

Thursday, December 09, 2021, Time 08:03

Wintherm32v3 Version 3.31.143 Uni

Instrument: F200s

Instrument Program Version 290

Instrument Serial Number: 2520

Sample Name: M2-F2

Thickness: 29.07mm

Rear Left : 28.91 mm

Rear Right : 28.96 mm

Front Left: 29.18 mm

Front Right: 29.24 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: 59 min

Block Averages for setpoint 1 in SI units

|      | Tupper<br>[°C] | Tlower<br>[°C] | Qupper<br>[μV] | Qlower<br>[μV] | Lambda<br>[W/mK] |
|------|----------------|----------------|----------------|----------------|------------------|
| -ne- | 15.22          | 23.92          | -5246          | 9882           | 0.6565           |
| -ne- | 15.01          | 24.98          | -3757          | 5467           | 0.3490           |
| -te- | 15.01          | 25.01          | -3903          | 4948           | 0.3338           |
| -te- | 15.01          | 25.02          | -4058          | 4753           | 0.3323           |
| -te- | 15.01          | 25.01          | -4157          | 4632           | 0.3316           |
| -te- | 15.01          | 25.02          | -4226          | 4563           | 0.3315           |
| -te- | 15.01          | 25.02          | -4264          | 4522           | 0.3314           |
| -pe- | 15.01          | 25.02          | -4278          | 4502           | 0.3312           |
| -pe- | 15.01          | 25.02          | -4293          | 4484           | 0.3311           |
| -pe- | 15.01          | 25.02          | -4308          | 4468           | 0.3310           |
| -pe- | 15.01          | 25.02          | -4315          | 4456           | 0.3308           |
| -pe- | 15.01          | 25.02          | -4320          | 4447           | 0.3307           |
| -pe- | 15.01          | 25.02          | -4320          | 4449           | 0.3308           |
| -pe- | 15.01          | 25.02          | -4318          | 4446           | 0.3306           |

Thursday, December 09, 2021, Time 09:02

Setpoint No. 1

Setpoint Upper: 15.00 °C

Setpoint Lower: 25.00 °C

Temperature Upper: 15.01 °C

CalibFactor Upper: 0.026016

Results Upper: 0.3264 W/mK

Temperature Lower: 25.02 °C

CalibFactor Lower: 0.025934

Results Lower: 0.3350 W/mK

Percent Difference: 2.59%

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- | 10.09          | 20.05          | -11717         | -4252          | 0.6110           |

|      |       |       |       |      |        |
|------|-------|-------|-------|------|--------|
| -te- | 10.00 | 20.01 | -7195 | 1252 | 0.3221 |
| -te- | 10.00 | 20.00 | -6085 | 2397 | 0.3233 |
| -te- | 10.00 | 20.00 | -5386 | 3118 | 0.3238 |
| -te- | 10.00 | 20.00 | -4951 | 3582 | 0.3245 |
| -te- | 10.00 | 20.01 | -4677 | 3869 | 0.3248 |
| -te- | 10.00 | 20.00 | -4513 | 4034 | 0.3249 |
| -te- | 10.00 | 20.00 | -4406 | 4154 | 0.3253 |
| -te- | 10.00 | 20.00 | -4341 | 4225 | 0.3255 |
| -te- | 10.00 | 20.01 | -4293 | 4264 | 0.3251 |
| -pe- | 10.00 | 20.00 | -4274 | 4288 | 0.3254 |
| -pe- | 10.00 | 20.00 | -4252 | 4312 | 0.3253 |
| -pe- | 10.00 | 20.00 | -4233 | 4325 | 0.3251 |
| -pe- | 10.00 | 20.00 | -4226 | 4334 | 0.3252 |
| -pe- | 10.00 | 20.00 | -4222 | 4337 | 0.3251 |
| -pe- | 10.00 | 20.00 | -4220 | 4339 | 0.3252 |
| -pe- | 10.00 | 20.00 | -4220 | 4338 | 0.3251 |
| -pe- | 10.00 | 20.00 | -4222 | 4339 | 0.3253 |

Thursday, December 09, 2021, Time 10:19

Setpoint No. 2  
Setpoint Upper: 10.00 °C  
Setpoint Lower: 20.00 °C  
Temperature Upper: 10.00 °C  
CalibFactor Upper: 0.026312  
Results Upper: 0.3228 W/mK  
Temperature Lower: 20.00 °C  
CalibFactor Lower: 0.025969  
Results Lower: 0.3275 W/mK  
Percent Difference: 1.45%

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- | 5.14           | 15.04          | -11478         | -4211          | 0.6093           |
| -te- | 4.99           | 15.00          | -7046          | 1220           | 0.3184           |
| -te- | 5.00           | 15.00          | -5967          | 2332           | 0.3188           |
| -te- | 5.00           | 15.00          | -5285          | 3044           | 0.3194           |
| -te- | 5.00           | 15.00          | -4862          | 3488           | 0.3198           |
| -te- | 5.00           | 15.01          | -4598          | 3767           | 0.3200           |
| -te- | 5.00           | 15.01          | -4424          | 3945           | 0.3200           |
| -te- | 5.00           | 15.01          | -4314          | 4062           | 0.3202           |
| -te- | 5.00           | 15.01          | -4252          | 4120           | 0.3200           |
| -te- | 5.00           | 15.00          | -4221          | 4156           | 0.3202           |
| -pe- | 4.99           | 15.00          | -4204          | 4177           | 0.3203           |
| -pe- | 4.99           | 15.00          | -4182          | 4203           | 0.3205           |
| -pe- | 4.99           | 15.00          | -4169          | 4219           | 0.3206           |
| -pe- | 4.99           | 15.00          | -4157          | 4233           | 0.3206           |
| -pe- | 5.00           | 15.00          | -4153          | 4242           | 0.3208           |
| -pe- | 5.00           | 15.00          | -4147          | 4245           | 0.3207           |
| -pe- | 5.00           | 15.01          | -4142          | 4251           | 0.3207           |
| -pe- | 5.00           | 15.01          | -4138          | 4254           | 0.3206           |
| -pe- | 5.00           | 15.01          | -4135          | 4254           | 0.3205           |
| -pe- | 5.00           | 15.01          | -4137          | 4248           | 0.3204           |

Thursday, December 09, 2021, Time 11:44

Setpoint No. 3  
Setpoint Upper: 5.00 °C  
Setpoint Lower: 15.00 °C  
Temperature Upper: 5.00 °C  
CalibFactor Upper: 0.026610  
Results Upper: 0.3198 W/mK  
Temperature Lower: 15.01 °C

CalibFactor Lower: 0.026002  
Results Lower: 0.3212 W/mK  
Percent Difference: 0.43%

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     | 0.3264     | 0.3350     | 0.3307       |
| 15.00     | 0.3228     | 0.3275     | 0.3252       |
| 10.01     | 0.3198     | 0.3212     | 0.3205       |