



## Test Report

**Report No** : L15042  
**Client:** : DW Windsor Ltd  
Pindar Road  
Hoddesdon  
Herts  
EN11 0DX  
**Description** : Street Lights - 1 LED module with 10 LEDs  
**Manufacturer** : DW Windsor Ltd  
**Type/Model** : LED Engine 1LX2-113-10  
**Test Specification** : Measurement of power consumption in accordance with the  
'Unmetered Supplies Operational Information Document' –  
Version 14.0 (17/12/2014)  
**Date Testing Started** : 20/04/15  
**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 - 1 LED module with 10 LEDs |
| Model No.  | LED Engine 1LX2-113-10                    |
| 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 - 1 LED module with 10 LEDs at end of life**

|                                      |  |       |       |       |       |
|--------------------------------------|--|-------|-------|-------|-------|
| Operating Mode                       | 500mA Drive Current at 100% light output |       |       |       |       |
| Watts                                |  |       |       |       |       |
| Voltage                              | Sample Number                            |       |       |       |       |
|                                      | 1  | 2     | 3     | 4     | 5     |
| 210                                  | 19.57                                    | 19.59 | 19.51 | 19.75 | 19.65 |
| 220                                  | 19.64                                    | 19.66 | 19.56 | 19.81 | 19.71 |
| 230                                  | 19.69                                    | 19.71 | 19.63 | 19.86 | 19.77 |
| 240                                  | 19.76                                    | 19.78 | 19.69 | 19.93 | 19.83 |
| 250                                  | 19.79                                    | 19.83 | 19.73 | 19.97 | 19.87 |
| VA                                   |  |       |       |       |       |
| Voltage                              | Sample Number                            |       |       |       |       |
|                                      | 1  | 2     | 3     | 4     | 5     |
| 210                                  | 22.25                                    | 22.45 | 22.22 | 22.47 | 22.45 |
| 220                                  | 22.87                                    | 22.88 | 22.90 | 23.11 | 23.09 |
| 230                                  | 23.47                                    | 23.48 | 23.43 | 23.70 | 23.71 |
| 240                                  | 24.27                                    | 24.24 | 24.22 | 24.45 | 24.24 |
| 250                                  | 25.02                                    | 24.95 | 25.00 | 25.25 | 25.00 |
| Power Factor                         |  |       |       |       |       |
| Voltage                              | Sample Number                            |       |       |       |       |
|                                      | 1  | 2     | 3     | 4     | 5     |
| 210                                  | 0.88                                     | 0.87  | 0.88  | 0.88  | 0.88  |
| 220                                  | 0.86                                     | 0.86  | 0.85  | 0.86  | 0.85  |
| 230                                  | 0.84                                     | 0.84  | 0.84  | 0.84  | 0.83  |
| 240                                  | 0.81                                     | 0.82  | 0.81  | 0.82  | 0.82  |
| 250                                  | 0.79                                     | 0.79  | 0.79  | 0.79  | 0.79  |
|                                      |  |       |       |       |       |
| Ambient Temperature During Test (°C) | 24.7                                     |       |       |       |       |
| PF Leading/Lagging                   | Leading                                  |       |       |       |       |

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## RESULTS

**Table 3. Wattage and VA results for Street Lights - 1 LED module with 10 LEDs at initial life**

|                                      |  |       |       |       |       |
|--------------------------------------|--|-------|-------|-------|-------|
| Operating Mode                       | 450mA Drive Current at 100% light output |       |       |       |       |
| Watts                                |  |       |       |       |       |
| Voltage                              | Sample Number                            |       |       |       |       |
|                                      | 1  | 2     | 3     | 4     | 5     |
| 210                                  | 17.97                                    | 17.72 | 17.72 | 17.83 | 17.97 |
| 220                                  | 18.04                                    | 17.79 | 17.80 | 17.91 | 18.04 |
| 230                                  | 18.11                                    | 17.85 | 17.87 | 17.96 | 18.10 |
| 240                                  | 18.18                                    | 17.92 | 17.93 | 18.03 | 18.16 |
| 250                                  | 18.23                                    | 17.98 | 17.99 | 18.09 | 18.22 |
| VA                                   |  |       |       |       |       |
| Voltage                              | Sample Number                            |       |       |       |       |
|                                      | 1  | 2     | 3     | 4     | 5     |
| 210                                  | 20.77                                    | 20.59 | 20.57 | 20.82 | 20.79 |
| 220                                  | 21.33                                    | 21.14 | 21.32 | 21.31 | 21.56 |
| 230                                  | 22.10                                    | 21.81 | 21.84 | 22.05 | 22.09 |
| 240                                  | 22.83                                    | 22.54 | 22.58 | 22.79 | 23.06 |
| 250                                  | 23.46                                    | 23.49 | 23.52 | 23.52 | 23.71 |
| Power Factor                         |  |       |       |       |       |
| Voltage                              | Sample Number                            |       |       |       |       |
|                                      | 1  | 2     | 3     | 4     | 5     |
| 210                                  | 0.87                                     | 0.86  | 0.86  | 0.86  | 0.86  |
| 220                                  | 0.85                                     | 0.84  | 0.83  | 0.84  | 0.84  |
| 230                                  | 0.82                                     | 0.82  | 0.82  | 0.81  | 0.82  |
| 240                                  | 0.80                                     | 0.80  | 0.79  | 0.79  | 0.79  |
| 250                                  | 0.78                                     | 0.77  | 0.76  | 0.77  | 0.77  |
|                                      |  |       |       |       |       |
| 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 - 1 LED module with 10 LEDs at end of life*

|                                      |   |       |       |       |       |
|--------------------------------------|---|-------|-------|-------|-------|
| Operating Mode                       | 500mA Drive Current at 75% light output |       |       |       |       |
| Watts                                |   |       |       |       |       |
| Voltage                              | Sample Number                           |       |       |       |       |
|                                      | 1                                       | 2     | 3     | 4     | 5     |
| 210                                  | 15.41                                   | 15.22 | 15.23 | 15.32 | 15.43 |
| 220                                  | 15.48                                   | 15.30 | 15.31 | 15.39 | 15.49 |
| 230                                  | 15.56                                   | 15.38 | 15.38 | 15.46 | 15.56 |
| 240                                  | 15.64                                   | 15.45 | 15.46 | 15.52 | 15.63 |
| 250                                  | 15.70                                   | 15.52 | 15.54 | 15.60 | 15.71 |
| VA                                   |   |       |       |       |       |
| Voltage                              | Sample Number                           |       |       |       |       |
|                                      | 1                                       | 2     | 3     | 4     | 5     |
| 210                                  | 18.67                                   | 18.46 | 18.48 | 18.48 | 18.70 |
| 220                                  | 19.34                                   | 19.14 | 19.12 | 19.36 | 19.39 |
| 230                                  | 20.01                                   | 19.81 | 19.80 | 20.00 | 19.99 |
| 240                                  | 20.91                                   | 20.65 | 20.66 | 20.61 | 20.87 |
| 250                                  | 21.73                                   | 21.72 | 21.98 | 21.74 | 21.77 |
| Power Factor                         |   |       |       |       |       |
| Voltage                              | Sample Number                           |       |       |       |       |
|                                      | 1                                       | 2     | 3     | 4     | 5     |
| 210                                  | 0.83                                    | 0.82  | 0.82  | 0.83  | 0.83  |
| 220                                  | 0.80                                    | 0.80  | 0.80  | 0.79  | 0.80  |
| 230                                  | 0.78                                    | 0.78  | 0.78  | 0.77  | 0.78  |
| 240                                  | 0.75                                    | 0.75  | 0.75  | 0.75  | 0.75  |
| 250                                  | 0.72                                    | 0.71  | 0.71  | 0.72  | 0.72  |
|                                      |   |       |       |       |       |
| Ambient Temperature During Test (°C) | 24.2                                    |       |       |       |       |
| PF Leading/Lagging                   | Leading                                 |       |       |       |       |

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## RESULTS

**Table 5 Wattage and VA results for Street Lights - 1 LED module with 10 LEDs at initial life**

|                                      |   |       |       |       |       |
|--------------------------------------|---|-------|-------|-------|-------|
| Operating Mode                       | 450mA Drive Current at 75% light output |       |       |       |       |
| Watts                                |   |       |       |       |       |
| Voltage                              | Sample Number                           |       |       |       |       |
|                                      | 1                                       | 2     | 3     | 4     | 5     |
| 210                                  | 14.48                                   | 14.30 | 14.36 | 14.37 | 14.49 |
| 220                                  | 14.41                                   | 14.23 | 14.22 | 14.31 | 14.42 |
| 230                                  | 14.31                                   | 14.13 | 14.14 | 14.21 | 14.33 |
| 240                                  | 14.40                                   | 14.23 | 14.22 | 14.29 | 14.41 |
| 250                                  | 14.48                                   | 14.32 | 14.35 | 14.38 | 14.49 |
| VA                                   |   |       |       |       |       |
| Voltage                              | Sample Number                           |       |       |       |       |
|                                      | 1                                       | 2     | 3     | 4     | 5     |
| 210                                  | 20.48                                   | 20.51 | 20.50 | 20.75 | 20.78 |
| 220                                  | 19.95                                   | 19.68 | 19.69 | 19.69 | 19.92 |
| 230                                  | 19.09                                   | 18.85 | 18.88 | 19.09 | 19.11 |
| 240                                  | 19.66                                   | 19.69 | 19.68 | 19.69 | 19.90 |
| 250                                  | 20.49                                   | 20.48 | 20.46 | 20.53 | 20.77 |
| Power Factor                         |   |       |       |       |       |
| Voltage                              | Sample Number                           |       |       |       |       |
|                                      | 1                                       | 2     | 3     | 4     | 5     |
| 210                                  | 0.71                                    | 0.70  | 0.70  | 0.69  | 0.70  |
| 220                                  | 0.72                                    | 0.72  | 0.72  | 0.73  | 0.72  |
| 230                                  | 0.75                                    | 0.75  | 0.75  | 0.74  | 0.75  |
| 240                                  | 0.73                                    | 0.72  | 0.72  | 0.73  | 0.72  |
| 250                                  | 0.71                                    | 0.70  | 0.70  | 0.70  | 0.70  |
|                                      |   |       |       |       |       |
| Ambient Temperature During Test (°C) | 25.1                                    |       |       |       |       |
| PF Leading/Lagging                   | Leading                                 |       |       |       |       |

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## RESULTS

**Table 6 Wattage and VA results for Street Lights - 1 LED module with 10 LEDs at end of life**

|                                      |   |       |       |       |       |
|--------------------------------------|---|-------|-------|-------|-------|
| Operating Mode                       | 500mA Drive Current at 70% light output |       |       |       |       |
| Watts                                |   |       |       |       |       |
| Voltage                              | Sample Number                           |       |       |       |       |
|                                      | 1                                       | 2     | 3     | 4     | 5     |
| 210                                  | 14.56                                   | 14.39 | 14.39 | 14.47 | 14.58 |
| 220                                  | 14.64                                   | 14.47 | 14.47 | 14.54 | 14.65 |
| 230                                  | 14.71                                   | 14.55 | 14.55 | 14.61 | 14.74 |
| 240                                  | 14.80                                   | 14.62 | 14.63 | 14.69 | 14.81 |
| 250                                  | 14.88                                   | 14.71 | 14.73 | 14.78 | 14.88 |
| VA                                   |   |       |       |       |       |
| Voltage                              | Sample Number                           |       |       |       |       |
|                                      | 1                                       | 2     | 3     | 4     | 5     |
| 210                                  | 17.84                                   | 17.86 | 17.87 | 17.83 | 18.03 |
| 220                                  | 18.67                                   | 18.50 | 18.49 | 18.46 | 18.68 |
| 230                                  | 19.31                                   | 19.12 | 19.09 | 19.32 | 19.34 |
| 240                                  | 20.13                                   | 19.92 | 19.89 | 20.15 | 20.18 |
| 250                                  | 21.02                                   | 20.76 | 20.75 | 20.98 | 21.03 |
| Power Factor                         |   |       |       |       |       |
| Voltage                              | Sample Number                           |       |       |       |       |
|                                      | 1                                       | 2     | 3     | 4     | 5     |
| 210                                  | 0.82                                    | 0.81  | 0.81  | 0.81  | 0.81  |
| 220                                  | 0.78                                    | 0.78  | 0.78  | 0.79  | 0.78  |
| 230                                  | 0.76                                    | 0.76  | 0.76  | 0.76  | 0.76  |
| 240                                  | 0.74                                    | 0.73  | 0.74  | 0.73  | 0.73  |
| 250                                  | 0.71                                    | 0.71  | 0.71  | 0.70  | 0.71  |
|                                      |   |       |       |       |       |
| Ambient Temperature During Test (°C) | 24.9                                    |       |       |       |       |
| PF Leading/Lagging                   | Leading                                 |       |       |       |       |

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## RESULTS

**Table 7 Wattage and VA results for Street Lights - 1 LED module with 10 LEDs at initial life**

|                                      |   |       |       |       |       |
|--------------------------------------|---|-------|-------|-------|-------|
| Operating Mode                       | 450mA Drive Current at 70% light output |       |       |       |       |
| Watts                                |   |       |       |       |       |
| Voltage                              | Sample Number                           |       |       |       |       |
|                                      | 1                                       | 2     | 3     | 4     | 5     |
| 210                                  | 13.40                                   | 13.24 | 13.24 | 13.31 | 13.41 |
| 220                                  | 13.49                                   | 13.33 | 13.33 | 13.39 | 13.52 |
| 230                                  | 13.57                                   | 13.41 | 13.42 | 13.48 | 13.59 |
| 240                                  | 13.66                                   | 13.50 | 13.50 | 13.59 | 13.69 |
| 250                                  | 13.74                                   | 13.58 | 13.58 | 13.65 | 13.77 |
| VA                                   |   |       |       |       |       |
| Voltage                              | Sample Number                           |       |       |       |       |
|                                      | 1                                       | 2     | 3     | 4     | 5     |
| 210                                  | 16.99                                   | 16.80 | 16.76 | 17.03 | 17.23 |
| 220                                  | 17.59                                   | 17.59 | 17.61 | 17.62 | 17.82 |
| 230                                  | 18.39                                   | 18.37 | 18.41 | 18.39 | 18.63 |
| 240                                  | 19.22                                   | 19.18 | 19.22 | 19.22 | 19.46 |
| 250                                  | 19.99                                   | 20.00 | 19.97 | 19.99 | 20.22 |
| Power Factor                         |   |       |       |       |       |
| Voltage                              | Sample Number                           |       |       |       |       |
|                                      | 1                                       | 2     | 3     | 4     | 5     |
| 210                                  | 0.79                                    | 0.79  | 0.79  | 0.78  | 0.78  |
| 220                                  | 0.77                                    | 0.76  | 0.76  | 0.76  | 0.76  |
| 230                                  | 0.74                                    | 0.73  | 0.73  | 0.73  | 0.73  |
| 240                                  | 0.71                                    | 0.70  | 0.70  | 0.71  | 0.70  |
| 250                                  | 0.69                                    | 0.68  | 0.68  | 0.68  | 0.68  |
|                                      |   |       |       |       |       |
| 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 - 1 LED module with 10 LEDs at end of life**

|                                      |   |       |       |       |       |
|--------------------------------------|---|-------|-------|-------|-------|
| Operating Mode                       | 500mA Drive Current at 50% light output |       |       |       |       |
| Watts                                |   |       |       |       |       |
| Voltage                              | Sample Number                           |       |       |       |       |
|                                      | 1                                       | 2     | 3     | 4     | 5     |
| 210                                  | 11.22                                   | 11.11 | 11.11 | 11.17 | 11.23 |
| 220                                  | 11.38                                   | 11.25 | 11.24 | 11.30 | 11.41 |
| 230                                  | 11.47                                   | 11.34 | 11.36 | 11.39 | 11.50 |
| 240                                  | 11.55                                   | 11.43 | 11.43 | 11.50 | 11.59 |
| 250                                  | 11.42                                   | 11.29 | 11.30 | 11.35 | 11.44 |
| VA                                   |   |       |       |       |       |
| Voltage                              | Sample Number                           |       |       |       |       |
|                                      | 1                                       | 2     | 3     | 4     | 5     |
| 210                                  | 15.34                                   | 15.14 | 15.13 | 15.33 | 15.31 |
| 220                                  | 16.08                                   | 16.06 | 16.06 | 16.07 | 16.32 |
| 230                                  | 16.77                                   | 16.80 | 16.81 | 16.80 | 17.02 |
| 240                                  | 17.53                                   | 17.55 | 17.54 | 17.55 | 17.75 |
| 250                                  | 18.02                                   | 18.02 | 17.98 | 17.97 | 18.25 |
| Power Factor                         |   |       |       |       |       |
| Voltage                              | Sample Number                           |       |       |       |       |
|                                      | 1                                       | 2     | 3     | 4     | 5     |
| 210                                  | 0.73                                    | 0.73  | 0.73  | 0.73  | 0.73  |
| 220                                  | 0.71                                    | 0.70  | 0.70  | 0.70  | 0.70  |
| 230                                  | 0.68                                    | 0.68  | 0.68  | 0.68  | 0.68  |
| 240                                  | 0.66                                    | 0.65  | 0.65  | 0.66  | 0.65  |
| 250                                  | 0.63                                    | 0.63  | 0.63  | 0.63  | 0.63  |
|                                      |   |       |       |       |       |
| Ambient Temperature During Test (°C) | 25.2                                    |       |       |       |       |
| PF Leading/Lagging                   | Leading                                 |       |       |       |       |

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## RESULTS

**Table 9 Wattage and VA results for Street Lights - 1 LED module with 10 LEDs at initial life**

|                                      |                                   |       |       |       |       |
|--------------------------------------|-----------------------------------|-------|-------|-------|-------|
| Operating Mode                       | 450mA Drive Current at 50% output |       |       |       |       |
| Watts                                |                                   |       |       |       |       |
| Voltage                              | Sample Number                     |       |       |       |       |
|                                      | 1                                 | 2     | 3     | 4     | 5     |
| 210                                  | 10.48                             | 10.37 | 10.36 | 10.41 | 10.52 |
| 220                                  | 10.57                             | 10.46 | 10.46 | 10.51 | 10.62 |
| 230                                  | 10.67                             | 10.56 | 10.55 | 10.60 | 10.71 |
| 240                                  | 10.76                             | 10.65 | 10.63 | 10.68 | 10.79 |
| 250                                  | 10.51                             | 10.39 | 10.37 | 10.43 | 10.53 |
| VA                                   |                                   |       |       |       |       |
| Voltage                              | Sample Number                     |       |       |       |       |
|                                      | 1                                 | 2     | 3     | 4     | 5     |
| 210                                  | 14.73                             | 14.49 | 14.50 | 14.71 | 14.70 |
| 220                                  | 15.39                             | 15.40 | 15.42 | 15.42 | 15.43 |
| 230                                  | 16.10                             | 16.08 | 16.11 | 16.09 | 16.33 |
| 240                                  | 17.04                             | 17.05 | 17.06 | 17.04 | 17.30 |
| 250                                  | 17.51                             | 17.27 | 17.27 | 17.52 | 17.73 |
| Power Factor                         |                                   |       |       |       |       |
| Voltage                              | Sample Number                     |       |       |       |       |
|                                      | 1                                 | 2     | 3     | 4     | 5     |
| 210                                  | 0.71                              | 0.72  | 0.71  | 0.71  | 0.72  |
| 220                                  | 0.69                              | 0.68  | 0.68  | 0.68  | 0.69  |
| 230                                  | 0.66                              | 0.66  | 0.65  | 0.66  | 0.66  |
| 240                                  | 0.63                              | 0.62  | 0.62  | 0.63  | 0.62  |
| 250                                  | 0.60                              | 0.60  | 0.60  | 0.60  | 0.59  |
|                                      |                                   |       |       |       |       |
| Ambient Temperature During Test (°C) | 25.2                              |       |       |       |       |
| PF Leading/Lagging                   | Leading                           |       |       |       |       |

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## RESULTS

Table 10 Wattage and VA results for Street Lights - 1 LED module with 10 LEDs at end of life

|                                      |                                   |       |       |       |       |
|--------------------------------------|-----------------------------------|-------|-------|-------|-------|
| Operating Mode                       | 500mA Drive Current at 25% output |       |       |       |       |
| Watts                                |                                   |       |       |       |       |
| Voltage                              | Sample Number                     |       |       |       |       |
|                                      | 1                                 | 2     | 3     | 4     | 5     |
| 210                                  | 7.29                              | 7.22  | 7.23  | 7.25  | 7.34  |
| 220                                  | 7.28                              | 7.20  | 7.20  | 7.22  | 7.33  |
| 230                                  | 7.08                              | 7.00  | 6.99  | 7.04  | 7.12  |
| 240                                  | 6.99                              | 6.98  | 6.91  | 6.97  | 7.02  |
| 250                                  | 6.88                              | 6.89  | 7.02  | 6.92  | 6.78  |
| VA                                   |                                   |       |       |       |       |
| Voltage                              | Sample Number                     |       |       |       |       |
|                                      | 1                                 | 2     | 3     | 4     | 5     |
| 210                                  | 12.40                             | 12.18 | 12.17 | 12.41 | 12.37 |
| 220                                  | 12.97                             | 12.78 | 12.78 | 12.96 | 12.98 |
| 230                                  | 12.87                             | 12.86 | 12.89 | 12.88 | 13.10 |
| 240                                  | 13.69                             | 13.43 | 13.43 | 13.44 | 13.67 |
| 250                                  | 14.24                             | 14.27 | 15.00 | 14.26 | 14.50 |
| Power Factor                         |                                   |       |       |       |       |
| Voltage                              | Sample Number                     |       |       |       |       |
|                                      | 1                                 | 2     | 3     | 4     | 5     |
| 210                                  | 0.59                              | 0.59  | 0.59  | 0.58  | 0.59  |
| 220                                  | 0.56                              | 0.56  | 0.56  | 0.56  | 0.56  |
| 230                                  | 0.55                              | 0.54  | 0.54  | 0.55  | 0.54  |
| 240                                  | 0.51                              | 0.52  | 0.51  | 0.52  | 0.51  |
| 250                                  | 0.48                              | 0.48  | 0.47  | 0.49  | 0.47  |
|                                      |                                   |       |       |       |       |
| 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 - 1 LED module with 10 LEDs at initial life

|                                      |                                   |       |       |       |       |
|--------------------------------------|-----------------------------------|-------|-------|-------|-------|
| Operating Mode                       | 450mA Drive Current at 25% output |       |       |       |       |
| Watts                                |                                   |       |       |       |       |
| Voltage                              | Sample Number                     |       |       |       |       |
|                                      | 1                                 | 2     | 3     | 4     | 5     |
| 210                                  | 6.91                              | 6.85  | 6.83  | 6.88  | 6.96  |
| 220                                  | 6.72                              | 6.70  | 6.74  | 6.71  | 6.74  |
| 230                                  | 6.62                              | 6.60  | 6.59  | 6.64  | 6.72  |
| 240                                  | 6.58                              | 6.54  | 6.51  | 6.56  | 6.62  |
| 250                                  | 6.68                              | 6.62  | 6.59  | 6.68  | 6.77  |
| VA                                   |                                   |       |       |       |       |
| Voltage                              | Sample Number                     |       |       |       |       |
|                                      | 1                                 | 2     | 3     | 4     | 5     |
| 210                                  | 12.17                             | 11.95 | 11.98 | 12.18 | 12.17 |
| 220                                  | 12.34                             | 12.32 | 12.34 | 12.12 | 12.33 |
| 230                                  | 12.67                             | 12.42 | 12.43 | 12.65 | 12.65 |
| 240                                  | 13.19                             | 13.19 | 12.96 | 13.19 | 13.46 |
| 250                                  | 15.76                             | 15.75 | 15.74 | 15.74 | 15.76 |
| Power Factor                         |                                   |       |       |       |       |
| Voltage                              | Sample Number                     |       |       |       |       |
|                                      | 1                                 | 2     | 3     | 4     | 5     |
| 210                                  | 0.57                              | 0.57  | 0.57  | 0.56  | 0.57  |
| 220                                  | 0.54                              | 0.54  | 0.55  | 0.55  | 0.55  |
| 230                                  | 0.52                              | 0.53  | 0.53  | 0.52  | 0.53  |
| 240                                  | 0.50                              | 0.50  | 0.50  | 0.50  | 0.49  |
| 250                                  | 0.42                              | 0.42  | 0.42  | 0.42  | 0.43  |
|                                      |                                   |       |       |       |       |
| Ambient Temperature During Test (°C) | 25.0                              |       |       |       |       |
| PF Leading/Lagging                   | Leading                           |       |       |       |       |

Continued on following page

## **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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**Continued on following page**

## ILLUSTRATION



Figure 1. *Product image*

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End