

REPORT : ASD-R-1479-A

TYPE : Dimming Output Range

Project Number: 5150
Customer : ASD Lighting PLC
Product Type : Street Light
Project Instigator : SB-DM
Project Start Date : 08/10/2018
Test Orientation : Installed Attitude
Project Notes : HWD8-100 RANGE TEST

Product Manufact. : ASD Lighting PLC
Product Descrip. : HWD8 100
Product Code : HWD8/#4K100xx
Product Ref. : N.A.
Driver Type : OSRAM 4Dim
Dimmable : Yes
Thermal Management : Passive

Luminaire Details
Length (mm) : 880
Width (mm) : 330
Height (mm) : 170
Test Item A : 2492832
Test Item B : 2492709
Test Item C : 2492803
Test Item D : 2492657
Test Item E : 2492755



Item A



Item B



Item C



Item D



Item E

REPORT : ASD-R-1479-A

TYPE : Dimming Output Range

Test Number: T1538
 Test Date: 09/10/2018
 Stabilization Time (mins): 31
 Output (%): 29
 Test Notes : T5
 Test Start Temp (°C) : 20.35

Nom. Drive Current (mA): 200
 Test Type: Std
 Tested By: SB-DM
 Frequency Start Test (Hz) : 50.00
 Frequency End Test (Hz) : 50.00
 Test End Temp (°C) : 20.23

ITEM	Voltage (V)	Current (mA)	Power (W)	VA	PF	Lead/Lag
A	250.06	312	66.34	77.98	0.851	Leading
B	250.07	311	66.19	77.71	0.852	Leading
C	250.09	314	66.40	78.43	0.847	Leading
D	250.06	313	66.10	78.27	0.845	Leading
E	250.08	315	66.60	78.66	0.847	Leading
A	240.05	317	66.20	75.98	0.871	Leading
B	240.04	316	66.06	75.79	0.872	Leading
C	240.07	319	66.28	76.52	0.866	Leading
D	240.04	318	65.90	76.28	0.864	Leading
E	240.07	320	66.47	76.76	0.866	Leading
A	230.08	323	66.10	74.23	0.891	Leading
B	230.06	322	65.93	74.12	0.890	Leading
C	230.07	325	66.19	74.73	0.886	Leading
D	230.03	324	65.85	74.54	0.884	Leading
E	230.05	326	66.35	74.97	0.885	Leading
A	220.04	331	66.07	72.81	0.908	Leading
B	220.04	330	65.85	72.63	0.907	Leading
C	220.08	333	66.11	73.21	0.903	Leading
D	220.07	332	65.79	72.98	0.902	Leading
E	220.04	334	66.34	73.44	0.903	Leading
A	210.06	341	66.03	71.56	0.923	Leading
B	210.07	340	65.83	71.37	0.922	Leading
C	210.06	342	66.05	71.89	0.919	Leading
D	210.06	341	65.77	71.66	0.918	Leading
E	210.02	343	66.27	72.06	0.920	Leading

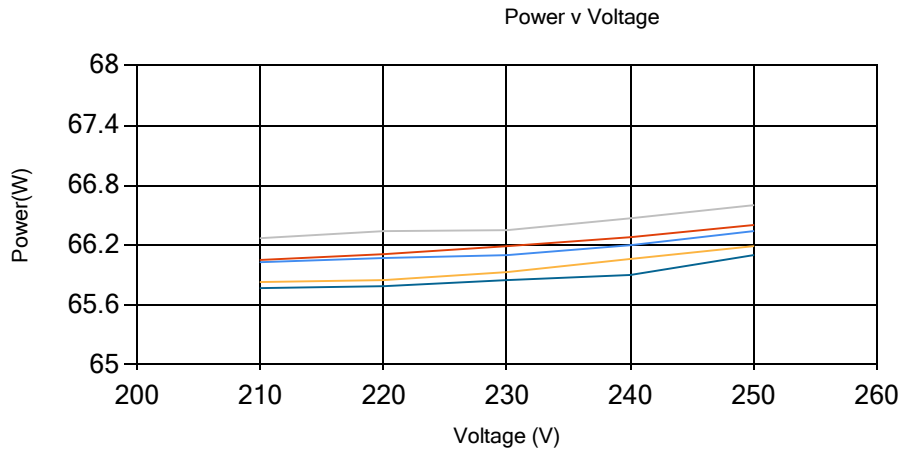
REPORT : ASD-R-1479-A

TYPE : Dimming Output Range

Test Number: T1538 Graphical Results Of Previous Page Tests.

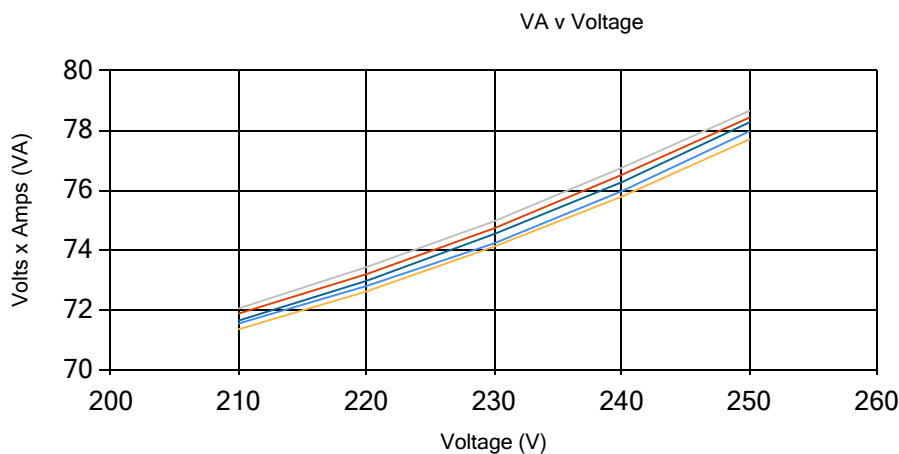
Drive (mA): 200

Output (%): 29



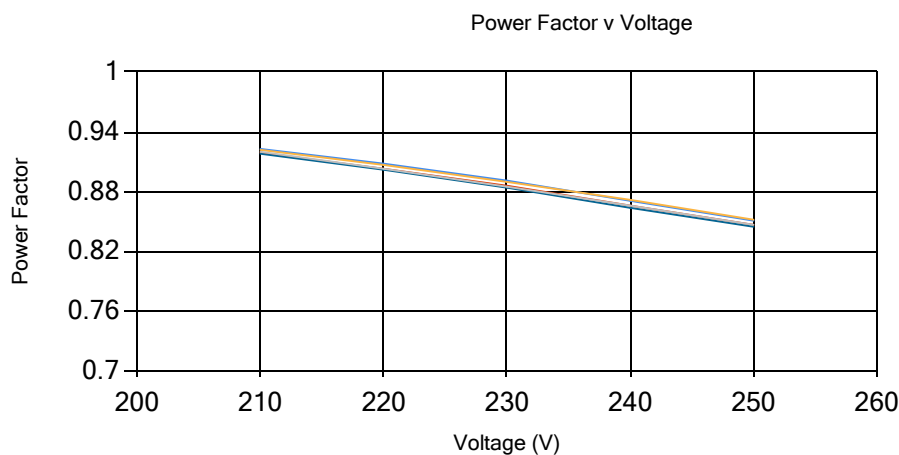
Fitting Designation

- A
- B
- C
- D
- E



Fitting Designation

- A
- B
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- D
- E



Fitting Designation

- A
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REPORT : ASD-R-1479-A

TYPE : Dimming Output Range

Test Number: T1537
 Test Date: 09/10/2018
 Stabilization Time (mins): 39
 Output (%): 46
 Test Notes : T4
 Test Start Temp (°C) : 20.10

Nom. Drive Current (mA): 325
 Test Type: Std
 Tested By: SB-DM
 Frequency Start Test (Hz) : 50.00
 Frequency End Test (Hz) : 50.00
 Test End Temp (°C) : 20.14

ITEM	Voltage (V)	Current (mA)	Power (W)	VA	PF	Lead/Lag
A	250.07	439	101.70	109.71	0.927	Leading
B	250.08	438	101.65	109.60	0.928	Leading
C	250.09	440	101.81	110.11	0.925	Leading
D	250.09	440	101.58	110.07	0.923	Leading
E	250.01	443	102.50	110.82	0.925	Leading
A	240.05	451	101.53	108.17	0.939	Leading
B	240.10	450	101.42	108.11	0.938	Leading
C	240.08	452	101.55	108.50	0.936	Leading
D	240.02	452	101.32	108.42	0.935	Leading
E	240.03	455	102.17	109.14	0.936	Leading
A	230.08	465	101.40	106.91	0.949	Leading
B	230.06	464	101.25	106.78	0.948	Leading
C	230.07	466	101.48	107.19	0.947	Leading
D	230.02	465	101.14	107.01	0.945	Leading
E	230.04	469	102.05	107.89	0.947	Leading
A	220.04	481	101.28	105.72	0.957	Leading
B	220.05	480	101.17	105.63	0.958	Leading
C	220.08	482	101.41	106.12	0.956	Leading
D	220.00	481	101.07	105.89	0.955	Leading
E	220.09	485	102.05	106.64	0.957	Leading
A	210.03	499	101.28	104.85	0.966	Leading
B	210.04	499	101.15	104.72	0.966	Leading
C	210.06	501	101.40	105.17	0.964	Leading
D	209.93	499	100.97	104.75	0.964	Leading
E	210.04	503	102.00	105.65	0.966	Leading

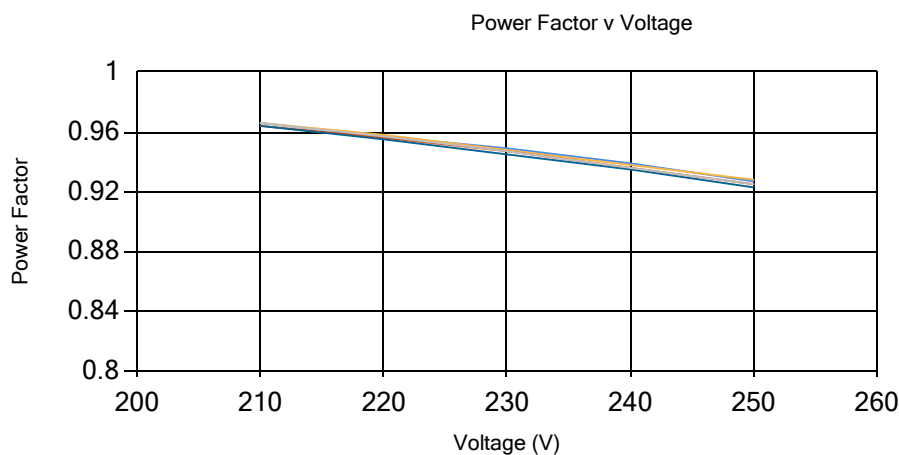
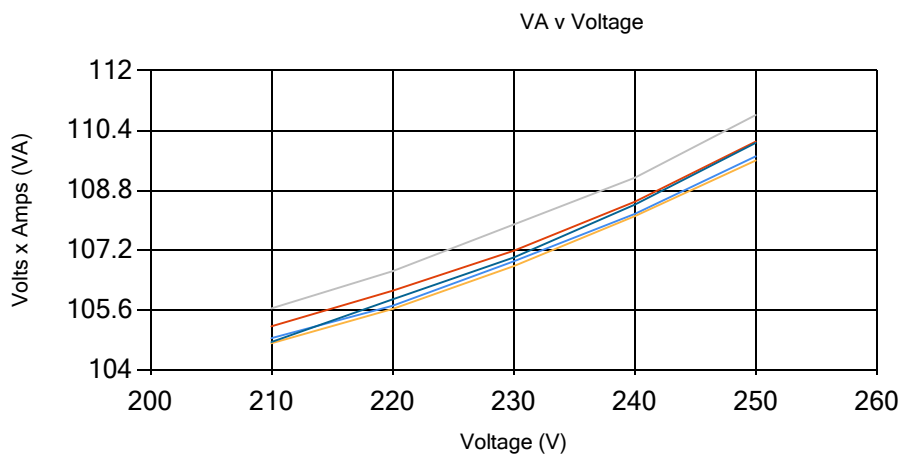
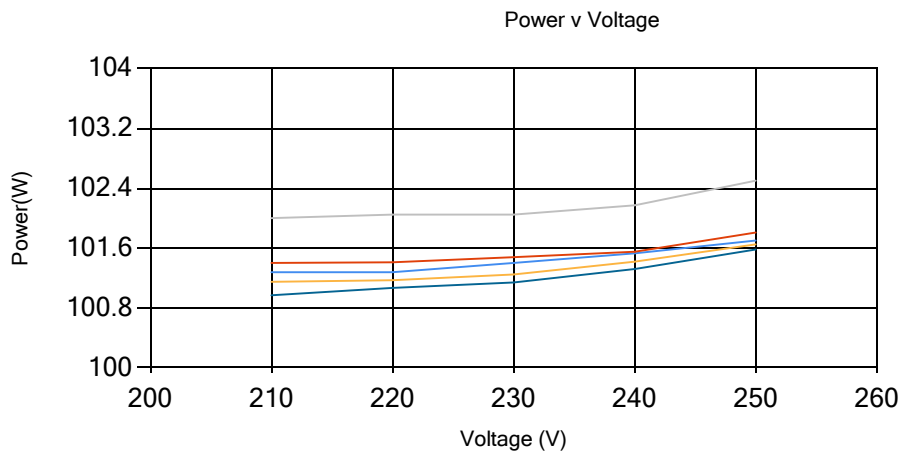
REPORT : ASD-R-1479-A

TYPE : Dimming Output Range

Test Number: T1537 Graphical Results Of Previous Page Tests.

Drive (mA): 325

Output (%): 46



REPORT : ASD-R-1479-A

TYPE : Dimming Output Range

Test Number: T1536
 Test Date: 09/10/2018
 Stabilization Time (mins): 31
 Output (%): 64
 Test Notes : T3
 Test Start Temp (°C) : 20.11

Nom. Drive Current (mA): 450
 Test Type: Std
 Tested By: SB-DM
 Frequency Start Test (Hz) : 50.00
 Frequency End Test (Hz) : 50.00
 Test End Temp (°C) : 21.75

ITEM	Voltage (V)	Current (mA)	Power (W)	VA	PF	Lead/Lag
A	250.05	575	137.19	143.80	0.954	Leading
B	250.07	574	137.07	143.49	0.955	Leading
C	250.09	576	137.23	144.09	0.952	Leading
D	250.07	575	136.87	143.85	0.952	Leading
E	250.03	579	137.99	144.81	0.953	Leading
A	240.02	595	137.20	142.72	0.961	Leading
B	240.07	593	137.14	142.44	0.963	Leading
C	240.08	595	137.22	142.95	0.960	Leading
D	240.01	595	136.93	142.76	0.959	Leading
E	240.02	598	137.90	143.59	0.960	Leading
A	230.05	617	137.35	141.90	0.968	Leading
B	230.05	616	137.21	141.61	0.969	Leading
C	230.07	617	137.30	142.05	0.967	Leading
D	230.01	616	136.99	141.80	0.966	Leading
E	230.08	620	138.01	142.66	0.967	Leading
A	220.06	641	137.35	141.08	0.974	Leading
B	220.05	640	137.31	140.86	0.975	Leading
C	220.09	642	137.43	141.31	0.973	Leading
D	220.06	641	137.21	141.14	0.972	Leading
E	220.08	645	138.14	141.89	0.974	Leading
A	210.02	669	137.44	140.42	0.979	Leading
B	210.03	668	137.36	140.20	0.980	Leading
C	210.04	669	137.48	140.58	0.978	Leading
D	210.04	668	137.20	140.35	0.978	Leading
E	210.06	673	138.27	141.28	0.979	Leading

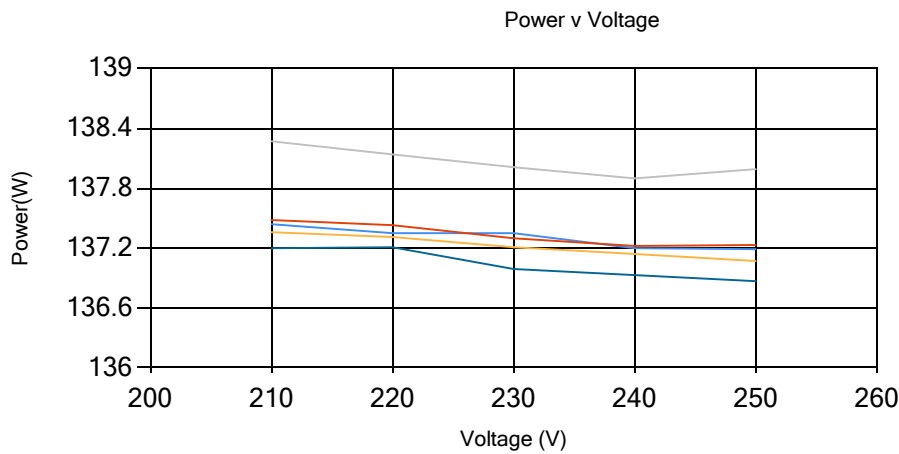
REPORT : ASD-R-1479-A

TYPE : Dimming Output Range

Test Number: T1536 Graphical Results Of Previous Page Tests.

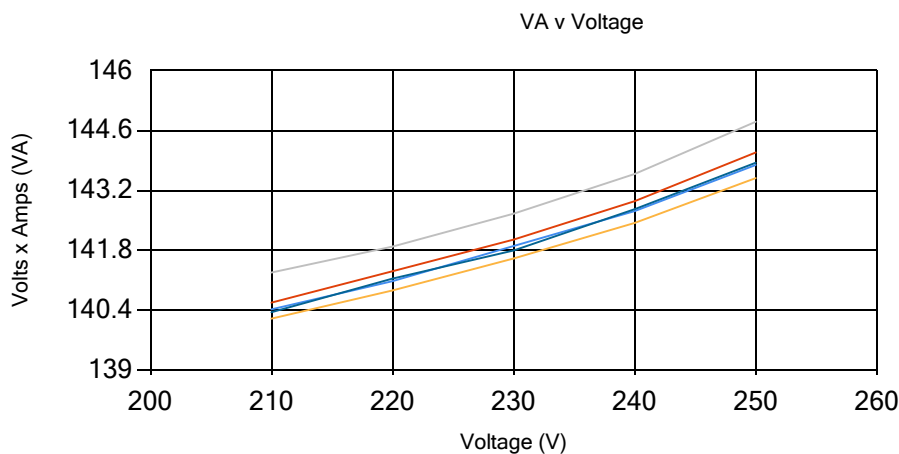
Drive (mA): 450

Output (%): 64



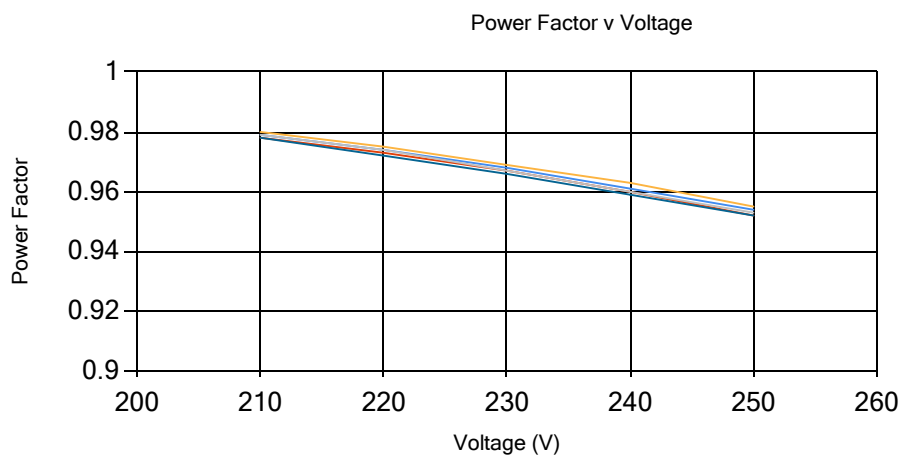
Fitting Designation

- A
- B
- C
- D
- E



Fitting Designation

- A
- B
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- E



Fitting Designation

- A
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REPORT : ASD-R-1479-A

TYPE : Dimming Output Range

Test Number: T1535
 Test Date: 09/10/2018
 Stabilization Time (mins): 42
 Output (%): 82
 Test Notes : T2
 Test Start Temp (°C) : 18.44

Nom. Drive Current (mA): 575
 Test Type: Std
 Tested By: SB-DM
 Frequency Start Test (Hz) : 50.00
 Frequency End Test (Hz) : 50.00
 Test End Temp (°C) : 20.10

ITEM	Voltage (V)	Current (mA)	Power (W)	VA	PF	Lead/Lag
A	250.08	722	174.45	180.61	0.966	Leading
B	250.08	721	174.24	180.35	0.966	Leading
C	250.09	724	174.61	180.99	0.965	Leading
D	250.09	723	174.21	180.76	0.964	Leading
E	250.09	728	175.69	182.03	0.965	Leading
A	240.05	748	174.29	179.50	0.971	Leading
B	240.07	746	173.93	179.08	0.971	Leading
C	240.08	750	174.55	179.96	0.970	Leading
D	240.06	748	173.99	179.53	0.969	Leading
E	240.08	753	175.47	180.75	0.971	Leading
A	230.03	776	174.17	178.52	0.976	Leading
B	230.04	774	173.93	178.09	0.977	Leading
C	230.07	778	174.44	178.97	0.975	Leading
D	230.05	776	173.81	178.41	0.974	Leading
E	230.07	781	175.33	179.61	0.976	Leading
A	220.05	808	174.27	177.86	0.980	Leading
B	220.04	806	173.83	177.27	0.981	Leading
C	220.06	810	174.42	178.16	0.979	Leading
D	220.05	807	173.86	177.66	0.979	Leading
E	220.08	813	175.43	178.98	0.980	Leading
A	210.05	844	174.36	177.32	0.983	Leading
B	210.05	841	173.90	176.71	0.984	Leading
C	210.05	845	174.50	177.52	0.983	Leading
D	210.10	844	174.13	177.25	0.982	Leading
E	210.07	850	175.57	178.48	0.984	Leading

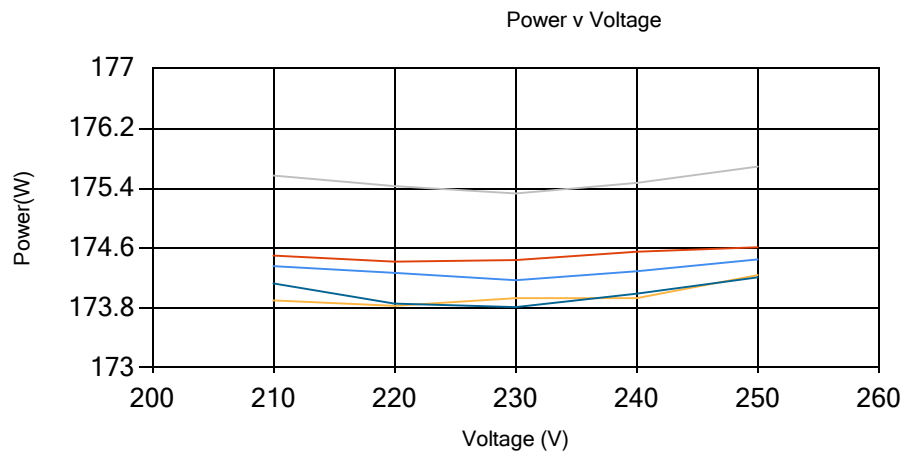
REPORT : ASD-R-1479-A

TYPE : Dimming Output Range

Test Number: T1535 Graphical Results Of Previous Page Tests.

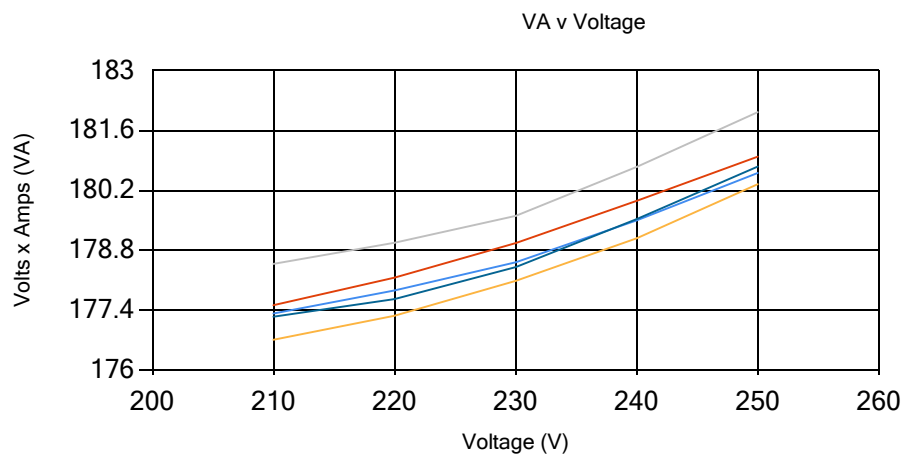
Drive (mA): 575

Output (%): 82



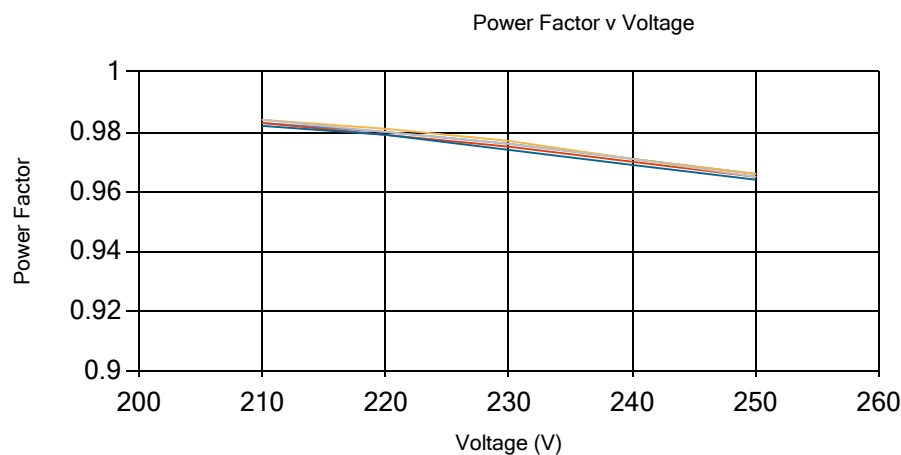
Fitting Designation

- A
- B
- C
- D
- E



Fitting Designation

- A
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- E



Fitting Designation

- A
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REPORT : ASD-R-1479-A

TYPE : Dimming Output Range

Test Number: T1534
 Test Date: 08/10/2018
 Stabilization Time (mins): 35
 Output (%): 100
 Test Notes : T1
 Test Start Temp (°C) : 19.59

Nom. Drive Current (mA): 700
 Test Type: Std
 Tested By: SB-DM
 Frequency Start Test (Hz) : 50.00
 Frequency End Test (Hz) : 50.00
 Test End Temp (°C) : 20.84

ITEM	Voltage (V)	Current (mA)	Power (W)	VA	PF	Lead/Lag
A	250.08	885	214.03	221.07	0.968	Leading
B	250.10	884	214.13	221.06	0.969	Leading
C	250.11	885	214.28	221.23	0.969	Leading
D	250.07	882	213.45	220.66	0.967	Leading
E	250.09	885	214.27	221.28	0.968	Leading
A	240.05	915	213.62	219.54	0.973	Leading
B	240.06	915	213.66	219.55	0.973	Leading
C	240.08	915	213.75	219.68	0.973	Leading
D	240.06	912	212.99	219.03	0.972	Leading
E	240.09	916	213.97	219.88	0.973	Leading
A	230.06	949	213.41	218.39	0.977	Leading
B	230.08	949	213.48	218.38	0.978	Leading
C	230.07	949	213.45	218.34	0.978	Leading
D	230.05	947	212.72	217.84	0.977	Leading
E	230.08	951	213.73	218.70	0.977	Leading
A	220.06	988	213.23	217.37	0.981	Leading
B	220.04	988	213.23	217.32	0.981	Leading
C	220.06	988	213.37	217.47	0.981	Leading
D	220.04	985	212.65	216.82	0.981	Leading
E	220.07	989	213.61	217.72	0.981	Leading
A	210.02	1031	213.07	216.49	0.984	Leading
B	210.03	1031	213.17	216.51	0.985	Leading
C	210.06	1031	213.34	216.64	0.985	Leading
D	210.03	1028	212.54	215.98	0.984	Leading
E	210.04	1033	213.61	217.01	0.984	Leading

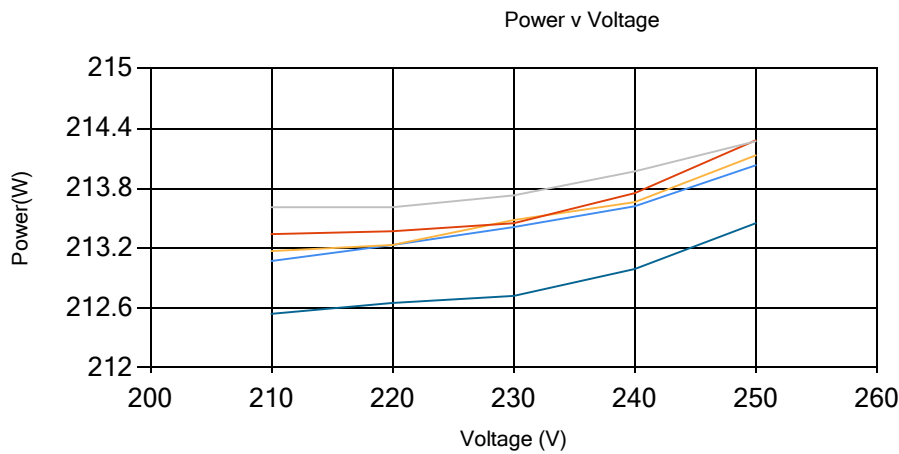
REPORT : ASD-R-1479-A

TYPE : Dimming Output Range

Test Number: T1534 Graphical Results Of Previous Page Tests.

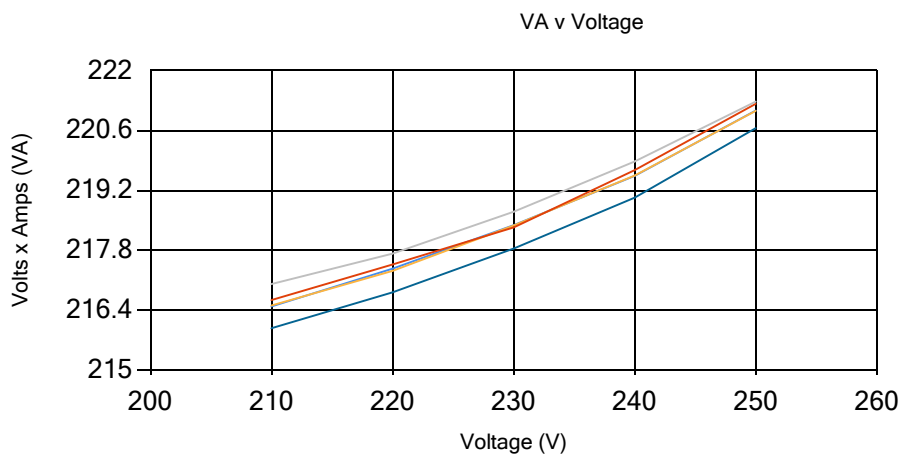
Drive (mA): 700

Output (%): 100



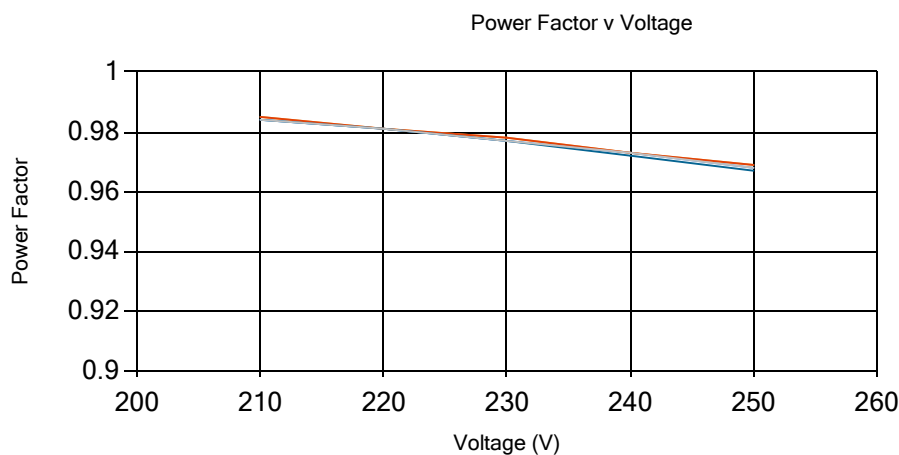
Fitting Designation

- A
- B
- C
- D
- E



Fitting Designation

- A
- B
- C
- D
- E



Fitting Designation

- A
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REPORT : ASD-R-1479-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.

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TYPE : Dimming Output Range

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

