

gOMS II VALIDATION STUDY

IP67

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Extreme Temperature Testing

In this document we explain the internal validation process replicating the adverse conditions that the outer wall (Type 2) **gOMS II** Node may experience.

The first set of tests conducted was that of exposure to **extreme temperatures**; these being **-20°C to 50°C**. In these tests, there was no damage due to temperature, with measurements and sensors functioning to specifications.

The second experiment conducted was to verify **water resistance**. The sensor-node connection interface was not permeated by water. As well as this, measurements and sensors performed to specifications during this test.

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COLD TEMPERATURE TEST

Conclusion:

- No Physical Damage
- Sensors worked to calibration standard after test
- Measurements taken throughout Testing

Set-up description

Type 2 (outer wall) gOMS II Measurement Nodes were kept in a freezer at (average temperature) -20°C for over 48hrs to verify functionality in extremely cold conditions. Standard Mounting Procedures were followed with extra mounting strips being adhered to the Measurement Nodes, and "wall" surfaces being thoroughly cleaned and dried of all residue.

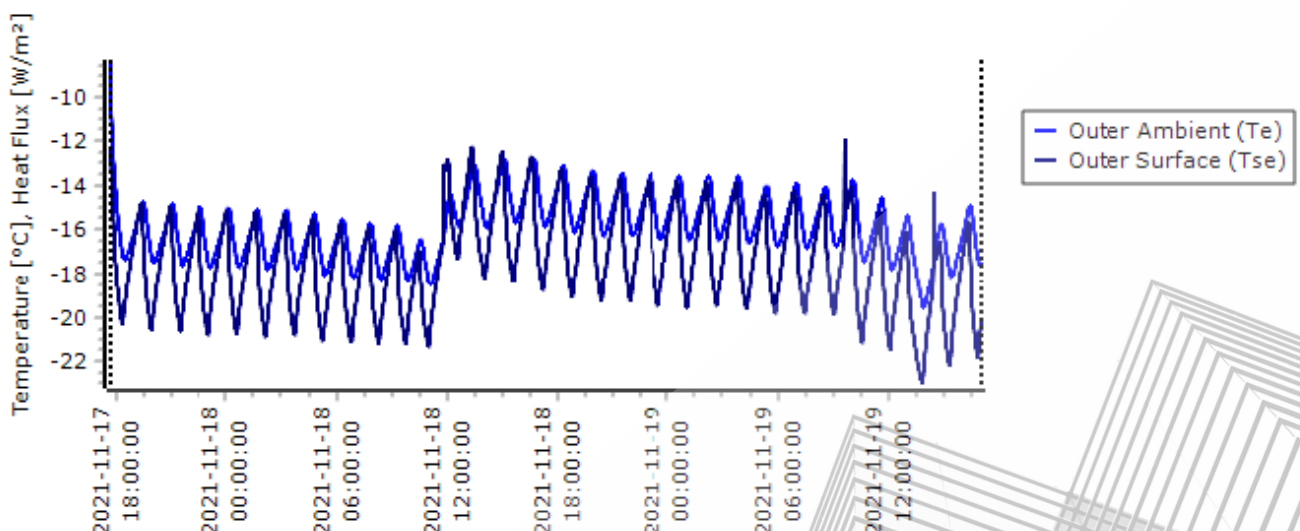


Above: Freezer Setup representing extremely **Cold** measurement conditions

Software Readings:

The freezer's cooling cycle follows a zig-zag cycle maintaining a temperature between -12°C to -22°C

(Readings were examined using both gOMS II software and csv export)



HOT TEMPERATURE TESTS

Conclusion:

- No Physical Damage
- Sensors worked to calibration standard after test
- Measurements taken throughout Testing

Set-up description

Type 2 (outer wall) gOMS II Measurement Nodes were kept in an oven at 50°C for over 48hrs to verify functionality at extremely hot environmental conditions. Standard Mounting Procedures were followed with extra mounting strips being adhered to the Measurement Nodes, and "wall" surfaces being thoroughly cleaned and dried of all residue.

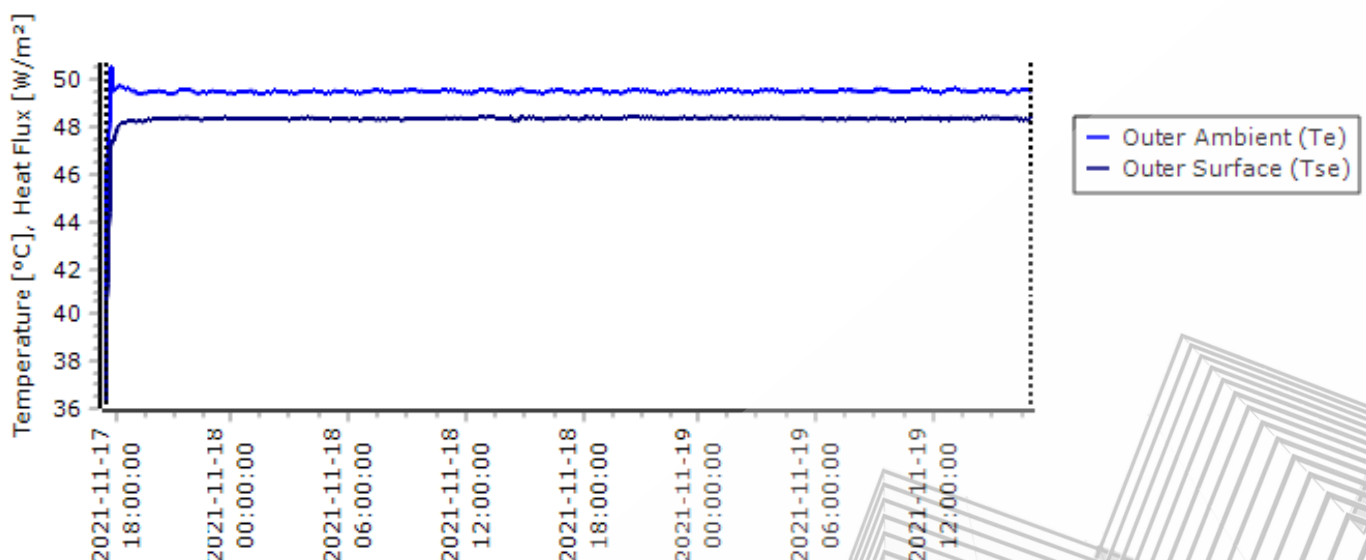


Above: Oven Setup representing extremely **Hot** measurement conditions

Software Readings:

The oven was at a constant of 50°C throughout the time period.

(Readings were examined using both gOMS II software and csv export)



WATER RESISTANCE TEST

Conclusion:

- No Physical Damage
- Sensor-Node Connectors work properly
- Sensors worked to calibration standard after test
- Measurements able to be taken throughout Testing

Set-up description

Type 2 (outer wall) gOMS II Measurement Node was placed in an empty dishwasher on rinse mode for approximately 30 mins.

Neither Node nor Sensors were adhered to any surface.

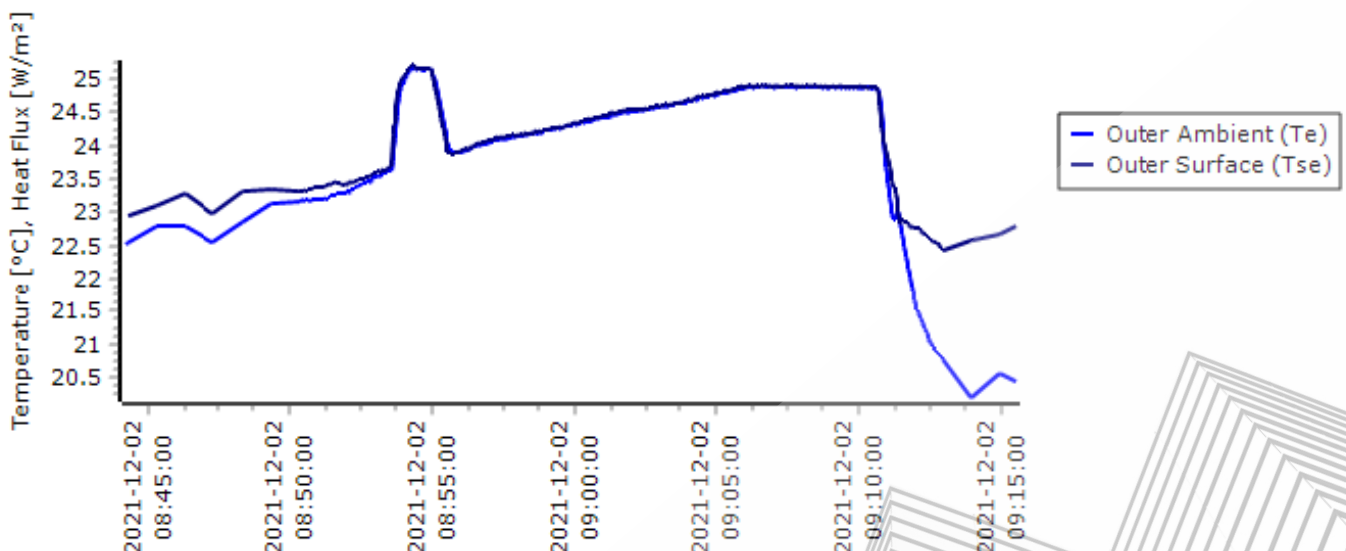


Above: Dishwasher setup representing extremely **Wet** measurement conditions

Software Readings:

Dishwasher rinse cycle without heating is shown. Rinse cycle stopped shortly after 9:10.

(Readings were examined using both gOMS II software and csv export)



READY TO START YOUR PROJECT?

greenTEG's gOMS II is the perfect wireless and modular u-value/r-value measurement system for facing adverse environmental conditions.

gOMS II can be used for the following applications:

Assessing the Status quo

Transparency is obtained with a quantitative U-Value, creating trust between stakeholders

Retrofitting Evaluation

Accurate U-Value assessment allows for the appropriate amount of insulation to be applied

Measuring Novel Materials

R&D and quality control use case for assessing novel and innovative materials

Difficult to Measure Places

A wireless system allows for measurements where windows and openings are not present

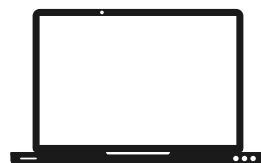
Building Energy Rating

gOMS II provides quantitative values for Energy Consultants to be paired with other energy assessment methods



Want more Information?

Send us an email at info@greenteg.com to get a better understanding of our system capabilities!



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