

REPORT : ASD-R-1469-A

TYPE : Dimming Output Range

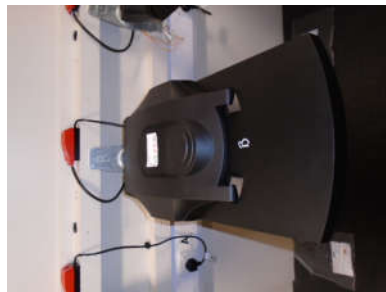
Project Number: 5140
Customer : ASD Lighting PLC
Product Type : Street Light
Project Instigator : D Butler
Project Start Date : 12/09/2018
Test Orientation : Installed Attitude
Project Notes : HWD6 76 led range test

Product Manufact. : ASD Lighting PLC
Product Descrip. : HWD6 76 LED Luminaire
Product Code : HWD6-#4K76xx
Product Ref. : N.A.
Driver Type : Osram OT 4DIM
Dimmable : Yes
Thermal Management : Passive

Luminaire Details
Length (mm) : 680
Width (mm) : 330
Height (mm) : 170
Test Item A : 2443990
Test Item B : 2444036
Test Item C : 2444038
Test Item D : 2444030
Test Item E : 2444023



Item A



Item B



Item C



Item D



Item E

REPORT : ASD-R-1469-A

TYPE : Dimming Output Range

Test Number: T1485
 Test Date: 12/09/2018
 Stabilization Time (mins): 31
 Output (%): 29
 Test Notes : T1
 Test Start Temp (°C) : 19.51

Nom. Drive Current (mA): 200
 Test Type: Std
 Tested By: D Butler
 Frequency Start Test (Hz) : 50.00
 Frequency End Test (Hz) : 50.00
 Test End Temp (°C) : 20.00

ITEM	Voltage (V)	Current (mA)	Power (W)	VA	PF	Lead/Lag
A	250.03	222	48.01	55.38	0.867	Leading
B	250.06	220	47.84	55.15	0.868	Leading
C	250.05	221	47.84	55.34	0.864	Leading
D	250.03	222	48.12	55.45	0.868	Leading
E	250.01	221	47.96	55.18	0.869	Leading
A	240.04	225	47.79	54.08	0.884	Leading
B	240.06	225	47.73	53.94	0.885	Leading
C	240.08	225	47.70	54.13	0.881	Leading
D	240.02	226	47.97	54.24	0.885	Leading
E	240.01	225	47.81	54.02	0.885	Leading
A	230.02	231	47.70	53.04	0.899	Leading
B	230.04	229	47.53	52.78	0.901	Leading
C	230.06	230	47.59	53.02	0.898	Leading
D	230.01	231	47.78	53.11	0.900	Leading
E	230.02	230	47.62	52.88	0.901	Leading
A	220.05	237	47.58	52.04	0.914	Leading
B	220.04	236	47.44	51.86	0.915	Leading
C	220.07	237	47.52	52.08	0.913	Leading
D	220.08	237	47.72	52.22	0.914	Leading
E	220.08	237	47.62	52.08	0.914	Leading
A	210.02	244	47.56	51.25	0.928	Leading
B	210.03	243	47.40	50.99	0.930	Leading
C	210.05	244	47.41	51.17	0.927	Leading
D	210.03	245	47.65	51.36	0.928	Leading
E	210.00	244	47.55	51.16	0.930	Leading

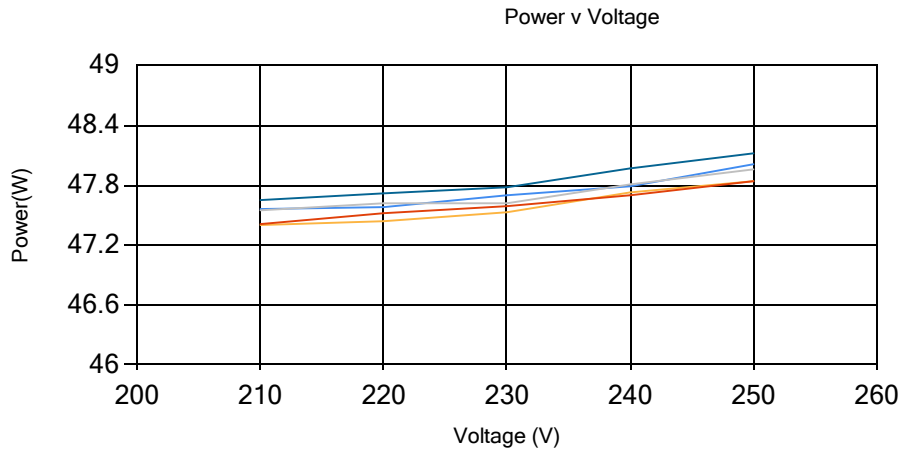
REPORT : ASD-R-1469-A

TYPE : Dimming Output Range

Test Number: T1485 Graphical Results Of Previous Page Tests.

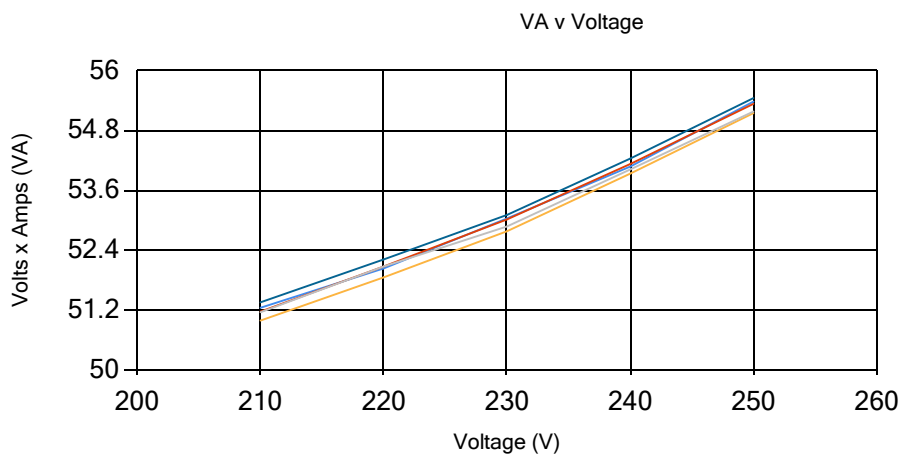
Drive (mA): 200

Output (%): 29



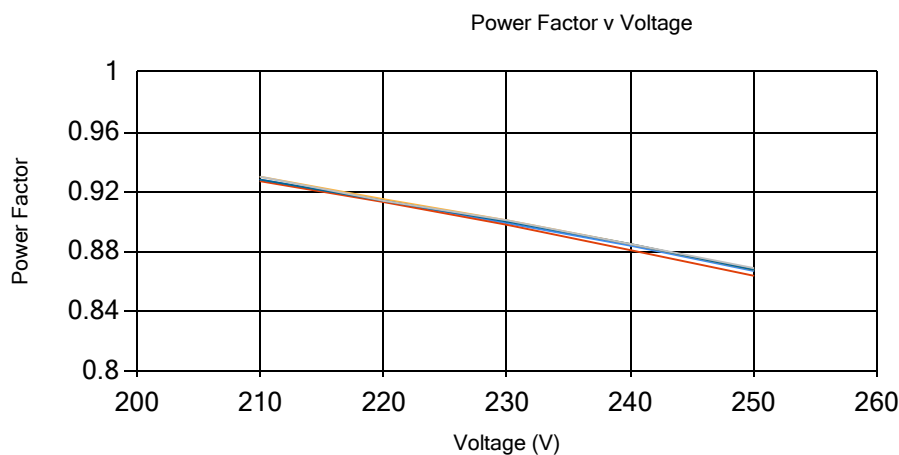
Fitting Designation

- A
- B
- C
- D
- E



Fitting Designation

- A
- B
- C
- D
- E



Fitting Designation

- A
- B
- C
- D
- E

REPORT : ASD-R-1469-A

TYPE : Dimming Output Range

Test Number: T1486
 Test Date: 12/09/2018
 Stabilization Time (mins): 31
 Output (%): 46
 Test Notes : T2
 Test Start Temp (°C) : 20.00

Nom. Drive Current (mA): 325
 Test Type: Std
 Tested By: D Butler
 Frequency Start Test (Hz) : 50.00
 Frequency End Test (Hz) : 50.00
 Test End Temp (°C) : 20.48

ITEM	Voltage (V)	Current (mA)	Power (W)	VA	PF	Lead/Lag
A	250.05	321	75.11	80.33	0.935	Leading
B	250.07	320	74.93	80.04	0.936	Leading
C	250.06	321	74.89	80.31	0.933	Leading
D	250.06	322	75.22	80.49	0.935	Leading
E	250.02	321	74.97	80.19	0.935	Leading
A	240.03	331	75.01	79.51	0.943	Leading
B	240.06	330	74.90	79.23	0.945	Leading
C	240.05	331	74.79	79.36	0.942	Leading
D	240.06	332	75.14	79.55	0.944	Leading
E	240.08	331	74.96	79.39	0.944	Leading
A	230.04	342	74.96	78.76	0.952	Leading
B	230.02	341	74.76	78.44	0.953	Leading
C	230.07	342	74.76	78.66	0.950	Leading
D	230.06	343	75.12	78.90	0.952	Leading
E	230.01	341	74.77	78.57	0.952	Leading
A	220.01	355	74.86	78.04	0.959	Leading
B	220.03	354	74.74	77.80	0.961	Leading
C	220.05	354	74.67	77.93	0.958	Leading
D	219.98	355	74.90	78.09	0.959	Leading
E	220.01	354	74.74	77.84	0.960	Leading
A	210.04	369	74.93	77.59	0.966	Leading
B	210.03	368	74.77	77.25	0.967	Leading
C	210.04	368	74.66	77.37	0.965	Leading
D	210.04	370	75.02	77.67	0.966	Leading
E	210.05	368	74.82	77.39	0.967	Leading

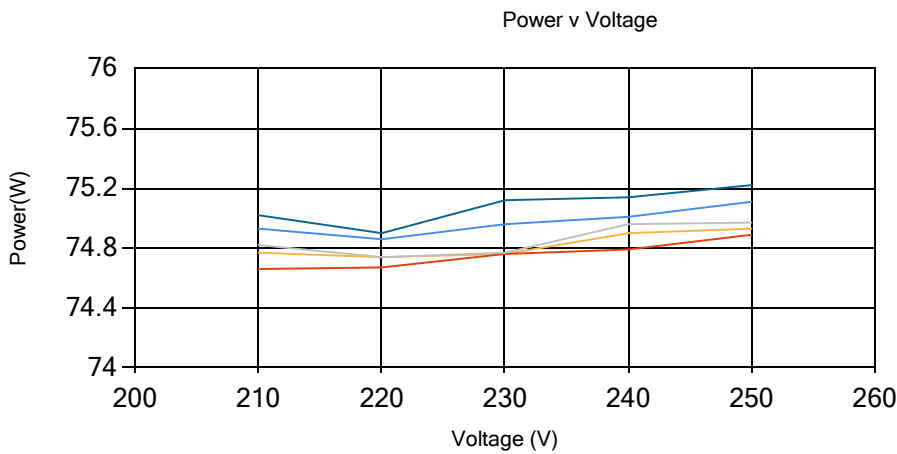
REPORT : ASD-R-1469-A

TYPE : Dimming Output Range

Test Number: T1486 Graphical Results Of Previous Page Tests.

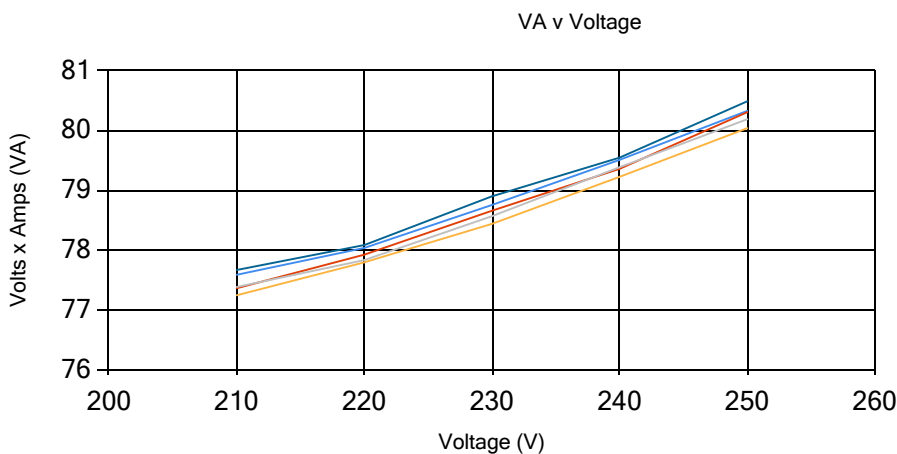
Drive (mA): 325

Output (%): 46



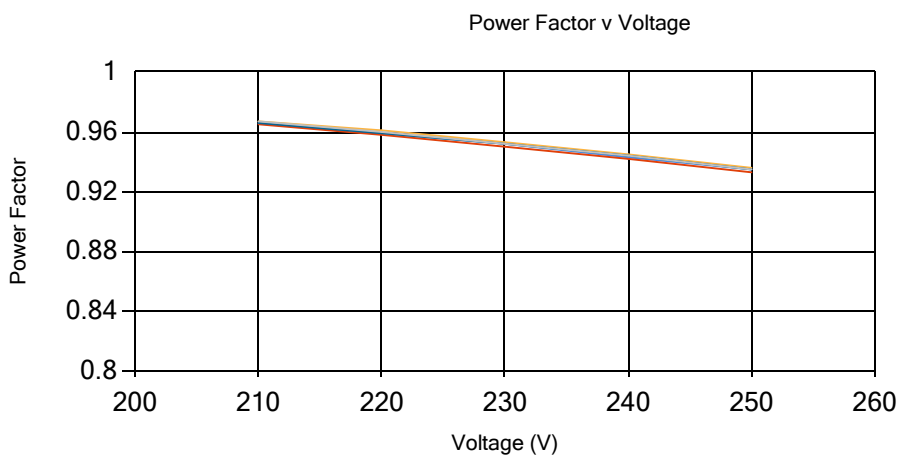
Fitting Designation

- A
- B
- C
- D
- E



Fitting Designation

- A
- B
- C
- D
- E



Fitting Designation

- A
- B
- C
- D
- E

REPORT : ASD-R-1469-A

TYPE : Dimming Output Range

Test Number: T1487
 Test Date: 12/09/2018
 Stabilization Time (mins): 31
 Output (%): 64
 Test Notes : T3
 Test Start Temp (°C) : 20.81

Nom. Drive Current (mA): 450
 Test Type: Std
 Tested By: D Butler
 Frequency Start Test (Hz) : 50.00
 Frequency End Test (Hz) : 50.00
 Test End Temp (°C) : 20.71

ITEM	Voltage (V)	Current (mA)	Power (W)	VA	PF	Lead/Lag
A	250.05	426	102.79	106.56	0.965	Leading
B	250.06	425	102.74	106.37	0.966	Leading
C	250.09	426	102.65	106.49	0.964	Leading
D	250.00	427	102.93	106.72	0.965	Leading
E	250.07	425	102.76	106.38	0.966	Leading
A	240.03	442	102.84	106.01	0.970	Leading
B	240.05	441	102.73	105.80	0.971	Leading
C	240.05	441	102.61	105.85	0.969	Leading
D	240.06	442	102.92	106.11	0.970	Leading
E	240.07	441	102.77	105.82	0.971	Leading
A	230.02	459	102.86	105.54	0.975	Leading
B	230.04	458	102.74	105.29	0.976	Leading
C	230.05	458	102.57	105.30	0.974	Leading
D	230.05	459	102.98	105.66	0.975	Leading
E	230.06	458	102.70	105.28	0.976	Leading
A	220.02	478	102.86	105.09	0.979	Leading
B	220.04	477	102.79	104.92	0.980	Leading
C	220.08	477	102.67	104.94	0.978	Leading
D	220.05	478	102.95	105.18	0.979	Leading
E	220.06	477	102.79	104.92	0.980	Leading
A	210.02	499	102.99	104.83	0.982	Leading
B	210.03	498	102.88	104.64	0.983	Leading
C	210.05	498	102.67	104.52	0.982	Leading
D	210.04	499	102.97	104.85	0.982	Leading
E	210.05	498	102.78	104.54	0.983	Leading

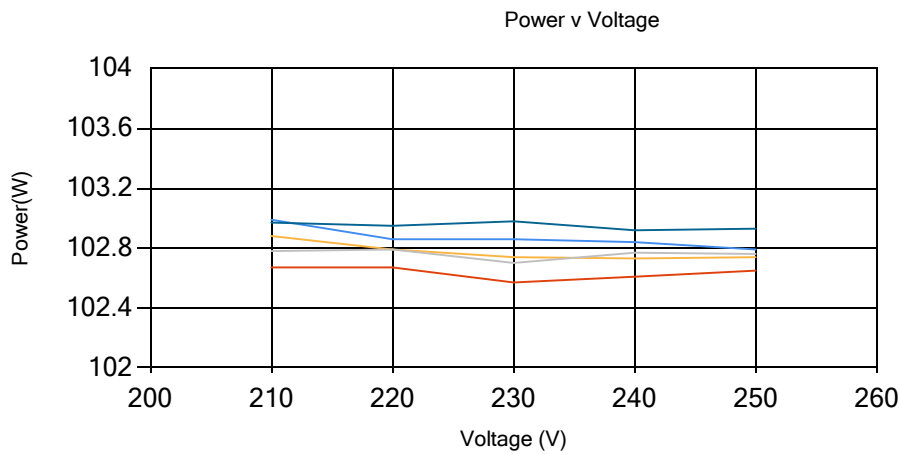
REPORT : ASD-R-1469-A

TYPE : Dimming Output Range

Test Number: T1487 Graphical Results Of Previous Page Tests.

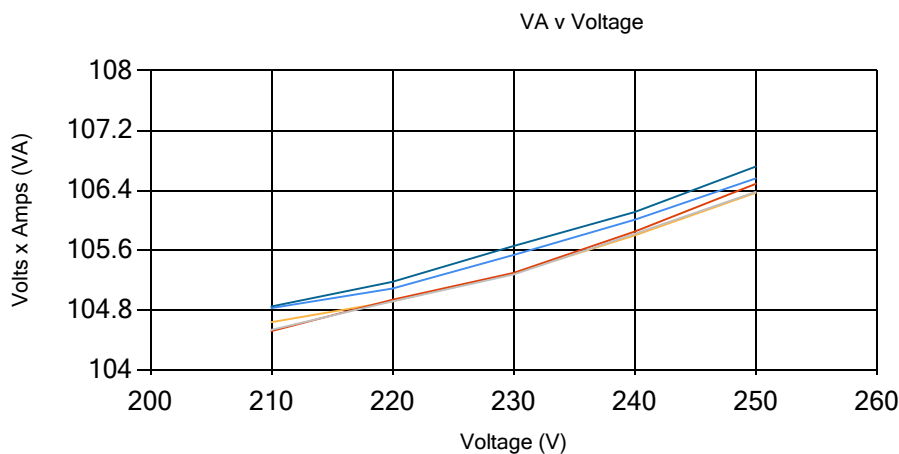
Drive (mA): 450

Output (%): 64



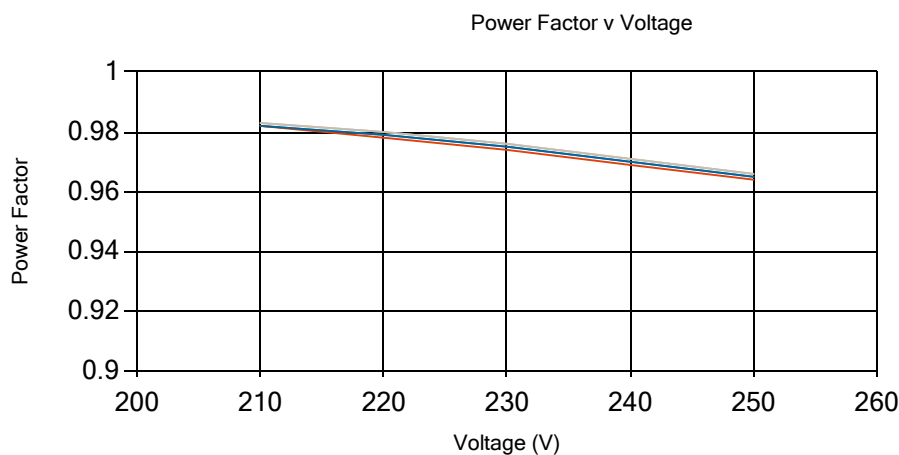
Fitting Designation

- A
- B
- C
- D
- E



Fitting Designation

- A
- B
- C
- D
- E



Fitting Designation

- A
- B
- C
- D
- E

REPORT : ASD-R-1469-A

TYPE : Dimming Output Range

Test Number: T1488
 Test Date: 12/09/2018
 Stabilization Time (mins): 31
 Output (%): 82
 Test Notes : T4
 Test Start Temp (°C) : 20.21

Nom. Drive Current (mA): 575
 Test Type: Std
 Tested By: D Butler
 Frequency Start Test (Hz) : 50.00
 Frequency End Test (Hz) : 50.00
 Test End Temp (°C) : 20.88

ITEM	Voltage (V)	Current (mA)	Power (W)	VA	PF	Lead/Lag
A	250.03	537	131.49	134.28	0.979	Leading
B	250.06	535	131.11	133.82	0.980	Leading
C	250.06	536	131.20	134.07	0.979	Leading
D	250.05	537	131.35	134.18	0.979	Leading
E	250.07	536	131.26	133.98	0.980	Leading
A	240.03	557	131.45	133.79	0.983	Leading
B	240.05	556	131.11	133.37	0.983	Leading
C	240.06	556	131.11	133.51	0.982	Leading
D	240.05	557	131.31	133.66	0.982	Leading
E	240.06	556	131.19	133.44	0.983	Leading
A	230.03	580	131.49	133.43	0.986	Leading
B	230.04	578	131.11	132.97	0.986	Leading
C	230.06	579	131.08	133.08	0.985	Leading
D	230.05	579	131.26	133.25	0.985	Leading
E	230.06	578	131.15	133.04	0.986	Leading
A	220.03	605	131.42	133.02	0.988	Leading
B	220.04	603	131.19	132.73	0.988	Leading
C	220.06	604	131.20	132.83	0.988	Leading
D	220.04	604	131.28	132.90	0.988	Leading
E	220.06	604	131.27	132.81	0.988	Leading
A	210.02	633	131.68	132.97	0.990	Leading
B	210.03	631	131.34	132.59	0.991	Leading
C	210.04	631	131.33	132.63	0.990	Leading
D	210.03	632	131.44	132.78	0.990	Leading
E	210.05	631	131.39	132.64	0.991	Leading

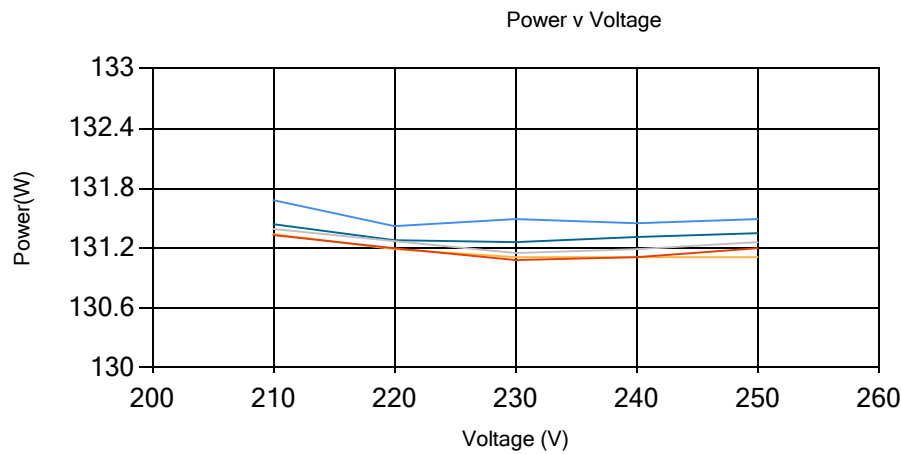
REPORT : ASD-R-1469-A

TYPE : Dimming Output Range

Test Number: T1488 Graphical Results Of Previous Page Tests.

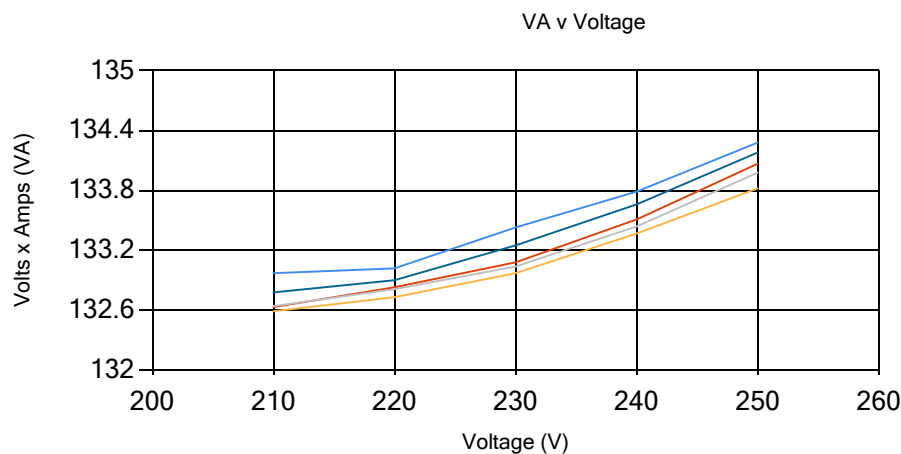
Drive (mA): 575

Output (%): 82



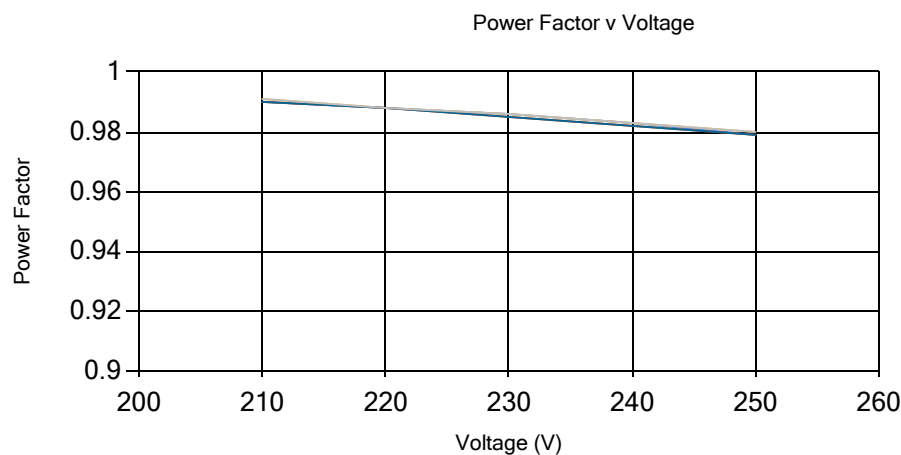
Fitting Designation

- A
- B
- C
- D
- E



Fitting Designation

- A
- B
- C
- D
- E



Fitting Designation

- A
- B
- C
- D
- E

REPORT : ASD-R-1469-A

TYPE : Dimming Output Range

Test Number: T1489
 Test Date: 13/09/2018
 Stabilization Time (mins): 35
 Output (%): 100
 Test Notes : T5
 Test Start Temp (°C) : 18.48

Nom. Drive Current (mA): 700
 Test Type: Std
 Tested By: D Butler
 Frequency Start Test (Hz) : 50.00
 Frequency End Test (Hz) : 50.00
 Test End Temp (°C) : 20.02

ITEM	Voltage (V)	Current (mA)	Power (W)	VA	PF	Lead/Lag
A	250.05	652	160.85	163.00	0.987	Leading
B	250.07	650	160.51	162.65	0.987	Leading
C	250.08	652	160.74	162.92	0.987	Leading
D	250.12	652	160.91	163.06	0.987	Leading
E	250.09	651	160.77	162.86	0.987	Leading
A	240.04	677	160.68	162.47	0.989	Leading
B	240.05	675	160.21	161.93	0.989	Leading
C	240.07	676	160.52	162.33	0.989	Leading
D	240.12	677	160.68	162.48	0.989	Leading
E	240.07	675	160.30	162.06	0.989	Leading
A	230.02	705	160.61	162.08	0.991	Leading
B	230.04	702	160.12	161.52	0.991	Leading
C	230.06	704	160.40	161.90	0.991	Leading
D	230.05	704	160.51	162.01	0.991	Leading
E	230.07	703	160.28	161.71	0.991	Leading
A	220.03	736	160.68	161.87	0.993	Leading
B	220.04	733	160.22	161.36	0.993	Leading
C	220.06	735	160.52	161.75	0.992	Leading
D	220.05	736	160.62	161.84	0.993	Leading
E	220.07	734	160.38	161.51	0.993	Leading
A	210.01	771	160.84	161.81	0.994	Leading
B	210.02	768	160.28	161.20	0.994	Leading
C	210.04	770	160.65	161.63	0.994	Leading
D	210.07	770	160.70	161.68	0.994	Leading
E	210.04	768	160.45	161.37	0.994	Leading

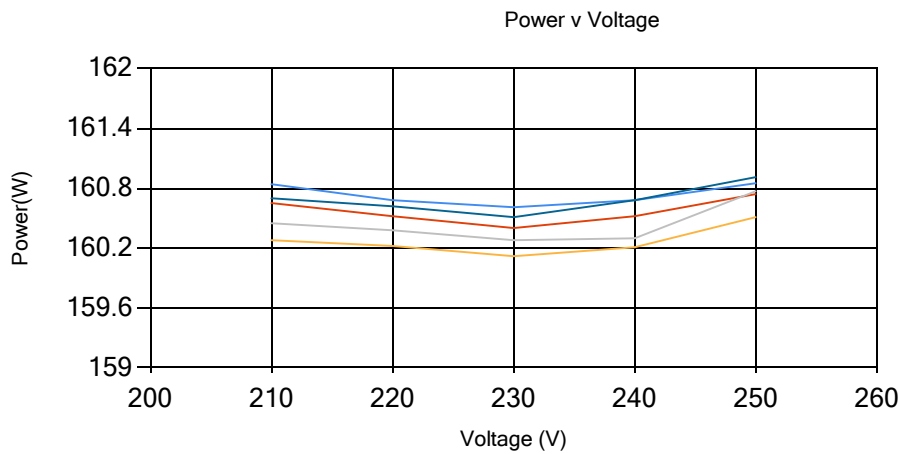
REPORT : ASD-R-1469-A

TYPE : Dimming Output Range

Test Number: T1489 Graphical Results Of Previous Page Tests.

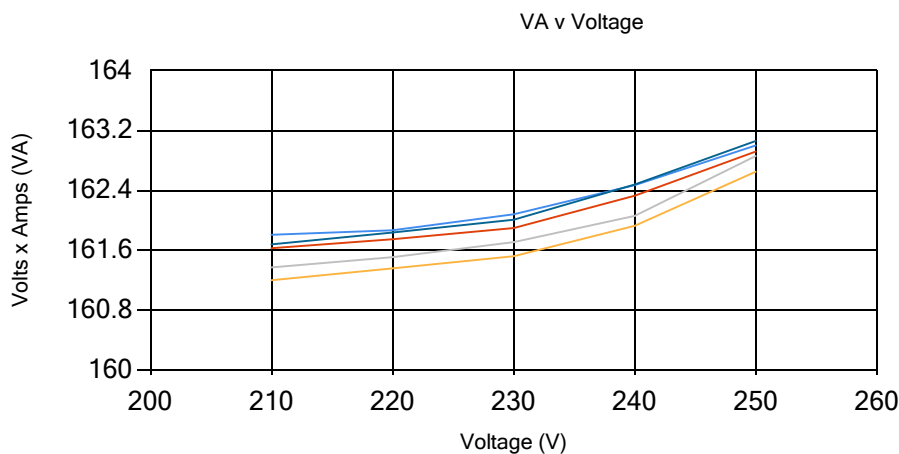
Drive (mA): 700

Output (%): 100



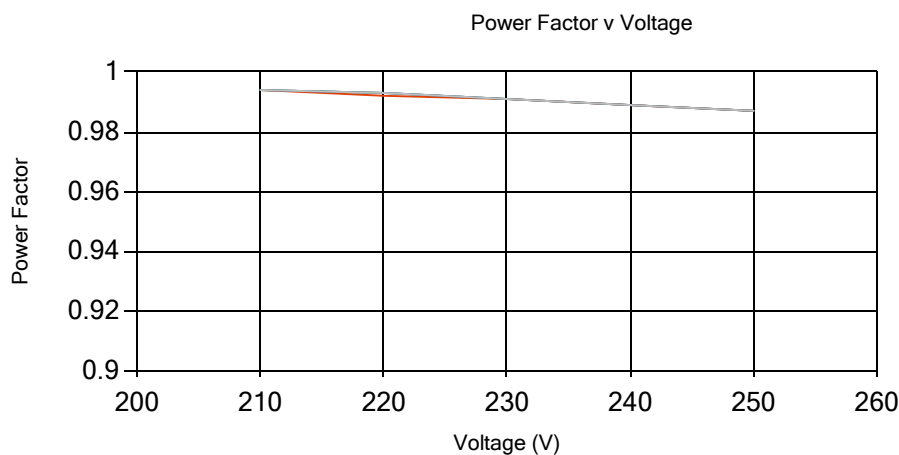
Fitting Designation

- A
- B
- C
- D
- E



Fitting Designation

- A
- B
- C
- D
- E



Fitting Designation

- A
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- E

REPORT : ASD-R-1469-A

TYPE : Dimming Output Range

Test Method.

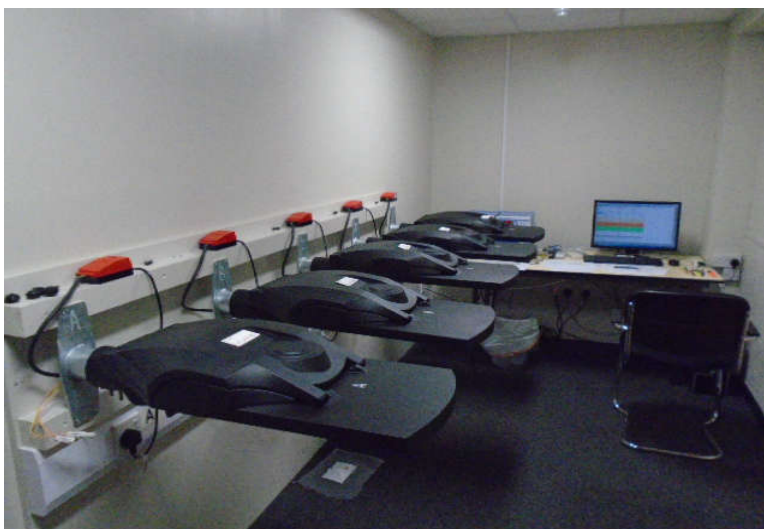
This UMSUG test was conducted in line with the requirements of the Unmetered Supplies Operational Information Document Version 17.0. Using a batch of 5 luminaires of identical product specification, Wattage and VA v Voltage readings were taken at 210, 220, 230, 240, and 250 Volt 50Hz.

The measurements included the drivers required to operate from the mains supply. Before results were recorded the equipment under test was allowed to reach steady state load conditions. This was achieved by powering up at 250V nominal voltage and taking power readings of all five fittings at one minute intervals, in line with LM79-08. The Pre-Burn test period at 250V was set at 15 minutes. The recording of the results commenced after the Pre-Burn period had expired and all five individual fittings had a % difference in power of less than 0.5% taken over a subsequent 15 minute rolling period. The dwell time before recording results, at the 4 reduced voltage levels, was 10 minutes at each reduction. All testing was conducted at a nominal ambient temperature of 20 degrees C. (+/- 3 deg). When testing for a dimming / range code data is taken at full load output, minimum dimmed load and 3 additional dim levels between these extremes. The percentage output dimming level is shown with each set of data. Equipment used: KiKusui PCR 2000M stabilised supply, Yokogawa WT332E and Yokogawa WT333E Digital Power Meters.

Measurement Uncertainty Between 4W and 500W.

Measured Value.	Accuracy.
Voltage (300V range, 250V 50Hz)	+/- 0.40 V
Current (500 mA, 250V 50Hz)	+/- 0.75 mA
Current (1000 mA, 250V 50Hz)	+/- 1.5 mA
Current (2000 mA, 250V 50Hz)	+/- 3.0 mA
Power (50W , 250V 50Hz)	+/- 0.125 W
Power (150W , 250V 50Hz)	+/- 0.225 W
Power (250W , 250V 50Hz)	+/- 0.40 W
Power (500W , 250V 50Hz)	+/- 0.80 W
Frequency(50Hz)	+/- 0.03 Hz

Measurements of Power of 4W or greater are made with an uncertainty of less than or equal to +/- 2% at a 95% confidence level. Below 4W Uncertainty is less than +/- 0.08 W at a 95% confidence level.



Typical Test Setup.

REPORT : ASD-R-1469-A
TYPE : Dimming Output Range

Dimming Curve: Avg. Power Of A To E Luminaires at 240V v Dimming Level Set

