

REPORT : ASD-R-1477-A

TYPE : Dimming Output Range

Project Number: 5148
Customer : ASD Lighting PLC
Product Type : Street Light
Project Instigator : SB-DM
Project Start Date : 04/10/2018
Test Orientation : Installed Attitude
Project Notes : HWD8 124 Range Test

Product Manufact. : ASD Lighting PLC
Product Descrip. : HWD8 124
Product Code : HWD8/#4K124xx
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-1477-A

TYPE : Dimming Output Range

Test Number: T1528
 Test Date: 05/10/2018
 Stabilization Time (mins): 31
 Output (%): 29
 Test Notes : T5
 Test Start Temp (°C) : 20.94

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) : 20.56

ITEM	Voltage (V)	Current (mA)	Power (W)	VA	PF	Lead/Lag
A	250.06	365	81.14	91.38	0.888	Leading
B	250.08	367	81.73	91.65	0.892	Leading
C	250.08	364	81.31	91.04	0.893	Leading
D	250.05	364	81.06	91.00	0.891	Leading
E	250.06	365	81.42	91.21	0.893	Leading
A	240.07	373	81.06	89.65	0.904	Leading
B	240.07	375	81.65	89.97	0.908	Leading
C	240.07	372	81.21	89.40	0.908	Leading
D	240.07	372	81.03	89.32	0.907	Leading
E	240.09	374	81.37	89.60	0.908	Leading
A	230.06	383	81.07	88.22	0.919	Leading
B	230.06	385	81.59	88.48	0.922	Leading
C	230.10	382	81.18	87.94	0.923	Leading
D	230.06	382	80.95	87.83	0.922	Leading
E	230.02	383	81.26	88.09	0.922	Leading
A	220.02	395	81.00	86.86	0.933	Leading
B	220.03	396	81.48	87.14	0.935	Leading
C	220.05	394	81.10	86.61	0.936	Leading
D	220.07	394	80.96	86.62	0.935	Leading
E	220.07	395	81.32	86.79	0.936	Leading
A	210.02	408	80.95	85.69	0.945	Leading
B	210.06	410	81.58	86.11	0.948	Leading
C	210.07	407	81.10	85.55	0.948	Leading
D	210.05	407	81.04	85.54	0.947	Leading
E	210.01	408	81.22	85.71	0.948	Leading

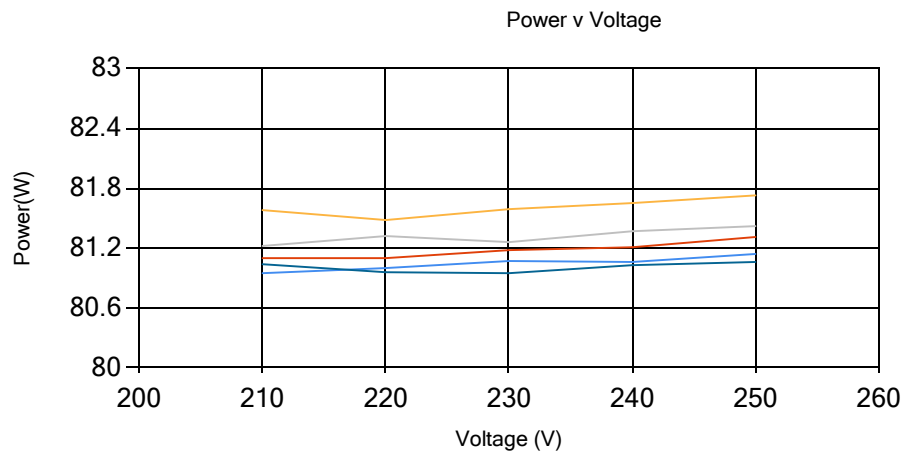
REPORT : ASD-R-1477-A

TYPE : Dimming Output Range

Test Number: T1528 Graphical Results Of Previous Page Tests.

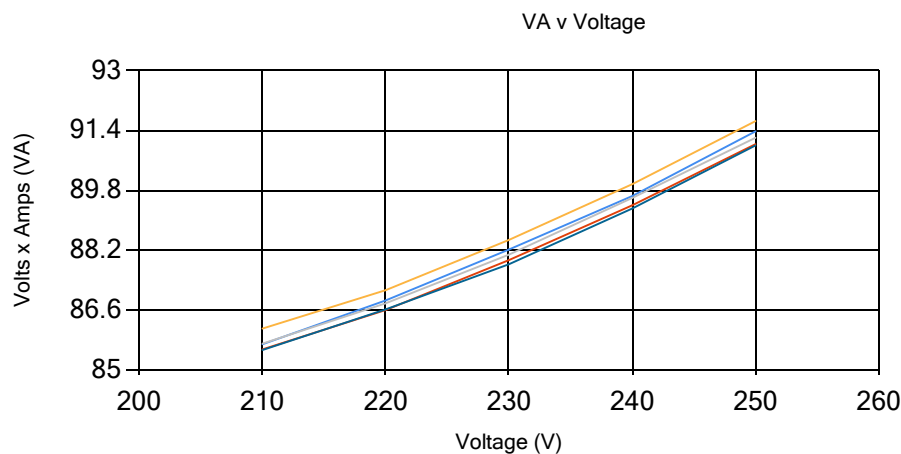
Drive (mA): 200

Output (%): 29



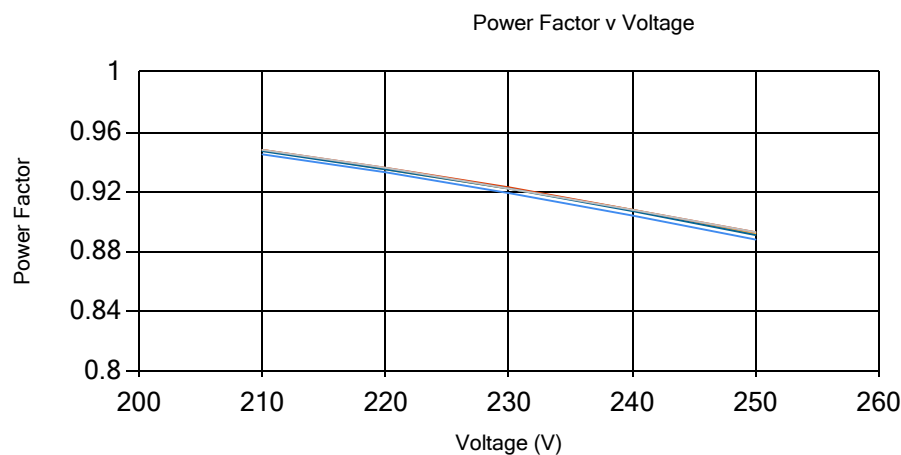
Fitting Designation

- A
- B
- C
- D
- E



Fitting Designation

- A
- B
- C
- D
- E



Fitting Designation

- A
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- C
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- E

REPORT : ASD-R-1477-A

TYPE : Dimming Output Range

Test Number: T1527
 Test Date: 05/10/2018
 Stabilization Time (mins): 31
 Output (%): 46
 Test Notes : T4
 Test Start Temp (°C) : 20.63

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) : 20.96

ITEM	Voltage (V)	Current (mA)	Power (W)	VA	PF	Lead/Lag
A	250.06	530	125.20	132.38	0.945	Leading
B	250.08	531	125.74	132.75	0.947	Leading
C	250.08	528	125.06	131.96	0.948	Leading
D	250.09	527	124.90	131.76	0.948	Leading
E	250.11	529	125.51	132.35	0.948	Leading
A	240.05	547	125.15	131.20	0.954	Leading
B	240.09	548	125.86	131.66	0.956	Leading
C	240.11	545	125.13	130.84	0.956	Leading
D	240.07	545	124.92	130.65	0.956	Leading
E	240.08	547	125.51	131.21	0.957	Leading
A	230.06	566	125.20	130.20	0.962	Leading
B	230.04	568	125.85	130.60	0.964	Leading
C	230.05	564	125.09	129.82	0.964	Leading
D	229.99	563	124.82	129.48	0.964	Leading
E	230.01	566	125.48	130.24	0.964	Leading
A	220.03	588	125.33	129.38	0.969	Leading
B	220.08	590	125.92	129.75	0.971	Leading
C	220.07	586	125.14	129.01	0.970	Leading
D	220.01	585	124.84	128.66	0.971	Leading
E	220.01	588	125.59	129.40	0.971	Leading
A	210.02	613	125.43	128.69	0.975	Leading
B	210.04	615	126.00	129.07	0.976	Leading
C	210.05	611	125.24	128.32	0.976	Leading
D	210.04	610	125.15	128.17	0.976	Leading
E	210.02	613	125.59	128.66	0.976	Leading

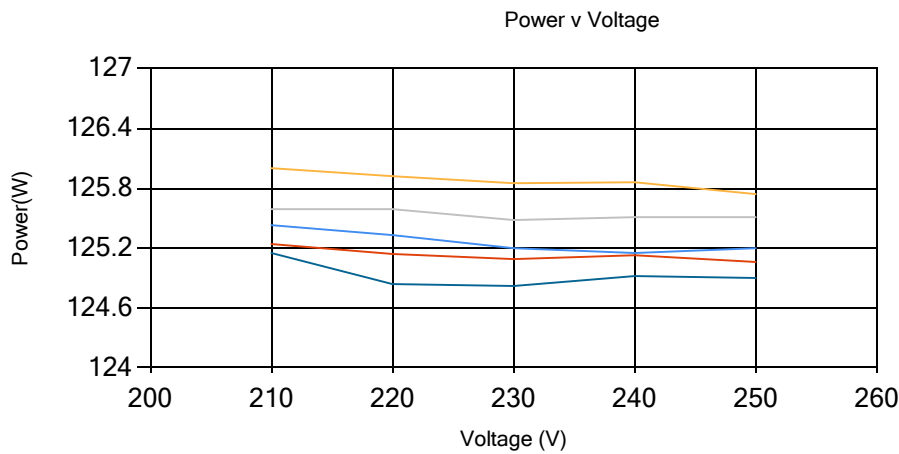
REPORT : ASD-R-1477-A

TYPE : Dimming Output Range

Test Number: T1527 Graphical Results Of Previous Page Tests.

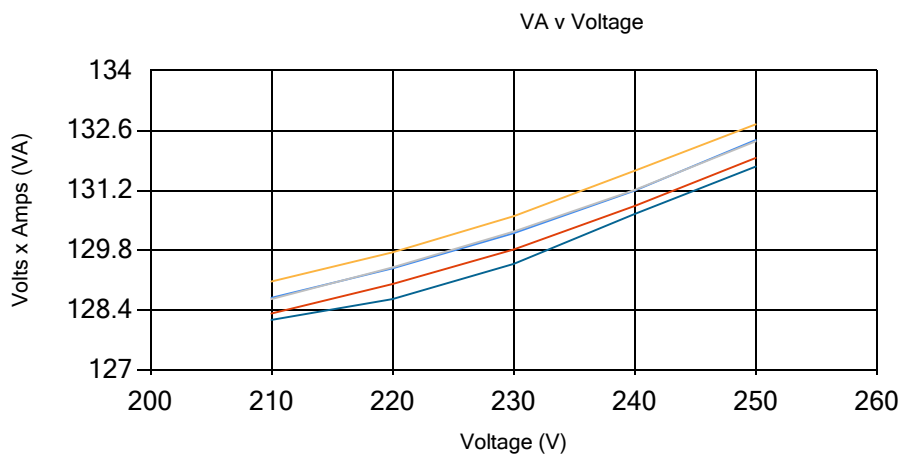
Drive (mA): 325

Output (%): 46



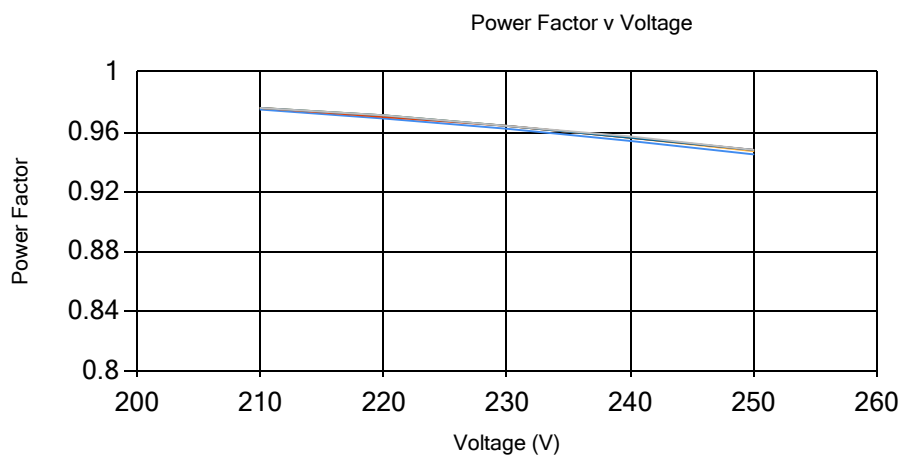
Fitting Designation

- A
- B
- C
- D
- E



Fitting Designation

- A
- B
- C
- D
- E



Fitting Designation

- A
- B
- C
- D
- E

REPORT : ASD-R-1477-A

TYPE : Dimming Output Range

Test Number: T1526
 Test Date: 05/10/2018
 Stabilization Time (mins): 42
 Output (%): 64
 Test Notes : T3
 Test Start Temp (°C) : 19.28

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) : 20.53

ITEM	Voltage (V)	Current (mA)	Power (W)	VA	PF	Lead/Lag
A	250.05	701	168.73	175.32	0.962	Leading
B	250.10	703	169.48	175.81	0.964	Leading
C	250.08	697	167.95	174.22	0.964	Leading
D	250.08	697	167.99	174.29	0.964	Leading
E	250.10	701	168.86	175.18	0.964	Leading
A	240.07	724	168.36	173.91	0.968	Leading
B	240.08	727	169.22	174.49	0.970	Leading
C	240.10	721	167.85	173.09	0.970	Leading
D	240.07	719	167.27	172.58	0.969	Leading
E	240.08	725	168.55	173.86	0.970	Leading
A	230.04	751	168.17	172.82	0.973	Leading
B	230.07	755	169.24	173.63	0.975	Leading
C	230.04	748	167.62	172.03	0.974	Leading
D	230.04	748	167.53	171.93	0.974	Leading
E	230.07	751	168.35	172.75	0.975	Leading
A	220.03	783	168.35	172.16	0.978	Leading
B	220.04	785	169.11	172.71	0.979	Leading
C	220.05	778	167.65	171.26	0.979	Leading
D	220.06	778	167.48	171.12	0.979	Leading
E	220.06	782	168.55	172.14	0.979	Leading
A	210.02	817	168.40	171.51	0.982	Leading
B	210.03	820	169.22	172.15	0.983	Leading
C	210.06	814	167.96	170.92	0.983	Leading
D	210.06	812	167.52	170.48	0.983	Leading
E	210.08	817	168.73	171.63	0.983	Leading

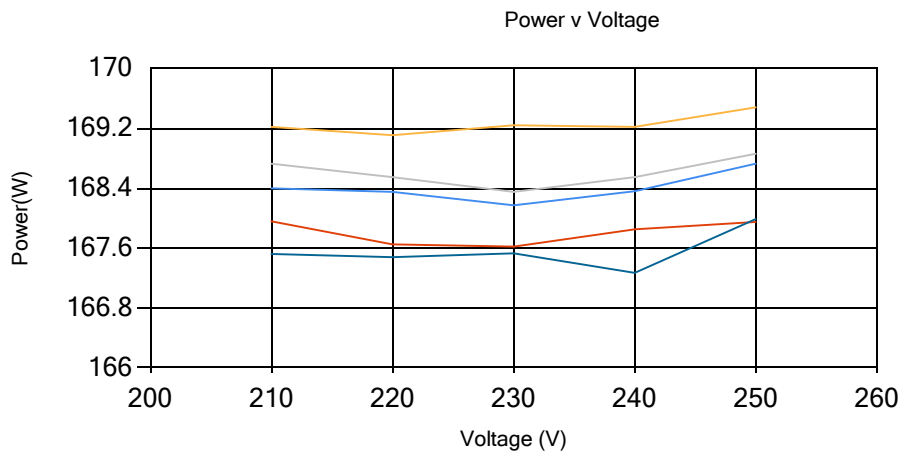
REPORT : ASD-R-1477-A

TYPE : Dimming Output Range

Test Number: T1526 Graphical Results Of Previous Page Tests.

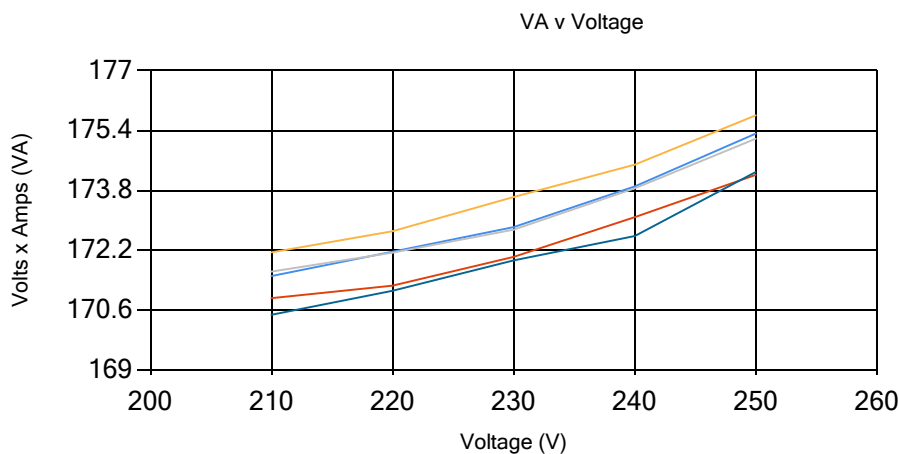
Drive (mA): 450

Output (%): 64



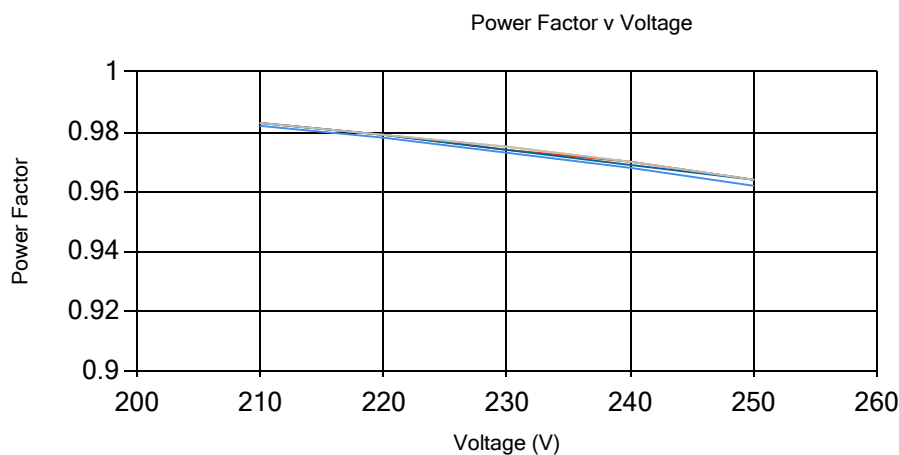
Fitting Designation

- A
- B
- C
- D
- E



Fitting Designation

- A
- B
- C
- D
- E



Fitting Designation

- A
- B
- C
- D
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REPORT : ASD-R-1477-A

TYPE : Dimming Output Range

Test Number: T1525
 Test Date: 04/10/2018
 Stabilization Time (mins): 31
 Output (%): 82
 Test Notes : T2
 Test Start Temp (°C) : 22.02

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) : 22.40

ITEM	Voltage (V)	Current (mA)	Power (W)	VA	PF	Lead/Lag
A	250.04	884	214.07	221.04	0.969	Leading
B	250.07	884	214.05	221.00	0.969	Leading
C	250.08	883	213.66	220.80	0.968	Leading
D	250.08	885	214.30	221.21	0.969	Leading
E	250.10	885	214.40	221.40	0.969	Leading
A	240.06	917	214.19	220.03	0.974	Leading
B	240.05	916	214.06	219.92	0.973	Leading
C	240.06	915	213.72	219.69	0.973	Leading
D	240.06	917	214.35	220.21	0.973	Leading
E	240.08	918	214.52	220.33	0.974	Leading
A	230.03	953	214.21	219.12	0.978	Leading
B	230.07	953	214.26	219.12	0.978	Leading
C	230.08	951	213.89	218.86	0.977	Leading
D	230.05	953	214.46	219.34	0.978	Leading
E	230.13	954	214.63	219.52	0.978	Leading
A	220.05	993	214.43	218.51	0.981	Leading
B	220.07	993	214.52	218.55	0.982	Leading
C	220.08	992	214.06	218.22	0.981	Leading
D	220.05	994	214.66	218.74	0.981	Leading
E	220.07	995	214.86	218.89	0.982	Leading
A	210.03	1038	214.70	218.04	0.985	Leading
B	210.05	1038	214.65	217.97	0.985	Leading
C	210.06	1037	214.38	217.79	0.984	Leading
D	210.03	1039	214.92	218.30	0.985	Leading
E	210.04	1040	215.03	218.37	0.985	Leading

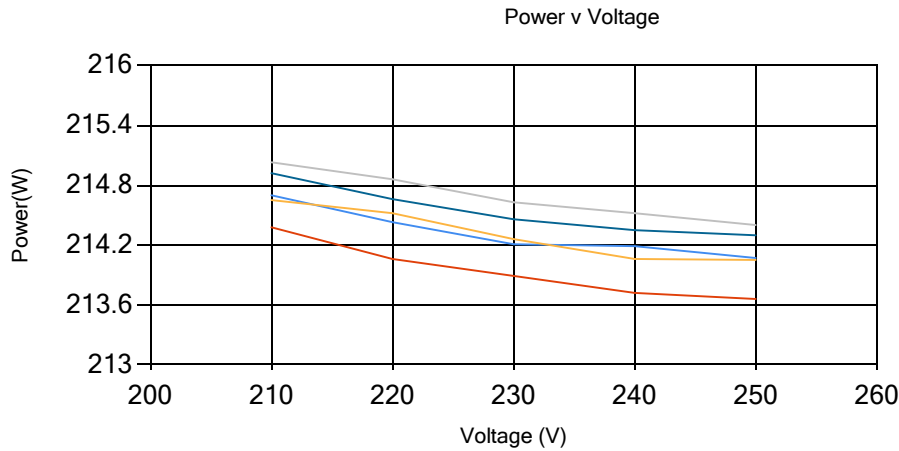
REPORT : ASD-R-1477-A

TYPE : Dimming Output Range

Test Number: T1525 Graphical Results Of Previous Page Tests.

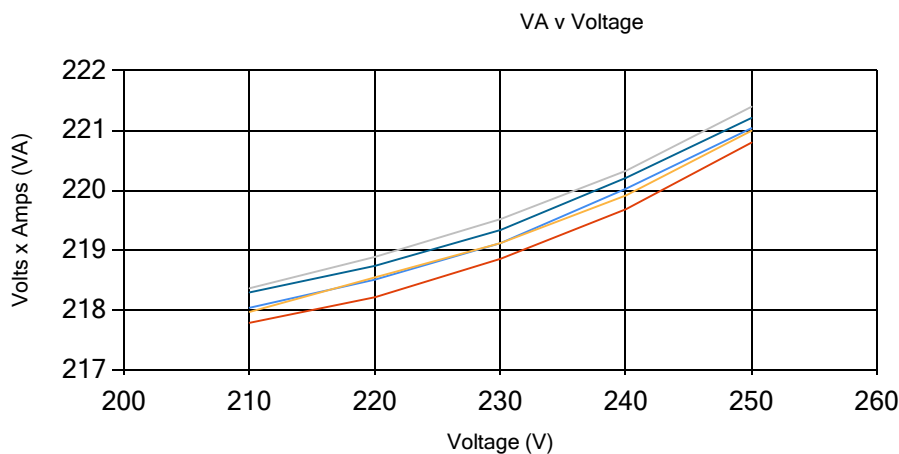
Drive (mA): 575

Output (%): 82



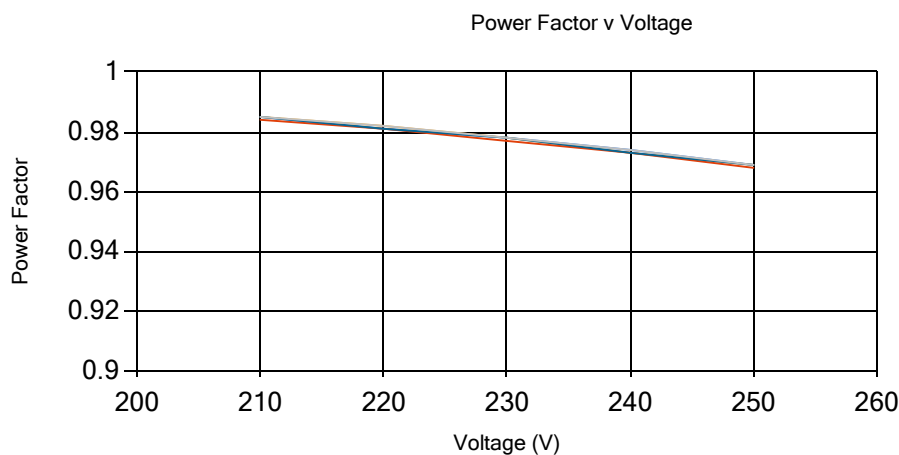
Fitting Designation

- A
- B
- C
- D
- E



Fitting Designation

- A
- B
- C
- D
- E



Fitting Designation

- A
- B
- C
- D
- E

REPORT : ASD-R-1477-A

TYPE : Dimming Output Range

Test Number: T1524
 Test Date: 04/10/2018
 Stabilization Time (mins): 31
 Output (%): 100
 Test Notes : T1
 Test Start Temp (°C) : 20.20

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) : 22.25

ITEM	Voltage (V)	Current (mA)	Power (W)	VA	PF	Lead/Lag
A	250.07	1072	262.47	267.99	0.979	Leading
B	250.06	1071	262.30	267.79	0.980	Leading
C	250.07	1069	261.71	267.26	0.979	Leading
D	250.06	1072	262.76	268.14	0.980	Leading
E	250.08	1074	263.11	268.56	0.980	Leading
A	240.03	1111	262.01	266.67	0.983	Leading
B	240.07	1111	262.02	266.62	0.983	Leading
C	240.06	1108	261.37	266.04	0.983	Leading
D	240.06	1112	262.44	266.95	0.983	Leading
E	240.08	1113	262.65	267.18	0.983	Leading
A	230.05	1155	261.86	265.66	0.986	Leading
B	230.07	1155	261.85	265.66	0.986	Leading
C	230.06	1153	261.26	265.07	0.986	Leading
D	230.06	1157	262.33	266.05	0.986	Leading
E	230.07	1157	262.55	266.21	0.986	Leading
A	220.03	1204	261.78	264.87	0.988	Leading
B	220.05	1204	261.87	265.00	0.988	Leading
C	220.06	1202	261.39	264.51	0.988	Leading
D	220.03	1206	262.20	265.24	0.988	Leading
E	220.05	1207	262.45	265.49	0.989	Leading
A	210.02	1259	261.90	264.45	0.990	Leading
B	210.04	1260	262.04	264.56	0.991	Leading
C	210.05	1258	261.60	264.14	0.990	Leading
D	210.03	1261	262.34	264.82	0.991	Leading
E	210.05	1262	262.56	265.04	0.991	Leading

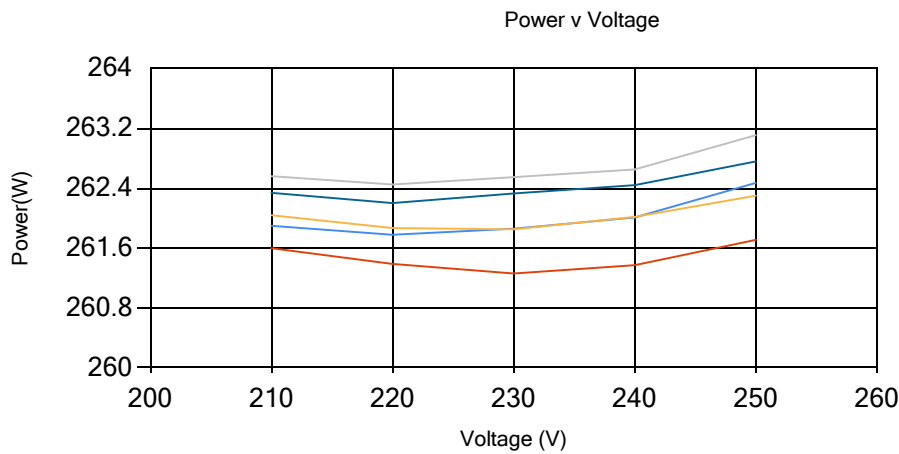
REPORT : ASD-R-1477-A

TYPE : Dimming Output Range

Test Number: T1524 Graphical Results Of Previous Page Tests.

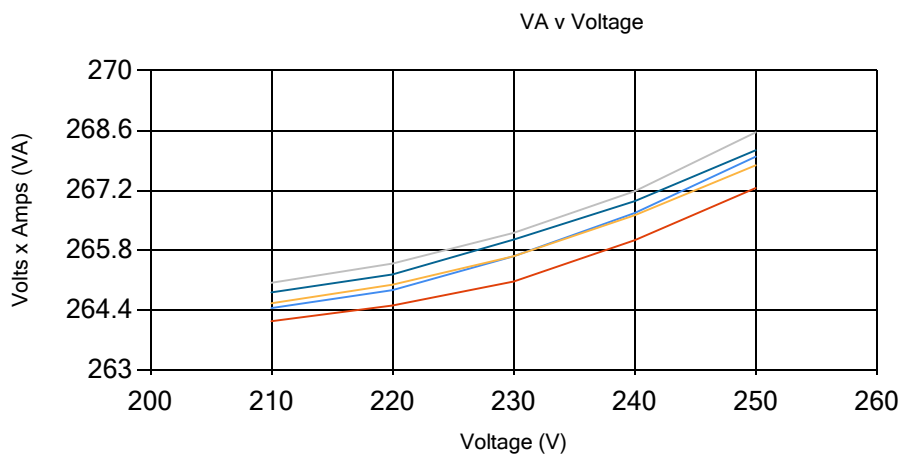
Drive (mA): 700

Output (%): 100



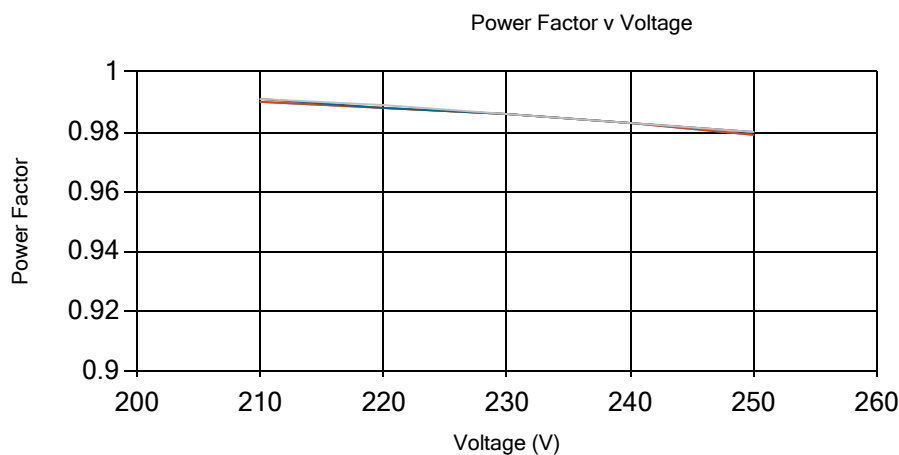
Fitting Designation

- A
- B
- C
- D
- E



Fitting Designation

- A
- B
- C
- D
- E



Fitting Designation

- A
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- C
- D
- E

REPORT : ASD-R-1477-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-1477-A
TYPE : Dimming Output Range

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

