VERIFICATION STATEMENT

FOR WATER SPRAYING FIRE EXTINGUISHING SYSTEM.

Statement No:
N1422229

Valid for products not subject to DNV GL classification requirements.

Particulars of Product

Product Name:	**Water spraying fire extinguishing system.**
Type designation:	**FIREKILL OH-DR1.**
Application/context:	**Residential and domestic**
ID/Serial/Tag no:	**N.A.**
The product is intended for:	**STOCK**
Requirements are based on:	**British Standard BS 8458:2015, + prEN 14972-17 Fixed firefighting systems – Residential occupancies, part e): Open room test.**

Deviations and limitations, if any, are stated on page 2 onwards.

Particulars of Vendor and Purchaser

Vendor:	**Vid Fire-Kill ApS**
Vendor reference:	
Purchaser:	
Purchaser reference:	

Issued at **Denmark CMC** on **2021-02-04**

for **DNV GL**

This document has been digitally signed and will therefore not have handwritten signatures

Lindelof, Kristian
Surveyor

Verification extent and result

Verification extent:
Fire test according to British Standard BS 8458:2015 + prEN 14972-17

Verification result/comments:
The VID FireKill Automatic Low Pressure Watermist Nozzle Model FIREKILL OH-DR1 have successfully been tested according to test method British Standard BS 8458:2015, + prEN 14972-17 Fixed firefighting systems – Residential occupancies, part e): Open room test.

Report

On October 23rd to 26th, 2020 - DNV-GL surveyor has witnessed successful testing of VID Fire-Kill Automatic Low Pressure Water Mist Nozzle Model FIREKILL OH-DR1 at Danish Fire Laboratories (DFL) test facilities, accredited according to ISO 17025.
Reference is made to DFL test report no. DFL 201207-266 dated 2020-12-08.

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Test report DFL-201207-266

Customer: VID FireKill ApS, Svalbardvej 13, 5700 Svendborg, Denmark.

Project: Fire test according to British Standard BS 8458:2015 + prEN 14972-17

Location of test: Danish Fire Laboratories, Svalbardvej 13, 5700 Svendborg, Denmark.

Operators DFL: Tommy Spangsgaard, Ulrik Engelstrøm, Peter Kierans

Witnessed by: Mr. Niels Ohmann, DNV-GL

Date of testing: October 23rd – 26th, 2020

Synopsis:
In October 2020, VID FireKill ApS conducted a series of fire tests at DFL – Danish Fire Laboratories. The purpose of the tests were to test the VID Fire-Kill Automatic Low Pressure Water Mist Nozzle Model FIREKILL OH-DR1, accordingly to test method British Standard BS 8458:2015, + prEN 14972-17 Fixed firefighting systems – Residential occupancies, part e): Open room test.
The result was found in compliance.

Requirements and results

Description	Corner test	Between two nozzles
Test no.	O-201023-1	O-201026-1
Number of nozzles installed	2	2
Number of nozzles activated	2	2
Operation time of first nozzle	2 min 09 sec.	2 min. 22 sec.
Max accepted temp under ceiling, 2 min. after activation	320°C	320°C
Actual temperature under ceiling, 2 min. after activation	164,5°C	43,2°C
Max accepted temperature, 1,6 m above floor.	95°C	95°C
Actual temperature, 1,6 m above floor	25,3°C	33,5°C
Max accepted temp. 1,6 m above floor, 120 sec intervals	55°C	55°C
Actual temperature 1,6 m above floor, 120 sec intervals	27,3°C	26,7°C
Test in compliance with standards	**Yes**	**Yes**

DFL – Danish Fire Laboratories ApS
Svendborg, December 7th, 2020

Peter Kierans
Laboratory Manager

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Table of Content

Svalbardvej 13,
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1.0 Purpose of tests

VID FireKill ApS did in 2020 conduct a series of fire tests at DFL – Danish Fire Laboratories, Svendborg.

The purpose of the tests was to test the VID FireKill Automatic Low Pressure Watermist Nozzle OH-DR1 system accordingly to test method British Standard BS 8458:2015, part e + prEN14972-17, Fixed fire protection systems – Residential occupancies.

2.0 Test hall

DFL is an international accredited fire test laboratory. The fire test laboratory is accredited in accordance with DS/EN ISO/IEC 17025:2017 by DANAK Registration no. 487.

The test hall is insulated and heated. The test hall volume has a floor area of 19,5 x 20,5 meters and a height of 15 meters.

The test hall is equipped with an adjustable pendent ceiling. The test laboratory has water storage tank and continuous fresh water supply, pump station with controlled water pressure and installations for handling smoke and wastewater.

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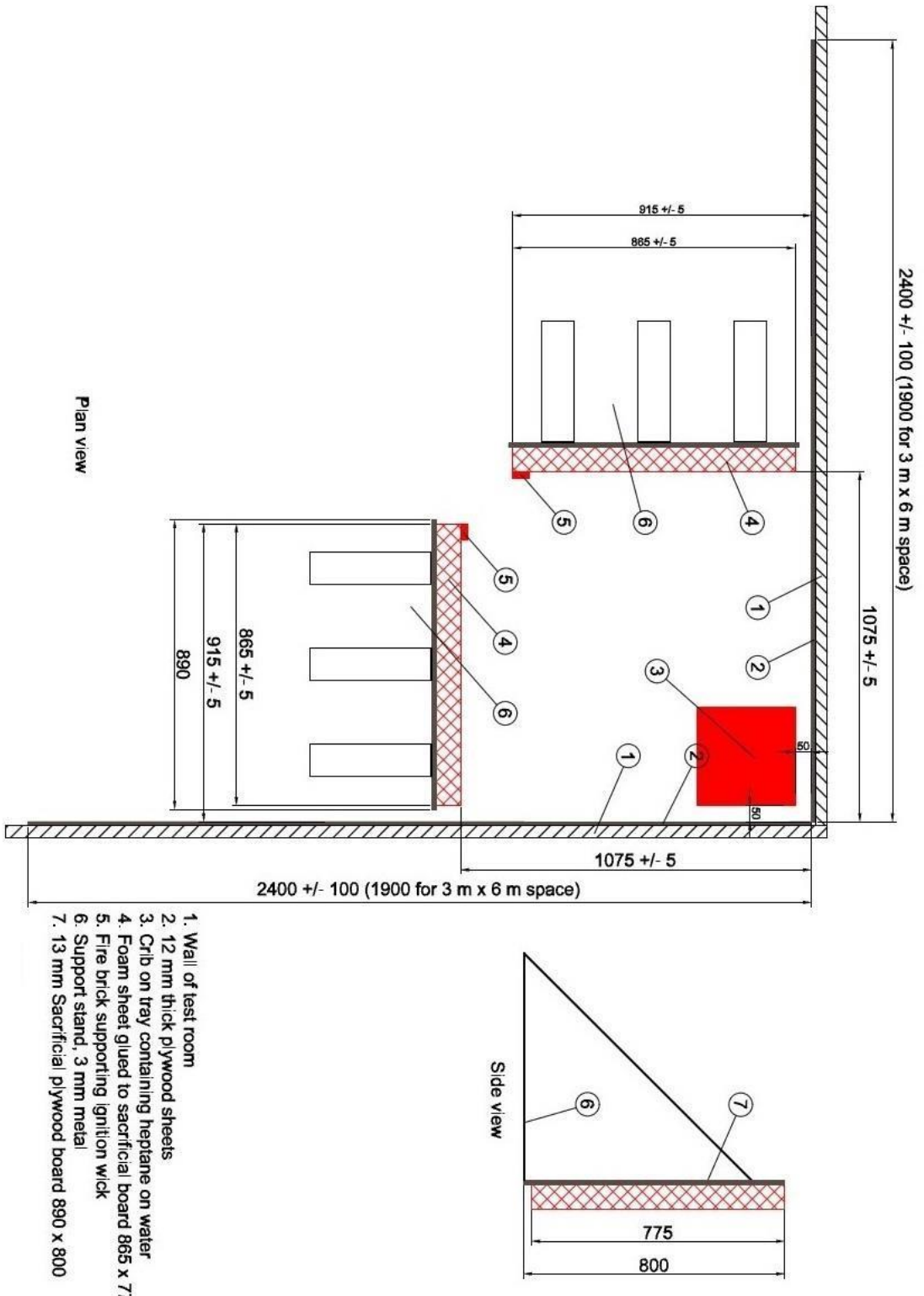
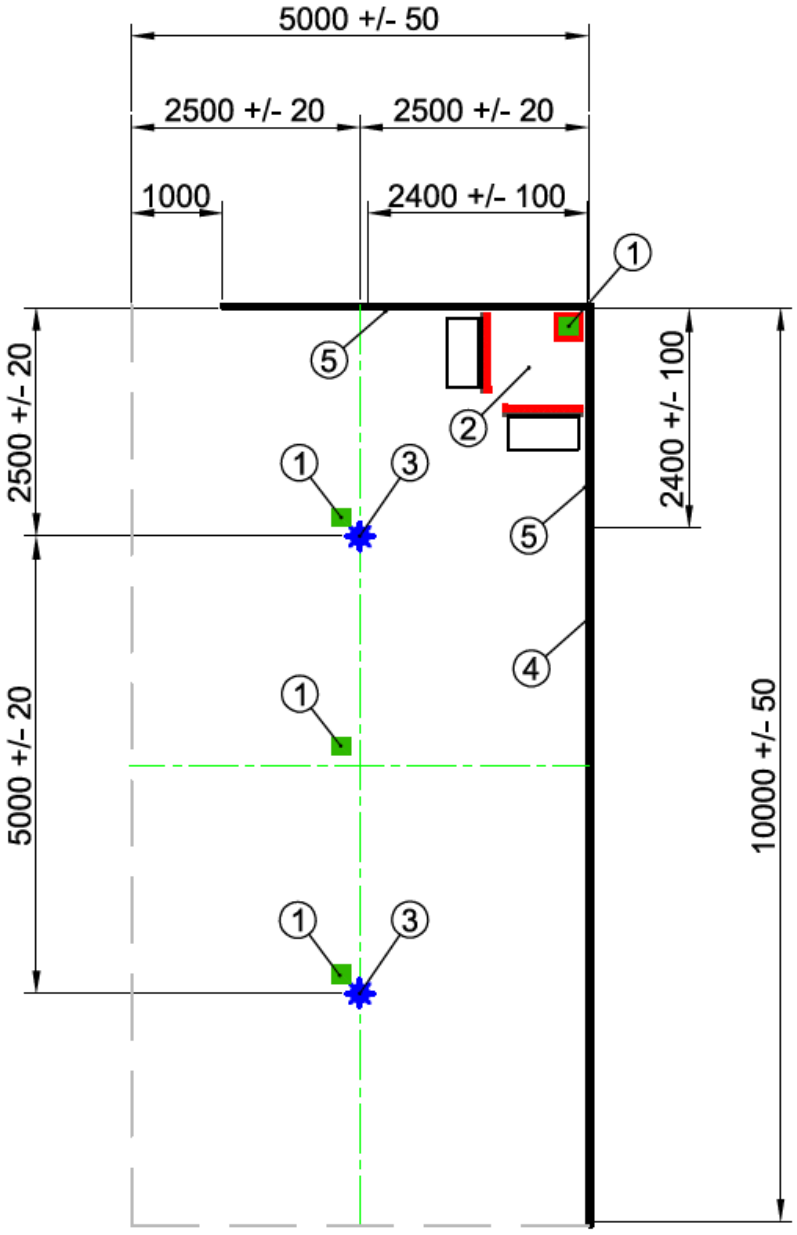
3.0 Test set up

3.1 Fuel package



3.2 Corner test

Corner



1. Thermocouple 76 mm below ceiling
2. Fuel package
3. Nozzle connected to water supply
4. Wall
5. 12 mm plywood wall panel

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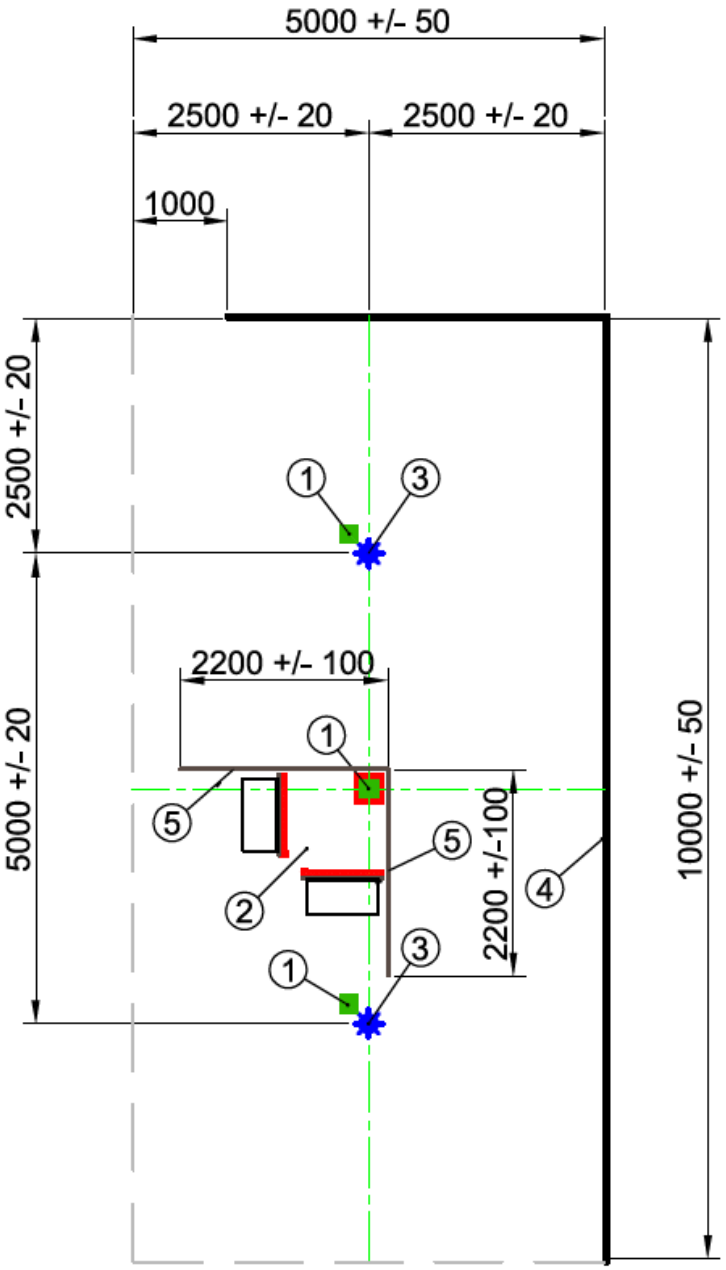
3.3 Between two nozzles

Between two



1. Thermocouple 76 mm below ceiling
2. Fuel package
3. Nozzle connected to water supply
4. Wall
5. 12 mm plywood wall panel

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4.0 Firefighting system

4.1 Water supply system

Fresh water was supplied by DFL's pressure-controlled fire pump system. The pump delivered the extinguishing water to the nozzle pipes at a constant pre-set pressure of 5.0 bar.

4.2 Water mist nozzles

The fire extinguishing nozzles used were VID FireKill Model OH-DR1 with K-factor 19. The nozzles were installed with 5 meters spacing between them.

4.3 Nozzle K-factor

The k-factor: $K = \frac{Q}{\sqrt{P}}$ was measured to 19±5%.

5.0 Measuring Systems

All measuring instruments used to collect data during the fire tests were calibrated and logged, in accordance with the quality assurance procedures of DFL. Calibration certificates on measuring instruments can be submitted upon request.

5.1 Datalogging

All data was logged by Agilent 34970A Datalogger

5.2 Water pressure

System water pressure was measured using a pressure transmitter fitted the nozzle pipe system at the most remote location from the inlet.

5.3 Water flow

The systems water flow was measured using a flow measurer fitted to the inlet of the nozzle pipe system.

5.4 Time

Time was measured on stopwatches and computer.

5.5 Temperatures

Temperatures were measured every second in accordance with the standard.

6.0 Test procedure

All tests were conducted, and observations done and recorded following the test procedures described underneath.

1. The fire protection system is installed fully in accordance with the guidelines of the manufacturer.
2. The enclosure was measured and checked to be in accordance with the standard.
3. The systems pressure was adjusted to the correct pressure.

4. Fuel is filled into the tray in accordance with the standards requirements, wood crib placed.
5. Data logging and video were started
6. The tray and wicks were ignited, and the test time started.

10 minutes after system activation, the remaining fire, if any, is manually extinguished.
All measurements are saved, cameras stopped, and the data evaluated.

7.0 Test results

Requirements and results.

Description	Corner test	Between two nozzles
Test no.	O-201023-1	O-201026-1
Number of nozzles installed	2	2
Number of nozzles activated	2	2
Operation time of first nozzle	2 min 09 sec.	2 min. 22 sec.
Water pressure	5,0 bar	5,0 bar
Water flow	87,4 L/min	87,5 L/min
Max accepted temp under ceiling, 2 min. after activation	320°C	320°C
Actual temperature under ceiling, 2 min. after activation	164,5°C	43,21°C
Max accepted temperature, 1,6 m above floor.	95°C	95°C
Actual temperature, 1,6 m above floor	25,3°C	33,5°C
Max accepted temp. 1,6 m above floor, 120 sec intervals	55°C	55°C
Actual temperature 1,6 m above floor, 120 sec intervals	27,3°C	26,7°C
Test in compliance with standards	**Yes**	**Yes**

8.0 Conclusion

The VID FireKill Automatic Low Pressure Watermist Nozzle Model FIREKILL OH-DR1 have successfully been tested according to test method British Standard BS 8458:2015, + prEN 14972-17 Fixed firefighting systems – Residential occupancies, part e): Open room test.

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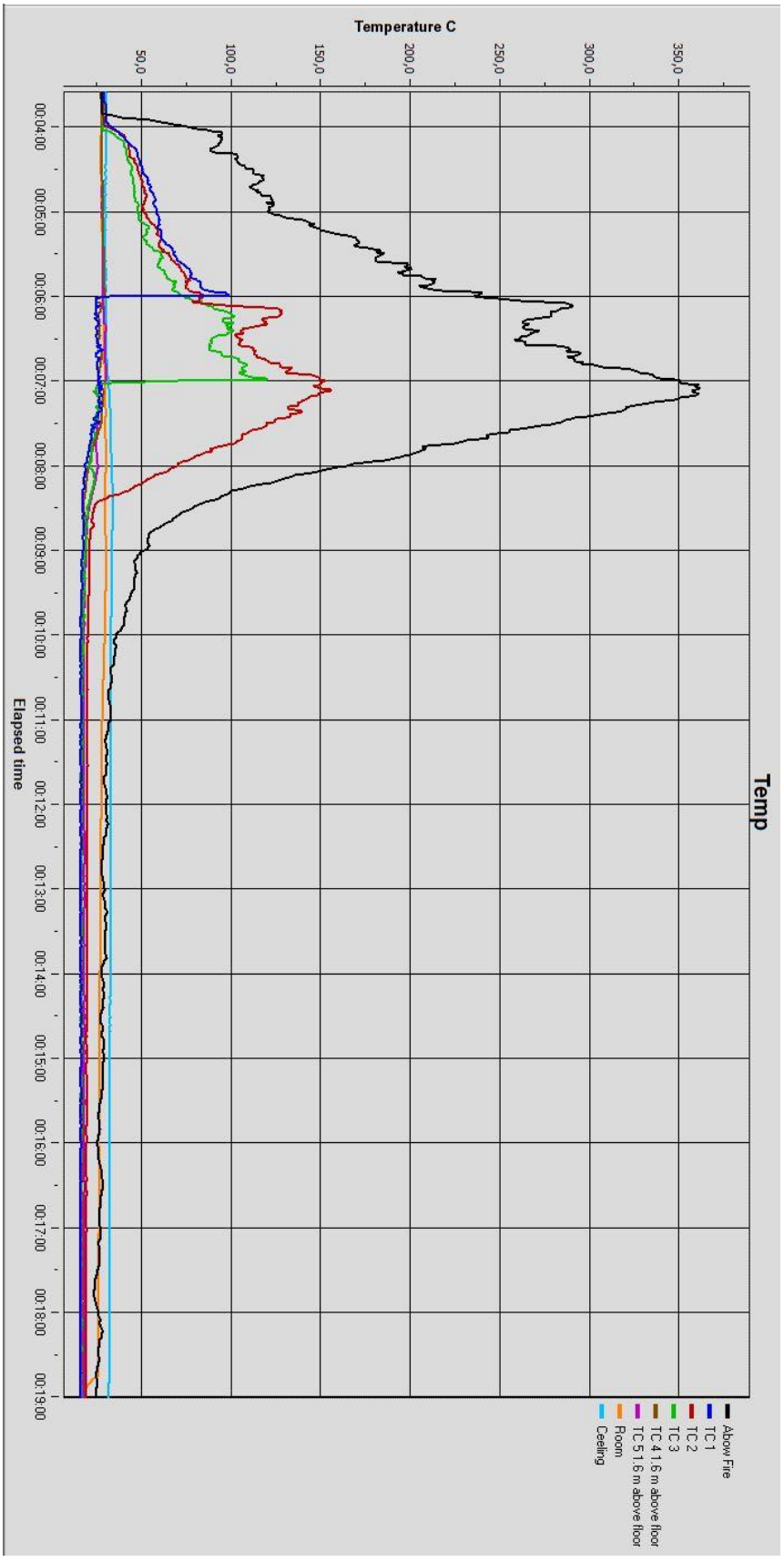
Appendix A – Test Data



O-201023-1 - Corner

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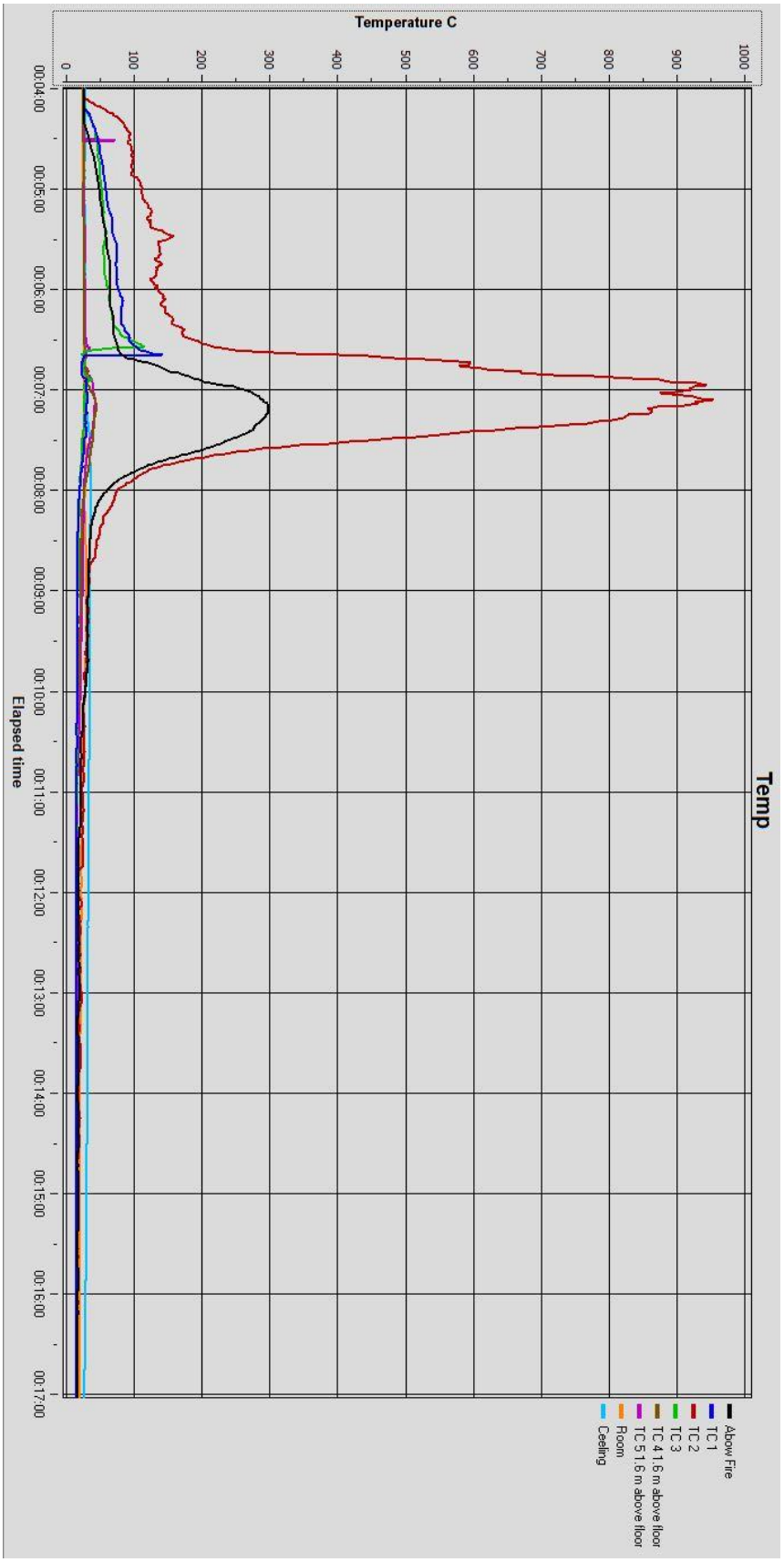

O-201026-1 – Between two nozzles

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Appendix B – Test Pictures

Corner test O-201023-1

Between two nozzles O-201026-1

Appendix C – Nozzle Data Sheet

(Doubleclick to open product data sheet)

Product Data Sheet
Automatic low-pressure nozzle
Model OH-DR1

FIREKILL™

Description

The FIREKILL™ Low Pressure Water mist nozzle OH-DR1 is an automatic, pendent low-pressure water mist nozzle ideal for residential and domestic areas. The different finishes and optional painted finishes makes the system blend in with almost every type of surface.

Approvals

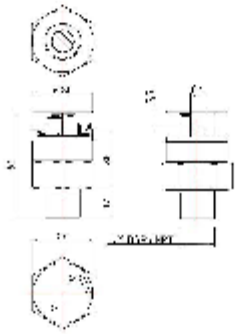
The FIREKILL™ OH-DR1 system has been successfully tested by an ISO17025 accredited test lab and 3rd party witness to the prEN 14972 and BS8458:2015 Fixed fire protection systems – Residential and domestic water mist systems – Code of practice.

This means that the system can be installed in residential and domestic areas as defined in BS8458:2015, Chapter 4, Table 1, Category of system and VID DIOM.

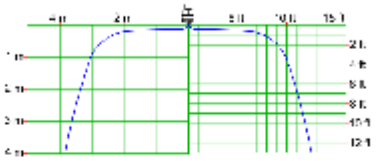
Technical data

General Description	
Minimum water pressure	5 bar
Maximum working pressure	16 bar
K-factor (metric)	19 (l/min@1 bar)
Nominal release temperatures	57°C ,68°C, 79°C, 93°C, 141°C
Time Response Index (metric)	RTI < 50 Fast Response Class
Drop size	DV90 < 300 µm
Application	
Coverage / Spacing (max)	25.00 m2 (5.00m x 5.00m)
Distance to wall (max)	2.50m
Room size (max)	80m²
Height (min / max)	3,50m
Specific Description	
Weight	0.211 kg
Housing	Brass
Coating	NiSn
Strainer	Stainless Steel
Thread	½" BSP/BSP-T/NPT
Standard Finish	Chrome, White RAL 9010
Other Finish	Other RAL colors
Hydraulic System	
Water density	1.70 mm/m²
Minimum system operation time	As required by AHJ
Minimum design area	As required by AHJ
Other products to be installed in the system	
Name	**Model**
Alarm Check Valve	WAC
OH Rosette	OH-R(2)-T / OH-R(2)-TH
OH Pipe Spanner	OH-S36

Dimension



Spray pattern



Third party witness

DNV·GL

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Page 1 of 2

Title: Model OH-DR1
No.: DS-171117-08 OHDR1
Rev. 03
Date of first issue: 17-11-2017
Date of revision: 23-10-2020