

# L I A V e r i f i e d S c h e d u l e o f C e r t i f i c a t i o n



**Schedule No.** : TSD004-0072 (Issue 1)

**Certificate No.** : 004-0072

**Certificate Holder:** : Energys Group  
Franklyn House  
Daux Road  
Billinghurst  
West Sussex  
RH14 9SJ



**Web:** : <https://www.energysgroup.com/>

**Date of Initial Registration** : 26/02/2020

**Date of Issue** : 26/02/2020

**Date of Expiry** : 25/02/2023

**This Schedule is to be read in conjunction with the accompanying certificate. The data shown relates only to the unit(s) tested. This schedule and any subsequent schedule(s) may not be reproduced except in full without the written approval of the Testing Laboratory.**

Registered Office: Stafford Park 7, Telford, Shropshire, TF3 3BQ, United Kingdom  
Tel: +44 (0) 1952 290907 Fax: +44 (0) 1952 290908 Email: [lab@thelia.org.uk](mailto:lab@thelia.org.uk)

Web: [www.lialab.org.uk](http://www.lialab.org.uk)  
Web: [www.lialabcert.org.uk](http://www.lialabcert.org.uk)



## Contents

<b>1. INTRODUCTION</b>	3
<b>2. CERTIFICATION STATUS</b>	3
<b>3. SCOPE</b>	3
<b>4. DOCUMENTATION</b>	4
<b>5. OBSERVATIONS AND LIMITATIONS</b>	4
<b>APPENDIX A</b>	5
<b>A.1. Tri-Proof 6ft 48W Twin with IDIM</b>	6
A.1.1. PRODUCT DETAILS	6
A.1.2. SAFETY EVALUATION	7
A.1.3. CENTRE BEAM INTENSITY AND BEAM ANGLE	8
A.1.4. COLORIMETRY	9
A.1.5. LIFE TEST	11
<b>A.2. Tri-Proof 5ft 42W Twin with IDIM</b>	12
A.2.1. PRODUCT DETAILS	12
A.2.2. SAFETY EVALUATION	13
A.2.3. CENTRE BEAM INTENSITY AND BEAM ANGLE	14
A.2.4. COLORIMETRY	15
A.2.5. LIFE TEST	17
<b>A.3. Tri-Proof 4ft 30W Twin with IDIM</b>	18
A.3.1. PRODUCT DETAILS	18
A.3.2. SAFETY EVALUATION	19
A.3.3. CENTRE BEAM INTENSITY AND BEAM ANGLE	20
A.3.4. COLORIMETRY	21
A.3.5. LIFE TEST	23



## 1. INTRODUCTION

This Schedule of certification accompanies the certificate identified on page one as part of the LIA Verified scheme for LED products. Assessment is carried out in line with the requirements set out in LIA Laboratory's Technical Scheme Document TSD-004.

## 2. CERTIFICATION STATUS

Final - The products have passed the safety assessment and have achieved 2000 hours of operation as required by the scheme.

## 3. SCOPE

The products listed in Table 1, supplied by the certificate holder identified on page one have been assessed and are covered under certificate no. 004-0072

**Table 1. *Products covered under scope***

<b>Model No.</b>	<b>Product Name</b>
TPL-648-840-H01	Tri-Proof 6ft 48W Twin with IDIM
TPL-542-840-H01	Tri-Proof 5ft 42W Twin with IDIM
TPL-430-840-H01	Tri-Proof 4ft 30W Twin with IDIM



#### 4. DOCUMENTATION

As part of the assessment process the following documents have been evaluated and form part of the Technical File held by the certificate holder and LIA Laboratory Ltd. It should be noted that in order to maintain certification the certificate holder is required to maintain up to date technical documentation related to all of the products identified in section three of this schedule.

All client documentation held by LIA Laboratory Ltd is maintained as strictly confidential.

**Table 2. Critical Documents**

Document reference	Title/Description
Triproof (H01)-Manual-180327	Installation Manual
PV176 Safety Report Amd 1	Safety Test Report
PV176 Final Report	Performance Test Report

#### 5. OBSERVATIONS AND LIMITATIONS

When installed in accordance with the manufacturer's instructions, this product is deemed to comply with the specified end use.



# **APPENDIX A**

# **PRODUCT TECHNICAL SPECIFICATIONS**

## A.1. Tri-Proof 6ft 48W Twin with IDIM

### A.1.1. PRODUCT DETAILS

Table A.1 *Product Specifications*

Product Name	Tri-Proof 6ft 48W Twin with IDIM
Model No.	TPL-648-840-H01
Product Description	LED IP64 Linear Luminaire
Nominal Dimensions	L – 1800mm; W – 80mm; H – 50mm
Product Supply Requirement	220-240V AC, 50/60Hz
Lamp Type and Power	LED, 48W



Figure 1. *Product Images*

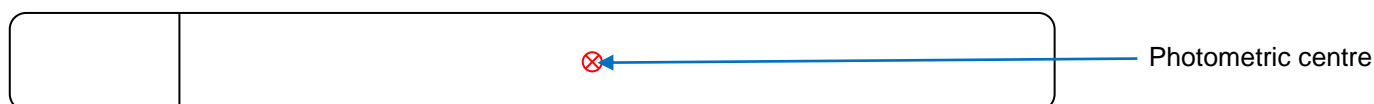


Figure 2. *Product diagram*

## A.1.2. SAFETY EVALUATION

Safety assessment was carried out in accordance with the requirements set in LIA Laboratory's technical scheme document TSD-004, the clauses verified are shown in Table 2 and have been evaluated against IEC 60598-2-1 (ed.1), am1 used in conjunction with IEC 60598-1 (ed.8).

The product has been found to conform to the requirements laid out in the identified clauses.

**Table A.2 Safety Test Results**

Clause No.	Title
Clause 1.4	Classification of luminaires
Clause 1.5	Marking
Clause 1.6	Construction
Clause 1.7	Creepage distances and clearances
Clause 1.8	Provision for earthing
Clause 1.9	Terminals
Clause 1.10	External and internal wiring
Clause 1.11	Protection against electric shock
Clause 1.12	Endurance tests and thermal tests
Clause 1.13	Resistance to dust and moisture
Clause 1.14	Insulation resistance and electric strength

### A.1.3. CENTRE BEAM INTENSITY AND BEAM ANGLE

Table A.3 *Beam Angle value for model TPL-648-840-H01*

Centre Beam Intensity (cd)	Beam Angle ( <i>Lamp orientation</i> )	Beam Angle Result (°)
1952	0° - 180°	110
	90° - 270°	120

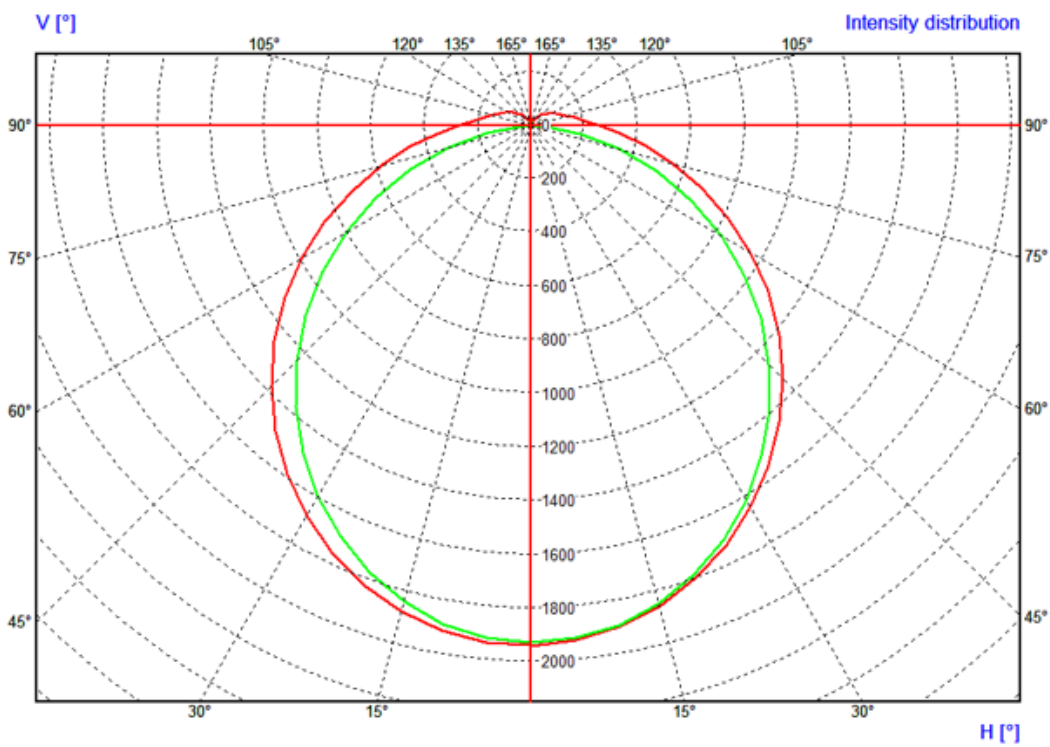


Figure 3. *Polar Diagram for model TPL-648-840-H01*





### A.1.4. COLORIMETRY

Table A.4 Colorimetry values for model TPL-648-840-H01

<b>COLORIMETRY &amp; LUMINOUS FLUX</b>	x coordinate	0.3760
	y coordinate	0.3752
	u' coordinate	0.2228
	v' coordinate	0.5002
	Correlated Colour Temperature (K)	4112
	Ra (%)	84
	R1 (%)	82
	R2 (%)	90
	R3 (%)	95
	R4 (%)	81
	R5 (%)	82
	R6 (%)	86
	R7 (%)	86
	R8 (%)	66
	R9 (%)	12
	R10 (%)	76
	R11 (%)	80
	R12 (%)	57
R13 (%)	85	
R14 (%)	97	
Lumen Output (lm)	6242	

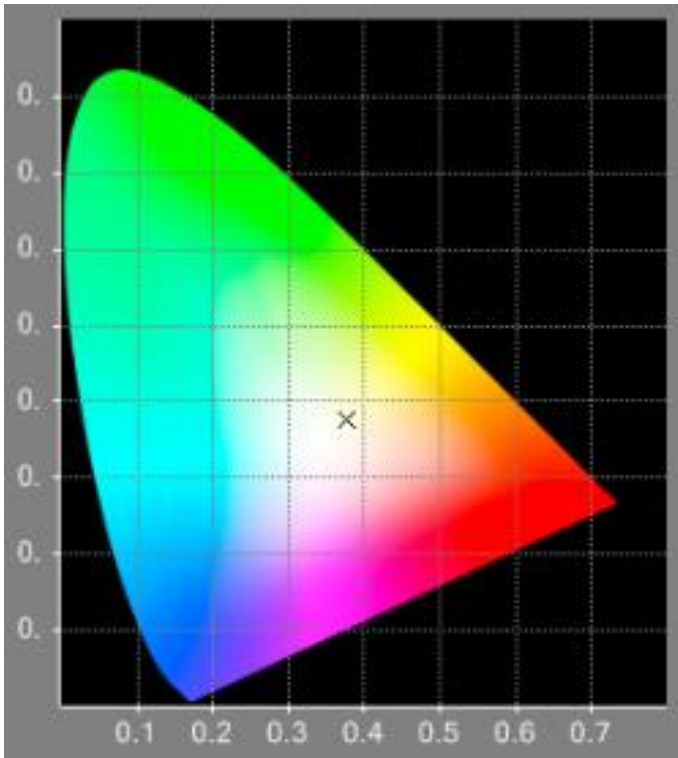


Figure 4. CIE 1931 diagram for model TPL-648-840-H01

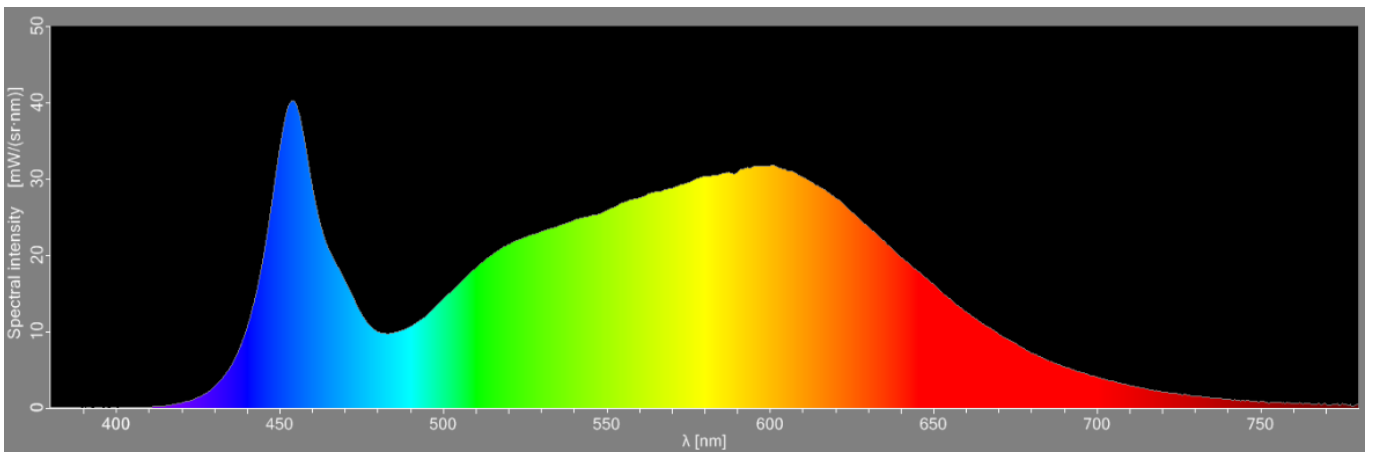
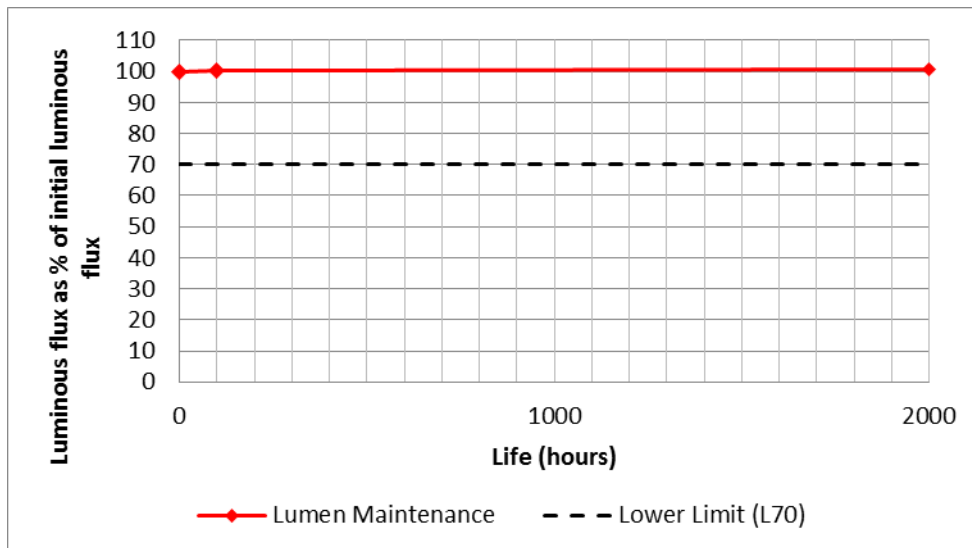


Figure 5. Spectral Flux for model TPL-648-840-H01

### A.1.5. LIFE TEST

**Table A.5 Colorimetry depreciation of model TPL-648-840-H01**

Measured Value	0 hours	100 hours	% Maintained (0-100hrs)	2000 hours	% Maintained (0-2000hrs)
Correlated Colour Temperature (K)	4112	4127	100.4	4152	100.9
Ra (%)	84	84	100.0	84	100.0
Luminous Flux (lm)	6242	6251	100.1	6281	100.6
Luminous Efficacy (lm/W)	123	124	100.8	125	101.6



**Figure 6. Luminous flux depreciation curve for model TPL-648-840-H01**

## A.2. Tri-Proof 5ft 42W Twin with IDIM

### A.2.1. PRODUCT DETAILS

Table A.6 *Product Specifications*

Product Name	Tri-Proof 5ft 42W Twin with IDIM
Model No.	TPL-542-840-H01
Product Description	LED IP64 Linear Luminaire
Nominal Dimensions	L – 1500mm; W – 80mm; H – 50mm
Product Supply Requirement	220-240V AC, 50/60Hz
Lamp Type and Power	LED, 42W

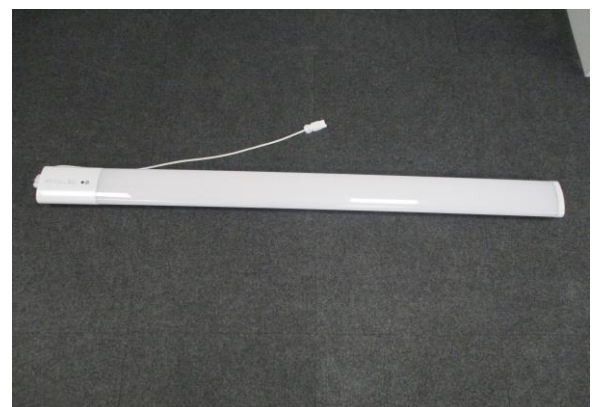
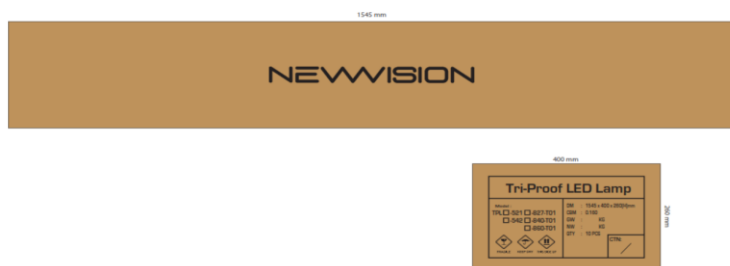


Figure 7. *Product Images*

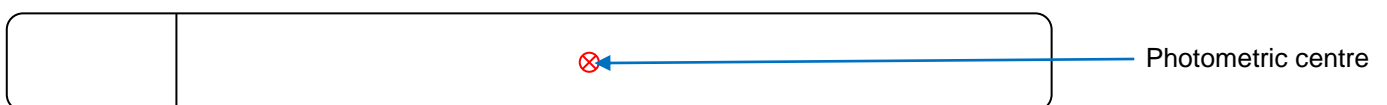


Figure 8. *Product diagram*

## A.2.2. SAFETY EVALUATION

Safety assessment was carried out in accordance with the requirements set in LIA Laboratory's technical scheme document TSD-004, the clauses verified are shown in Table 2 and have been evaluated against IEC 60598-2-1 (ed.1), am1 used in conjunction with IEC 60598-1 (ed.8).

The product has been found to conform to the requirements laid out in the identified clauses.

**Table A.7 Safety Test Results**

Clause No.	Title
Clause 1.4	Classification of luminaires
Clause 1.5	Marking
Clause 1.6	Construction
Clause 1.7	Creepage distances and clearances
Clause 1.8	Provision for earthing
Clause 1.9	Terminals
Clause 1.10	External and internal wiring
Clause 1.11	Protection against electric shock
Clause 1.12	Endurance tests and thermal tests
Clause 1.13	Resistance to dust and moisture
Clause 1.14	Insulation resistance and electric strength

### A.2.3. CENTRE BEAM INTENSITY AND BEAM ANGLE

Table A.8 *Beam Angle value for model TPL-648-840-H01*

Centre Beam Intensity (cd)	Beam Angle ( <i>Lamp orientation</i> )	Beam Angle Result (°)
1724	0° - 180°	108
	90° - 270°	120

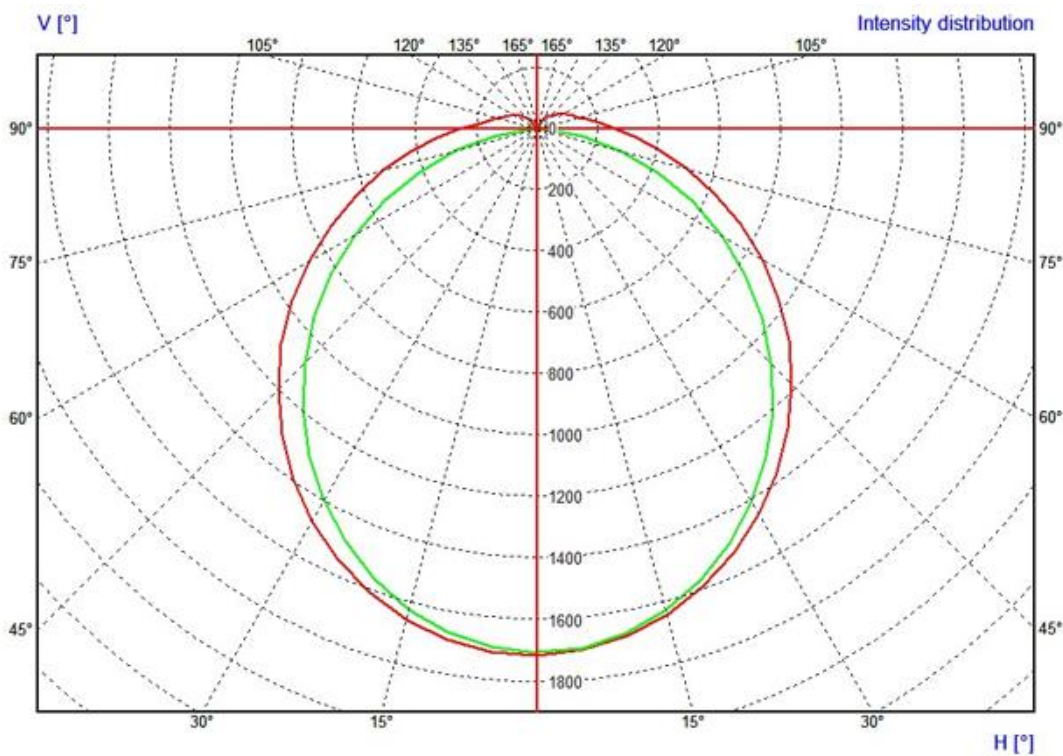


Figure 9. *Polar Diagram for model TPL-648-840-H01*

## A.2.4. COLORIMETRY

Table A.9 Colorimetry values for model TPL-542-840-H01

<b>COLORIMETRY &amp; LUMINOUS FLUX</b>	x coordinate	0.3771
	y coordinate	0.3760
	u coordinate	0.2232
	v coordinate	0.3338
	u' coordinate	0.2232
	v' coordinate	0.5008
	Dominant Wavelength (nm)	581.0
	Purity (%)	31.2
	Correlated Colour Temperature (K)	4087
	Ra (%)	82.3
	R1 (%)	80.9
	R2 (%)	89.2
	R3 (%)	94.2
	R4 (%)	80.1
	R5 (%)	80.0
	R6 (%)	83.8
	R7 (%)	86.0
	R8 (%)	64.3
	R9 (%)	7.7
	R10 (%)	73.0
R11 (%)	78.1	
R12 (%)	55.2	
R13 (%)	83.1	
R14 (%)	96.9	
Lumen Output (lm)	5745	

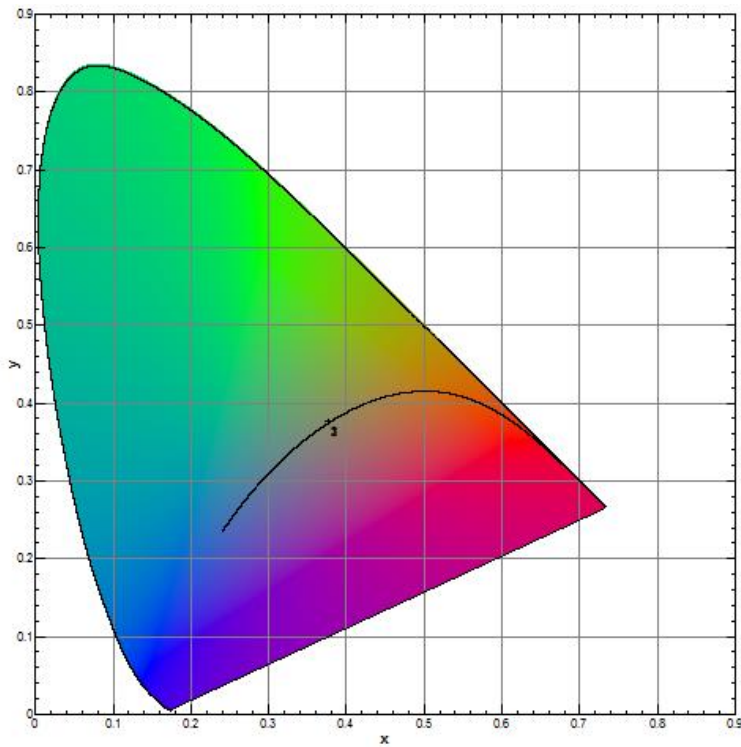


Figure 10. CIE 1931 diagram for model TPL-542-840-H01

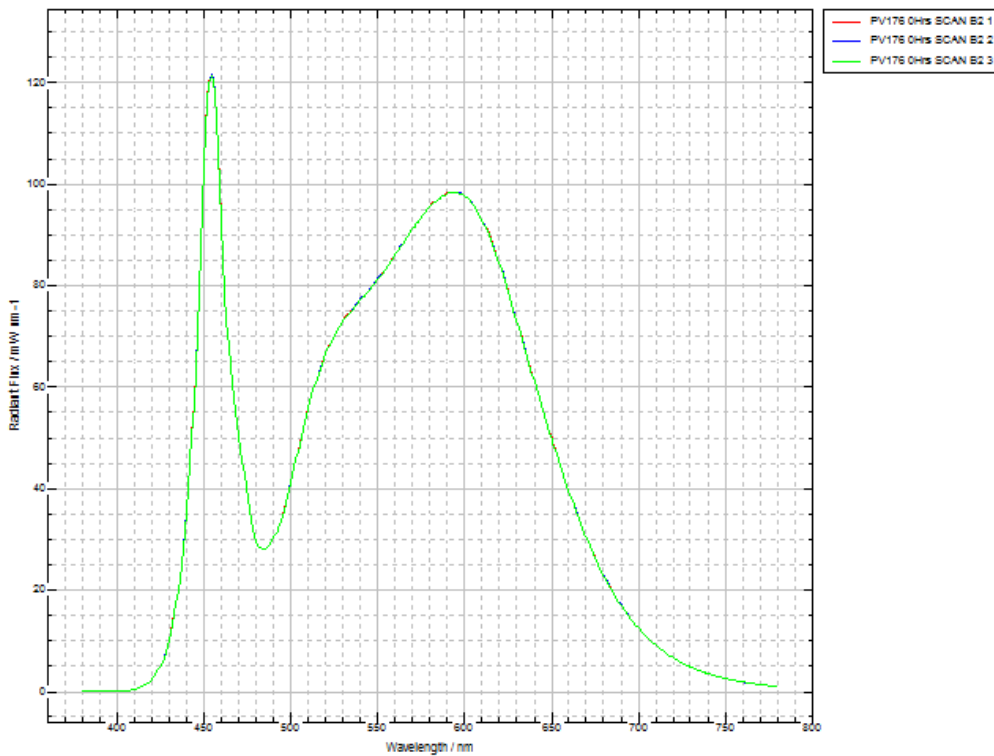


Figure 11. Spectral Flux for model TPL-542-840-H01





### **A.2.5. LIFE TEST**

Due to the identical construction and critical components used in this model, the life assessment was carried out as a family variant. Life testing was conducted on the Tri-Proof 6ft 48W Twin with IDIM – TPL-648-840-H01 as this was considered to be the most onerous. Refer to section A.1.5 for the measured values

### A.3. Tri-Proof 4ft 30W Twin with IDIM

#### A.3.1. PRODUCT DETAILS

Table A.10 *Product Specifications*

Product Name	Tri-Proof 4ft 30W Twin with IDIM
Model No.	TPL-430-840-H01
Product Description	LED IP64 Linear Luminaire
Nominal Dimensions	L – 1200mm; W – 80mm; H – 50mm
Product Supply Requirement	220-240V AC, 50/60Hz
Lamp Type and Power	LED, 30W

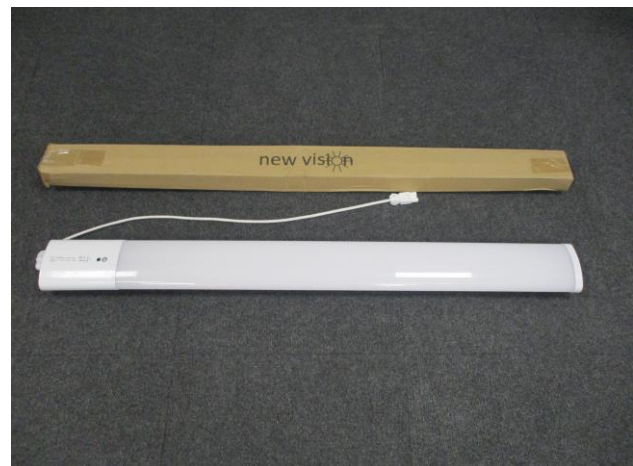


Figure 12. *Product Images*



Figure 13. *Product diagram*

### A.3.2. SAFETY EVALUATION

Safety assessment was carried out in accordance with the requirements set in LIA Laboratory's technical scheme document TSD-004, the clauses verified are shown in Table 2 and have been evaluated against IEC 60598-2-1 (ed.1), am1 used in conjunction with IEC 60598-1 (ed.8).

The product has been found to conform to the requirements laid out in the identified clauses.

**Table A.11 Safety Test Results**

Clause No.	Title
Clause 1.4	Classification of luminaires
Clause 1.5	Marking
Clause 1.6	Construction
Clause 1.7	Creepage distances and clearances
Clause 1.8	Provision for earthing
Clause 1.9	Terminals
Clause 1.10	External and internal wiring
Clause 1.11	Protection against electric shock
Clause 1.12	Endurance tests and thermal tests
Clause 1.13	Resistance to dust and moisture
Clause 1.14	Insulation resistance and electric strength

### A.3.3. CENTRE BEAM INTENSITY AND BEAM ANGLE

Table A.12 *Beam Angle value for model TPL-648-840-H01*

Centre Beam Intensity (cd)	Beam Angle (Lamp orientation)	Beam Angle Result (°)
1153	0° - 180°	107
	90° - 270°	118

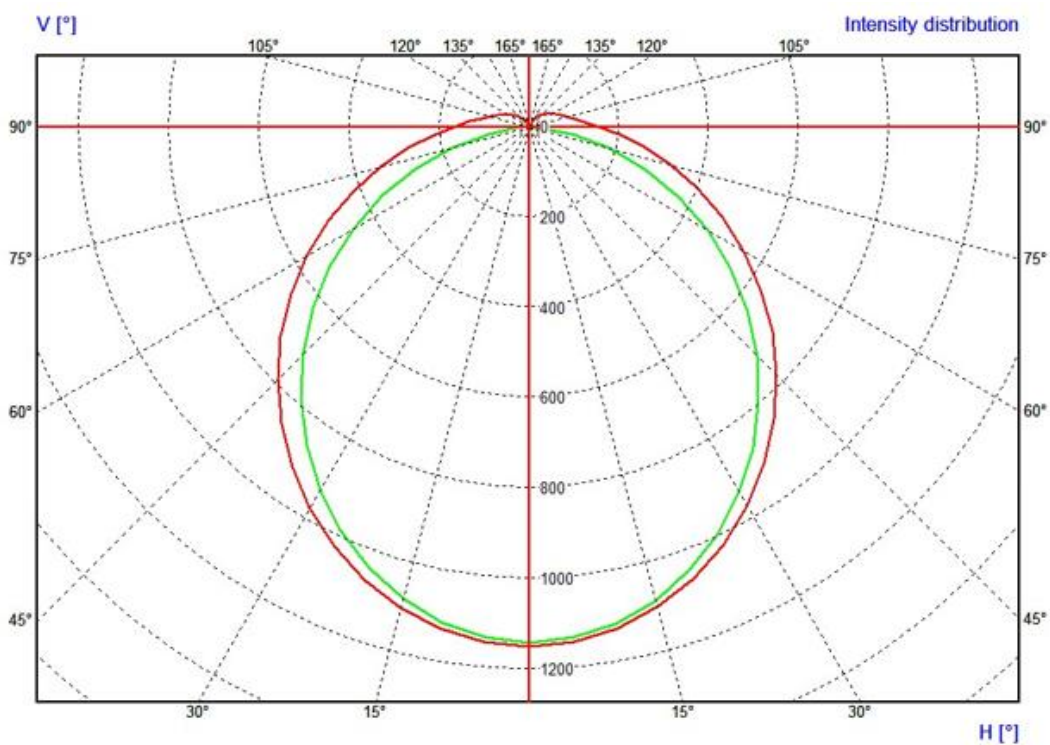


Figure 14. *Polar Diagram for model TPL-648-840-H01*

### A.3.4. COLORIMETRY

Table A.13 *Colorimetry values for model TPL-430-840-H01*

<b>COLORIMETRY &amp; LUMINOUS FLUX</b>	x coordinate	0.3764
	y coordinate	0.3766
	u coordinate	0.2225
	v coordinate	0.3339
	u' coordinate	0.2225
	v' coordinate	0.5009
	Dominant Wavelength (nm)	581.0
	Purity (%)	30.9
	Correlated Colour Temperature (K)	4111
	Ra (%)	83.1
	R1 (%)	81.7
	R2 (%)	89.9
	R3 (%)	94.8
	R4 (%)	80.9
	R5 (%)	80.9
	R6 (%)	84.8
	R7 (%)	86.4
	R8 (%)	65.5
	R9 (%)	10.9
	R10 (%)	74.8
R11 (%)	79.3	
R12 (%)	56.0	
R13 (%)	84.0	
R14 (%)	97.3	
Lumen Output (lm)	3756	

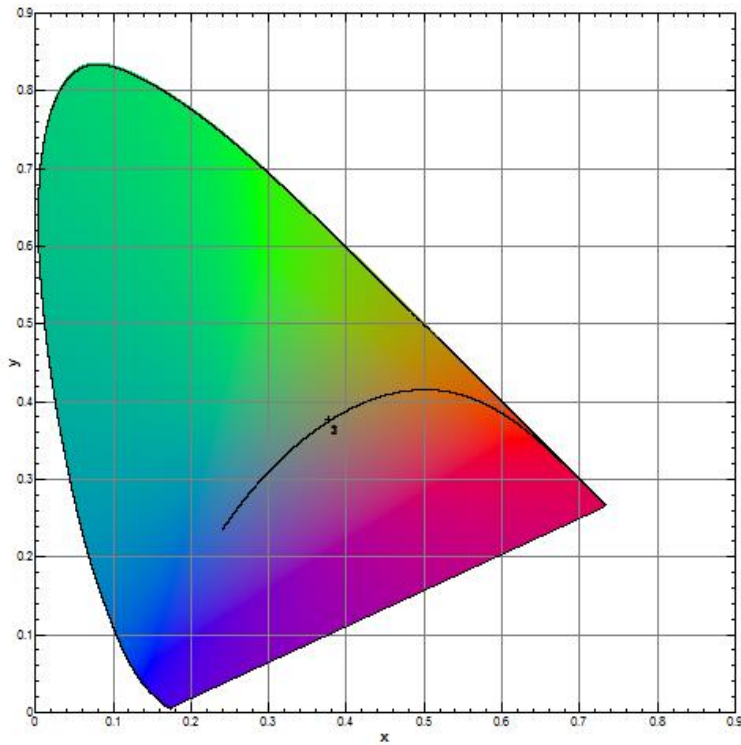


Figure 15. CIE 1931 diagram for model TPL-430-840-H01

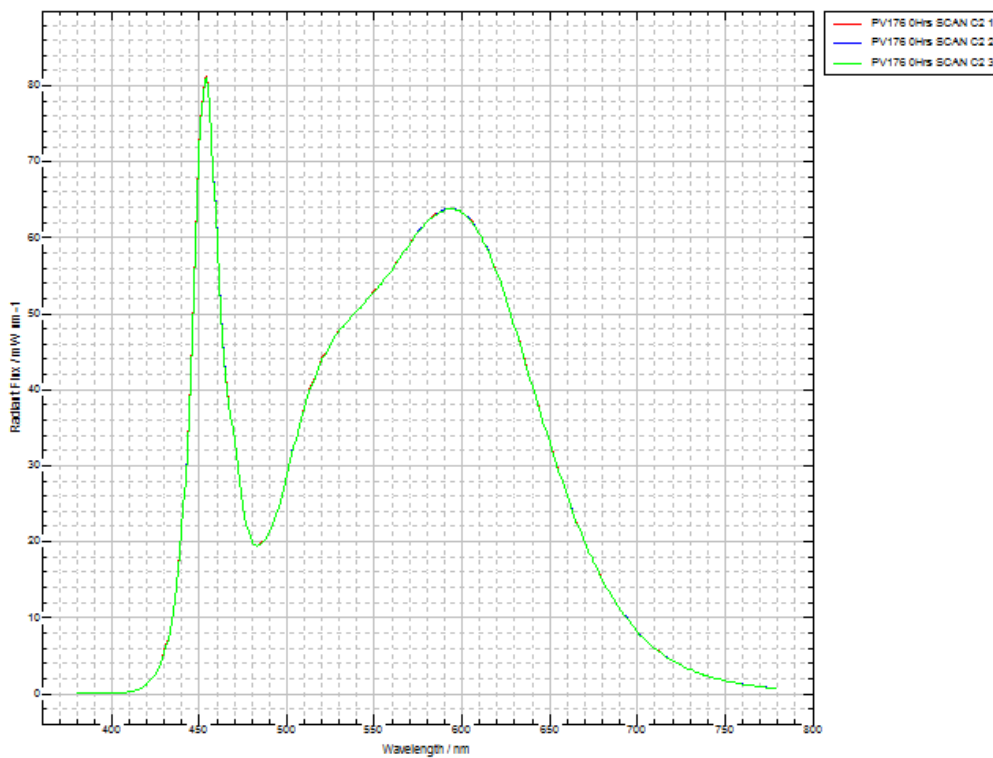


Figure 16. Spectral Flux for model TPL-430-840-H01



### **A.3.5. LIFE TEST**

Due to the identical construction and critical components used in this model, the life assessment was carried out as a family variant. Life testing was conducted on the Tri-Proof 6ft 48W Twin with IDIM – TPL-648-840-H01 as this was considered to be the most onerous. Refer to section A.1.5 for the measured values

---

**END**