



T e s t R e p o r t

Report No : L15042A
Client: : DW Windsor Ltd
Pindar Road
Hoddesdon
Herts
EN11 0DX
Description : Street Lights - 2 LED module with 30 LEDs
Manufacturer : DW Windsor Ltd
Type/Model : LED Engine 2LX2-113-15
Test Specification : Measurement of power consumption in accordance with the
'Unmetered Supplies Operational Information Document' –
Version 14.0 (17/12/2014)
Date Testing Started : 13/04/15
Conclusion : Refer to body of report
Date of Issue : 30/04/15
Date of Expiry : 29/04/20

Checked by: J.ADAMS
Position: Laboratory Supervisor

Approved by: T.MALIK
Position: Quality Accreditation &
Certification Officer



INTRODUCTION

The products identified in tables 1, was tested at the premises of DW Windsor Ltd for measurement of power consumption in accordance with the “Unmetered Supplies Operational Information” document – Version 14.0 (17/12/2014).

PRODUCT DETAILS

Table 1. *Test Sample Details*

Product Description	Street Lights - 2 LED module with 30 LEDs
Model No.	LED Engine 2LX2-113-15
Number of Samples	5
Nominal Dimensions	Length 706mm, Width 343mm, Height 167mm
Product Supply Requirement	240V AC 50 Hz
Lamp Type and Power	LED / Variable power
Sampling Method: Test samples selected and supplied by client, no sampling method specified by client.	

The customer has declared that the equipment load does not vary with ambient temperature.

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RESULTS

Table 2. Wattage and VA results for Street Lights - 2 LED module with 30 LEDs at end of life

Operating Mode	350mA Drive Current at 100% light output				
Watts					
Voltage	Sample Number				
	1	2	3	4	5
210	35.91	35.87	36.68	36.61	36.16
220	35.93	35.88	36.68	36.59	36.25
230	35.98	35.93	36.74	36.66	36.26
240	35.99	35.93	36.74	36.66	36.23
250	35.98	35.93	36.72	36.67	36.25
VA					
Voltage	Sample Number				
	1	2	3	4	5
210	37.40	37.33	37.96	37.96	37.62
220	37.64	37.65	38.32	38.33	38.08
230	38.01	37.98	38.67	38.65	38.45
240	38.43	38.41	39.15	39.12	38.88
250	38.98	39.04	39.52	39.76	39.23
Power Factor					
Voltage	Sample Number				
	1	2	3	4	5
210	0.96	0.96	0.97	0.96	0.96
220	0.95	0.95	0.96	0.95	0.95
230	0.95	0.95	0.95	0.95	0.94
240	0.94	0.94	0.94	0.94	0.93
250	0.92	0.92	0.93	0.92	0.92
Ambient Temperature During Test (°C)	25.1				
PF Leading/Lagging	Leading				

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RESULTS

Table 3. Wattage and VA results for Street Lights - 2 LED module with 30 LEDs at initial life

Operating Mode	315mA Drive Current at 100% light output				
Watts					
Voltage	Sample Number				
	1	2	3	4	5
210	32.61	32.52	33.26	33.18	32.79
220	32.60	32.51	33.32	33.20	33.18
230	32.61	32.54	33.31	33.22	32.81
240	32.62	32.55	33.33	33.21	32.82
250	32.55	32.49	33.28	33.16	32.74
VA					
Voltage	Sample Number				
	1	2	3	4	5
210	34.19	34.04	34.86	34.67	34.46
220	34.55	34.37	35.16	35.19	35.03
230	34.92	34.73	35.47	35.65	35.17
240	35.50	35.25	36.04	36.06	35.76
250	35.76	35.72	36.46	36.52	36.21
Power Factor					
Voltage	Sample Number				
	1	2	3	4	5
210	0.95	0.96	0.95	0.96	0.95
220	0.94	0.95	0.95	0.94	0.95
230	0.93	0.94	0.94	0.93	0.93
240	0.92	0.92	0.92	0.92	0.92
250	0.91	0.91	0.91	0.91	0.90
Ambient Temperature During Test (°C)	25.0				
PF Leading/Lagging	Leading				

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RESULTS

Table 4. *Wattage and VA results for Street Lights - 2 LED module with 30 LEDs at end of life*

Operating Mode	350mA Drive Current at 75% light output				
Watts					
Voltage	Sample Number				
	1	2	3	4	5
210	27.77	27.66	28.40	28.30	27.95
220	27.81	27.71	28.46	28.34	27.99
230	27.84	27.74	28.49	28.38	28.02
240	27.91	27.78	28.48	28.42	28.07
250	27.92	27.84	28.57	28.45	28.11
VA					
Voltage	Sample Number				
	1	2	3	4	5
210	29.65	29.40	30.21	30.21	29.80
220	30.12	29.94	30.62	30.62	30.38
230	30.57	30.36	31.09	31.07	30.83
240	31.22	30.98	31.70	31.45	31.49
250	31.72	31.74	32.25	32.26	32.01
Power Factor					
Voltage	Sample Number				
	1	2	3	4	5
210	0.94	0.94	0.94	0.94	0.94
220	0.92	0.93	0.93	0.93	0.92
230	0.91	0.91	0.92	0.91	0.91
240	0.89	0.90	0.90	0.90	0.89
250	0.88	0.88	0.89	0.88	0.88
Ambient Temperature During Test (°C)	24.9				
PF Leading/Lagging	Leading				

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RESULTS

Table 5 Wattage and VA results for Street Lights - 2 LED module with 30 LEDs at initial life

Operating Mode	315mA Drive Current at 75% light output				
Watts					
Voltage	Sample Number				
	1	2	3	4	5
210	25.36	25.21	25.95	25.82	25.48
220	25.42	25.28	26.02	25.88	25.52
230	25.45	25.33	26.05	25.93	25.60
240	25.48	25.39	26.08	25.96	25.64
250	25.54	25.42	26.14	26.00	25.68
VA					
Voltage	Sample Number				
	1	2	3	4	5
210	27.34	27.31	27.97	27.90	27.47
220	27.93	27.72	28.42	28.15	27.94
230	28.30	28.29	28.98	28.97	28.52
240	29.05	28.81	29.52	29.52	29.29
250	29.49	29.49	30.01	30.03	29.77
Power Factor					
Voltage	Sample Number				
	1	2	3	4	5
210	0.93	0.92	0.93	0.93	0.93
220	0.91	0.91	0.92	0.92	0.91
230	0.90	0.90	0.90	0.90	0.90
240	0.88	0.88	0.88	0.88	0.88
250	0.87	0.86	0.87	0.87	0.86
Ambient Temperature During Test (°C)	25.5				
PF Leading/Lagging	Leading				

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RESULTS

Table 6 Wattage and VA results for Street Lights - 2 LED module with 30 LEDs at end of life

Operating Mode	350mA Drive Current at 70% light output				
Watts					
Voltage	Sample Number				
	1	2	3	4	5
210	26.15	26.02	26.77	26.65	26.31
220	26.22	26.09	26.81	26.69	26.36
230	26.23	26.11	26.85	26.72	26.40
240	26.26	26.24	26.89	26.78	26.45
250	26.30	26.21	26.93	26.81	26.48
VA					
Voltage	Sample Number				
	1	2	3	4	5
210	28.16	27.95	28.61	28.56	28.31
220	28.63	28.40	28.99	29.07	28.80
230	29.17	28.98	29.66	29.65	29.20
240	29.54	29.54	30.23	30.26	30.03
250	30.30	30.25	30.74	30.71	30.49
Power Factor					
Voltage	Sample Number				
	1	2	3	4	5
210	0.93	0.93	0.94	0.93	0.93
220	0.92	0.92	0.92	0.92	0.92
230	0.90	0.90	0.91	0.90	0.90
240	0.89	0.89	0.89	0.88	0.88
250	0.87	0.87	0.88	0.87	0.87
Ambient Temperature During Test (°C)	25.6				
PF Leading/Lagging	Leading				

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Table 7 Wattage and VA results for Street Lights - 2 LED module with 30 LEDs at initial life

Operating Mode	315mA Drive Current at 70% light output				
Watts					
Voltage	Sample Number				
	1	2	3	4	5
210	23.93	23.79	24.51	24.37	24.05
220	23.98	23.85	24.57	24.43	24.11
230	24.03	23.90	24.60	24.49	24.16
240	24.09	23.96	24.67	24.53	24.22
250	24.09	23.99	24.72	24.58	24.26
VA					
Voltage	Sample Number				
	1	2	3	4	5
210	26.05	25.89	26.66	26.42	26.22
220	26.61	26.43	27.11	27.05	26.63
230	27.15	26.92	27.60	27.39	27.40
240	27.82	27.58	28.06	28.32	27.83
250	28.28	28.24	28.78	28.73	28.45
Power Factor					
Voltage	Sample Number				
	1	2	3	4	5
210	0.92	0.92	0.92	0.92	0.92
220	0.90	0.90	0.91	0.90	0.91
230	0.89	0.89	0.89	0.89	0.88
240	0.87	0.87	0.88	0.87	0.87
250	0.85	0.85	0.86	0.86	0.85
Ambient Temperature During Test (°C)	26.4				
PF Leading/Lagging	Leading				

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Table 8 Wattage and VA results for Street Lights - 2 LED module with 30 LEDs at end of life

Operating Mode	350mA Drive Current at 50% light output				
Watts					
Voltage	Sample Number				
	1	2	3	4	5
210	19.88	19.72	20.41	20.23	20.00
220	19.95	19.78	20.47	20.33	20.06
230	20.01	19.84	20.53	20.38	20.13
240	20.05	19.92	20.58	20.44	20.19
250	20.10	19.96	20.64	20.50	20.25
VA					
Voltage	Sample Number				
	1	2	3	4	5
210	22.43	22.26	22.86	22.88	22.68
220	23.11	22.89	23.55	23.37	23.14
230	23.73	23.48	23.94	23.94	23.92
240	24.21	23.99	24.71	24.74	24.51
250	24.97	24.72	25.20	25.51	25.20
Power Factor					
Voltage	Sample Number				
	1	2	3	4	5
210	0.89	0.89	0.89	0.88	0.88
220	0.86	0.86	0.87	0.87	0.87
230	0.84	0.84	0.86	0.85	0.84
240	0.83	0.83	0.83	0.83	0.82
250	0.80	0.81	0.82	0.80	0.80
Ambient Temperature During Test (°C)	25.3				
PF Leading/Lagging	Leading				

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RESULTS

Table 9 Wattage and VA results for Street Lights - 2 LED module with 30 LEDs at initial life

Operating Mode	315mA Drive Current at 50% output				
Watts					
Voltage	Sample Number				
	1	2	3	4	5
210	18.29	18.13	18.81	18.66	18.39
220	18.35	18.20	18.87	18.71	18.46
230	18.38	18.24	18.90	18.75	18.50
240	18.45	18.31	18.95	18.83	18.58
250	18.53	18.37	19.03	18.89	18.64
VA					
Voltage	Sample Number				
	1	2	3	4	5
210	20.98	21.02	21.39	21.46	21.23
220	21.61	21.54	21.99	22.00	21.75
230	22.29	22.06	22.55	22.54	22.53
240	22.80	22.81	23.28	23.29	23.04
250	23.75	23.51	24.03	24.00	23.99
Power Factor					
Voltage	Sample Number				
	1	2	3	4	5
210	0.87	0.86	0.88	0.87	0.87
220	0.85	0.84	0.86	0.85	0.85
230	0.82	0.83	0.84	0.83	0.82
240	0.81	0.80	0.81	0.81	0.81
250	0.78	0.78	0.79	0.79	0.78
Ambient Temperature During Test (°C)	25.2				
PF Leading/Lagging	Leading				

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Table 10 Wattage and VA results for Street Lights - 2 LED module with 30 LEDs at end of life

Operating Mode	350mA Drive Current at 25% output				
Watts					
Voltage	Sample Number				
	1	2	3	4	5
210	12.08	11.88	12.50	12.34	12.17
220	12.16	11.98	12.59	12.43	12.26
230	12.27	12.07	12.67	12.51	12.35
240	12.35	12.15	12.76	12.60	12.44
250	12.43	12.23	12.84	12.67	12.54
VA					
Voltage	Sample Number				
	1	2	3	4	5
210	15.74	15.54	15.96	16.17	15.98
220	16.51	16.29	16.73	16.74	16.74
230	17.25	17.01	17.49	17.51	17.49
240	18.01	17.75	18.25	18.46	18.24
250	19.03	18.75	19.24	19.25	19.25
Power Factor					
Voltage	Sample Number				
	1	2	3	4	5
210	0.77	0.76	0.78	0.76	0.76
220	0.74	0.74	0.75	0.74	0.73
230	0.71	0.71	0.72	0.71	0.71
240	0.69	0.68	0.70	0.68	0.68
250	0.65	0.65	0.67	0.66	0.65
Ambient Temperature During Test (°C)	25.3				
PF Leading/Lagging	Leading				

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RESULTS

Table 11 Wattage and VA results for Street Lights - 2 LED module with 30 LEDs at initial life

Operating Mode	315mA Drive Current at 25% output				
Watts					
Voltage	Sample Number				
	1	2	3	4	5
210	11.30	11.12	11.72	11.55	11.39
220	11.39	11.20	11.80	11.63	11.48
230	11.50	11.29	11.88	11.72	11.57
240	11.57	11.37	11.98	11.81	11.65
250	11.41	11.21	12.01	11.82	11.56
VA					
Voltage	Sample Number				
	1	2	3	4	5
210	15.12	14.92	15.55	15.54	15.34
220	15.81	15.63	16.06	16.26	16.06
230	16.77	16.54	16.81	17.03	16.79
240	17.52	17.28	17.77	17.78	17.79
250	18.01	17.76	18.48	18.51	18.22
Power Factor					
Voltage	Sample Number				
	1	2	3	4	5
210	0.75	0.75	0.75	0.74	0.74
220	0.72	0.72	0.73	0.72	0.71
230	0.69	0.68	0.71	0.69	0.69
240	0.66	0.66	0.67	0.66	0.65
250	0.63	0.63	0.65	0.64	0.63
Ambient Temperature During Test (°C)	25.2				
PF Leading/Lagging	Leading				

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DEVIATION(S) FROM TEST STANDARD

No reported deviations from test standard.

MEASUREMENT UNCERTAINTY

The following expanded uncertainties apply to the measurements shown in the results;

For power range 5W to 50W

True Power (W): $\pm 0.25\%$, Apparent Power (VA): $\pm 0.39\%$

For power range 50W to 100W

True Power (W): $\pm 0.25\%$, Apparent Power (VA): $\pm 0.39\%$

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor $k=2$, providing a coverage probability of approximately 95%. The uncertainty evaluation has been carried out in accordance with UKAS requirements.

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ILLUSTRATION



Figure 1. *Product image*

End

This page is to be read in conjunction with the first page of this report