



## Test Report

**Report No** : L15042B  
**Client:** : DW Windsor Ltd  
Pindar Road  
Hoddesdon  
Herts  
EN11 0DX  
**Description** : Street Lights - 3 LED module with 45 LEDs  
**Manufacturer** : DW Windsor Ltd  
**Type/Model** : LED Engine 3LX2-113-15  
**Test Specification** : Measurement of power consumption in accordance with the  
'Unmetered Supplies Operational Information Document' –  
Version 14.0 (17/12/2014)  
**Date Testing Started** : 09/04/15  
**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 - 3 LED module with 45 LEDs
Model No.	LED Engine 3LX2-113-15
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 - 3 LED module with 45 LEDs at end of life*

Operating Mode	350mA Drive Current at 100% light output				
Watts					
Voltage	Sample Number				
	1	2	3	4	5
210	52.02	51.99	51.95	52.08	52.71
220	51.98	52.01	51.95	52.06	52.68
230	51.95	51.95	51.92	52.06	52.67
240	51.93	51.90	51.84	51.98	52.59
250	51.87	51.87	51.83	51.99	52.52
VA					
Voltage	Sample Number				
	1	2	3	4	5
210	53.01	52.99	52.91	53.15	53.79
220	53.27	53.27	53.26	53.53	53.91
230	53.57	53.37	53.35	53.82	54.36
240	53.75	53.79	53.79	54.06	54.51
250	54.21	53.94	54.08	54.24	54.76
Power Factor					
Voltage	Sample Number				
	1	2	3	4	5
210	0.98	0.98	0.98	0.98	0.98
220	0.98	0.98	0.98	0.97	0.98
230	0.97	0.97	0.97	0.97	0.97
240	0.97	0.96	0.96	0.96	0.96
250	0.96	0.96	0.96	0.96	0.96
Ambient Temperature During Test (°C)	25.0				
PF Leading/Lagging	Leading				

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## RESULTS

**Table 3. Wattage and VA results for Street Lights - 3 LED module with 45 LEDs at initial life**

Operating Mode	315mA Drive Current at 100% light output				
Watts					
Voltage	Sample Number				
	1	2	3	4	5
210	47.15	47.10	47.08	47.20	47.81
220	47.17	47.13	47.06	47.18	47.80
230	47.17	47.12	47.10	47.22	47.79
240	47.19	47.13	47.08	47.21	47.81
250	47.22	47.15	47.19	47.23	47.79
VA					
Voltage	Sample Number				
	1	2	3	4	5
210	48.23	48.25	48.12	48.38	48.95
220	48.63	48.44	48.39	48.62	49.27
230	48.85	48.84	48.73	49.03	49.42
240	49.25	49.24	49.20	49.22	49.88
250	49.75	49.52	49.51	50.25	50.27
Power Factor					
Voltage	Sample Number				
	1	2	3	4	5
210	0.98	0.98	0.98	0.98	0.98
220	0.97	0.97	0.97	0.97	0.97
230	0.97	0.96	0.97	0.96	0.97
240	0.96	0.96	0.96	0.96	0.96
250	0.95	0.95	0.95	0.94	0.95
Ambient Temperature During Test (°C)	25.5				
PF Leading/Lagging	Leading				

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## RESULTS

Table 4. *Wattage and VA results for Street Lights - 3 LED module with 45 LEDs at end of life*

Operating Mode	350mA Drive Current at 75% light output				
Watts					
Voltage	Sample Number				
	1	2	3	4	5
210	39.92	39.88	39.92	39.99	40.51
220	39.95	39.94	39.99	40.05	40.54
230	39.99	39.93	39.97	40.04	40.57
240	40.03	39.96	39.99	40.07	40.59
250	40.07	40.01	40.02	40.11	40.63
VA					
Voltage	Sample Number				
	1	2	3	4	5
210	41.36	41.21	41.42	41.45	41.81
220	41.77	41.61	41.60	41.79	42.20
230	42.05	41.91	42.06	42.13	42.57
240	42.49	42.46	42.51	42.70	43.22
250	42.99	42.97	43.04	43.04	43.72
Power Factor					
Voltage	Sample Number				
	1	2	3	4	5
210	0.97	0.97	0.96	0.96	0.97
220	0.96	0.96	0.96	0.96	0.96
230	0.95	0.95	0.95	0.95	0.95
240	0.94	0.94	0.94	0.94	0.94
250	0.93	0.93	0.93	0.93	0.93
Ambient Temperature During Test (°C)	25.0				
PF Leading/Lagging	Leading				

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## RESULTS

**Table 5 Wattage and VA results for Street Lights - 3 LED module with 45 LEDs at initial life**

Operating Mode	315mA Drive Current at 75% light output				
Watts					
Voltage	Sample Number				
	1	2	3	4	5
210	36.33	36.23	36.29	36.33	36.78
220	36.32	36.29	36.31	36.36	36.82
230	36.43	36.32	36.38	36.42	36.85
240	36.39	36.37	36.42	36.44	36.90
250	36.48	36.41	36.44	36.49	36.94
VA					
Voltage	Sample Number				
	1	2	3	4	5
210	37.79	37.67	37.76	38.00	38.42
220	38.24	38.06	38.11	38.36	38.74
230	38.71	38.62	38.71	38.88	39.07
240	39.12	39.16	39.11	39.42	39.63
250	39.79	39.54	39.48	39.76	40.30
Power Factor					
Voltage	Sample Number				
	1	2	3	4	5
210	0.96	0.96	0.96	0.96	0.96
220	0.95	0.95	0.95	0.95	0.95
230	0.94	0.94	0.94	0.94	0.94
240	0.93	0.93	0.93	0.92	0.93
250	0.92	0.92	0.92	0.92	0.92
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 - 3 LED module with 45 LEDs at end of life**

Operating Mode	350mA Drive Current at 70% light output				
Watts					
Voltage	Sample Number				
	1	2	3	4	5
210	37.53	37.45	37.50	37.56	38.06
220	37.56	37.48	37.51	37.59	38.09
230	37.59	37.53	37.56	37.61	38.11
240	37.63	37.55	37.59	37.66	38.14
250	37.72	37.66	37.67	37.71	38.19
VA					
Voltage	Sample Number				
	1	2	3	4	5
210	39.10	38.88	38.87	39.07	39.50
220	39.36	39.19	39.37	39.59	39.81
230	39.75	39.77	39.83	39.81	40.26
240	40.32	40.31	40.33	40.53	40.77
250	40.99	40.74	40.81	40.97	41.27
Power Factor					
Voltage	Sample Number				
	1	2	3	4	5
210	0.96	0.96	0.96	0.96	0.96
220	0.95	0.96	0.95	0.95	0.96
230	0.95	0.94	0.94	0.94	0.95
240	0.93	0.93	0.93	0.93	0.94
250	0.92	0.92	0.92	0.92	0.93
Ambient Temperature During Test (°C)	25.2				
PF Leading/Lagging	Leading				

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## RESULTS

**Table 7 Wattage and VA results for Street Lights - 3 LED module with 45 LEDs at initial life**

Operating Mode	315mA Drive Current at 70% light output				
Watts					
Voltage	Sample Number				
	1	2	3	4	5
210	34.23	34.08	34.23	34.24	34.70
220	34.29	34.22	34.29	34.31	34.72
230	34.31	34.25	34.34	34.35	34.81
240	34.32	34.25	34.37	34.39	34.87
250	34.42	34.35	34.42	34.45	34.92
VA					
Voltage	Sample Number				
	1	2	3	4	5
210	35.91	35.71	35.95	35.91	36.28
220	36.31	36.24	36.32	36.32	36.77
230	36.78	36.81	36.78	37.01	37.23
240	37.15	37.18	37.21	37.41	37.74
250	38.01	37.72	37.76	37.99	38.52
Power Factor					
Voltage	Sample Number				
	1	2	3	4	5
210	0.95	0.95	0.95	0.95	0.96
220	0.94	0.94	0.94	0.94	0.94
230	0.93	0.93	0.93	0.93	0.93
240	0.92	0.92	0.92	0.92	0.92
250	0.91	0.91	0.91	0.91	0.91
Ambient Temperature During Test (°C)	25.0				
PF Leading/Lagging	Leading				

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## RESULTS

**Table 8 Wattage and VA results for Street Lights - 3 LED module with 45 LEDs at end of life**

Operating Mode	350mA Drive Current at 50% light output				
Watts					
Voltage	Sample Number				
	1	2	3	4	5
210	28.11	28.03	28.13	28.12	28.53
220	28.15	28.12	28.21	28.20	28.61
230	28.27	28.19	28.30	28.29	28.70
240	28.34	28.27	28.36	28.36	28.77
250	28.41	28.35	28.44	28.44	28.85
VA					
Voltage	Sample Number				
	1	2	3	4	5
210	30.24	30.04	30.24	30.26	30.65
220	30.78	30.60	30.62	30.78	31.22
230	31.23	31.04	31.05	31.27	31.52
240	31.66	31.68	31.65	31.92	32.14
250	32.48	32.47	32.48	32.50	32.74
Power Factor					
Voltage	Sample Number				
	1	2	3	4	5
210	0.93	0.93	0.93	0.93	0.93
220	0.91	0.92	0.92	0.92	0.92
230	0.91	0.91	0.91	0.90	0.91
240	0.90	0.89	0.90	0.89	0.90
250	0.87	0.87	0.88	0.88	0.88
Ambient Temperature During Test (°C)	24.5				
PF Leading/Lagging	Leading				

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## RESULTS

**Table 9 Wattage and VA results for Street Lights - 3 LED module with 45 LEDs at initial life**

Operating Mode	315mA Drive Current at 50% output				
Watts					
Voltage	Sample Number				
	1	2	3	4	5
210	25.79	25.71	25.80	25.78	26.20
220	25.86	25.79	25.87	25.86	26.27
230	25.93	25.84	25.94	25.93	26.34
240	26.00	25.91	26.03	26.00	26.41
250	26.08	26.00	26.04	26.07	26.47
VA					
Voltage	Sample Number				
	1	2	3	4	5
210	28.12	27.94	27.96	28.16	28.33
220	28.65	28.39	28.60	28.60	28.78
230	28.99	28.96	28.96	29.18	29.39
240	29.77	29.52	29.78	29.77	30.22
250	30.46	30.22	30.28	30.51	30.78
Power Factor					
Voltage	Sample Number				
	1	2	3	4	5
210	0.92	0.92	0.92	0.92	0.92
220	0.90	0.91	0.90	0.90	0.91
230	0.89	0.89	0.90	0.89	0.90
240	0.87	0.88	0.87	0.87	0.87
250	0.86	0.86	0.86	0.85	0.86
Ambient Temperature During Test (°C)	25.1				
PF Leading/Lagging	Leading				

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## RESULTS

**Table 10 Wattage and VA results for Street Lights - 3 LED module with 45 LEDs at end of life**

Operating Mode	350mA Drive Current at 25% output				
Watts					
Voltage	Sample Number				
	1	2	3	4	5
210	16.46	16.38	16.52	16.45	16.79
220	16.57	16.48	16.62	16.54	16.89
230	16.66	16.58	16.71	16.63	16.98
240	16.75	16.69	16.75	16.73	17.08
250	16.85	16.79	16.92	16.85	17.19
VA					
Voltage	Sample Number				
	1	2	3	4	5
210	19.73	19.58	19.56	19.78	19.97
220	20.26	20.25	20.24	20.24	20.47
230	20.93	20.91	20.95	20.93	21.19
240	21.84	21.59	21.64	21.58	22.09
250	22.49	22.26	22.48	22.49	22.74
Power Factor					
Voltage	Sample Number				
	1	2	3	4	5
210	0.83	0.84	0.84	0.83	0.84
220	0.82	0.81	0.82	0.82	0.83
230	0.80	0.79	0.80	0.79	0.80
240	0.77	0.77	0.77	0.78	0.77
250	0.75	0.75	0.75	0.75	0.76
Ambient Temperature During Test (°C)	25.1				
PF Leading/Lagging	Leading				

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## RESULTS

Table 11 Wattage and VA results for Street Lights - 3 LED module with 45 LEDs at initial life

Operating Mode	315mA Drive Current at 25% output				
Watts					
Voltage	Sample Number				
	1	2	3	4	5
210	15.29	15.20	15.34	15.25	15.60
220	15.39	15.31	15.45	15.37	15.71
230	15.51	15.42	15.56	15.46	15.82
240	15.62	15.54	15.66	15.59	15.92
250	15.71	15.66	15.76	15.70	16.03
VA					
Voltage	Sample Number				
	1	2	3	4	5
210	18.68	18.48	18.68	18.92	18.93
220	19.36	19.17	19.38	19.35	19.56
230	20.01	20.04	19.99	20.01	20.26
240	20.88	20.64	20.65	20.86	20.87
250	21.76	21.53	21.48	21.74	21.77
Power Factor					
Voltage	Sample Number				
	1	2	3	4	5
210	0.82	0.82	0.82	0.81	0.82
220	0.79	0.80	0.80	0.79	0.80
230	0.78	0.77	0.78	0.77	0.78
240	0.75	0.75	0.76	0.75	0.76
250	0.72	0.73	0.73	0.72	0.74
Ambient Temperature During Test (°C)	25.1				
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***

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**End**

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