

## T e s t R e p o r t

**Report No** : Cer1561-080518C  
**Client:** : DW Windsor Ltd  
Pindar Road  
Hoddesdon  
Herts  
EN11 0DX  
**Description** : Streetlight - LED module with 32 LEDs  
**Manufacturer** : DW Windsor Ltd  
**Type/Model** : Sephora 650 - 32LED  
**Test Specification** : Measurement of power consumption in accordance with the  
'Unmetered Supplies Operational Information Document' –  
Version 17.0 (15/03/2017)  
**Date Testing Started** : 10/04/2018  
**Conclusion** : Refer to body of report  
**Date of Issue** : 13/06/2018  
**Date of Expiry** : 12/06/2023

**Checked by:** **A. BOROBY**  
**Position:** Technical Lead –  
Product Safety



**Approved by:** **T. MALIK**  
**Position:** Operations Manager



## **INTRODUCTION**

The products identified in Table 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 17.0 (15/03/2017).

## **PRODUCT DETAILS**

**Table 1. Test Sample Details**

|  |                                       |
|--|---------------------------------------|
| Product Description  | Streetlight - LED module with 32 LEDs |
| Model No.  | Sephora 650 - 32LED                   |
| Number of Samples  | Five                                  |
| Condition on Receipt   | Good                                  |
| Nominal Dimensions   | 105mm x 779mm x 690mm                 |
| Product Supply Requirement   | 240V AC @ 50Hz                        |
| 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 Sephora 650 - 32LED**

| <b>Operating Mode</b>                | 800mA @ 100% light output |         |        |        |        |
|--------------------------------------|---------------------------|---------|--------|--------|--------|
| <b>Watts</b>                         |                           |         |        |        |        |
| Voltage                              | Sample Number             |         |        |        |        |
|                                      | 1                         | 2       | 3      | 4      | 5      |
| 210                                  | 297.80                    | 297.60  | 296.60 | 297.70 | 297.30 |
| 220                                  | 297.50                    | 297.30  | 296.00 | 297.50 | 295.10 |
| 230                                  | 296.10                    | 296.50  | 295.50 | 297.00 | 294.70 |
| 240                                  | 296.90                    | 296.20  | 295.20 | 296.80 | 295.40 |
| 250                                  | 296.60                    | 296.20  | 295.10 | 295.40 | 294.30 |
| <b>VA</b>                            |                           |         |        |        |        |
| Voltage                              | Sample Number             |         |        |        |        |
|                                      | 1                         | 2       | 3      | 4      | 5      |
| 210                                  | 300.90                    | 300.80  | 299.60 | 300.80 | 300.40 |
| 220                                  | 301.00                    | 300.90  | 299.50 | 301.30 | 298.80 |
| 230                                  | 300.30                    | 300.80  | 299.80 | 301.20 | 299.00 |
| 240                                  | 302.00                    | 301.20  | 300.20 | 301.70 | 300.30 |
| 250                                  | 302.40                    | 302.10  | 300.90 | 301.10 | 300.10 |
| <b>Power Factor</b>                  |                           |         |        |        |        |
| Voltage                              | Sample Number             |         |        |        |        |
|                                      | 1                         | 2       | 3      | 4      | 5      |
| 210                                  | 0.99                      | 0.99    | 0.99   | 0.99   | 0.99   |
| 220                                  | 0.99                      | 0.99    | 0.99   | 0.99   | 0.99   |
| 230                                  | 0.99                      | 0.99    | 0.99   | 0.99   | 0.99   |
| 240                                  | 0.98                      | 0.98    | 0.98   | 0.98   | 0.98   |
| 250                                  | 0.98                      | 0.98    | 0.98   | 0.98   | 0.98   |
| Ambient Temperature During Test (°C) |                           | 25.0    |        |        |        |
| PF Leading/Lagging                   |                           | Leading |        |        |        |

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**Table 3. Wattage and VA results for Sephora 650 - 32LED**

| Operating Mode                       | 800mA @ 90% light output |         |        |        |        |
|--------------------------------------|--------------------------|---------|--------|--------|--------|
| <b>Watts</b>                         |                          |         |        |        |        |
| Voltage                              | Sample Number            |         |        |        |        |
|                                      | 1                        | 2       | 3      | 4      | 5      |
| 210                                  | 264.10                   | 264.50  | 264.60 | 264.20 | 262.80 |
| 220                                  | 264.30                   | 264.50  | 264.30 | 264.10 | 262.50 |
| 230                                  | 263.90                   | 264.10  | 263.70 | 263.90 | 262.50 |
| 240                                  | 263.70                   | 263.80  | 263.60 | 263.40 | 262.10 |
| 250                                  | 262.40                   | 263.60  | 263.50 | 263.20 | 261.80 |
| <b>VA</b>                            |                          |         |        |        |        |
| Voltage                              | Sample Number            |         |        |        |        |
|                                      | 1                        | 2       | 3      | 4      | 5      |
| 210                                  | 267.40                   | 267.80  | 267.80 | 267.40 | 266.10 |
| 220                                  | 268.10                   | 268.40  | 268.20 | 268.00 | 266.40 |
| 230                                  | 268.50                   | 268.70  | 268.20 | 268.40 | 266.80 |
| 240                                  | 269.10                   | 269.10  | 268.90 | 268.90 | 267.40 |
| 250                                  | 268.70                   | 269.90  | 269.70 | 269.40 | 267.90 |
| <b>Power Factor</b>                  |                          |         |        |        |        |
| Voltage                              | Sample Number            |         |        |        |        |
|                                      | 1                        | 2       | 3      | 4      | 5      |
| 210                                  | 0.99                     | 0.99    | 0.99   | 0.99   | 0.99   |
| 220                                  | 0.99                     | 0.99    | 0.99   | 0.99   | 0.99   |
| 230                                  | 0.98                     | 0.98    | 0.98   | 0.98   | 0.98   |
| 240                                  | 0.98                     | 0.98    | 0.98   | 0.98   | 0.98   |
| 250                                  | 0.98                     | 0.98    | 0.98   | 0.98   | 0.98   |
| Ambient Temperature During Test (°C) |                          | 24.8    |        |        |        |
| PF Leading/Lagging                   |                          | Leading |        |        |        |

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**Table 4. Wattage and VA results for Sephora 650 - 32LED**

| Operating Mode                       | 800mA @ 80% light output |         |        |        |        |
|--------------------------------------|--------------------------|---------|--------|--------|--------|
| <b>Watts</b>                         |                          |         |        |        |        |
| Voltage                              | Sample Number            |         |        |        |        |
|                                      | 1                        | 2       | 3      | 4      | 5      |
| 210                                  | 236.70                   | 236.50  | 235.20 | 236.70 | 234.20 |
| 220                                  | 236.50                   | 236.20  | 235.10 | 236.50 | 234.10 |
| 230                                  | 236.50                   | 236.40  | 235.70 | 236.40 | 234.00 |
| 240                                  | 236.20                   | 236.20  | 234.80 | 236.30 | 233.90 |
| 250                                  | 236.40                   | 235.70  | 234.70 | 236.00 | 233.70 |
| <b>VA</b>                            |                          |         |        |        |        |
| Voltage                              | Sample Number            |         |        |        |        |
|                                      | 1                        | 2       | 3      | 4      | 5      |
| 210                                  | 240.20                   | 239.90  | 238.90 | 240.40 | 237.70 |
| 220                                  | 240.70                   | 240.50  | 239.20 | 240.70 | 238.30 |
| 230                                  | 241.30                   | 241.40  | 240.70 | 241.40 | 238.80 |
| 240                                  | 241.80                   | 241.80  | 240.60 | 242.10 | 239.70 |
| 250                                  | 243.00                   | 242.50  | 241.50 | 242.70 | 240.20 |
| <b>Power Factor</b>                  |                          |         |        |        |        |
| Voltage                              | Sample Number            |         |        |        |        |
|                                      | 1                        | 2       | 3      | 4      | 5      |
| 210                                  | 0.99                     | 0.99    | 0.98   | 0.98   | 0.99   |
| 220                                  | 0.98                     | 0.98    | 0.98   | 0.98   | 0.98   |
| 230                                  | 0.98                     | 0.98    | 0.98   | 0.98   | 0.98   |
| 240                                  | 0.98                     | 0.98    | 0.98   | 0.98   | 0.98   |
| 250                                  | 0.97                     | 0.97    | 0.97   | 0.97   | 0.97   |
| Ambient Temperature During Test (°C) |                          | 24.6    |        |        |        |
| PF Leading/Lagging                   |                          | Leading |        |        |        |

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**Table 5. Wattage and VA results for Sephora 650 - 32LED**

| Operating Mode                       | 800mA @ 70% light output |         |        |        |        |
|--------------------------------------|--------------------------|---------|--------|--------|--------|
| <b>Watts</b>                         |                          |         |        |        |        |
| Voltage                              | Sample Number            |         |        |        |        |
|                                      | 1                        | 2       | 3      | 4      | 5      |
| 210                                  | 203.50                   | 204.00  | 203.70 | 203.50 | 202.70 |
| 220                                  | 203.20                   | 203.40  | 203.30 | 203.20 | 202.40 |
| 230                                  | 203.10                   | 203.50  | 203.20 | 203.10 | 202.30 |
| 240                                  | 202.40                   | 203.00  | 203.30 | 203.50 | 203.00 |
| 250                                  | 203.10                   | 203.50  | 203.30 | 203.20 | 202.30 |
| <b>VA</b>                            |                          |         |        |        |        |
| Voltage                              | Sample Number            |         |        |        |        |
|                                      | 1                        | 2       | 3      | 4      | 5      |
| 210                                  | 207.50                   | 207.90  | 207.50 | 207.50 | 206.70 |
| 220                                  | 207.80                   | 207.90  | 207.80 | 207.80 | 206.90 |
| 230                                  | 208.60                   | 209.00  | 208.50 | 208.60 | 207.60 |
| 240                                  | 208.80                   | 209.50  | 209.70 | 209.50 | 209.50 |
| 250                                  | 210.50                   | 211.00  | 210.80 | 210.50 | 209.80 |
| <b>Power Factor</b>                  |                          |         |        |        |        |
| 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   | 0.98   | 0.98   |
| 230                                  | 0.97                     | 0.97    | 0.97   | 0.97   | 0.97   |
| 240                                  | 0.97                     | 0.97    | 0.97   | 0.97   | 0.97   |
| 250                                  | 0.96                     | 0.96    | 0.96   | 0.97   | 0.96   |
| Ambient Temperature During Test (°C) |                          | 24.1    |        |        |        |
| PF Leading/Lagging                   |                          | Leading |        |        |        |

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**Table 6. Wattage and VA results for Sephora 650 - 32LED**

| Operating Mode                       | 800mA @ 60% light output |         |        |        |        |
|--------------------------------------|--------------------------|---------|--------|--------|--------|
| <b>Watts</b>                         |                          |         |        |        |        |
| Voltage                              | Sample Number            |         |        |        |        |
|                                      | 1                        | 2       | 3      | 4      | 5      |
| 210                                  | 172.89                   | 173.87  | 172.89 | 172.51 | 170.37 |
| 220                                  | 172.82                   | 173.80  | 172.82 | 172.50 | 170.24 |
| 230                                  | 172.71                   | 172.88  | 172.67 | 172.45 | 170.14 |
| 240                                  | 172.66                   | 173.66  | 172.62 | 172.37 | 170.22 |
| 250                                  | 172.74                   | 173.62  | 172.68 | 172.42 | 170.25 |
| <b>VA</b>                            |                          |         |        |        |        |
| Voltage                              | Sample Number            |         |        |        |        |
|                                      | 1                        | 2       | 3      | 4      | 5      |
| 210                                  | 177.25                   | 178.26  | 177.20 | 176.99 | 174.70 |
| 220                                  | 178.04                   | 179.11  | 178.06 | 177.80 | 175.37 |
| 230                                  | 178.77                   | 179.01  | 178.78 | 178.54 | 176.21 |
| 240                                  | 179.83                   | 180.78  | 179.59 | 179.61 | 177.22 |
| 250                                  | 180.89                   | 181.90  | 180.90 | 180.90 | 178.43 |
| <b>Power Factor</b>                  |                          |         |        |        |        |
| Voltage                              | Sample Number            |         |        |        |        |
|                                      | 1                        | 2       | 3      | 4      | 5      |
| 210                                  | 0.98                     | 0.98    | 0.98   | 0.97   | 0.98   |
| 220                                  | 0.97                     | 0.97    | 0.97   | 0.97   | 0.97   |
| 230                                  | 0.97                     | 0.97    | 0.97   | 0.97   | 0.97   |
| 240                                  | 0.96                     | 0.96    | 0.96   | 0.96   | 0.96   |
| 250                                  | 0.95                     | 0.95    | 0.95   | 0.95   | 0.95   |
| Ambient Temperature During Test (°C) |                          | 23.8    |        |        |        |
| PF Leading/Lagging                   |                          | Leading |        |        |        |

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**Table 7. Wattage and VA results for Sephora 650 - 32LED**

| <b>Operating Mode</b>                | 800mA @ 50% light output |          |          |          |          |
|--------------------------------------|--------------------------|----------|----------|----------|----------|
| <b>Watts</b>                         |                          |          |          |          |          |
| <b>Voltage</b>                       | <b>Sample Number</b>     |          |          |          |          |
|                                      | <b>1</b>                 | <b>2</b> | <b>3</b> | <b>4</b> | <b>5</b> |
| 210                                  | 144.49                   | 144.94   | 144.67   | 144.78   | 144.74   |
| 220                                  | 144.45                   | 144.88   | 144.60   | 144.75   | 144.70   |
| 230                                  | 144.61                   | 144.69   | 144.54   | 144.77   | 144.64   |
| 240                                  | 144.43                   | 144.88   | 144.76   | 144.71   | 144.60   |
| 250                                  | 144.43                   | 144.95   | 144.57   | 144.71   | 144.70   |
| <b>VA</b>                            |                          |          |          |          |          |
| <b>Voltage</b>                       | <b>Sample Number</b>     |          |          |          |          |
|                                      | <b>1</b>                 | <b>2</b> | <b>3</b> | <b>4</b> | <b>5</b> |
| 210                                  | 149.55                   | 149.98   | 149.56   | 149.96   | 149.76   |
| 220                                  | 150.36                   | 150.81   | 150.36   | 150.78   | 150.58   |
| 230                                  | 151.23                   | 151.69   | 151.44   | 151.71   | 151.45   |
| 240                                  | 152.30                   | 152.77   | 152.76   | 152.78   | 152.30   |
| 250                                  | 153.66                   | 154.18   | 153.67   | 153.94   | 153.69   |
| <b>Power Factor</b>                  |                          |          |          |          |          |
| <b>Voltage</b>                       | <b>Sample Number</b>     |          |          |          |          |
|                                      | <b>1</b>                 | <b>2</b> | <b>3</b> | <b>4</b> | <b>5</b> |
| 210                                  | 0.97                     | 0.97     | 0.97     | 0.97     | 0.97     |
| 220                                  | 0.96                     | 0.96     | 0.96     | 0.96     | 0.96     |
| 230                                  | 0.96                     | 0.95     | 0.95     | 0.95     | 0.96     |
| 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) |                          | 24.0     |          |          |          |
| PF Leading/Lagging                   |                          | Leading  |          |          |          |

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**Table 8. Wattage and VA results for Sephora 650 - 32LED**

| <b>Operating Mode</b>                | 800mA @ 40% light output |          |          |          |          |
|--------------------------------------|--------------------------|----------|----------|----------|----------|
| <b>Watts</b>                         |                          |          |          |          |          |
| <b>Voltage</b>                       | <b>Sample Number</b>     |          |          |          |          |
|                                      | <b>1</b>                 | <b>2</b> | <b>3</b> | <b>4</b> | <b>5</b> |
| 210                                  | 114.73                   | 115.93   | 115.71   | 114.83   | 113.83   |
| 220                                  | 114.73                   | 116.00   | 115.96   | 114.91   | 113.89   |
| 230                                  | 114.81                   | 116.06   | 115.83   | 114.93   | 113.84   |
| 240                                  | 114.84                   | 116.07   | 115.89   | 115.00   | 113.95   |
| 250                                  | 114.95                   | 116.12   | 115.93   | 115.08   | 114.04   |
| <b>VA</b>                            |                          |          |          |          |          |
| <b>Voltage</b>                       | <b>Sample Number</b>     |          |          |          |          |
|                                      | <b>1</b>                 | <b>2</b> | <b>3</b> | <b>4</b> | <b>5</b> |
| 210                                  | 120.65                   | 121.68   | 121.48   | 120.84   | 119.59   |
| 220                                  | 121.58                   | 122.91   | 122.69   | 121.82   | 120.70   |
| 230                                  | 122.76                   | 123.89   | 123.66   | 122.99   | 121.59   |
| 240                                  | 124.01                   | 125.20   | 124.96   | 124.25   | 122.80   |
| 250                                  | 125.20                   | 126.71   | 126.22   | 125.72   | 124.22   |
| <b>Power Factor</b>                  |                          |          |          |          |          |
| <b>Voltage</b>                       | <b>Sample Number</b>     |          |          |          |          |
|                                      | <b>1</b>                 | <b>2</b> | <b>3</b> | <b>4</b> | <b>5</b> |
| 210                                  | 0.95                     | 0.95     | 0.95     | 0.95     | 0.95     |
| 220                                  | 0.94                     | 0.94     | 0.95     | 0.94     | 0.94     |
| 230                                  | 0.94                     | 0.94     | 0.94     | 0.93     | 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) |                          | 24.0     |          |          |          |
| PF Leading/Lagging                   |                          | Leading  |          |          |          |

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**Table 9. Wattage and VA results for Sephora 650 - 32LED**

| Operating Mode                       | 800mA @ 30% light output |         |        |        |        |
|--------------------------------------|--------------------------|---------|--------|--------|--------|
| <b>Watts</b>                         |                          |         |        |        |        |
| Voltage                              | Sample Number            |         |        |        |        |
|                                      | 1                        | 2       | 3      | 4      | 5      |
| 210                                  | 88.65                    | 88.59   | 88.47  | 88.95  | 89.04  |
| 220                                  | 88.72                    | 88.70   | 88.53  | 89.04  | 89.08  |
| 230                                  | 88.81                    | 88.80   | 88.62  | 89.13  | 89.22  |
| 240                                  | 89.13                    | 88.95   | 88.77  | 88.97  | 89.27  |
| 250                                  | 89.04                    | 89.05   | 88.89  | 89.38  | 89.48  |
| <b>VA</b>                            |                          |         |        |        |        |
| Voltage                              | Sample Number            |         |        |        |        |
|                                      | 1                        | 2       | 3      | 4      | 5      |
| 210                                  | 95.48                    | 95.48   | 95.28  | 95.90  | 95.70  |
| 220                                  | 96.53                    | 96.77   | 96.31  | 97.22  | 96.75  |
| 230                                  | 97.94                    | 97.94   | 97.72  | 98.40  | 98.17  |
| 240                                  | 99.33                    | 99.56   | 99.10  | 99.57  | 99.56  |
| 250                                  | 100.98                   | 100.99  | 100.73 | 101.48 | 100.99 |
| <b>Power Factor</b>                  |                          |         |        |        |        |
| Voltage                              | Sample Number            |         |        |        |        |
|                                      | 1                        | 2       | 3      | 4      | 5      |
| 210                                  | 0.93                     | 0.93    | 0.93   | 0.93   | 0.93   |
| 220                                  | 0.92                     | 0.92    | 0.92   | 0.92   | 0.92   |
| 230                                  | 0.91                     | 0.91    | 0.91   | 0.91   | 0.91   |
| 240                                  | 0.90                     | 0.89    | 0.90   | 0.89   | 0.90   |
| 250                                  | 0.88                     | 0.88    | 0.88   | 0.88   | 0.89   |
| Ambient Temperature During Test (°C) |                          | 24.0    |        |        |        |
| PF Leading/Lagging                   |                          | Leading |        |        |        |

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**Table 10. Wattage and VA results for Sephora 650 - 32LED**

| <b>Operating Mode</b>                | 800mA @ 20% light output |          |          |          |          |
|--------------------------------------|--------------------------|----------|----------|----------|----------|
| <b>Watts</b>                         |                          |          |          |          |          |
| <b>Voltage</b>                       | <b>Sample Number</b>     |          |          |          |          |
|                                      | <b>1</b>                 | <b>2</b> | <b>3</b> | <b>4</b> | <b>5</b> |
| 210                                  | 61.63                    | 61.64    | 61.23    | 61.83    | 61.06    |
| 220                                  | 62.17                    | 62.22    | 61.91    | 62.16    | 61.62    |
| 230                                  | 62.62                    | 62.38    | 62.18    | 62.53    | 61.97    |
| 240                                  | 62.81                    | 62.74    | 62.55    | 62.72    | 62.24    |
| 250                                  | 63.01                    | 62.93    | 62.74    | 62.91    | 62.85    |
| <b>VA</b>                            |                          |          |          |          |          |
| <b>Voltage</b>                       | <b>Sample Number</b>     |          |          |          |          |
|                                      | <b>1</b>                 | <b>2</b> | <b>3</b> | <b>4</b> | <b>5</b> |
| 210                                  | 69.89                    | 69.89    | 69.47    | 70.32    | 69.26    |
| 220                                  | 71.71                    | 71.71    | 71.48    | 71.92    | 71.05    |
| 230                                  | 73.58                    | 73.35    | 73.13    | 73.81    | 72.66    |
| 240                                  | 75.34                    | 75.34    | 75.10    | 75.58    | 74.38    |
| 250                                  | 77.00                    | 77.25    | 76.75    | 77.50    | 77.24    |
| <b>Power Factor</b>                  |                          |          |          |          |          |
| <b>Voltage</b>                       | <b>Sample Number</b>     |          |          |          |          |
|                                      | <b>1</b>                 | <b>2</b> | <b>3</b> | <b>4</b> | <b>5</b> |
| 210                                  | 0.88                     | 0.88     | 0.88     | 0.88     | 0.88     |
| 220                                  | 0.87                     | 0.87     | 0.87     | 0.86     | 0.87     |
| 230                                  | 0.85                     | 0.85     | 0.85     | 0.85     | 0.85     |
| 240                                  | 0.83                     | 0.83     | 0.83     | 0.83     | 0.84     |
| 250                                  | 0.82                     | 0.81     | 0.82     | 0.81     | 0.81     |
| Ambient Temperature During Test (°C) |                          | 24.0     |          |          |          |
| 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

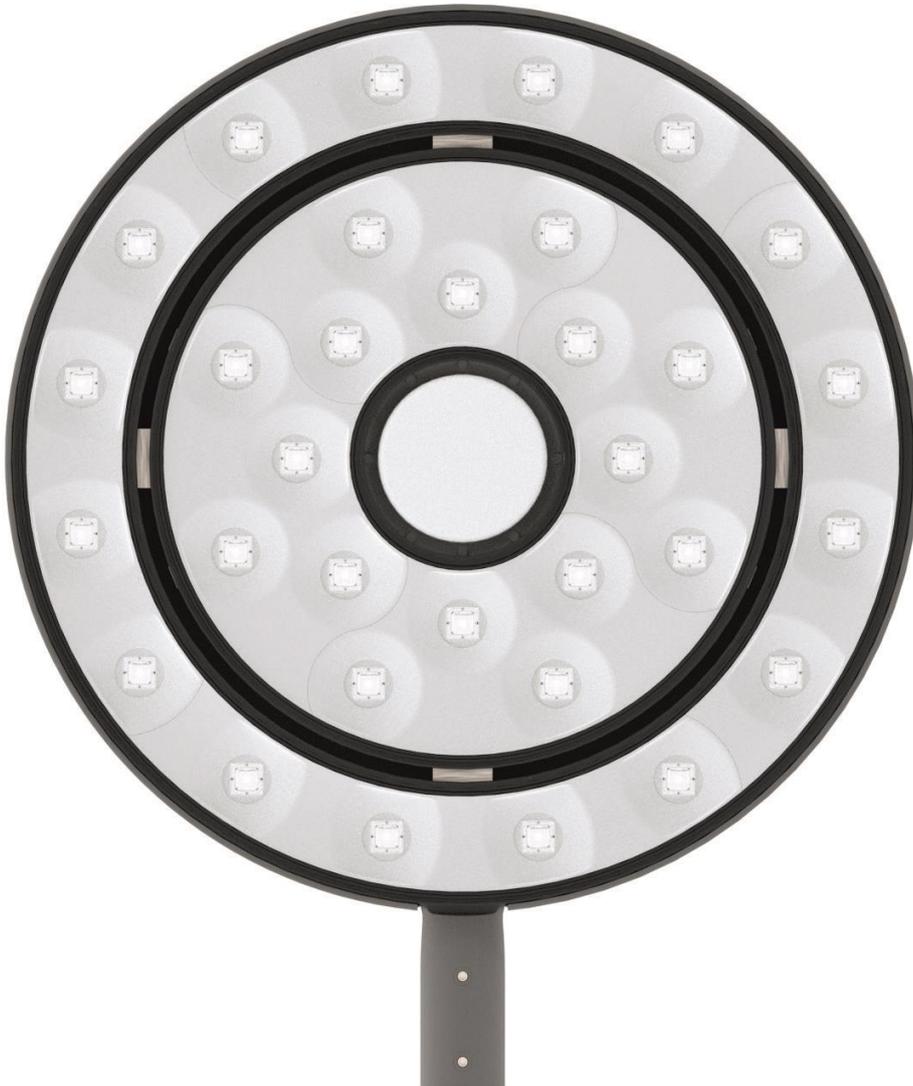
True Power (W):  $\pm 0.25\%$ , Apparent Power (VA):  $\pm 0.39\%$

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**