

Test report TL201801007

Outdoor cabinet 10149-337

Revision 1.0

DUT type:	Outdoor Modular Cabinet	Test date:	CW 17 and 18
DUT p/n:	10149-337	Firmware:	-----
DUT s/n:	-----	Test also applies to p/n:	-----
Test item:	Climatic tests according to IEC 60068-2-1 A / 60068-2-2 B / 60068-2-78 Cb / 60068-2-14 Nb / 60068-2-30 Db / EN 50125-3		
Results:	<input checked="" type="checkbox"/> PASS <input type="checkbox"/> FAIL <input type="checkbox"/> MIXED		
Document history:			
Revision	Date	Author	Description of changes
1.0	2018.05.18	Lehm	Initial release



Information about producer:
 Schroff GmbH
 D-75334 Straubenhardt
nvent.com/SCHROFF

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1 Test purpose

These climatic tests cover the environmental conditions encountered within Europe and cover temperature tests for -45°C and +85°C, damp heat, change of temperature and condensation.

All tests cover the requirements specified within the Railway Norm EN 50125-3.

2 Description of the test

Test 1:

“High air temperature”

+85°C for 16h according to IEC 60068-2-1 A

Evaluation after testing if the Outdoor Modular Cabinet shows any mechanical defects.

Fans should still be fully functional and running after the climatic test.

Test 2:

“Low air temperature”

-45°C for 16h according to IEC 60068-2-2 B

Evaluation after testing if the Outdoor Modular Cabinet shows any mechanical defects.

Fans should still be fully functional and running after the climatic test.

Test 3:

“Damp heat”

+30°C / 93% humidity / 96h according to IEC 60068-2-78 Cb

Evaluation after testing if the Outdoor Modular Cabinet shows any mechanical defects.

Fans should still be fully functional and running after the climatic test.

Test 4:

“Rate of change of temperature”

-45°C to +23°C (1°C/min) 2 cycles = 5,4h according to IEC 60068-2-14 Nb

Evaluation after testing if the Outdoor Modular Cabinet shows any mechanical defects.

Fans should still be fully functional and running after the climatic test.

Test 5:

“Condensation”

+40°C / 90% to 100% / 96h according to IEC 60068-2-30 Db

Evaluation after testing if the Outdoor Modular Cabinet shows any mechanical defects.

Fans should still be fully functional and running after the climatic test.

3 Test Setup



Outdoor cabinet inside the climatic chamber.

3.1 Test resources/equipment

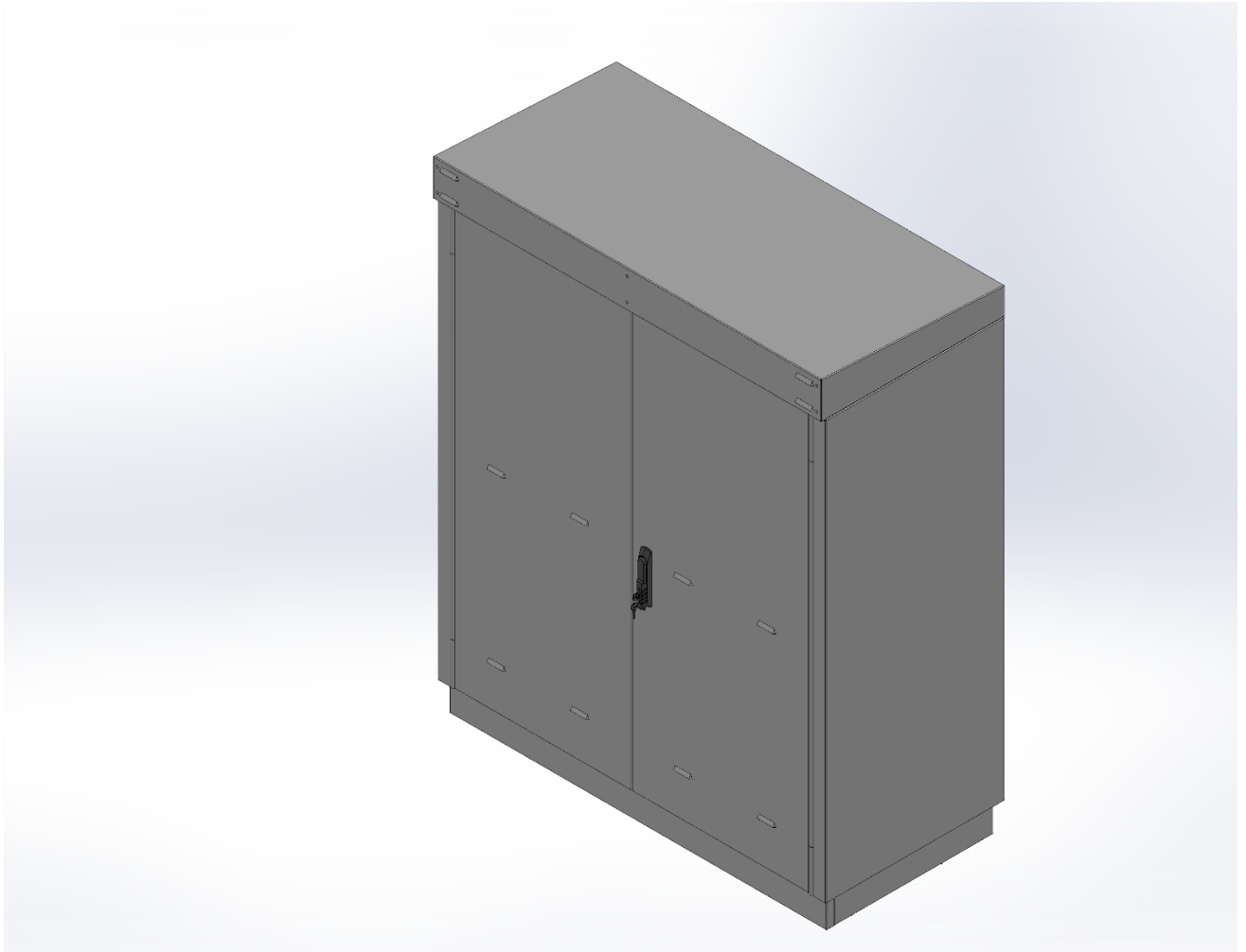
- CTS climatic chamber
-45°C to +85°C
10 to 98% Humidity



CTS climatic chamber

3.2 Test object

nVent SCHROFF Outdoor Modular Cabinet
Item number: 10149-337



3D model of nVent SCHROFF Outdoor Modular Cabinet, Item Number 10149-337

3.3 Ambient conditions

Please see chapter 2 for ambient conditions.

4 Measurement results

Test 1:

“High air temperature”

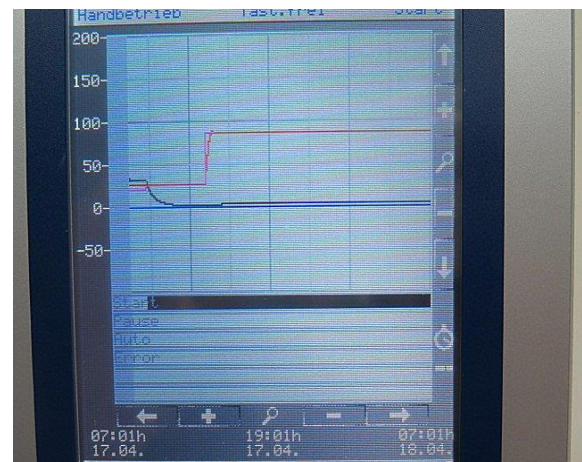
+85°C for 16h according to IEC 60068-2-1 A

- Cracks around the rivets on the roof / crack of the powder coating
- No other defects or mechanical issues could be detected
- Fans are running after testing

Pictures:



Temperature inside the climatic chamber



Temperature curve



Crack around the rivet

Test 2:

“Low air temperature”

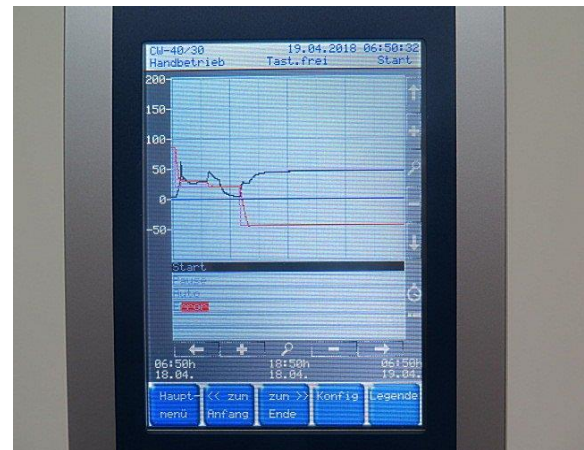
-45°C for 16h according to IEC 60068-2-2 B

- visually in good condition
- No defects or mechanical issues could be detected
- Fans are not running at -45°C because of the temperature sensor that works for 0°C and higher. The fans are running at 0°C and above.

Pictures:



Temperature inside the climatic chamber



Temperature curve



Cabinet at -45°C inside the climatic chamber



Handle at -45°C

Test 3:

“Damp heat”

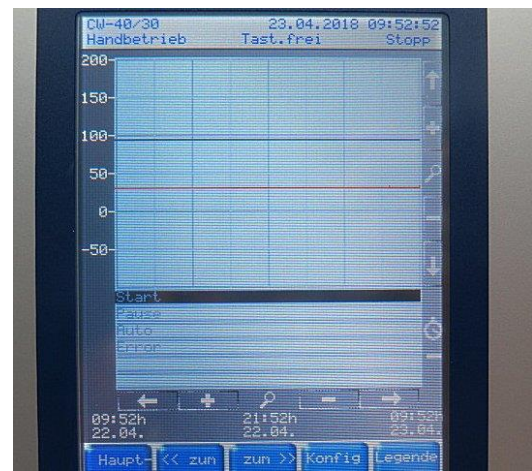
+30°C / 93% humidity / 96h according to IEC 60068-2-78 Cb

- visually in good condition
- No defects or mechanical issues could be detected
- No condensation inside the cabinet
- Fans are running after testing

Pictures:



Temperature inside the climatic chamber



Temperature curve



Cabinet after testing / Fans are running



Fans running with 24V

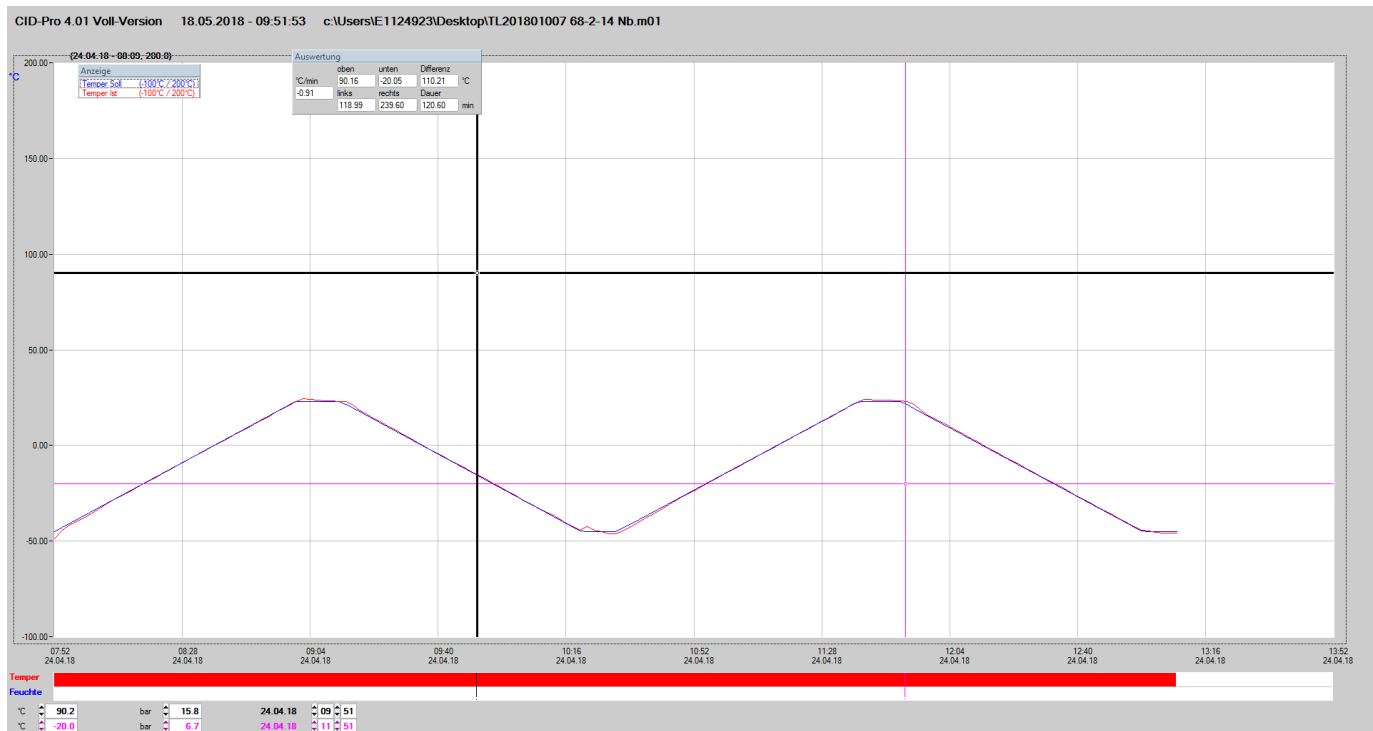
Test 4:

“Rate of change of temperature”

-45°C to +23°C (1°C/min) 2 cycles = 5,4h according to IEC 60068-2-14 Nb

- visually in good condition
- No defects or mechanical issues could be detected
- No condensation inside the cabinet
- Fans are running after testing for temperatures above 0°C

Pictures:



Temperature curve



Cabinet after testing

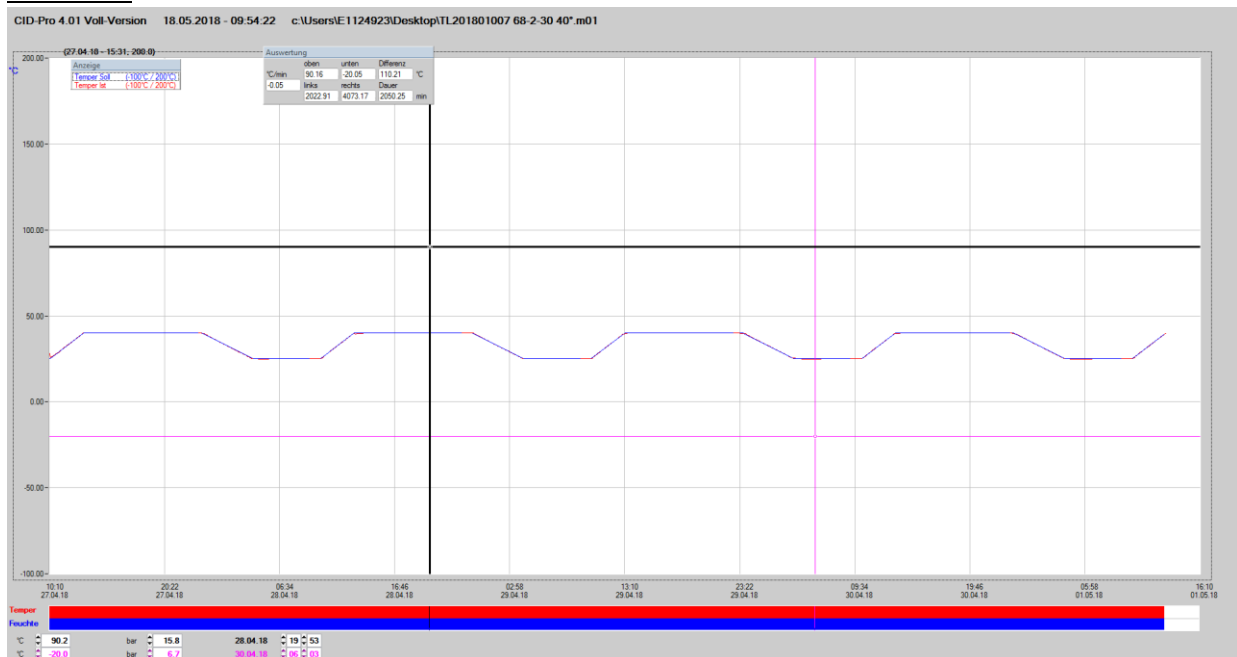
Test 5:

“Condensation”

+40°C / 90% to 100% / 96h according to IEC 60068-2-30 Db

- visually in good condition
- No defects or mechanical issues could be detected
- **Condensation inside the cabinet**
- Fans are running after testing

Pictures:



Cabinet after testing



Condensation inside the cabinet

5 Conclusion

The behavior of the Outdoor Modular Cabinet 10149-337 for environmental testing according to:

- High air temperature IEC 60068-2-1 A
- Low air temperature IEC 60068-2-2 B
- Damp heat IEC 60068-2-78 Cb
- Rate of change of temperature IEC 60068-2-14 Nb
- Condensation IEC 60068-2-30 Db

was studied in the CTS Climatic Chamber.

At the end of the tests, the cabinet showed no defects of mechanical issues. The doors open and close normally and the fans are running at the defined temperatures.

These results confirm the resistance to environmental conditions according to the norms above and also to EN 50125-3,

Pictures before testing:



