



Test Report

Report No : L14963
Client: : Ark Lighting Ltd
McGann House
Chesham Road, Barnsley, South Yorkshire, S70 2NT
Description : LED Street Lights
Manufacturer : Ark Lighting Ltd
Type/Model : Various
Test Specification : Measurement of power consumption in accordance with the
'Unmetered Supplies Operational Information Document' –
Version 14.0 (17/12/2014)
Date Testing Started : 07/04/15
Conclusion : Refer to body of Report
Date of Issue : 07/05/15
Date of Expiry : 06/05/20

Tested by: S.RICHARDS
Position: Photometric Engineer

Approved by: K. GOVINDEN
Position: Technical Manager



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INTRODUCTION

Ark Lighting Ltd has supplied the product identified in table 1 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	Ark Lighting LED Street Light
Model No.	48LED PCB
Number of Samples	Five
Condition on Receipt	Good
Nominal Dimensions	210mm x 35mm x 57mm
Product Supply Requirement	220v to 240v 50/60Hz
Lamp Type and Power	LED, 106W
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.

RESULTS

Table 2. *Wattage and VA results for Ark Lighting LED Street Light*

Operating Mode	700mA (100%)				
Watts					
Voltage	Sample Number				
	1	2	3	4	5
210	106.46	105.12	105.10	105.88	105.22
220	105.14	104.00	105.04	104.70	105.03
230	104.76	103.55	105.00	104.24	104.62
240	104.61	103.40	104.65	104.07	103.56
250	104.55	103.34	104.15	104.03	104.37
VA					
Voltage	Sample Number				
	1	2	3	4	5
210	108.12	106.76	106.75	107.54	106.85
220	107.23	106.10	107.18	106.77	107.11
230	107.23	106.10	107.62	106.81	107.16
240	107.70	106.54	107.76	107.24	106.78
250	108.22	107.04	107.97	107.75	108.20
Power Factor					
Voltage	Sample Number				
	1	1	1	1	1
210	0.98	0.98	0.98	0.98	0.98
220	0.98	0.98	0.98	0.98	0.98
230	0.98	0.98	0.98	0.98	0.98
240	0.97	0.97	0.97	0.97	0.97
250	0.97	0.97	0.96	0.97	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 Ark Lighting LED Street Light*

Operating Mode	500mA (70%)				
Watts					
Voltage	Sample Number				
	1	2	3	4	5
210	74.85	75.01	74.85	74.80	74.43
220	74.62	74.62	74.42	74.55	74.40
230	74.54	74.53	74.38	74.44	74.40
240	74.51	74.48	74.40	74.52	74.42
250	74.53	74.48	74.53	74.56	74.47
VA					
Voltage	Sample Number				
	1	2	3	4	5
210	77.26	77.38	77.47	77.24	76.92
220	77.57	77.55	77.38	77.53	77.39
230	78.08	77.97	78.05	77.97	78.01
240	78.68	78.52	78.40	78.62	78.60
250	79.38	79.25	79.54	79.25	79.48
Power Factor					
Voltage	Sample Number				
	1	1	1	1	1
210	0.97	0.97	0.97	0.97	0.97
220	0.96	0.96	0.96	0.96	0.96
230	0.95	0.96	0.95	0.95	0.95
240	0.95	0.95	0.95	0.95	0.95
250	0.94	0.94	0.94	0.94	0.94
Ambient Temperature During Test (°C)	25.0				
PF Leading/Lagging	Leading				

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RESULTS

Table 4. *Wattage and VA results for Ark Lighting LED Street Light*

Operating Mode	350mA (50%)				
Watts					
Voltage	Sample Number				
	1	2	3	4	5
210	52.88	52.81	51.37	52.81	52.55
220	52.58	52.51	51.38	52.56	52.58
230	52.63	52.53	51.41	52.57	52.63
240	52.67	52.59	51.46	52.62	52.68
250	52.73	52.65	51.51	52.68	52.77
VA					
Voltage	Sample Number				
	1	2	3	4	5
210	55.94	55.87	54.46	55.83	55.66
220	56.17	56.14	55.10	56.06	56.31
230	56.86	56.84	55.78	56.70	56.91
240	57.58	57.50	56.61	57.47	57.70
250	58.35	58.31	57.36	58.21	58.60
Power Factor					
Voltage	Sample Number				
	1	1	1	1	1
210	0.95	0.95	0.94	0.95	0.94
220	0.94	0.94	0.93	0.94	0.93
230	0.93	0.92	0.92	0.93	0.92
240	0.91	0.91	0.91	0.92	0.91
250	0.90	0.90	0.90	0.90	0.90
Ambient Temperature During Test (°C)	25.0				
PF Leading/Lagging	Leading				

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PRODUCT DETAILS

Table 5. Test Sample Details

Product Description	Dinky Street Light 500mA
Model No.	SA2.TIIIDWC.5
Number of Samples	Five
Condition on Receipt	Good
Nominal Dimensions	L. 300mm; H. 100mm; W. 100mm
Product Supply Requirement	100-277V AC
Lamp Type and Power	LED 14W
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.

RESULTS

Table 6. *Wattage and VA results for Dinky Street Light 500mA*

Operating Mode	100% (500mA)				
Watts					
Voltage	Sample Number				
	1	2	3	4	5
210	13.82	14.12	14.02	13.99	13.97
220	13.87	14.17	14.07	14.05	14.03
230	13.94	14.24	14.13	14.11	14.10
240	14.00	14.30	14.19	14.18	14.16
250	14.07	14.37	14.27	14.27	14.23
VA					
Voltage	Sample Number				
	1	2	3	4	5
210	14.45	14.54	14.67	14.52	14.54
220	14.48	14.59	14.70	14.57	14.58
230	14.53	14.66	14.75	14.66	14.65
240	14.60	14.74	14.82	14.77	14.72
250	14.69	14.86	14.91	14.92	14.83
Power Factor					
Voltage	Sample Number				
	1	1	1	1	1
210	0.96	0.97	0.96	0.96	0.96
220	0.96	0.97	0.96	0.96	0.96
230	0.96	0.97	0.96	0.96	0.96
240	0.96	0.97	0.96	0.96	0.96
250	0.96	0.97	0.96	0.96	0.96
Ambient Temperature During Test (°C)	25.0				
PF Leading/Lagging	Leading				

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PRODUCT DETAILS

Table 7. Test Sample Details

Product Description	Dinky Street Light 350mA
Model No.	SA2.TIIIDWC.35
Number of Samples	Five
Condition on Receipt	Good
Nominal Dimensions	L. 300mm; H. 100mm; W. 100mm
Product Supply Requirement	100-277V AC
Lamp Type and Power	LED 9W
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.

RESULTS

Table 8. *Wattage and VA results for Dinky Street Light 350mA*

Operating Mode	100% (350mA)				
Watts					
Voltage	Sample Number				
	1	2	3	4	5
210	9.96	9.83	9.86	9.78	9.95
220	10.03	9.90	9.93	9.87	10.04
230	10.10	9.98	10.00	9.96	10.12
240	10.18	10.06	10.08	10.05	10.21
250	10.27	10.15	10.16	10.22	10.35
VA					
Voltage	Sample Number				
	1	2	3	4	5
210	11.23	11.00	11.06	11.22	11.30
220	11.29	11.08	11.12	11.31	11.37
230	11.36	11.18	11.21	11.41	11.46
240	11.47	11.32	11.33	11.53	11.56
250	11.60	11.47	11.48	11.75	11.75
Power Factor					
Voltage	Sample Number				
	1	1	1	1	1
210	0.89	0.89	0.89	0.87	0.88
220	0.89	0.89	0.89	0.87	0.88
230	0.89	0.89	0.89	0.87	0.88
240	0.89	0.89	0.89	0.87	0.88
250	0.89	0.88	0.89	0.87	0.88
Ambient Temperature During Test (°C)	25.5				
PF Leading/Lagging	Leading				

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PRODUCT DETAILS

Table 9. Test Sample Details

Product Description	Dinky Street Light 700mA
Model No.	SA2.TIIIDWC.7
Number of Samples	Five
Condition on Receipt	Good
Nominal Dimensions	L. 300mm; H. 100mm; W. 100mm
Product Supply Requirement	100-277V AC
Lamp Type and Power	LED 18W
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.

RESULTS

Table 10. *Wattage and VA results for Dinky Street Light 700mA*

Operating Mode	100% (700mA)				
Watts					
Voltage	Sample Number				
	1	2	3	4	5
210	18.49	18.39	18.46	18.75	18.32
220	18.58	18.49	18.54	18.80	18.43
230	18.66	18.59	18.60	18.82	18.54
240	18.72	18.67	18.66	18.87	18.63
250	18.79	18.76	18.72	18.94	18.74
VA					
Voltage	Sample Number				
	1	2	3	4	5
210	19.47	19.44	19.45	19.73	19.31
220	19.69	19.66	19.64	19.91	19.56
230	19.91	19.90	19.83	20.07	19.82
240	20.09	20.13	20.04	20.28	20.10
250	20.34	20.40	20.29	20.54	20.40
Power Factor					
Voltage	Sample Number				
	1	1	1	1	1
210	0.95	0.95	0.95	0.95	0.95
220	0.94	0.94	0.94	0.94	0.94
230	0.94	0.93	0.94	0.94	0.94
240	0.93	0.93	0.93	0.93	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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PRODUCT DETAILS

Table 11. *Test Sample Details*

Product Description	LED BOARDS 40W
Model No.	LB1
Number of Samples	Five
Condition on Receipt	Good
Nominal Dimensions	L. 300mm; H. 100mm; W. 100mm
Product Supply Requirement	120V TO 277V
Lamp Type and Power	LED 40W
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.



RESULTS

Table 10. *Wattage and VA results for LED BOARDS 40W*

Operating Mode	700mA (100%)				
Watts					
Voltage	Sample Number				
	1	2	3	4	5
210	36.52	36.33	36.35	36.85	36.88
220	36.51	36.31	36.33	36.60	36.59
230	36.48	36.29	36.29	36.39	36.36
240	36.46	36.27	36.28	36.37	36.32
250	36.46	36.28	36.28	36.30	36.27
VA					
Voltage	Sample Number				
	1	2	3	4	5
210	37.87	37.66	37.75	37.89	37.94
220	38.01	37.79	37.87	37.89	37.82
230	38.16	37.93	37.99	37.76	37.78
240	38.29	38.10	38.15	37.94	37.91
250	38.50	38.33	38.36	38.11	38.10
Power Factor					
Voltage	Sample Number				
	1	1	1	1	1
210	0.96	0.96	0.96	0.97	0.97
220	0.96	0.96	0.96	0.97	0.97
230	0.96	0.96	0.96	0.96	0.96
240	0.95	0.95	0.95	0.96	0.96
250	0.95	0.95	0.95	0.95	0.95
Ambient Temperature During Test (°C)	25.5				
PF Leading/Lagging	Leading				

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RESULTS

Table 11. *Wattage and VA results for LED BOARDS 40W*

Operating Mode	500mA (70%)				
Watts					
Voltage	Sample Number				
	1	2	3	4	5
210	26.36	26.26	26.48	26.34	26.42
220	26.35	26.25	26.47	26.33	26.42
230	26.36	26.27	26.48	26.34	26.42
240	26.36	26.27	26.48	26.34	26.44
250	26.38	26.29	26.50	26.37	26.50
VA					
Voltage	Sample Number				
	1	2	3	4	5
210	28.01	27.77	28.05	27.62	27.71
220	28.16	27.94	28.26	27.82	27.90
230	28.36	28.14	28.44	27.96	28.07
240	28.53	28.37	28.67	28.16	28.28
250	28.80	28.60	28.96	28.47	28.67
Power Factor					
Voltage	Sample Number				
	1	1	1	1	1
210	0.94	0.95	0.94	0.95	0.95
220	0.94	0.94	0.94	0.95	0.95
230	0.93	0.93	0.93	0.94	0.94
240	0.92	0.93	0.92	0.94	0.93
250	0.92	0.92	0.92	0.93	0.92
Ambient Temperature During Test (°C)	21.0				
PF Leading/Lagging	Leading				

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RESULTS

Table 12. *Wattage and VA results for LED BOARDS 40W*

Operating Mode	350mA (50%)				
Watts					
Voltage	Sample Number				
	1	2	3	4	5
210	19.18	19.09	19.11	19.11	18.98
220	19.20	19.12	19.13	19.12	18.98
230	19.23	19.14	19.16	19.13	18.98
240	19.25	19.17	19.18	19.15	19.00
250	19.29	19.21	19.22	19.18	19.03
VA					
Voltage	Sample Number				
	1	2	3	4	5
210	20.99	20.34	20.88	20.61	20.47
220	21.17	20.55	21.11	20.68	20.71
230	21.45	20.81	21.37	21.10	20.99
240	21.64	21.68	21.64	21.37	21.16
250	21.92	22.00	21.96	21.73	21.53
Power Factor					
Voltage	Sample Number				
	1	1	1	1	1
210	0.91	0.94	0.92	0.93	0.93
220	0.91	0.93	0.91	0.92	0.92
230	0.90	0.92	0.90	0.91	0.90
240	0.89	0.88	0.89	0.90	0.90
250	0.88	0.87	0.88	0.88	0.88
Ambient Temperature During Test (°C)	22.0				
PF Leading/Lagging	Leading				

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PRODUCT DETAILS

Table 13. *Test Sample Details*

Product Description	LED Boards 27W c/w Philips Xitanium LED Electronic Driver (Model No. 929000712303)
Model No.	LB3
Number of Samples	Five
Condition on Receipt	Good
Nominal Dimensions	120 x 70mm
Product Supply Requirement	220-240V 50/60Hz
Lamp Type and Power	LED 27W
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.

RESULTS

Table 14. Wattage and VA results for LED Boards 27W c/w Philips Xitanium LED Electronic Driver (Model No. 929000712303)

Operating Mode	700mA (100%)				
Watts					
Voltage	Sample Number				
	1	2	3	4	5
210	19.26	19.26	19.19	18.89	19.02
220	19.23	19.22	19.17	18.87	19.00
230	19.20	19.20	19.15	18.86	18.99
240	19.17	19.17	19.13	18.85	18.98
250	19.15	19.14	19.12	18.84	18.97
VA					
Voltage	Sample Number				
	1	2	3	4	5
210	19.58	19.57	19.50	19.21	19.33
220	19.60	19.59	19.53	19.25	19.36
230	19.63	19.63	19.57	19.29	19.41
240	19.68	19.67	19.62	19.36	19.46
250	19.73	19.71	19.68	19.42	19.53
Power Factor					
Voltage	Sample Number				
	1	1	1	1	1
210	0.98	0.98	0.98	0.98	0.98
220	0.98	0.98	0.98	0.98	0.98
230	0.98	0.98	0.98	0.98	0.98
240	0.97	0.97	0.98	0.97	0.98
250	0.97	0.97	0.97	0.97	0.97
Ambient Temperature During Test (°C)	25.5				
PF Leading/Lagging	Leading				

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RESULTS

Table 15. Wattage and VA results for LED Boards 27W c/w Philips Xitanium LED Electronic Driver (Model No. 929000712303)

Operating Mode	500mA (70%)				
Watts					
Voltage	Sample Number				
	1	2	3	4	5
210	14.03	14.07	13.97	13.97	14.05
220	14.02	14.07	13.96	13.97	14.04
230	14.02	14.06	13.96	13.96	14.04
240	14.02	14.06	13.95	13.96	14.03
250	14.02	14.06	13.95	13.96	14.03
VA					
Voltage	Sample Number				
	1	2	3	4	5
210	14.40	14.44	14.35	14.35	14.43
220	14.45	14.50	14.41	14.40	14.49
230	14.52	14.56	14.48	14.47	14.55
240	14.59	14.64	14.56	14.54	14.63
250	14.68	14.73	14.65	14.63	14.71
Power Factor					
Voltage	Sample Number				
	1	1	1	1	1
210	0.97	0.97	0.97	0.97	0.97
220	0.97	0.97	0.97	0.97	0.97
230	0.97	0.97	0.96	0.96	0.96
240	0.96	0.96	0.96	0.96	0.96
250	0.96	0.95	0.95	0.95	0.95
Ambient Temperature During Test (°C)	25.0				
PF Leading/Lagging	Leading				

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RESULTS

Table 16. Wattage and VA results for LED Boards 27W c/w Philips Xitanium LED Electronic Driver (Model No. 929000712303)

Operating Mode	350mA (50%)				
Watts					
Voltage	Sample Number				
	1	2	3	4	5
210	10.27	10.29	10.31	10.30	10.25
220	10.28	10.29	10.31	10.30	10.26
230	10.29	10.30	10.32	10.29	10.25
240	10.29	10.31	10.33	10.29	10.26
250	10.30	10.32	10.34	10.30	10.26
VA					
Voltage	Sample Number				
	1	2	3	4	5
210	10.86	10.76	10.77	10.91	10.84
220	10.96	10.85	10.85	10.99	10.92
230	11.05	10.94	10.95	11.07	10.99
240	11.16	11.05	11.05	11.17	11.09
250	11.27	11.16	11.16	11.29	11.20
Power Factor					
Voltage	Sample Number				
	1	1	1	1	1
210	0.95	0.96	0.96	0.94	0.95
220	0.94	0.95	0.95	0.94	0.94
230	0.93	0.94	0.94	0.93	0.93
240	0.92	0.93	0.93	0.92	0.93
250	0.91	0.92	0.93	0.91	0.92
Ambient Temperature During Test (°C)	25.5				
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;

True Power (W): $\pm 0.69\%$, Apparent Power (VA): $\pm 0.61\%$

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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ILLUSTRATIONS

Ark Lighting LED Street Light



Dinky Street Light 500Ma



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ILLUSTRATIONS

Dinky Street Light 350mA



Dinky Street Light 700mA



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ILLUSTRATIONS

LED BOARDS 40W



LED Boards 27W c/w Philips Xitanium LED Electronic Driver (Model No. 929000712303)



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