

Friday, November 19, 2021, Time 14:36

Wintherm32v3 Version 3.31.143 Uni

Instrument: F200s

Instrument Program Version 290

Instrument Serial Number: 2520

Sample Name: RE_OSa.50.50.0.L8#2

Thickness: 29.92mm

Rear Left : 29.95 mm Rear Right : 30.00 mm

Front Left: 29.84 mm Front Right: 29.90 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: 67 min

Block Averages for setpoint 1 in SI units

| Tupper [°C] | Tlower [°C] | Qupper [μV] | Qlower [μV] | Lambda [W/mK] |
|----------------|----------------|----------------|----------------|------------------|
| 15.95 | 24.42 | -8623 | 5570 | 0.6506 |
| 14.96 | 24.99 | -5481 | 3446 | 0.3460 |
| 14.99 | 25.00 | -4749 | 3623 | 0.3252 |
| 15.00 | 25.01 | -4538 | 3789 | 0.3234 |
| 15.01 | 25.01 | -4390 | 3903 | 0.3220 |
| 15.01 | 25.01 | -4298 | 3968 | 0.3210 |
| 15.01 | 25.02 | -4236 | 4014 | 0.3203 |
| 15.01 | 25.02 | -4199 | 4038 | 0.3198 |
| 15.00 | 25.01 | -4184 | 4050 | 0.3197 |
| 15.00 | 25.01 | -4164 | 4066 | 0.3196 |
| 15.00 | 25.01 | -4152 | 4073 | 0.3193 |
| 15.00 | 25.01 | -4146 | 4078 | 0.3192 |
| 15.00 | 25.01 | -4140 | 4082 | 0.3192 |
| 15.00 | 25.01 | -4137 | 4084 | 0.3192 |
| 15.00 | 25.01 | -4137 | 4083 | 0.3191 |
| 15.01 | 25.01 | -4138 | 4082 | 0.3192 |

Friday, November 19, 2021, Time 15:44

Setpoint No. 1

Setpoint Upper: 15.00 °C

Setpoint Lower: 25.00 °C

Temperature Upper: 15.00 °C

CalibFactor Upper: 0.026016

Results Upper: 0.3218 W/mK

Temperature Lower: 25.01 °C

CalibFactor Lower: 0.025934

Results Lower: 0.3166 W/mK

Percent Difference: 1.63%

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: 89 min

Block Averages for setpoint 2 in SI units

| Tupper | Tlower | Qupper | Qlower | Lambda |
|--------|--------|--------|--------|--------|
|--------|--------|--------|--------|--------|

| | [°C] | [°C] | [µV] | [µV] | [W/mK] |
|------|-------|-------|--------|-------|--------|
| -ne- | 10.33 | 20.18 | -12082 | -2978 | 0.5996 |
| -ne- | 9.86 | 19.83 | -7745 | 1178 | 0.3518 |
| -te- | 9.99 | 19.98 | -6321 | 2339 | 0.3402 |
| -te- | 10.00 | 20.00 | -5566 | 2886 | 0.3312 |
| -te- | 10.00 | 20.00 | -5055 | 3269 | 0.3260 |
| -te- | 10.00 | 20.00 | -4710 | 3530 | 0.3225 |
| -te- | 10.00 | 20.00 | -4485 | 3703 | 0.3204 |
| -te- | 10.00 | 20.00 | -4340 | 3815 | 0.3190 |
| -te- | 10.00 | 20.01 | -4244 | 3888 | 0.3181 |
| -te- | 10.00 | 20.01 | -4181 | 3935 | 0.3174 |
| -te- | 10.00 | 20.00 | -4141 | 3966 | 0.3171 |
| -pe- | 10.00 | 20.00 | -4123 | 3979 | 0.3168 |
| -pe- | 10.00 | 20.00 | -4102 | 3995 | 0.3166 |
| -pe- | 10.00 | 20.00 | -4086 | 4006 | 0.3164 |
| -pe- | 10.00 | 20.00 | -4077 | 4014 | 0.3163 |
| -pe- | 10.00 | 20.01 | -4076 | 4013 | 0.3163 |
| -pe- | 10.00 | 20.00 | -4073 | 4016 | 0.3163 |
| -pe- | 10.00 | 20.00 | -4070 | 4017 | 0.3162 |
| -pe- | 10.00 | 20.00 | -4069 | 4018 | 0.3162 |
| -pe- | 10.00 | 20.00 | -4067 | 4020 | 0.3162 |
| -pe- | 10.00 | 20.01 | -4068 | 4019 | 0.3162 |

Friday, November 19, 2021, Time 17:13

Setpoint No. 2
 Setpoint Upper: 10.00 °C
 Setpoint Lower: 20.00 °C
 Temperature Upper: 10.00 °C
 CalibFactor Upper: 0.026312
 Results Upper: 0.3202 W/mK
 Temperature Lower: 20.00 °C
 CalibFactor Lower: 0.025969
 Results Lower: 0.3122 W/mK
 Percent Difference: 2.52%

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 [°C] | Tlower [°C] | Qupper [µV] | Qlower [µV] | Lambda [W/mK] |
|----------------|----------------|----------------|----------------|------------------|
| 5.46 | 15.32 | -11730 | -2806 | 0.5837 |
| 4.85 | 14.83 | -7649 | 1114 | 0.3487 |
| 4.99 | 14.98 | -6231 | 2292 | 0.3376 |
| 4.99 | 15.00 | -5485 | 2825 | 0.3281 |
| 5.00 | 15.00 | -4969 | 3211 | 0.3226 |
| 5.00 | 15.00 | -4637 | 3461 | 0.3191 |
| 5.00 | 15.00 | -4416 | 3631 | 0.3169 |
| 5.00 | 15.00 | -4273 | 3738 | 0.3154 |
| 5.00 | 15.00 | -4181 | 3807 | 0.3144 |
| 5.00 | 15.00 | -4122 | 3853 | 0.3138 |
| 5.00 | 15.00 | -4079 | 3886 | 0.3134 |
| 5.00 | 15.00 | -4063 | 3900 | 0.3133 |
| 4.99 | 15.00 | -4042 | 3914 | 0.3130 |
| 5.00 | 15.00 | -4028 | 3926 | 0.3129 |
| 5.00 | 15.00 | -4020 | 3931 | 0.3128 |
| 5.00 | 15.00 | -4017 | 3933 | 0.3128 |
| 5.00 | 15.00 | -4012 | 3937 | 0.3128 |
| 5.00 | 15.01 | -4010 | 3939 | 0.3127 |
| 5.00 | 15.00 | -4009 | 3940 | 0.3127 |
| 5.00 | 15.01 | -4010 | 3937 | 0.3126 |

Friday, November 19, 2021, Time 18:38

Setpoint No. 3
 Setpoint Upper: 5.00 °C

Setpoint Lower: 15.00 °C
Temperature Upper: 5.00 °C
CalibFactor Upper: 0.026610
Results Upper: 0.3191 W/mK
Temperature Lower: 15.01 °C
CalibFactor Lower: 0.026002
Results Lower: 0.3063 W/mK
Percent Difference: 4.08%

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 | 0.3218 | 0.3166 | 0.3192 |
| 15.00 | 0.3202 | 0.3122 | 0.3162 |
| 10.00 | 0.3191 | 0.3063 | 0.3127 |