2633           | 0.5161           |
| -te- | 10.00          | 19.99          | -9279          | 3919           | 0.5005           |
| -te- | 10.00          | 20.00          | -8208          | 4747           | 0.4906           |
| -te- | 10.00          | 20.00          | -7539          | 5265           | 0.4846           |
| -te- | 10.00          | 20.00          | -7116          | 5593           | 0.4808           |
| -te- | 10.00          | 20.00          | -6850          | 5800           | 0.4784           |
| -te- | 10.00          | 20.00          | -6679          | 5933           | 0.4769           |
| -te- | 10.00          | 20.00          | -6581          | 6011           | 0.4761           |
| -te- | 10.00          | 20.00          | -6508          | 6070           | 0.4756           |
| -te- | 10.00          | 20.00          | -6462          | 6104           | 0.4751           |
| -pe- | 10.00          | 20.00          | -6443          | 6120           | 0.4749           |
| -pe- | 10.00          | 20.00          | -6419          | 6136           | 0.4745           |
| -pe- | 10.00          | 20.00          | -6404          | 6149           | 0.4745           |
| -pe- | 10.00          | 20.01          | -6392          | 6152           | 0.4740           |
| -pe- | 10.00          | 20.01          | -6385          | 6149           | 0.4736           |
| -pe- | 10.00          | 20.00          | -6379          | 6150           | 0.4735           |
| -pe- | 10.00          | 20.00          | -6384          | 6147           | 0.4738           |

Wednesday, December 20, 2023, Time 16:27

Setpoint No. 2  
Setpoint Upper: 10.00 °C  
Setpoint Lower: 20.00 °C  
Temperature Upper: 10.00 °C  
CalibFactor Upper: 0.026312  
Results Upper: 0.4856 W/mK  
Temperature Lower: 20.01 °C  
CalibFactor Lower: 0.025969  
Results Lower: 0.4617 W/mK  
Percent Difference: 5.05%

Thermal Equilibrium Criteria:  
Temperature Equilibrium: 0.20  
Between Block HFM Equil.: 49  
HFM Percent Change: 2.00  
Min Number of Blocks: 4  
Calculation Blocks: 3

Setpoint duration: 84 min

Block Averages for setpoint 3 in SI units

|      | Tupper<br>[°C] | Tlower<br>[°C] | Qupper<br>[μV] | Qlower<br>[μV] | Lambda<br>[W/mK] |
|------|----------------|----------------|----------------|----------------|------------------|
| -ne- | 5.23           | 15.07          | -15490         | -2556          | 0.7032           |
| -te- | 4.99           | 14.99          | -10792         | 2560           | 0.5112           |
| -te- | 4.99           | 15.00          | -9117          | 3817           | 0.4940           |
| -te- | 5.00           | 15.00          | -8067          | 4624           | 0.4841           |
| -te- | 5.00           | 15.00          | -7410          | 5135           | 0.4780           |
| -te- | 5.00           | 15.00          | -6987          | 5459           | 0.4740           |
| -te- | 5.00           | 15.01          | -6727          | 5661           | 0.4715           |
| -te- | 5.00           | 15.01          | -6560          | 5787           | 0.4698           |
| -te- | 5.00           | 15.01          | -6451          | 5869           | 0.4687           |
| -te- | 5.00           | 15.01          | -6385          | 5917           | 0.4680           |
| -te- | 5.00           | 15.01          | -6340          | 5950           | 0.4675           |
| -pe- | 4.99           | 15.00          | -6323          | 5961           | 0.4672           |
| -pe- | 4.99           | 15.00          | -6303          | 5979           | 0.4671           |
| -pe- | 4.99           | 15.00          | -6290          | 5991           | 0.4671           |
| -pe- | 4.99           | 15.00          | -6282          | 6000           | 0.4672           |
| -pe- | 5.00           | 15.00          | -6275          | 6008           | 0.4672           |
| -pe- | 5.00           | 15.00          | -6271          | 6014           | 0.4673           |
| -pe- | 5.00           | 15.01          | -6271          | 6012           | 0.4671           |
| -pe- | 5.00           | 15.01          | -6268          | 6013           | 0.4671           |
| -pe- | 5.00           | 15.01          | -6274          | 6010           | 0.4672           |

Wednesday, December 20, 2023, Time 17:52

Setpoint No. 3  
Setpoint Upper: 5.00 °C  
Setpoint Lower: 15.00 °C  
Temperature Upper: 5.00 °C

CalibFactor Upper: 0.026610  
Results Upper: 0.4824 W/mK  
Temperature Lower: 15.01 °C  
CalibFactor Lower: 0.026003  
Results Lower: 0.4519 W/mK  
Percent Difference: 6.53%

Thermal Equilibrium Criteria:

Temperature Equilibrium: 0.20  
Between Block HFM Equil.: 49  
HFM Percent Change: 2.00  
Min Number of Blocks: 4  
Calculation Blocks: 3

Results Table -- SI Units

| Mean Temp | Upper Cond | Lower Cond | Average Cond |
|-----------|------------|------------|--------------|
| 20.01     | 0.4911     | 0.4726     | 0.4818       |
| 15.00     | 0.4856     | 0.4617     | 0.4736       |
| 10.00     | 0.4824     | 0.4519     | 0.4672       |