Test Report

Report No	:	L17119
Client:	:	Tenmat Ltd Bowden House Ashburton Road West Trafford Park Manchester M17 1RU
Description	:	Fire Hood
Manufacturer	:	Tenmat Ltd
Type/Model	:	FF130
Test Specification	:	Thermal and flammability test with reference to UL1598 and IEC 60598-1
Dates of Testing	:	03/05/2018 – 11/05/2018
Conclusion	:	On the basis of the tests undertaken, the submitted sample is considered to comply with the requirements of the above specification.
Date of Issue	:	13/06/2018
Date of Expiry	:	12/06/2018

Tested by: **J.ARNOLD**
Position: Laboratory Engineer

Approved by: **A.BOROVY**
Position: Technical Lead - Product safety

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INTRODUCTION

Tenmat Ltd have supplied the product identified in Table 1. for evaluation to the specification detailed on page one of this report.

PRODUCT DETAILS

Table 1. ***Test Sample Details***

Product Description	Fire Hood
Model No.	FF130
Number of Samples	Two
Date of Receipt	08/03/2018
Condition on Receipt	Good
Nominal Dimensions	250mm x 250mm x 260mm
Note	Fire hood to be positioned over the rear of a recessed downlight to prevent the spread of fire through a building.
Sampling Method: Test samples selected and supplied by client, no sampling method specified by client.	

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INTRODUCTION

The Lighting Association Laboratories were commissioned by Tenmat Ltd to conduct thermals tests to the clients own specification with reference to UL 1598 clause 11, 13.4.8, 14.7 & 15.4 on 2 recessed luminaire fire hoods. The testing is to be undertaken using a readily available recessed luminaire supplied by the client. Each fire hood is to be tested using 3 lamps supplied by the client.

PRODUCT DETAILS

The Fire Hoods

The 2 fire hoods supplied are manufactured.
The fire hoods are intended to be positioned over the rear of a recessed downlight to prevent the spread of fire through a building. The products submitted are intended for use in domestic and commercial premises.
No installation instructions have been supplied with the covers

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TEST SPECIFICATION

Thermal Test

The luminaire was installed to simulate mounting in a suspended ceiling. For the purposes of testing the mounting surface used to simulate the ceiling was 12 mm thick porous wood fibre board. The fire hood was placed over the top of the luminaire so as to position the luminaire centrally within the fire hood. The edges of the fire hood were sealed down onto the false ceiling
The fire hood was covered in 100mm thickness of insulation to simulate the insulation material used in a ceiling cavity
The testing was conducted in a draught proof enclosure as detailed in UL1598
The luminaire was fitted with each of the lamps in turn and operated at rated lamp rated voltage (120V).
The luminaire was allowed to reach thermal stability – i.e temperature change <1ºC per hour.
Once thermal stability was reached the temperature was recorded.
Temperature limits in the results section below are referenced to table 12.2 of UL1598 or are specific limits specified by the client.
Thermal tests were performed with three different recessed LED downlights:.
1) WF6 LED 30K MW M6 (Ultra-Thin Wafer Recessed Downlight);
2) WF4 LED 30K MW M6 (Ultra Thin Wafer Recessed Downlight);
3) WF3 LED 30K MW M6 (Ultra-Thin Wafer Recessed Downlight).

Flammability Tests

Glow wire and Needle Flame tests were carried out on the fire hood in accordance with section 13 of IEC 60598.
The glow wire test was conducted at a temperature of 650ºC.

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Product reference FF130

WF6 LED 30K MW M6

Test Voltage 120V
Test Current 0.115A
Test wattage 13.5W

Table 2. ***Thermal results***

Measurement Point:	Measure Value	Standard Limit
Ambient (Actual)	24.7ºC	Ref
Rear of LED unit	49.3ºC	<90°C
Cable clamp on LED unit	50.9ºC	<150°C
Mounting surface	25.5ºC	Ref
Plug and socket	37.3ºC	Ref
LED Driver	58.9ºC	<90°C
Connector in LED driver box	45.5ºC	Ref
Outside of LED Driver Box	53.9ºC	Ref
Inside top of hood	41.3ºC	<90°C
65mm from base left side inside hood	42.7ºC	<90°C
130mm from base left side inside hood	44.0ºC	<90°C
65mm from base right side inside hood	43.4ºC	<90°C
130mm from base right side inside hood	42.9ºC	<90°C

RESULT – PASS

All temperatures recorded were within the specified limits

THERMAL TEST

All temperatures are referenced to 25ºC ambient. There may be temperatures recorded that are above the standard limit. If, when taking into account the Laboratory's errors and uncertainties, they are within the 5ºC allowance on standard limits which is made to take into account the inevitable variability of temperature measurements in luminaires, they are deemed to comply.

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Product reference FF130

WF4 LED 30K MW M6

Test Voltage 120V
Test Current 0.087A
Test wattage 10.3W

Table 2. ***Thermal results***

Measurement Point:	Measure Value	Standard Limit
Ambient (Actual)	24.8ºC	Ref
Rear of LED unit	29.1ºC	<90°C
Cable clamp on LED unit	53.7ºC	<150°C
Mounting surface	25.3ºC	Ref
Plug and socket	25.2ºC	Ref
LED Driver	45.1ºC	<90°C
Connector in LED driver box	39.1ºC	Ref
Outside of LED Driver Box	48.2ºC	Ref
Inside top of hood	40.6ºC	<90°C
65mm from base left side inside hood	41.7ºC	<90°C
130mm from base left side inside hood	41.9ºC	<90°C
65mm from base right side inside hood	41.5ºC	<90°C
130mm from base right side inside hood	41.7ºC	<90°C

RESULT – PASS

All temperatures recorded were within the specified limits

THERMAL TEST

All temperatures are referenced to 25ºC ambient. There may be temperatures recorded that are above the standard limit. If, when taking into account the Laboratory's errors and uncertainties, they are within the 5ºC allowance on standard limits which is made to take into account the inevitable variability of temperature measurements in luminaires, they are deemed to comply.

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Product reference FF130

WF3 LED 30K MW M6

Test Voltage 120V
Test Current 0.068A
Test wattage 7.9W

Table 4. ***Thermal results***

Measurement Point:	Measure Value	Standard Limit
Ambient (Actual)	24.3ºC	Ref
Rear of LED unit	59.1ºC	<90°C
Cable clamp on LED unit	56.8ºC	150°C
Mounting surface	45.0ºC	Ref
Plug and socket	39.2ºC	Ref
LED Driver	45.5ºC	<90°C
Connector in LED driver box	38.9ºC	Ref
Outside of LED Driver Box	43.9ºC	Ref
Inside top of hood	38.8ºC	<90°C
65mm from base left side inside hood	25.4ºC	<90°C
130mm from base left side inside hood	36.2ºC	<90°C
65mm from base right side inside hood	38.7ºC	<90°C
130mm from base right side inside hood	39.2ºC	<90°C

RESULT – PASS

All temperatures recorded were within the specified limits

THERMAL TEST

All temperatures are referenced to 25ºC ambient. There may be temperatures recorded that are above the standard limit. If, when taking into account the Laboratory's errors and uncertainties, they are within the 5ºC allowance on standard limits which is made to take into account the inevitable variability of temperature measurements in luminaires, they are deemed to comply.

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Flammability Test Results

Product reference FF130

650ºC Glow Wire Test - **Pass**

Needle Flame Test – **Pass**

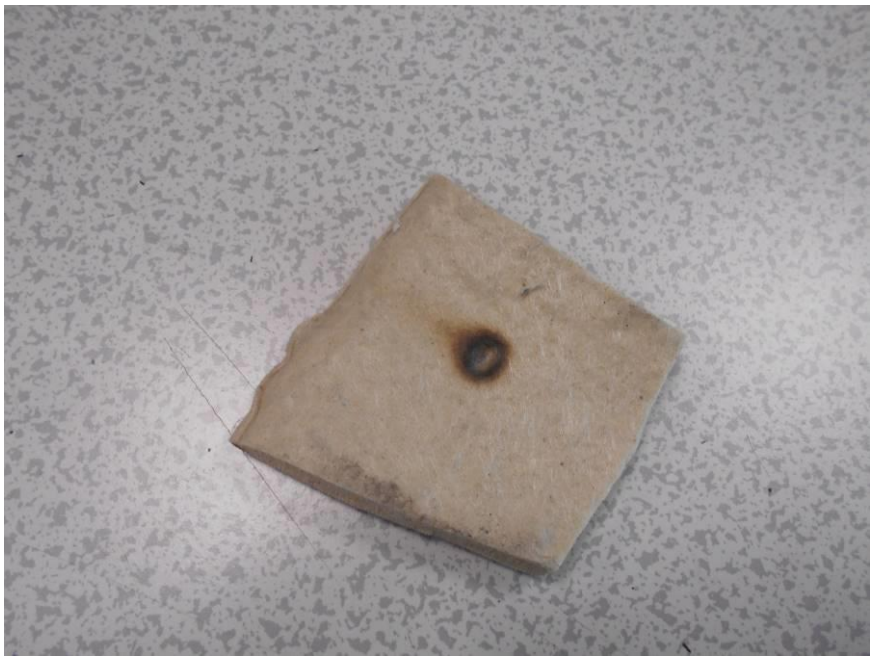

Figure 1: ***Glow wire test result***

Figure 2: ***Needle flame test result***

DEVIATION(S) FROM TEST STANDARD

No reported deviations from test standard.

ILLUSTRATION

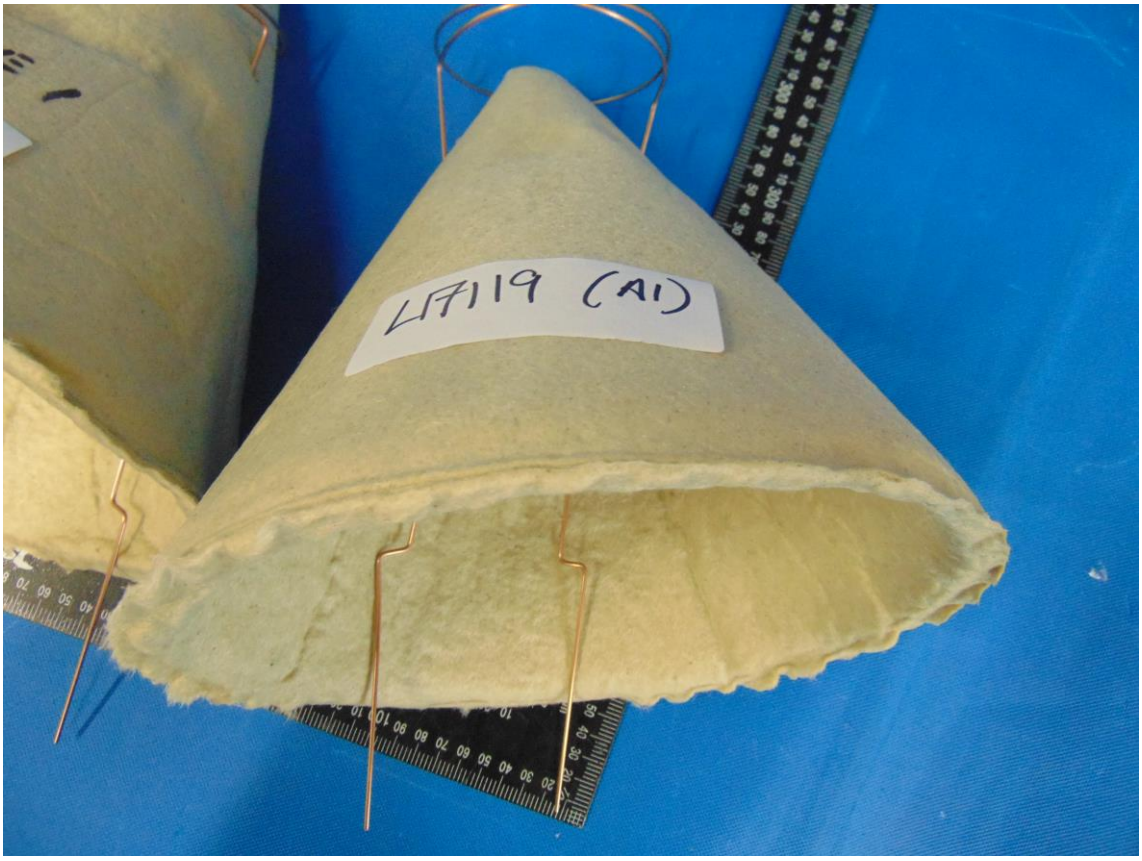

Figure 3. ***Product image***

End