



## TEST REPORT

### COMPULSORY SPECIFICATION FOR ENERGY EFFICIENCY AND FUNCTIONAL PERFORMANCE REQUIREMENTS OF GENERAL SERVICE LAMPS (GSLs) -VC 9109

Self-ballasted LED lamps for general lighting services with supply  
voltages > 50 V - Performance requirements- IEC 62612

|                                      |                                                                                                                                                                                                                                                             |
|--------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Report Reference No.</b> .....    | AOC251104042ER                                                                                                                                                                                                                                              |
| Compiled by (print+ signature).....  | Bill Hu <i>Bill Hu</i>                                                                                                                                                                                                                                      |
| Approved by (print+ signature).....  | Robin Liu <i>Robin Liu</i>                                                                                                                                                                                                                                  |
|                                      | Lab Supervisor                                                                                                                                                                                                                                              |
| Date of issue.....                   | 2025-11-21                                                                                                                                                                                                                                                  |
| <b>Testing Laboratory</b> .....      | Shenzhen AOCE Electronic Technology Service Co., Ltd                                                                                                                                                                                                        |
| Address.....                         | Room 202, 2nd Floor, No.12th Building of Xinhe Tongfuyu Industrial Park, Fuhai Street, Baoan District, Shenzhen, Guangdong, China                                                                                                                           |
| Testing location/address.....        | Same as above                                                                                                                                                                                                                                               |
| <b>Applicant's name</b> .....        | Major Tech (Pty) Ltd                                                                                                                                                                                                                                        |
| Address.....                         | T9 Industrial Village, 7 Sam Green Rd, Elandsfontein, South Africa                                                                                                                                                                                          |
| <b>Manufacturer name</b> .....       | Jiangxi Lepeng Electric Appliance Co., LTD.                                                                                                                                                                                                                 |
| Address.....                         | Changjiang Electronic Information Industry Park Changjiang District 333000 Jingdezhen City, Jiangxi Province                                                                                                                                                |
| Test Object.....                     | LED BULBS                                                                                                                                                                                                                                                   |
| Trade Mark.....                      | MAJOR-TECH                                                                                                                                                                                                                                                  |
| Model / Type reference.....          | LHC37E27-D5N, LHC37B22-D5N, LHC37E14-D5N (Only the model name and lamp cap type are different.)                                                                                                                                                             |
| Rated voltage (V).....               | 220-240 V~                                                                                                                                                                                                                                                  |
| Rated frequency (Hz).....            | 50/60 Hz                                                                                                                                                                                                                                                    |
| Rated Power (W).....                 | 4.8 W                                                                                                                                                                                                                                                       |
| Rated luminous (lm).....             | 504 lm                                                                                                                                                                                                                                                      |
| Rated color temperature (CCT).....   | 4000K                                                                                                                                                                                                                                                       |
| Rated color rendering (CRI).....     | 80                                                                                                                                                                                                                                                          |
| Rated life (h).....                  | 25000                                                                                                                                                                                                                                                       |
| <b>Test specification:</b>           |                                                                                                                                                                                                                                                             |
| Standard .....                       | COMPULSORY SPECIFICATION FOR ENERGY EFFICIENCY AND FUNCTIONAL PERFORMANCE REQUIREMENTS OF GENERAL SERVICE LAMPS (GSLs) -VC 9109<br>Self-ballasted LED lamps for general lighting services with supply voltages > 50 V - Performance requirements- IEC 62612 |
| Test procedure .....                 | Test report                                                                                                                                                                                                                                                 |
| Non-standard test method .....       | N/A                                                                                                                                                                                                                                                         |
| <b>Test Report Form No.</b> .....    | IECEE TRF No. VC 9109                                                                                                                                                                                                                                       |
| Test Report Form(s) Originator ..... | AOCE                                                                                                                                                                                                                                                        |
| Master TRF.....                      | 2019-11-30                                                                                                                                                                                                                                                  |

| Summary of Testing:                                                                                                                                           |                                                                                                                                                                                           |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Tests performed (name of test and test clause):                                                                                                               | Testing location:                                                                                                                                                                         |
| The sample(s) tested complies with the requirements of VC 9109 When determining the test conclusion. The Measurement Uncertainty of test has be enconsidered. | Shenzhen AOCE Electronic Technology Service Co., Ltd<br>Room 202, 2nd Floor, No.12th Building of Xinhe Tongfuyu Industrial Park, Fuhai Street, Baoan District, Shenzhen, Guangdong, China |
| Normative References:                                                                                                                                         |                                                                                                                                                                                           |
| Standard reference                                                                                                                                            | Describe                                                                                                                                                                                  |
| IEC / SANS 62612                                                                                                                                              | Self-ballasted LED lamps for general lighting services with supply voltages > 50 V - Performance requirements                                                                             |
| CIE S 025/E:2015                                                                                                                                              | Test Method for LED Lamps, LED Luminaires and LED Modules                                                                                                                                 |
| IEC 63103:2020                                                                                                                                                | Lighting equipment - Non-active mode power measurement                                                                                                                                    |
| CIE 13.3                                                                                                                                                      | Method of Measuring and Specifying Colour Rendering Properties of Light Sources                                                                                                           |
| CIE 84:1989                                                                                                                                                   | Measurement of Luminous Flux (1st Edition).                                                                                                                                               |
| IEC TR 61547-1:2020                                                                                                                                           | Equipment for general lighting purposes - EMC immunity requirements -Part 1: Objective light flickermeter and voltage fluctuation immunity test method                                    |
| IEC TR 63158:2018                                                                                                                                             | Equipment for general lighting purposes - Objective test method for stroboscopic effects of lighting equipment                                                                            |
| Copy of Marking Plate:                                                                                                                                        |                                                                                                                                                                                           |
| N/A                                                                                                                                                           |                                                                                                                                                                                           |

| Type of light source:                                    |                                                              |                                                                |                                   |
|----------------------------------------------------------|--------------------------------------------------------------|----------------------------------------------------------------|-----------------------------------|
| Product type.....                                        | <input checked="" type="checkbox"/> Light source             | <input type="checkbox"/> Separate control gears                |                                   |
| Lighting technology used.....                            | <input checked="" type="checkbox"/> LED                      | <input type="checkbox"/> OLED                                  | <input type="checkbox"/> Other    |
| Non-directional or directional.....                      | <input type="checkbox"/> DLS (Directional)                   | <input checked="" type="checkbox"/> NDLS (Non-directional)     |                                   |
| Use of lamp.....                                         | <input checked="" type="checkbox"/> Indoor                   | <input type="checkbox"/> Outdoor                               | <input type="checkbox"/> Industry |
| Light source cap-type (or other electric interface)..... | E27/E14/ B22(d)                                              |                                                                |                                   |
| Mains or non-mains.....                                  | <input checked="" type="checkbox"/> MLS (mains light source) | <input type="checkbox"/> NMLS (non-mains light source)         |                                   |
| Connected light source (CLS).....                        | <input type="checkbox"/> Yes                                 | <input checked="" type="checkbox"/> No                         |                                   |
| Colour-tuneable light source.....                        | <input type="checkbox"/> Yes                                 | <input checked="" type="checkbox"/> No                         |                                   |
| Envelope.....                                            | <input type="checkbox"/> Yes                                 | <input checked="" type="checkbox"/> No                         |                                   |
| High luminance light source.....                         | <input type="checkbox"/> Yes                                 | <input checked="" type="checkbox"/> No                         |                                   |
| Anti-glare shield.....                                   | <input type="checkbox"/> Yes                                 | <input checked="" type="checkbox"/> No                         |                                   |
| Dimmable.....                                            | <input type="checkbox"/> Yes                                 | <input checked="" type="checkbox"/> only with specific dimmers | <input type="checkbox"/> No       |
| Product parameters                                       |                                                              |                                                                |                                   |
| Parameter.....                                           | 220-240 V~, 50/60 Hz, 4.8 W                                  |                                                                |                                   |
| Energy consumption in on-mode (KWh/1000h).....           | 4.8                                                          |                                                                |                                   |
| Energy efficiency class.....                             | See table 7                                                  |                                                                |                                   |
| Beam angle correspondence.....                           | See table 3                                                  |                                                                |                                   |
| Correlated colour temperature (K).....                   | See table 2                                                  |                                                                |                                   |
| On-mode power (W).....                                   | See table 1                                                  |                                                                |                                   |
| Standby power (W).....                                   | See table 1                                                  |                                                                |                                   |
| Networked standby power for CLS (W).....                 | See table 1                                                  |                                                                |                                   |
| Colour rendering index.....                              | See table 2                                                  |                                                                |                                   |
| Colour rendering index range (Minimum).....              | See table 2                                                  |                                                                |                                   |
| Colour rendering index range (Maximum).....              | See table 2                                                  |                                                                |                                   |
| Claim of equivalent power.....                           | <input type="checkbox"/> Yes                                 | <input checked="" type="checkbox"/> No                         |                                   |
| Equivalent power (W).....                                | /                                                            |                                                                |                                   |
| Chromaticity coordinate (x).....                         | See table 2                                                  |                                                                |                                   |
| Chromaticity coordinate (y).....                         | See table 2                                                  |                                                                |                                   |
| PARAMETERS FOR DIRECTIONAL LIGHT SOURCES                 |                                                              |                                                                |                                   |
| Peak luminous intensity (cd).....                        | See table 3                                                  |                                                                |                                   |
| Beam angle (degrees).....                                | See table 3                                                  |                                                                |                                   |
| Beam angle range (Minimum) (degrees).....                | See table 3                                                  |                                                                |                                   |
| Beam angle range (Maximum) (degrees).....                | See table 3                                                  |                                                                |                                   |
| PARAMETERS FOR LED AND OLED LIGHT SOURCES                |                                                              |                                                                |                                   |
| R9 Colour rendering index.....                           | See table 2                                                  |                                                                |                                   |
| Survival factor.....                                     | See table 3                                                  |                                                                |                                   |
| Lumen maintenance factor.....                            | See table 3                                                  |                                                                |                                   |
| PARAMETERS FOR LED AND OLED MAINS LIGHT SOURCES          |                                                              |                                                                |                                   |

|                                                                                                                                                                                                                                      |                                                                                                                                                                |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Displacement factor.....                                                                                                                                                                                                             | See table 1                                                                                                                                                    |
| Colour consistency in McAdam ellipses.....                                                                                                                                                                                           | See table 2                                                                                                                                                    |
| Claims that an LED light source replaces a fluorescent light source without integrated ballast of a particular wattage.....                                                                                                          | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> N.A                                                                                           |
| Replacement claim (W).....                                                                                                                                                                                                           | /                                                                                                                                                              |
| Flicker metric (W).....                                                                                                                                                                                                              | See table 4                                                                                                                                                    |
| Stroboscopic effect metric (W).....                                                                                                                                                                                                  | See table 4                                                                                                                                                    |
| Outer dimensions (Millimetre).....                                                                                                                                                                                                   | Ø59×H104                                                                                                                                                       |
| Spectral power distribution in the range 250 nm to 800 nm, at full-load.....                                                                                                                                                         | See table 5                                                                                                                                                    |
| <b>Possible Test Case Verdicts:</b>                                                                                                                                                                                                  |                                                                                                                                                                |
| Test case does not apply to the test object.....                                                                                                                                                                                     | N/A (Not Applicable)                                                                                                                                           |
| Test object does meet the requirement.....                                                                                                                                                                                           | P (Pass)                                                                                                                                                       |
| Test object does not meet the requirement.....                                                                                                                                                                                       | F (Fail)                                                                                                                                                       |
| Name and address of factory.....                                                                                                                                                                                                     | Jiangxi Lepeng Electric Appliance Co., LTD.<br>Changjiang Electronic Information Industry Park<br>Changjiang District 333000 Jingdezhen City, Jiangxi Province |
| <b>Testing:</b>                                                                                                                                                                                                                      |                                                                                                                                                                |
| Ambient temperature of tested .....                                                                                                                                                                                                  | 25.0 °C                                                                                                                                                        |
| Test inputs.....                                                                                                                                                                                                                     | 230 V~                                                                                                                                                         |
| Sample size for tested .....                                                                                                                                                                                                         | 10 pcs                                                                                                                                                         |
| Date of receipt of test item.....                                                                                                                                                                                                    | 2024-12-16                                                                                                                                                     |
| Date (s) of performance of tests.....                                                                                                                                                                                                | 2024-12-16 to 2025-11-04                                                                                                                                       |
| <b>General Remarks:</b>                                                                                                                                                                                                              |                                                                                                                                                                |
| Note: This test report is prepared for the customer shown above and for the device described herein. It may not be duplicated or use in part without prior written consent from Shenzhen AOCE Electronic Technology Service Co., Ltd |                                                                                                                                                                |
| <b>Note:</b>                                                                                                                                                                                                                         |                                                                                                                                                                |
| N/A                                                                                                                                                                                                                                  |                                                                                                                                                                |

| VC 9109                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                             |         |                      |                                          |                                   |      |                   |      |                             |      |                                                   |  |                    |      |                     |      |                      |       |                       |       |                       |       |  |     |
|---------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|---------|----------------------|------------------------------------------|-----------------------------------|------|-------------------|------|-----------------------------|------|---------------------------------------------------|--|--------------------|------|---------------------|------|----------------------|-------|-----------------------|-------|-----------------------|-------|--|-----|
| Clause                                            | Requirement + Test                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Result – Remark                             | Verdict |                      |                                          |                                   |      |                   |      |                             |      |                                                   |  |                    |      |                     |      |                      |       |                       |       |                       |       |  |     |
| 4                                                 | EFFICIENCY REQUIREMENTS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                             | -       |                      |                                          |                                   |      |                   |      |                             |      |                                                   |  |                    |      |                     |      |                      |       |                       |       |                       |       |  |     |
| a)                                                | GSLs shall comply with the luminous efficacy requirements in Table 1 or Table 2, as relevant:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                             | P       |                      |                                          |                                   |      |                   |      |                             |      |                                                   |  |                    |      |                     |      |                      |       |                       |       |                       |       |  |     |
|                                                   | <table><tr><td colspan="2">Table 1: Minimum luminous efficacy, phase 1</td></tr><tr><td>Product Type</td><td>Phase 1 Minimum luminous efficacy (lm/W)</td></tr><tr><td>General Service Lamp</td><td>90</td></tr></table>                                                                                                                                                                                                                                                                                                                                                                                                                                    | Table 1: Minimum luminous efficacy, phase 1 |         | Product Type         | Phase 1 Minimum luminous efficacy (lm/W) | General Service Lamp              | 90   |                   | P    |                             |      |                                                   |  |                    |      |                     |      |                      |       |                       |       |                       |       |  |     |
| Table 1: Minimum luminous efficacy, phase 1       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                             |         |                      |                                          |                                   |      |                   |      |                             |      |                                                   |  |                    |      |                     |      |                      |       |                       |       |                       |       |  |     |
| Product Type                                      | Phase 1 Minimum luminous efficacy (lm/W)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                             |         |                      |                                          |                                   |      |                   |      |                             |      |                                                   |  |                    |      |                     |      |                      |       |                       |       |                       |       |  |     |
| General Service Lamp                              | 90                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                             |         |                      |                                          |                                   |      |                   |      |                             |      |                                                   |  |                    |      |                     |      |                      |       |                       |       |                       |       |  |     |
|                                                   | <table><tr><td colspan="2">Table 2: Minimum luminous efficacy, phase 2</td></tr><tr><td>Product Type</td><td>Phase 2 Minimum luminous efficacy (lm/W)</td></tr><tr><td>General Service Lamp</td><td>105</td></tr></table>                                                                                                                                                                                                                                                                                                                                                                                                                                   | Table 2: Minimum luminous efficacy, phase 2 |         | Product Type         | Phase 2 Minimum luminous efficacy (lm/W) | General Service Lamp              | 105  |                   | P    |                             |      |                                                   |  |                    |      |                     |      |                      |       |                       |       |                       |       |  |     |
| Table 2: Minimum luminous efficacy, phase 2       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                             |         |                      |                                          |                                   |      |                   |      |                             |      |                                                   |  |                    |      |                     |      |                      |       |                       |       |                       |       |  |     |
| Product Type                                      | Phase 2 Minimum luminous efficacy (lm/W)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                             |         |                      |                                          |                                   |      |                   |      |                             |      |                                                   |  |                    |      |                     |      |                      |       |                       |       |                       |       |  |     |
| General Service Lamp                              | 105                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                             |         |                      |                                          |                                   |      |                   |      |                             |      |                                                   |  |                    |      |                     |      |                      |       |                       |       |                       |       |  |     |
| b)                                                | Depending on the lamp characteristics, the minimum luminous efficacy values may be decreased by the following correction factors (C):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                             | P       |                      |                                          |                                   |      |                   |      |                             |      |                                                   |  |                    |      |                     |      |                      |       |                       |       |                       |       |  |     |
|                                                   | <table><tr><td colspan="2">Table 3: Correction factors</td></tr><tr><td>Lamp Characteristics</td><td>C</td></tr><tr><td>Luminous flux Φ (lm) below 400 lm</td><td>-10%</td></tr><tr><td>Directional lamps</td><td>-15%</td></tr><tr><td>Colour-tuneable lamps (CTL)</td><td>-10%</td></tr><tr><td>Connected LED Lamps – rated luminous flux Φ (lm):</td><td></td></tr><tr><td>60 lm ≤ Φ ≤ 300 lm</td><td>-15%</td></tr><tr><td>300 lm &lt; Φ ≤ 650 lm</td><td>-10%</td></tr><tr><td>650 lm &lt; Φ ≤ 1200 lm</td><td>-7.5%</td></tr><tr><td>1200 lm &lt; Φ ≤ 2000 lm</td><td>-5.0%</td></tr><tr><td>2000 lm &lt; Φ ≤ 3300 lm</td><td>-2.5%</td></tr></table> | Table 3: Correction factors                 |         | Lamp Characteristics | C                                        | Luminous flux Φ (lm) below 400 lm | -10% | Directional lamps | -15% | Colour-tuneable lamps (CTL) | -10% | Connected LED Lamps – rated luminous flux Φ (lm): |  | 60 lm ≤ Φ ≤ 300 lm | -15% | 300 lm < Φ ≤ 650 lm | -10% | 650 lm < Φ ≤ 1200 lm | -7.5% | 1200 lm < Φ ≤ 2000 lm | -5.0% | 2000 lm < Φ ≤ 3300 lm | -2.5% |  | N/A |
| Table 3: Correction factors                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                             |         |                      |                                          |                                   |      |                   |      |                             |      |                                                   |  |                    |      |                     |      |                      |       |                       |       |                       |       |  |     |
| Lamp Characteristics                              | C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                             |         |                      |                                          |                                   |      |                   |      |                             |      |                                                   |  |                    |      |                     |      |                      |       |                       |       |                       |       |  |     |
| Luminous flux Φ (lm) below 400 lm                 | -10%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                             |         |                      |                                          |                                   |      |                   |      |                             |      |                                                   |  |                    |      |                     |      |                      |       |                       |       |                       |       |  |     |
| Directional lamps                                 | -15%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                             |         |                      |                                          |                                   |      |                   |      |                             |      |                                                   |  |                    |      |                     |      |                      |       |                       |       |                       |       |  |     |
| Colour-tuneable lamps (CTL)                       | -10%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                             |         |                      |                                          |                                   |      |                   |      |                             |      |                                                   |  |                    |      |                     |      |                      |       |                       |       |                       |       |  |     |
| Connected LED Lamps – rated luminous flux Φ (lm): |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                             |         |                      |                                          |                                   |      |                   |      |                             |      |                                                   |  |                    |      |                     |      |                      |       |                       |       |                       |       |  |     |
| 60 lm ≤ Φ ≤ 300 lm                                | -15%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                             |         |                      |                                          |                                   |      |                   |      |                             |      |                                                   |  |                    |      |                     |      |                      |       |                       |       |                       |       |  |     |
| 300 lm < Φ ≤ 650 lm                               | -10%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                             |         |                      |                                          |                                   |      |                   |      |                             |      |                                                   |  |                    |      |                     |      |                      |       |                       |       |                       |       |  |     |
| 650 lm < Φ ≤ 1200 lm                              | -7.5%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                             |         |                      |                                          |                                   |      |                   |      |                             |      |                                                   |  |                    |      |                     |      |                      |       |                       |       |                       |       |  |     |
| 1200 lm < Φ ≤ 2000 lm                             | -5.0%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                             |         |                      |                                          |                                   |      |                   |      |                             |      |                                                   |  |                    |      |                     |      |                      |       |                       |       |                       |       |  |     |
| 2000 lm < Φ ≤ 3300 lm                             | -2.5%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                             |         |                      |                                          |                                   |      |                   |      |                             |      |                                                   |  |                    |      |                     |      |                      |       |                       |       |                       |       |  |     |
| 4.2                                               | Displacement Factor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                             | P       |                      |                                          |                                   |      |                   |      |                             |      |                                                   |  |                    |      |                     |      |                      |       |                       |       |                       |       |  |     |
|                                                   | Lamp displacement factor (Df) with integrated control gear and integrated luminaires:<br><input type="checkbox"/> P ≤ 2W: no requirement<br><input checked="" type="checkbox"/> 2W < P ≤ 5W: Df > 0.4<br><input type="checkbox"/> 5W < P ≤ 10W: Df > 0.7<br><input type="checkbox"/> P > 10W: Df > 0.9                                                                                                                                                                                                                                                                                                                                                      | See test sheet                              | P       |                      |                                          |                                   |      |                   |      |                             |      |                                                   |  |                    |      |                     |      |                      |       |                       |       |                       |       |  |     |
| 4.2.1                                             | Standby Power for connected lamps                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                             | N/A     |                      |                                          |                                   |      |                   |      |                             |      |                                                   |  |                    |      |                     |      |                      |       |                       |       |                       |       |  |     |
|                                                   | Standby power for lamps shall not exceed 0.5 W.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                             | N/A     |                      |                                          |                                   |      |                   |      |                             |      |                                                   |  |                    |      |                     |      |                      |       |                       |       |                       |       |  |     |
|                                                   | Networked standby power for Connected LED Lamps shall not exceed 0.5 W.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                             | N/A     |                      |                                          |                                   |      |                   |      |                             |      |                                                   |  |                    |      |                     |      |                      |       |                       |       |                       |       |  |     |
|                                                   | The allowable values for Standby power and networked standby power shall not be added together.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                             | N/A     |                      |                                          |                                   |      |                   |      |                             |      |                                                   |  |                    |      |                     |      |                      |       |                       |       |                       |       |  |     |
| 4.3                                               | Functional Performance Requirements                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                             | P       |                      |                                          |                                   |      |                   |      |                             |      |                                                   |  |                    |      |                     |      |                      |       |                       |       |                       |       |  |     |
|                                                   | Colour Rendering Index (CRI) CRI ≥80                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | See test sheet                              | P       |                      |                                          |                                   |      |                   |      |                             |      |                                                   |  |                    |      |                     |      |                      |       |                       |       |                       |       |  |     |

| VC 9109 |                                                                                                                                                                              |                 |         |
|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|---------|
| Clause  | Requirement + Test                                                                                                                                                           | Result – Remark | Verdict |
|         | Lumen Maintenance Factor (for LED and OLED):<br>$X_{LMF,MIN}\% = 100 \times e^{\frac{(3000 \times \ln(0.7))}{L_{70}}}$                                                       | See test sheet  | P       |
|         | Survival factor:<br>No less than 90% of sample units should be operational following endurance testing according                                                             | See test sheet  | P       |
|         | Short term flicker indicator ( $P_{stLM}$ ):<br>≤1.0 at full load and a sinusoidal input voltage                                                                             | See test sheet  | P       |
|         | Short term flicker indicator (SVM):<br>≤0.4 at full load and a sinusoidal input voltage                                                                                      | See test sheet  | P       |
|         | Colour consistency:<br>Variation of x,y chromaticity coordinates within a five -step Standard Deviation of Colour Matching (SDCM) or less.                                   | See test sheet  | P       |
| 4.4     | Product Information Requirements                                                                                                                                             |                 | P       |
| 4.4.1   | Lamp information                                                                                                                                                             |                 | P       |
|         | a) Rated power in Watts (mandatory).                                                                                                                                         |                 | P       |
|         | b) Rated operating voltage (mandatory).                                                                                                                                      |                 | P       |
|         | c) Trade name or brand name (mandatory).                                                                                                                                     |                 | P       |
|         | d) Rated initial luminous flux in lumens (mandatory).                                                                                                                        |                 | P       |
|         | e) Rated correlated colour temperature (CCT) in Kelvin (K) (mandatory).                                                                                                      |                 | P       |
|         | f) Beam angle (mandatory for directional lamps).                                                                                                                             |                 | N/A     |
| 4.4.2   | Packaging information                                                                                                                                                        |                 | P       |
|         | a) Rated power in Watts (mandatory).                                                                                                                                         |                 | P       |
|         | b) Rated operating voltage (mandatory).                                                                                                                                      |                 | P       |
|         | c) Rated initial luminous flux in lumens (mandatory).                                                                                                                        |                 | P       |
|         | d) Rated efficacy in lumens per Watt (lm/W) (mandatory).                                                                                                                     |                 | P       |
|         | e) Rated lifetime in hours and L70B50 if longer (mandatory)                                                                                                                  |                 | P       |
|         | f) Rated correlated colour temperature (CCT) in Kelvin (K) combined with a sliding scale: (mandatory).                                                                       |                 | P       |
|         | g) Beam angle (mandatory for directional lamps).                                                                                                                             |                 | N/A     |
|         | h) Statement on Dimmability. Clearly state whether dimmable or not dimmable. If yes, then information on dimmer compatibility, or web link to this information. (mandatory). |                 | P       |

| VC 9109                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                    |         |                                    |  |  |                       |    |  |     |    |  |     |    |  |     |    |  |     |    |  |      |     |  |      |     |  |      |     |  |      |  |     |
|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|---------|------------------------------------|--|--|-----------------------|----|--|-----|----|--|-----|----|--|-----|----|--|-----|----|--|------|-----|--|------|-----|--|------|-----|--|------|--|-----|
| Clause                       | Requirement + Test                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Result – Remark                    | Verdict |                                    |  |  |                       |    |  |     |    |  |     |    |  |     |    |  |     |    |  |      |     |  |      |     |  |      |     |  |      |  |     |
|                              | i) For general service lamps which are, according to paragraph 1.2, exempted from the requirements of paragraph 3, the intended purpose shall be stated on all forms of packaging, product information and advertisement, together with a clear indication in large font on the front of the package that the Lamp is NOT Intended for General Illumination Purposes. (mandatory).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                    | P       |                                    |  |  |                       |    |  |     |    |  |     |    |  |     |    |  |     |    |  |      |     |  |      |     |  |      |     |  |      |  |     |
|                              | j) Base type (mandatory).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                    | P       |                                    |  |  |                       |    |  |     |    |  |     |    |  |     |    |  |     |    |  |      |     |  |      |     |  |      |     |  |      |  |     |
|                              | k) Efficiency label compliant with the current version of the Department of Energy guideline for energy efficiency label compliance in South Africa: A Guide for Energy Efficiency Labelling (mandatory).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                    | P       |                                    |  |  |                       |    |  |     |    |  |     |    |  |     |    |  |     |    |  |      |     |  |      |     |  |      |     |  |      |  |     |
|                              | l) Incandescent equivalency claim (optional).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                    | N/A     |                                    |  |  |                       |    |  |     |    |  |     |    |  |     |    |  |     |    |  |      |     |  |      |     |  |      |     |  |      |  |     |
|                              | <p>m) Manufacturers are not required to provide an incandescent equivalency claim (i.e. "This lamp is as bright as a 60W incandescent" or "10W = 60W "). However, if they do, then the equivalency shall be based on the table below which depicts the minimum initial luminous flux that is required to claim a specific incandescent lamp wattage equivalency:</p> <p>Table 6: Incandescent wattage equivalencies for LED lamps</p> <table><tr><th>Incandescent Equivalency [W]</th><th>Wattage</th><th>Minimum Initial Luminous Flux [lm]</th></tr><tr><td></td><td></td><th>Non-directional Lamps</th></tr><tr><td>15</td><td></td><td>150</td></tr><tr><td>25</td><td></td><td>250</td></tr><tr><td>40</td><td></td><td>500</td></tr><tr><td>60</td><td></td><td>800</td></tr><tr><td>75</td><td></td><td>1000</td></tr><tr><td>100</td><td></td><td>1500</td></tr><tr><td>150</td><td></td><td>2500</td></tr><tr><td>200</td><td></td><td>3500</td></tr></table> | Incandescent Equivalency [W]       | Wattage | Minimum Initial Luminous Flux [lm] |  |  | Non-directional Lamps | 15 |  | 150 | 25 |  | 250 | 40 |  | 500 | 60 |  | 800 | 75 |  | 1000 | 100 |  | 1500 | 150 |  | 2500 | 200 |  | 3500 |  | N/A |
| Incandescent Equivalency [W] | Wattage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Minimum Initial Luminous Flux [lm] |         |                                    |  |  |                       |    |  |     |    |  |     |    |  |     |    |  |     |    |  |      |     |  |      |     |  |      |     |  |      |  |     |
|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Non-directional Lamps              |         |                                    |  |  |                       |    |  |     |    |  |     |    |  |     |    |  |     |    |  |      |     |  |      |     |  |      |     |  |      |  |     |
| 15                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 150                                |         |                                    |  |  |                       |    |  |     |    |  |     |    |  |     |    |  |     |    |  |      |     |  |      |     |  |      |     |  |      |  |     |
| 25                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 250                                |         |                                    |  |  |                       |    |  |     |    |  |     |    |  |     |    |  |     |    |  |      |     |  |      |     |  |      |     |  |      |  |     |
| 40                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 500                                |         |                                    |  |  |                       |    |  |     |    |  |     |    |  |     |    |  |     |    |  |      |     |  |      |     |  |      |     |  |      |  |     |
| 60                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 800                                |         |                                    |  |  |                       |    |  |     |    |  |     |    |  |     |    |  |     |    |  |      |     |  |      |     |  |      |     |  |      |  |     |
| 75                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 1000                               |         |                                    |  |  |                       |    |  |     |    |  |     |    |  |     |    |  |     |    |  |      |     |  |      |     |  |      |     |  |      |  |     |
| 100                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 1500                               |         |                                    |  |  |                       |    |  |     |    |  |     |    |  |     |    |  |     |    |  |      |     |  |      |     |  |      |     |  |      |  |     |
| 150                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 2500                               |         |                                    |  |  |                       |    |  |     |    |  |     |    |  |     |    |  |     |    |  |      |     |  |      |     |  |      |     |  |      |  |     |
| 200                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 3500                               |         |                                    |  |  |                       |    |  |     |    |  |     |    |  |     |    |  |     |    |  |      |     |  |      |     |  |      |     |  |      |  |     |
|                              | Voltage surge and dip immunity claim (optional). Manufacturers are not required to provide a voltage surge and dip immunity claim (e.g. "Withstands Power Surge ", "Power Surge Protected "). However, if they do, then the claim shall meet the EMC immunity requirements for equipment for general lighting purposes as set out in IEC 61547 for conditions in South Africa.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                    | N/A     |                                    |  |  |                       |    |  |     |    |  |     |    |  |     |    |  |     |    |  |      |     |  |      |     |  |      |     |  |      |  |     |
| ANNEX B                      | NDURANCE TEST METHOD AND SEQUENCE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                    | P       |                                    |  |  |                       |    |  |     |    |  |     |    |  |     |    |  |     |    |  |      |     |  |      |     |  |      |     |  |      |  |     |
| B1                           | Ambient conditions and test setup:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                    | P       |                                    |  |  |                       |    |  |     |    |  |     |    |  |     |    |  |     |    |  |      |     |  |      |     |  |      |     |  |      |  |     |
| B1.1                         | The switching cycles are to be conducted in a room with an ambient temperature of 25 ± 10 °C and an average air velocity of less than 0,2 m/s.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                    | P       |                                    |  |  |                       |    |  |     |    |  |     |    |  |     |    |  |     |    |  |      |     |  |      |     |  |      |     |  |      |  |     |

| VC 9109 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                 |         |
|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|---------|
| Clause  | Requirement + Test                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Result – Remark | Verdict |
| B1.2    | The switching cycles on the sample shall be conducted in free air in a vertical base-up position. However, if a manufacturer or importer has declared the light source suitable for use in a specific orientation only, then the sample shall be mounted in that orientation.                                                                                                                                                                                             |                 | P       |
| B1.3    | The applied voltage during the switching cycles shall have a tolerance within 2 %. The total harmonic content of the supply voltage shall not exceed 3 %. Standards provide guidance on the supply voltage source.                                                                                                                                                                                                                                                        |                 | P       |
| B2      | Provisional Endurance Test Method                                                                                                                                                                                                                                                                                                                                                                                                                                         |                 | P       |
| B2.1    | Initial flux measurement: measure the luminous flux of the light source prior to starting the endurance test switching cycle.                                                                                                                                                                                                                                                                                                                                             |                 | P       |
| B2.2    | Switching cycles: operate the light source for 1 200 cycles of repeated, continuous switching cycles without interruption. One complete switching cycle consists of 150 minutes of the light source switched ON at full power followed by 30 minutes of the light source switched OFF. The hours of operation recorded (i.e. 3 000 hours) include only the periods of the switching cycle when the light source was switched ON, i.e. the total test time is 3 600 hours. |                 | P       |
| B2.3    | Final flux measurement: at the end of the 1 200 switching cycles, note if any light sources have failed (see 'Survival factor' in Annex IV, Table 6 of this Regulation) and measure the luminous flux of the light sources that have not failed.                                                                                                                                                                                                                          |                 | P       |
| B2.4    | For each of the units in the sample which have not failed, divide the measured final flux by the measured initial flux. Average the resulting values over all the units that did not fail to compute the determined value for the lumen maintenance factor XLMF %.                                                                                                                                                                                                        |                 | P       |

## Test data sheet

**Table 1**

Model No.: LHC37E27-D5N

| Sample No.    | Pon(W) | No-load power<br>$P_{no}(W)$ | Standby power<br>$P_{sb}(W)$ | Networked standby<br>power $P_{net}(W)$ | Displacement<br>factor |
|---------------|--------|------------------------------|------------------------------|-----------------------------------------|------------------------|
| S01           | 4.79   | N/A                          | N/A                          | N/A                                     | 0.93                   |
| S02           | 4.81   | N/A                          | N/A                          | N/A                                     | 0.92                   |
| S03           | 4.77   | N/A                          | N/A                          | N/A                                     | 0.92                   |
| S04           | 4.81   | N/A                          | N/A                          | N/A                                     | 0.92                   |
| S05           | 4.78   | N/A                          | N/A                          | N/A                                     | 0.92                   |
| S06           | 4.78   | N/A                          | N/A                          | N/A                                     | 0.91                   |
| S07           | 4.81   | N/A                          | N/A                          | N/A                                     | 0.91                   |
| S08           | 4.77   | N/A                          | N/A                          | N/A                                     | 0.92                   |
| S09           | 4.80   | N/A                          | N/A                          | N/A                                     | 0.92                   |
| S10           | 4.81   | N/A                          | N/A                          | N/A                                     | 0.91                   |
| Average value | 4.79   | N/A                          | N/A                          | N/A                                     | 0.92                   |

**Table 2**

Model No.: LHC37E27-D5N

| Sample No.    | Chromaticity Coordinates |        | CCT(K) | CRI  | SDCM | R9 |
|---------------|--------------------------|--------|--------|------|------|----|
|               | x                        | y      |        |      |      |    |
| S01           | 0.3745                   | 0.3765 | 4085   | 82.3 | 2.6  | 2  |
| S02           | 0.3772                   | 0.3784 | 4106   | 82.4 | 1.4  | 2  |
| S03           | 0.3756                   | 0.3769 | 4114   | 82.3 | 2.0  | 3  |
| S04           | 0.3764                   | 0.3784 | 4056   | 82.1 | 1.8  | 3  |
| S05           | 0.3753                   | 0.3776 | 4106   | 82.2 | 2.3  | 2  |
| S06           | 0.3747                   | 0.3761 | 4129   | 82.4 | 2.5  | 2  |
| S07           | 0.3749                   | 0.3757 | 4039   | 82.3 | 2.4  | 2  |
| S08           | 0.3764                   | 0.3772 | 4083   | 82.1 | 1.7  | 2  |
| S09           | 0.3768                   | 0.3769 | 4121   | 82.4 | 1.5  | 3  |
| S10           | 0.3760                   | 0.3784 | 4046   | 82.4 | 2.0  | 2  |
| Average value | 0.3758                   | 0.3772 | 4089   | 82.3 | 2.0  | 2  |

## Test data sheet

**Table 3**

Model No.: LHC37E27-D5N

| Sample No.    | Useful luminous flux $\Phi_{use}$ (lm) at 0h | Useful luminous flux $\Phi_{use}$ (lm) at 3600h | Lumen maintenance factor | Survival factor | Beam angle(°) | Peak luminous intensity (cd) |
|---------------|----------------------------------------------|-------------------------------------------------|--------------------------|-----------------|---------------|------------------------------|
| S01           | 508.6                                        | 490.7                                           | 96.48%                   | 100%            | N/A           | N/A                          |
| S02           | 512.8                                        | 494.5                                           | 96.42%                   | 100%            | N/A           | N/A                          |
| S03           | 515.5                                        | 496.3                                           | 96.28%                   | 100%            | N/A           | N/A                          |
| S04           | 511.5                                        | 495.0                                           | 96.77%                   | 100%            | N/A           | N/A                          |
| S05           | 508.9                                        | 490.4                                           | 96.35%                   | 100%            | N/A           | N/A                          |
| S06           | 505.8                                        | 488.4                                           | 96.55%                   | 100%            | N/A           | N/A                          |
| S07           | 510.4                                        | 491.0                                           | 96.20%                   | 100%            | N/A           | N/A                          |
| S08           | 494.7                                        | 477.3                                           | 96.49%                   | 100%            | N/A           | N/A                          |
| S09           | 504.3                                        | 486.1                                           | 96.40%                   | 100%            | N/A           | N/A                          |
| S10           | 514.1                                        | 495.2                                           | 96.32%                   | 100%            | N/A           | N/A                          |
| Average value | 508.7                                        | 490.5                                           | 96.43%                   | 100%            | N/A           | N/A                          |

**Table 4**

Model No.: LHC37E27-D5N

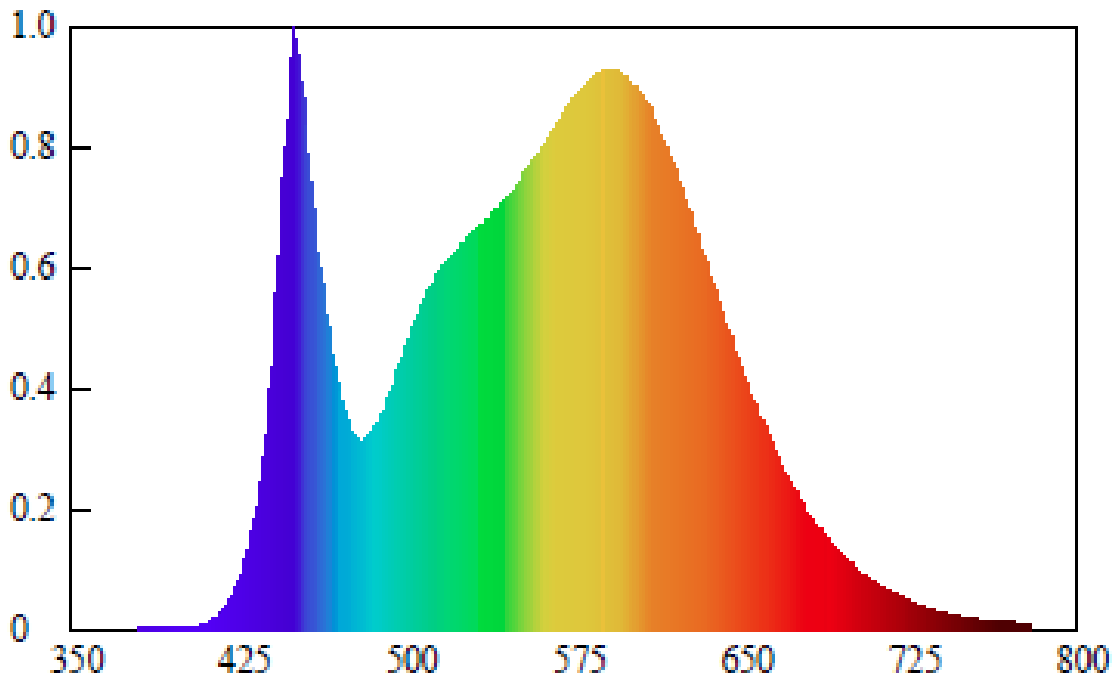
| Sample No.    | Flicker for LED and OLED MLS ( $P_{st} \text{ LM} \leq 1.0$ ) | Stroboscopic effect for LED and OLED MLS ( $SVM \leq 0.4$ ) |
|---------------|---------------------------------------------------------------|-------------------------------------------------------------|
| S01           | 0.218                                                         | 0.287                                                       |
| S02           | 0.249                                                         | 0.265                                                       |
| S03           | 0.181                                                         | 0.275                                                       |
| S04           | 0.205                                                         | 0.262                                                       |
| S05           | 0.178                                                         | 0.246                                                       |
| S06           | 0.188                                                         | 0.278                                                       |
| S07           | 0.175                                                         | 0.268                                                       |
| S08           | 0.239                                                         | 0.265                                                       |
| S09           | 0.228                                                         | 0.300                                                       |
| S10           | 0.192                                                         | 0.271                                                       |
| Average value | 0.205                                                         | 0.272                                                       |

Test data sheet

**Table 5**

Model No.: LHC37E27-D5N

**Spectral Distribution**



## Test data sheet

Table 7

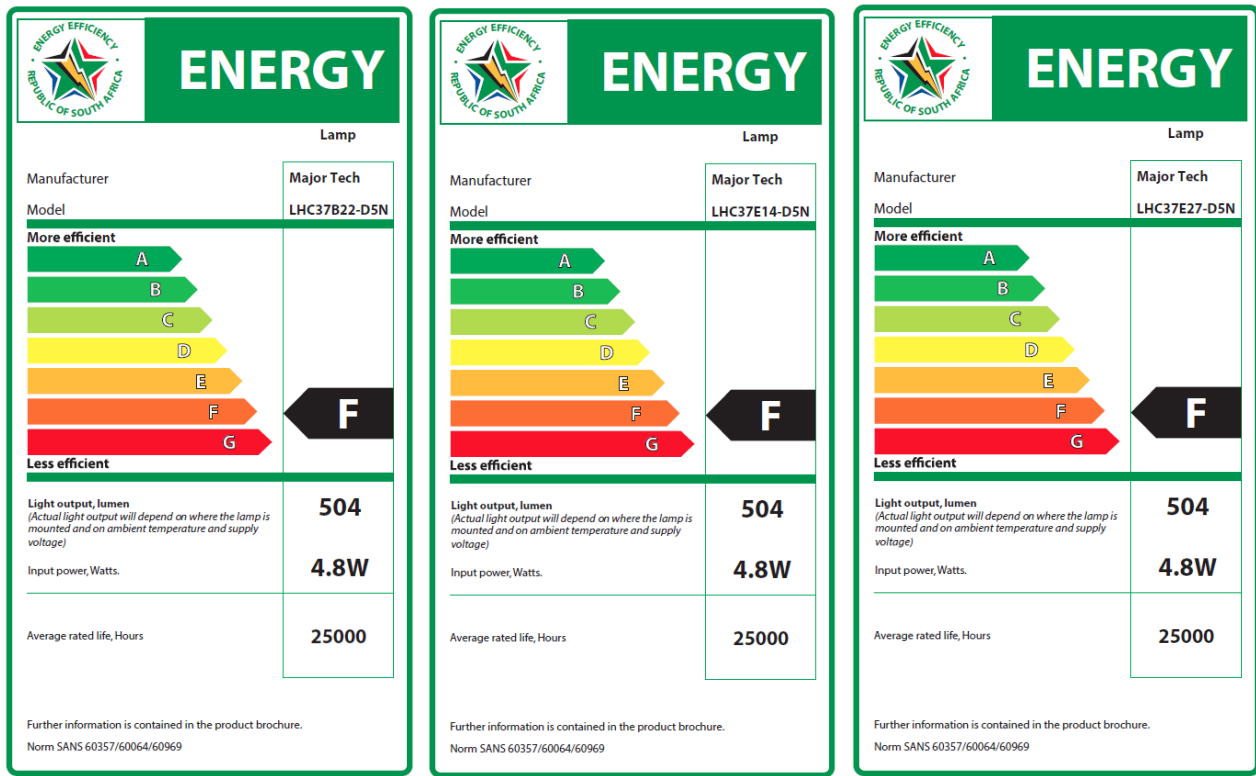
Model No.: LHC37E27-D5N

| Energy efficiency classes                  |                                                 |                                                      |                 |                         |
|--------------------------------------------|-------------------------------------------------|------------------------------------------------------|-----------------|-------------------------|
| According to rated value                   |                                                 |                                                      |                 |                         |
| Total mains efficacy<br>$\eta_{TM}$ (lm/W) | Useful luminous flux<br>$\Phi_{use}$ (lm) at 0h | $P_{on}(W)$                                          | Factor $F_{TM}$ | Energy Efficiency Class |
| 105.0                                      | 504                                             | 4.8                                                  | 1.000           | F                       |
| Energy efficiency class                    | Total mains efficacy<br>$\eta_{TM}$ (lm/W)      | Factors $F_{TM}$ by light source type                |                 |                         |
|                                            |                                                 | Light source type                                    | Factor $F_{TM}$ |                         |
| A                                          | $210 \leq \eta_{TM}$                            | Non-directional (NDLS) operating on mains (MLS)      | 1,000           |                         |
| B                                          | $185 \leq \eta_{TM} < 210$                      | Non-directional (NDLS) not operating on mains (NMLS) | 0,926           |                         |
| C                                          | $160 \leq \eta_{TM} < 185$                      | Directional (DLS) operating on mains (MLS)           | 1,176           |                         |
| D                                          | $135 \leq \eta_{TM} < 160$                      | Directional (DLS) not operating on mains (NMLS)      | 1,089           |                         |
| E                                          | $110 \leq \eta_{TM} < 135$                      |                                                      |                 |                         |
| F                                          | $85 \leq \eta_{TM} < 110$                       |                                                      |                 |                         |
| G                                          | $\eta_{TM} < 85$                                |                                                      |                 |                         |

| According to measured value                |                                                 |                                                      |                 |                         |
|--------------------------------------------|-------------------------------------------------|------------------------------------------------------|-----------------|-------------------------|
| Total mains efficacy<br>$\eta_{TM}$ (lm/W) | Useful luminous flux<br>$\Phi_{use}$ (lm) at 0h | $P_{on}(W)$                                          | Factor $F_{TM}$ | Energy Efficiency Class |
| 106.2                                      | 508.7                                           | 4.79                                                 | 1.000           | F                       |
| Energy efficiency class                    | Total mains efficacy<br>$\eta_{TM}$ (lm/W)      | Factors $F_{TM}$ by light source type                |                 |                         |
|                                            |                                                 | Light source type                                    | Factor $F_{TM}$ |                         |
| A                                          | $210 \leq \eta_{TM}$                            | Non-directional (NDLS) operating on mains (MLS)      | 1,000           |                         |
| B                                          | $185 \leq \eta_{TM} < 210$                      | Non-directional (NDLS) not operating on mains (NMLS) | 0,926           |                         |
| C                                          | $160 \leq \eta_{TM} < 185$                      | Directional (DLS) operating on mains (MLS)           | 1,176           |                         |
| D                                          | $135 \leq \eta_{TM} < 160$                      | Directional (DLS) not operating on mains (NMLS)      | 1,089           |                         |
| E                                          | $110 \leq \eta_{TM} < 135$                      |                                                      |                 |                         |
| F                                          | $85 \leq \eta_{TM} < 110$                       |                                                      |                 |                         |
| G                                          | $\eta_{TM} < 85$                                |                                                      |                 |                         |

Test data sheet

Energy efficiency label:



**Test Equipment List**

| Equipment Name                     | Manufacturer | Model No.      | Reference No. | Calibration Due Date |
|------------------------------------|--------------|----------------|---------------|----------------------|
| 2m Integrating Sphere              | SENSING      | SL-300         | AOC-S-126     | 2026-04-13           |
| Horizontal Distribution Photometer | SENSING      | GMS1800D       | AOC-S-124     | 2026-04-13           |
| Standard Lamp                      | SENSING      | 220V/150W      | AOC-S-156     | 2026-06-05           |
| Digital power meter                | HENGHE       | WT310E         | AOC-S-012     | 2026-04-13           |
| Digital power meter                | SENSING      | UI2008         | AOC-S-123     | 2026-04-13           |
| Digital power meter                | SENSING      | UI2021         | AOC-S-123     | 2026-04-13           |
| DC source                          | OYHS         | OYHS-Z120V-50A | AOC-S-062     | 2026-04-13           |
| Variable frequency power supply    | WOSEN        | BP6005         | AOC-S-129     | 2026-04-13           |
| Variable frequency power supply    | AIPUSI       | KDF-500        | AOC-S-130     | 2026-04-13           |
| Oscilloscope                       | TEKTRONIX    | MDO3012        | AOC-S-028     | 2026-04-13           |

## Product Photo



Fig. 1



Fig. 2 (Lamp cap type: E27)



Fig. 3(Lamp cap type: B22(d))



Fig. 4(Lamp cap type: E14)

-- End of Report --