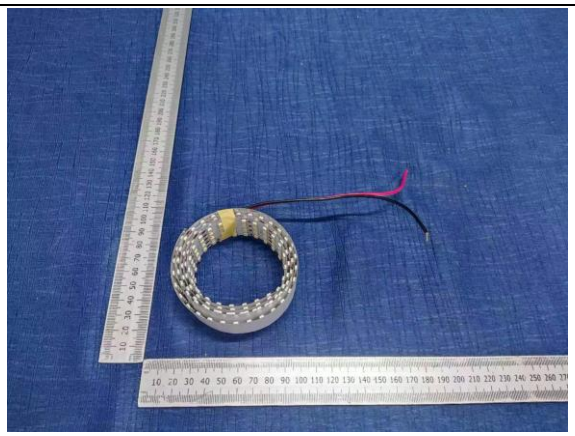
| | | | | |
|---|---|---|---|---|
| **Prüfbericht-Nr.:** *Test Report No.:* | **CN25LP40 001** | **Auftrags-Nr.:** *Order No.:* | 168568615 | Seite 1 von 23 *Page 1 of 23* |
| **Kunden-Referenz-Nr.:** *Client Reference No.:* | 2420312 | **Auftragsdatum:** *Order date.:* | 2025-08-06 | |
| **Auftraggeber:** *Client:* | **SHENZHEN LEDYI LIGHTING CO., LTD.**<br>8th Floor, Skyworth Digital Building,<br>Songbai Road, Shiyan, Bao'an District,<br>Shenzhen,<br>518105 Guangdong<br>P.R. China | | | |
| **Prüfgegenstand:** *Test item:* | Flexible LED Strip | | | |
| **Bezeichnung / Typ-Nr.:** *Identification / Type No.:* | LY-STxQyVz-Z (x, y, z and Z are variables, refer to section 3.1 for details) | | | |
| **Auftrags-Inhalt:** *Order content:* | TÜV Rheinland - EMC service | | | |
| **Prüfgrundlage:** *Test specification:* | EN IEC 55015:2019+A11:2020<br>EN IEC 61547:2023 | | | |
| **Wareneingangsdatum:** *Date of receipt:* | 2023-07-17 | | | |
| **Prüfmuster-Nr.:** *Test sample No.:* | A003516620-001 | | | |
| **Prüfzeitraum:** *Testing period:* | Refer to test report | | | |
| **Ort der Prüfung:** *Place of testing:* | Refer to section 2.1 | | | |
| **Prüflaboratorium:** *Testing laboratory:* | TÜV Rheinland (Shenzhen) Co., Ltd. | | | |
| **Prüfergebnis*:** *Test result*:* | Pass | | | |



| | | | |
|---|---|---|---|
| **geprüft von:** *tested by: Chris Mo* | Chris Mo | **genehmigt von:** *authorized by: Tiger Su* | |
| **Datum:** *Date:* 2025-08-21 | | **Ausstellungsdatum:** *Issue date:* 2025-08-21 | |
| **Stellung** / Position**:** | Project Engineer | **Stellung** / Position: | Authorizer |

**Sonstiges** */ Other:*

| | |
|---|---|
| **Zustand des Prüfgegenstandes bei Anlieferung:** *Condition of the test item at delivery:* | Prüfmuster vollständig und unbeschädigt *Test item complete and undamaged* |

| | | | | |
|---|---|---|---|---|
| * Legende: | P(ass) = entspricht o.g. Prüfgrundlage(n) | F(ail) = entspricht nicht o.g. Prüfgrundlage(n) | N/A = nicht anwendbar | N/T = nicht getestet |
| ** Legend:* | *P(ass) = passed a.m. test specification(s)* | *F(ail) = failed a.m. test specification(s)* | *N/A = not applicable* | *N/T = not tested* |

**Anmerkungen**
*Remarks*

| | |
|---|---|
| **1** | Alle eingesetzten Prüfmittel waren zum angegebenen Prüfzeitraum gemäß eines festgelegten Kalibrierungsprogramms unseres Prüfhauses kalibriert. Sie entsprechen den in den Prüfprogrammen hinterlegten Anforderungen. Die Rückverfolgbarkeit der eingesetzten Prüfmittel ist durch die Einhaltung der Regelungen unseres Managementsystems gegeben.<br>Detaillierte Informationen bezüglich Prüfkonditionen, Prüfequipment und Messunsicherheiten sind im Prüflabor vorhanden und können auf Wunsch bereitgestellt werden.<br><br>*The equipment used during the specified testing period was calibrated according to our test laboratory calibration program. The equipment fulfils the requirements included in the relevant standards. The traceability of the test equipment used is ensured by compliance with the regulations of our management system.*<br>*Detailed information regarding test conditions, equipment and measurement uncertainty is available in the test laboratory and could be provided on request.* |
| **2** | Wie vertraglich vereinbart, wurde dieses Dokument nur digital unterzeichnet. Der TÜV Rheinland hat nicht überprüft, welche rechtlichen oder sonstigen diesbezüglichen Anforderungen für dieses Dokument gelten. Diese Überprüfung liegt in der Verantwortung des Benutzers dieses Dokuments. Auf Verlangen des Kunden kann der TÜV Rheinland die Gültigkeit der digitalen Signatur durch ein gesondertes Dokument bestätigen. Diese Anfrage ist an unseren Vertrieb zu richten. Eine Umweltgebühr für einen solchen zusätzlichen Service wird erhoben. Informationen zur Verifizierung der Authentizität unserer Dokumente erhalten Sie auf folgender Webseite: go.tuv.com/digital-signature<br><br>*As contractually agreed, this document has been signed digitally only. TUV Rheinland has not verified and unable to verify which legal or other pertaining requirements are applicable for this document. Such verification is within the responsibility of the user of this document. Upon request by its client, TUV Rheinland can confirm the validity of the digital signature by a separate document. Such request shall be addressed to our Sales department. An environmental fee for such additional service will be charged. For information on verifying the authenticity of our documents, please visit the following website: go.tuv.com/digital-signature* |
| **3** | Prüfklausel mit der Note * wurden an qualifizierte Unterauftragnehmer vergeben und sind unter der jeweiligen Prüfklausel des Berichts beschrieben.<br>Abweichungen von Prüfspezifikation(en) oder Kundenanforderungen sind in der jeweiligen Prüfklausel im Bericht aufgeführt.<br><br>*Test clauses with remark of * are subcontracted to qualified subcontractors and descripted under the respective test clause in the report.*<br>*Deviations of testing specification(s) or customer requirements are listed in specific test clause in the report.* |
| **4** | Die Entscheidungsregel für Konformitätserklärungen basierend auf numerischen Messergebnisen in diesem Prüfbericht basiert auf der "Null-Grenzwert-Regel" und der "Einfachen Akzeptanz" gemäß ILAC G8:2019 und IEC Guide 115:2023, es sei denn, in der auf Seite 1 dieses Berichts genannten angewandten Norm ist etwas anderes festgelegt oder vom Kunden gewünscht. Dies bedeutet, dass die Messunsicherheit nicht berücksichtigt wird und daher auch nicht im Prüfbericht angegeben wird. Zu weiteren Informationen bezueglich des Risikos durch diese Entscheidungsregel siehe ILAC G8:2019.<br><br>*The decision rule for statements of conformity, based on numerical measurement results, in this test report is based on the “Zero Guard Band Rule” and “Simple Acceptance” in accordance with ILAC G8:2019 and IEC Guide 115:2023, unless otherwise specified in the applied standard mentioned on Page 1 of this report or requested by the customer. This means that measurement uncertainty is not taken in account and hence also not declared in the test report. For additional information to the resulting risk based of this decision rule please refer to ILAC G8:2019.* |

# TEST SUMMARY

**5.1.1 DISTURBANCE VOLTAGE AT LOCAL WIRED PORT**
*RESULT: Pass*

**5.1.2 RADIATED ELECTROMAGNETIC DISTURBANCES**
*RESULT: Pass*

**5.2.1 RADIATED ELECTROMAGNETIC DISTURBANCES**
*RESULT: Pass*

**6.2.1 RADIO-FREQUENCY ELECTROMAGNETIC FIELD (RS)**
*RESULT: Pass*

**6.2.2 INJECTED CURRENTS / CONDUCTED SUSCEPTIBILITY (CS)**
*RESULT: Pass*

**6.3.1 ELECTRICAL FAST TRANSIENTS (EFT)**
*RESULT: Pass*

**6.3.2 ELECTROSTATIC DISCHARGES (ESD)**
*RESULT: Pass*

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# 1. General Remarks

## 1.1 Complementary Materials

All attachments are integral parts of this test report. This applies especially to the following appendix:

Appendix 1: Test result

Appendix 2: Measurement Uncertainties

(Remark: The model no. shown on the appendix 1 – test results is 'SK-ST3Q480V24-c5', but the final version of this model no. is changed to 'LY-ST3Q480V24-c5' by the client.)

# 2. Test Sites

## 2.1 Test Facilities

TÜV Rheinland (Shenzhen) Co., Ltd. EMC Testing Center
No. 362 Huanguan Road Middle, Longhua District, 518110, Shenzhen, P.R. China

## 2.2 List of Test and Measurement Instruments

**Table 1: List of Test and Measurement Equipment**

| Kind of Equipment | Manufacturer | Type | S/N | Calibrated until |
|---|---|---|---|---|
| **Radiated Electromagnetic Disturbances (30-1000MHz) (TÜV)** | | | | |
| 10m SAC | ETS-Lindgren | SAC10 | CT001632-Q1399 | 2024-03-01 |
| EMI Test Receiver 1 | R&S | ESR7 | 102022 | 2023-07-31 |
| Bilog Antenna 1 | TESEQ | CBL6112D | 51321 | 2023-08-23 |
| Preamplifier 1 (30-1000MHz) | SCHWARZBECK | BBV9745 | 115 | 2023-08-01 |
| EMC32 test software | R&S | EMC32(Ver.10.50.00) | N/A | N/A |
| **Radiated Electromagnetic Disturbances (9kHz-30MHz)(TÜV)** | | | | |
| EMI Test Receiver | R&S | ESR3 | 102428 | 2023-07-31 |
| Triple Loop Antena | R&S | HM020E | 101119 | 2023-07-31 |
| EMC32 test software | R&S | EMC32(Ver.10.50.00) | N/A | N/A |
| **Disturbance Voltage(TÜV)** | | | | |
| EMI Test Receiver | R&S | ESR3 | 102428 | 2023-07-31 |
| Artificial Mains Network | R&S | ENV216 | 102333 | 2023-08-01 |
| Voltage Probe | R&S | ESH2-Z3 | 100557 | 2023-08-01 |
| EMC32 test software | R&S | EMC32(Ver.10.50.00) | N/A | N/A |
| **Radio Frequency Electromagnetic Field (TÜV)** | | | | |
| 3m FAC | ETS-Lindgren | FAC3 | CT001632-Q1360 | 2024-04-26 |
| Signal Generator | R&S | SMB100A | 115183 | 2023-07-31 |
| Power Amplifier | R&S | BBA150-BC250 | 103102 | 2023-08-01 |
| Power Amplifier | R&S | BBA150-D110E100 | 103117 | 2023-08-01 |
| NRP6AN Average power sensor | R&S | NRP6AN | 101161 | 2023-08-01 |
| NRP6AN Average power sensor | R&S | NRP6AN | 101162 | 2023-08-01 |
| Stacked double Log.-Per. Antenna | SCHWARZBECK | STLP 9128E | 0153 | 2023-12-30 |
| Stacked Log.-Per. Antenna | SCHWARZBECK | STLP 9149 | 00520 | 2023-12-30 |
| Laser Probe Interface | rf/microwave | FI7000 | 0351048 | 2023-08-08 |
| Electric Field Probe Kit | rf/microwave | FL7006/KIT | 0350352/035 1122 | 2023-08-08 |

| Kind of Equipment | Manufacturer | Type | S/N | Calibrated until |
|---|---|---|---|---|
| EMC32 test software | R&S | EMC32(Ver.10.30.01) | N/A | N/A |
| **Radio-Frequency Continuous Conducted (TÜV)** | | | | |
| Conducted Immunity Test System | Teseq | NSG 4070 | 51350 | 2023-08-01 |
| 6 dB Attenuator | Teseq | 100W6dB | / | 2023-08-01 |
| COUPLING AND DECOULPING NETWORK | Teseq | CDN M016 | 51055 | 2023-08-01 |
| **EFT (TÜV)** | | | | |
| EFT/Surge/Voltage Dips & Interruption Main test unit | EMTest | compact NX5 bspt-1-300-16 | P1807214329 | 2023-07-31 |
| Variac | EMTest | Variac NX-1-260-16 | P1828221789 | 2023-07-31 |
| **ESD (TÜV)** | | | | |
| ESD Tester | TESEQ | NSG-437 | 1282 | 2023-08-02 |

# 3. General Product Information

## 3.1 Product Function and Intended Use

The EUT (**E**quipment **U**nder **T**est) is Flexible LED Strip for illumination purpose.
**Model No.: LY-STxQyVz-Z**
**Details of variables:**

1) "LY" represents company series number.
2) Second "S" represents LED Strip.
3) "Tx" represents the type of LED chips,

   x: Can be 1, 2, 3…28, 1=type 3030, 2=type 2835, 3=type 3528, 4=type 3014, 5=type 5050, 6=type 5630, 7=type 2216, 8=type 2323, 9=type 3020, 10=type 020, 11=type 2016, 12=type 335, 13=type 3535, 14=type 4014, 15=type 5730, 16=type 4040, 17=type 1808, 18=type 3838, 19=type 6060, 20=type COB, 21=type 2110，22=type 2010, 23=type 2219, 24=type 0402, 25=type 0502, 26=type 1313, 27=type 1515, 28=type 2121.

4) "Qy" represents quantities of LED chips,
   y: Can be 1, 2, 3, 5, 6, 7, 8, 9, 10, 12, 14, 16, 17, 18, 20, 21, 22, 24, 25, 26, 28, 30, 32, 34, 35, 36, 37, 38, 39, 40, 42, 48, 50, 54, 56, 60, 68, 70, 72, 80, 84, 88, 90, 96, 99, 104, 112, 120, 126, 128, 140, 144, 150, 156, 160, 168, 174, 180, 182, 192, 196, 198, 200, 204, 210, 224, 228, 240, 280, ,288, 300, 320, 322, 352, 360, 392, 420, 480, 512, 546, 560, 576, 588, 600, 640, 693, 700, 702, 720, 768, 784, 800, 810, 820, 828, 840, 846, 896, 960, 1120, 1200, 1400, 1920.
5) "Vz" represents input voltage,
   z: Can be 3, 3.2, 3.7, 4.5, 5, 6, 9, 12, 24, 28, 36, 48.
6) "Z" represents some special features of led strip,
   Z: Can be be a letter or the combination of a letter and a number, a=The LED strip can adjust the color temperature, c=The LED strip is with functions of constantcurrent, c1=Red, c2=Green, c3=Blue, c4=Yellow, c5=White, c6=Warm White, c7 =Natural White, c8=RGB, c9=RGBW, c10=RGBCW, c11=means Pink, c12=Orange, c13=Violet.

Remark: The maximum power is 38W/m.

For more information refer to the schematic diagram.

## 3.2 Ratings and System Details

| | |
|---|---|
| System input voltage: | Refer to section 3.1 |
| Frequency: | -- |
| Protection class: | III |

## 3.3 Independent Operation Modes

The basic operation modes are:

A. On.
B. Off.

## 3.4 Noise Generating and Noise Suppressing Parts

Refer to the Schematic Diagram.

## 3.5 Submitted Documents

- Schematic diagram

# 4. Test Set-up and Operation Modes

## 4.1 Principle of Configuration Selection

**Emission:** The equipments under test (EUT) was configured to measure its highest possible radiation level. The test modes were adapted accordingly in reference to the instructions for use.

**Immunity:** The equipments under test (EUT) was configured to have its highest possible susceptibility against the tested phenomena. The test modes were adapted accordingly in reference to the instructions for use.

## 4.2 Test Operation and Test Software

Test operation refers to test setup in section 5 & 6. According to the product characteristics and the description indicated in section 3.1, tests were applied to typical model LY-ST3Q480V24-c5 which is 38W/m.

## 4.3 Special Accessories and Auxiliary Equipment

None.

## 4.4 Countermeasures to achieve EMC Compliance

The test sample, which has been tested, contained the noise suppression parts as described in the Constructional Data Form or the Technical Construction File. No additional measures were employed to achieve compliance.

# 5. Test Results EMISSION

## 5.1 Emission in the Frequency Range up to 30 MHz

### 5.1.1 Disturbance Voltage at Local Wired Port

**RESULT:** **Pass**

| | | |
|---|---|---|
| Date of testing | : | Refer to Appendix 1 |
| Test standard | : | EN IEC 55015:2019+A11:2020 |
| Frequency range | : | 0.15 - 30MHz |
| Limits | : | Table 5 |
| Kind of test site | : | Shielded room |

**Test setup**

| | | |
|---|---|---|
| Input Voltage | : | DC 24V |
| Operation Condition | : | According to Clause 7 & A.3 |
| Operation mode | : | A |
| Earthing | : | Not connected |

Detailed test data refer to attached Appendix 1.

## 5.1.2 Radiated Electromagnetic Disturbances

**RESULT:** **Pass**

| | | |
|---|---|---|
| Date of testing | : | Refer to Appendix 1 |
| Test standard | : | EN IEC 55015:2019+A11:2020 |
| Frequency range | : | 0.009 – 30MHz |
| Limits | : | Table 8 |
| Kind of test site | : | Shielded room |

**Test setup**

| | | |
|---|---|---|
| Input Voltage | : | DC 24V |
| Operation Condition | : | According to Clause 7 & A.3 |
| Operation mode | : | A |
| Earthing | : | Not connected |

Detailed test data refer to attached Appendix 1.

# 5.2 Emission in the Frequency Range above 30 MHz

## 5.2.1 Radiated Electromagnetic Disturbances

**RESULT:** **Pass**

| | | |
|---|---|---|
| Date of testing | : | Refer to Appendix 1 |
| Test standard | : | EN IEC 55015:2019+A11:2020 |
| Frequency range | : | 30 – 1000MHz |
| Limits | : | Table 10 |
| Kind of test site | : | 10m semi-anechoic chamber |

**Test setup:**

| | | |
|---|---|---|
| Input Voltage | : | DC 24V |
| Operation Condition | : | According to Clause 7 & A.3 |
| Operation mode | : | A |
| Earthing | : | Not connected |

Detailed test data refer to attached Appendix 1.

# 6. Test Results IMMUNITY

## 6.1 Classification of apparatus

According to EN IEC 61547:2023, the EUTs belong to luminaires, and shall be tested in accordance with clause 5 and comply with the performance criterion of table 15.

**Continuous Disturbance**

| | |
|---|---|
| Radio-Frequency Electromagnetic Fields (RS) | **Criterion A** |
| Injected Currents | **Criterion A** |
| Power Frequency Magnetic Fields * | **Criterion A** |

**Transient Disturbance**

| | |
|---|---|
| Fast Transient (EFT) | **Criterion B** |
| Electrostatic Discharges (ESD) | **Criterion B** |

Remark:
* Power Frequency Magnetic Fields is not applicable, since the EUTs do not contain any components susceptible to magnetic fields.

# 6.2 Continuous Disturbances

## 6.2.1 Radio-Frequency Electromagnetic Field (RS)

**RESULT:** **Pass**

| | | |
|---|---|---|
| Date of Testing | : | 2023-07-21 |
| Test Specification | : | EN IEC 61547:2023, Table 2 |
| Basic Standard | : | IEC 61000-4-3:2006+A1+A2 |
| Criterion | : | A |
| Frequency Range | : | 80 – 1,000MHz |
| Test Level | : | 3V/m (Unmodulated, rms) |
| Modulation | : | 80% AM, 1kHz |

**Test setup**

| | | |
|---|---|---|
| Input Voltage | : | DC 24V |
| Operation Mode | : | A |
| Earthing | : | Not connected |
| Ambient Temperature | : | 24.0°C |
| Relative Humidity | : | 52.2% |
| Atmospheric Pressure | : | 101kPa |

**Test Result**

| Frequency Range | Polarization | Test Level (Unmodulated, rms) | Performance Criterion | Location | Result |
|---|---|---|---|---|---|
| 80MHz to 1000MHz | Horizontal and Vertical | 3V/m (rms) | A | Front/Rear/Left/ Right | Pass |

Remark: Operating as intended, no degradation detected during and after testing.

## 6.2.2 Injected Currents / Conducted Susceptibility (CS)

**RESULT:** **Pass**

| | | |
|---|---|---|
| Date of testing | : | 2023-07-21 |
| Test Specification | : | EN IEC 61547:2023, Table 8 |
| Basic Standard | : | IEC 61000-4-6:2013 |
| Criterion | : | A |
| Frequency range | : | 0.15 – 80MHz |
| Source impedance | : | 150Ω |
| Test level | : | Level 2 (3V) (unmodulated, rms.) |
| Modulation | : | AM 80%, 1kHz sine-wave |
| Sweep mode | : | automatic |
| Sweep rate | : | < $1.5\times10^{-3}$ decade / sec. |

**Test setup**

| | | |
|---|---|---|
| Input Voltage | : | DC 24V |
| Operation Mode | : | A |
| Earthing | : | Not connected |
| Ambient temperature | : | 23.8°C |
| Relative humidity | : | 53.6% |
| Atmospheric pressure | : | 101kPa |

**Test Result**

| Ports | Cable Type | Coupling Network | Frequency Range | Test Level | Criterion | Description | Conclusion |
|---|---|---|---|---|---|---|---|
| DC Input | Unshielded | CDN M2 | 150kHz-80MHz | 3V (rms) | A | Operating as intended, no degradation detected during and after testing | Pass |

# 6.3 Transient Disturbances

## 6.3.1 Electrical Fast Transients (EFT)

**RESULT:** **Pass**

| | | |
|---|---|---|
| Date of testing | : | 2023-07-21 |
| Test Specification | : | EN IEC 61547:2023, Table 5 |
| Basic Standard | : | IEC 61000-4-4:2012 |
| Criterion | : | B |
| Test level | : | ±0.5kV |
| Test duration | : | ≥120sec |
| Rise time | : | 5/50ns |
| Repetition frequency | : | 5 kHz |

**Test setup**

| | | |
|---|---|---|
| Input Voltage | : | DC 24V |
| Operation Mode | : | A |
| Earthing | : | Not connected |
| Ambient temperature | : | 23.9°C |
| Relative humidity | : | 53.8% |
| Atmospheric pressure | : | 101kPa |

**Test Result**

| Applicable | Coupling | Polarity | Voltage | Result |
|---|---|---|---|---|
| ☑ | DC input | + | ☐ 1 kV<br>☑ 0.5 kV<br>☐ | ☑ Pass ☐ Fail |
| | | - | | ☑ Pass ☐ Fail |
| Remark: Operating as intended, no failure detected | | | | |

## 6.3.2 Electrostatic Discharges (ESD)

**RESULT:** **Pass**

| | | |
|---|---|---|
| Date of testing | : | 2023-07-21 |
| Test Specification | : | EN IEC 61547:2023, Table 1 |
| Basic Standard | : | IEC 61000-4-2:2008 |
| Criterion | : | B |
| Charge voltage | : | ±2kV, ±4kV, ±8kV (air discharge)<br>±4kV (contact discharge) |
| Number of discharges | : | >10 |

**Test Setup**

| | | |
|---|---|---|
| Input Voltage | : | DC 24V |
| Operation Mode | : | A |
| Earthing | : | Not connected |
| Ambient temperature | : | 23.6°C |
| Relative humidity | : | 52.8% |
| Atmospheric pressure | : | 101kPa |

**Test Result**

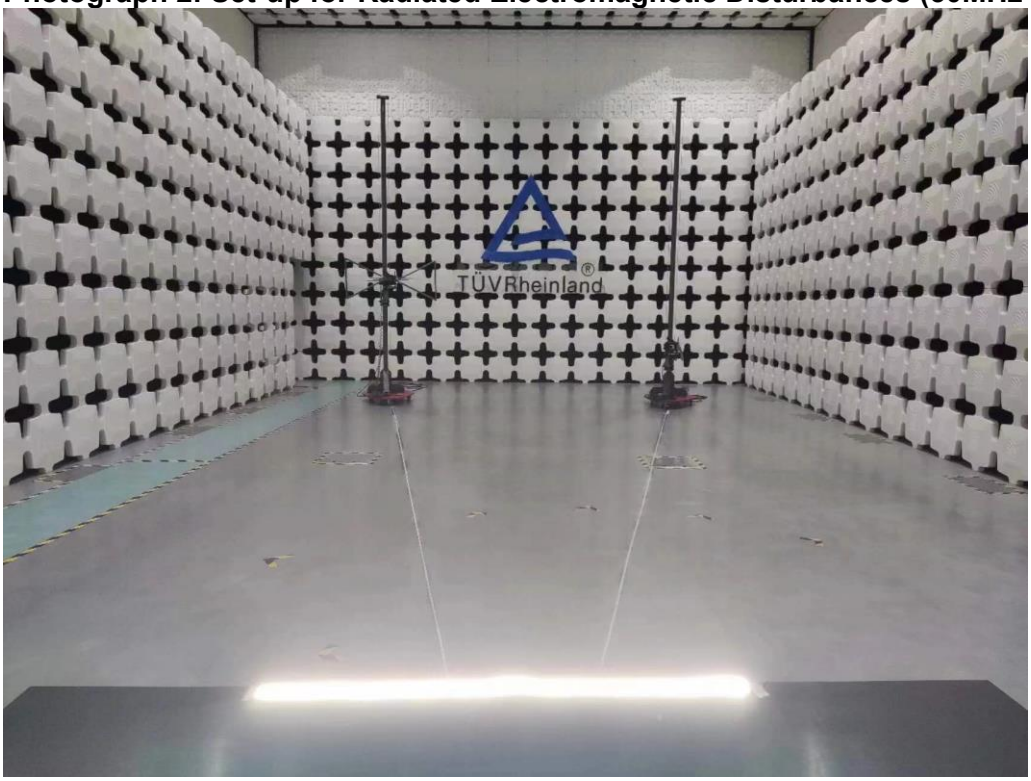
| Test Point | Test Mode | Test Level (kV) | Performance Criterion | Description | Result |
|---|---|---|---|---|---|
| VCP | C | ±4 | B | No failure detected | Pass |
| HCP | C | ±4 | B | No failure detected | Pass |
| Non-Conducted Enclosure | A | ±2, ±4, ±8 | B | No failure detected | Pass |
| Note: A-Air discharge; C- Contact Discharge; VCP- Vertical Coupling Plane; HCP- Horizontal Coupling Plane | | | | | |

Remark: Due to description of client, LED strip is used in the installation tank, and ensure those points and surfaces of the EUT which are not accessible to persons during normal use. Hence direct application of discharges to the EUT is exempt actually.

# 7. Photographs of the Test Set-Up

**Photograph 1: Set-up for Radiated Electromagnetic Disturbances (9kHz-30MHz)**

**Photograph 2: Set-up for Radiated Electromagnetic Disturbances (30MHz-1000MHz)**



**Photograph 3: Set-up for Disturbance Voltage**

**Photograph 4: Set-up for Injected Currents on DC Power Port (CS)**

**Photograph 5: Set-up for Radio-Frequency Electromagnetic Field (RS)**


**Photograph 6: Set-up for EFT on DC Power Port**

**Photograph 7: Set-up for Electrostatic Discharges (ESD)**

# 8. List of Tables

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# 9. List of Photographs

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Photograph 3: Set-up for Disturbance Voltage.....20
Photograph 4: Set-up for Injected Currents on DC Power Port (CS).....20
Photograph 5: Set-up for Radio-Frequency Electromagnetic Field (RS) .....21
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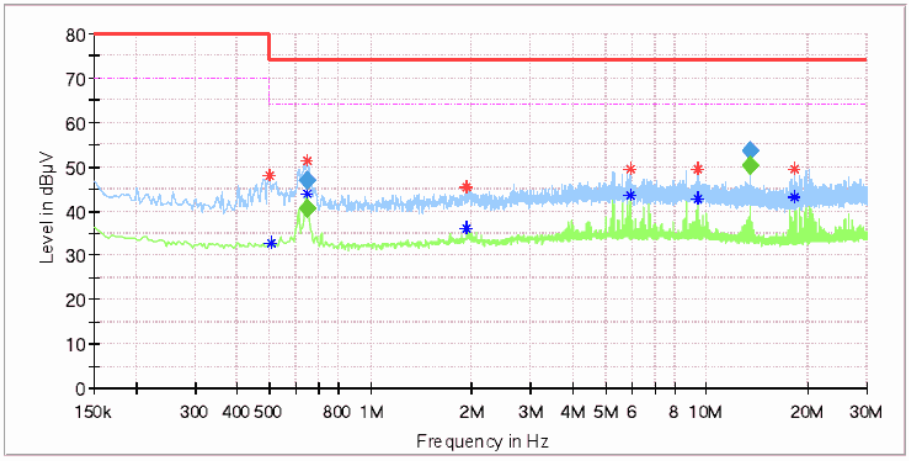
# Test Report

## EUT Information

| | |
|---|---|
| EUT Name: | Flexible LED Strip |
| Order Number: | 168434756 10 |
| Model: | SK-ST3Q480V24-c5 |
| Test Mode: | ON |
| Test Voltage: | DC 24V |
| Test Standard: | EN 55015 |
| Test By:/Review By: | Guangshen Cen/Gary Chen |
| Tem./Hum./Pressure: | 24.3°C/51.8%/101kPa |
| Remark: | SR1 |




## Critical_Freqs

| Frequency (MHz) | MaxPeak (dBµV) | Average (dBµV) | Limit (dBµV) | Margin (dB) | Corr. (dB) |
|---|---|---|---|---|---|
| 0.498000 | 48.12 | --- | 80.00 | 31.88 | 29.3 |
| 0.506000 | --- | 32.74 | 64.00 | 31.26 | 29.3 |
| 0.646000 | --- | 43.79 | 64.00 | 20.21 | 29.4 |
| 0.646000 | 51.36 | --- | 74.00 | 22.64 | 29.4 |
| 1.934000 | 45.54 | --- | 74.00 | 28.46 | 29.4 |
| 1.934000 | --- | 36.02 | 64.00 | 27.98 | 29.4 |
| 5.910000 | 49.47 | --- | 74.00 | 24.53 | 29.4 |
| 5.910000 | --- | 43.46 | 64.00 | 20.54 | 29.4 |
| 9.390000 | --- | 42.74 | 64.00 | 21.26 | 29.3 |
| 9.390000 | 49.45 | --- | 74.00 | 24.55 | 29.3 |
| 18.242000 | --- | 43.10 | 64.00 | 20.90 | 29.4 |
| 18.242000 | 49.52 | --- | 74.00 | 24.48 | 29.4 |

## Final_Result

| Frequency (MHz) | QuasiPeak (dBµV) | Average (dBµV) | Limit (dBµV) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Corr. (dB) |
|---|---|---|---|---|---|---|---|
| 0.646000 | --- | 40.38 | 64.00 | 23.62 | 1000.0 | 9.000 | 29.4 |
| 0.646000 | 46.92 | --- | 74.00 | 27.08 | 1000.0 | 9.000 | 29.4 |
| 13.558000 | --- | 50.19 | 64.00 | 13.81 | 1000.0 | 9.000 | 29.2 |
| 13.562000 | 53.68 | --- | 74.00 | 20.32 | 1000.0 | 9.000 | 29.2 |

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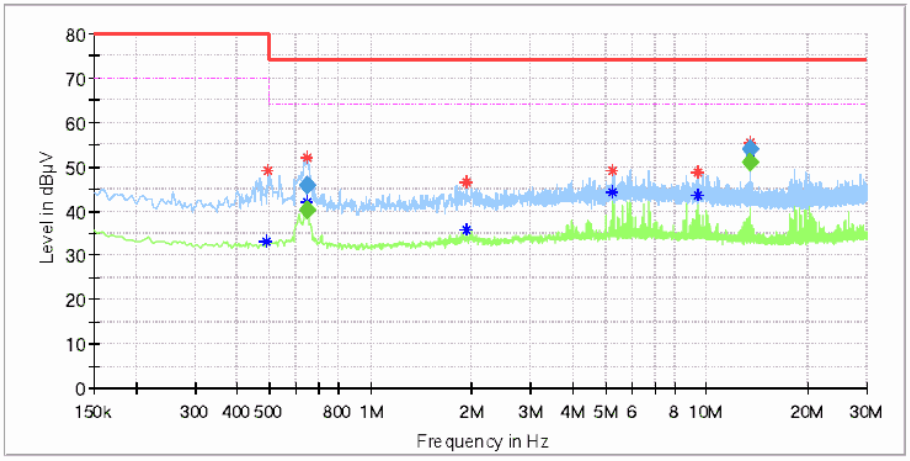
# Test Report

## EUT Information

| | |
|---|---|
| EUT Name: | Flexible LED Strip |
| Order Number: | 168434756 10 |
| Model: | SK-ST3Q480V24-c5 |
| Test Mode: | ON |
| Test Voltage: | DC 24V |
| Test Standard: | EN 55015 |
| Test By:/Review By: | Guangshen Cen/Gary Chen |
| Tem./Hum./Pressure: | 24.3°C/51.8%/101kPa |
| Remark: | SR1 |




## Critical_Freqs

| Frequency (MHz) | MaxPeak (dBµV) | Average (dBµV) | Limit (dBµV) | Margin (dB) | Corr. (dB) |
|---|---|---|---|---|---|
| 0.490000 | --- | 33.02 | 70.00 | 36.98 | 29.3 |
| 0.494000 | 49.13 | --- | 80.00 | 30.87 | 29.3 |
| 0.646000 | --- | 42.15 | 64.00 | 21.85 | 29.4 |
| 0.650000 | 51.99 | --- | 74.00 | 22.01 | 29.4 |
| 1.930000 | 46.41 | --- | 74.00 | 27.59 | 29.4 |
| 1.934000 | --- | 35.61 | 64.00 | 28.39 | 29.4 |
| 5.238000 | --- | 44.39 | 64.00 | 19.61 | 29.4 |
| 5.238000 | 49.24 | --- | 74.00 | 24.76 | 29.4 |
| 9.390000 | --- | 43.54 | 64.00 | 20.46 | 29.3 |
| 9.390000 | 48.72 | --- | 74.00 | 25.28 | 29.3 |
| 13.562000 | --- | 51.90 | 64.00 | 12.10 | 29.2 |
| 13.562000 | 55.28 | --- | 74.00 | 18.72 | 29.2 |

## Final_Result

| Frequency (MHz) | QuasiPeak (dBµV) | Average (dBµV) | Limit (dBµV) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Corr. (dB) |
|---|---|---|---|---|---|---|---|
| 0.646000 | --- | 40.01 | 64.00 | 23.99 | 1000.0 | 9.000 | 29.4 |
| 0.650000 | 45.92 | --- | 74.00 | 28.08 | 1000.0 | 9.000 | 29.4 |
| 13.562000 | --- | 51.10 | 64.00 | 12.90 | 1000.0 | 9.000 | 29.2 |
| 13.562000 | 53.86 | --- | 74.00 | 20.14 | 1000.0 | 9.000 | 29.2 |

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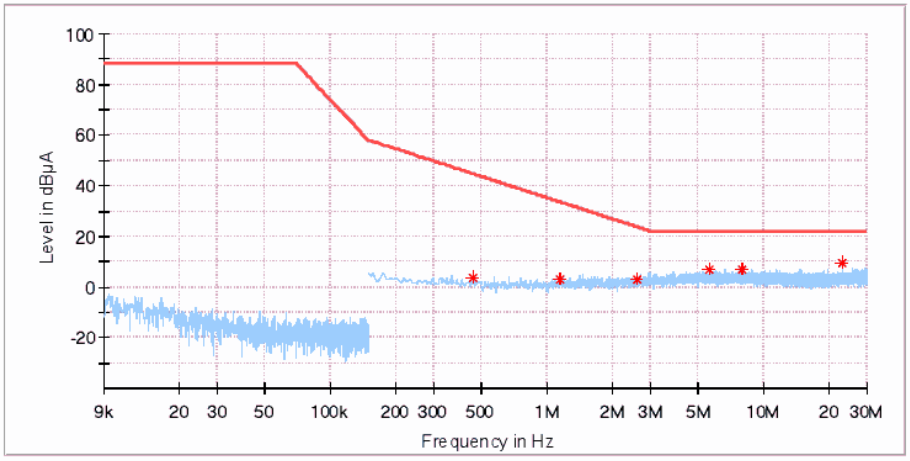
# EMC32 Report

## EUT Information

| | |
|---|---|
| EUT Name: | Flexible LED Strip |
| Order Number: | 168434756 10 |
| Model: | SK-ST3Q480V24-c5 |
| Test Mode: | ON |
| Test Voltage: | DC 24V |
| Test Standard: | EN 55015 |
| Test By:/Review By: | Guangshen Cen/Gary Chen |
| Tem./Hum./Pressure: | 24.3°C/51.8%/101kPa |
| Remark: | SR1 |



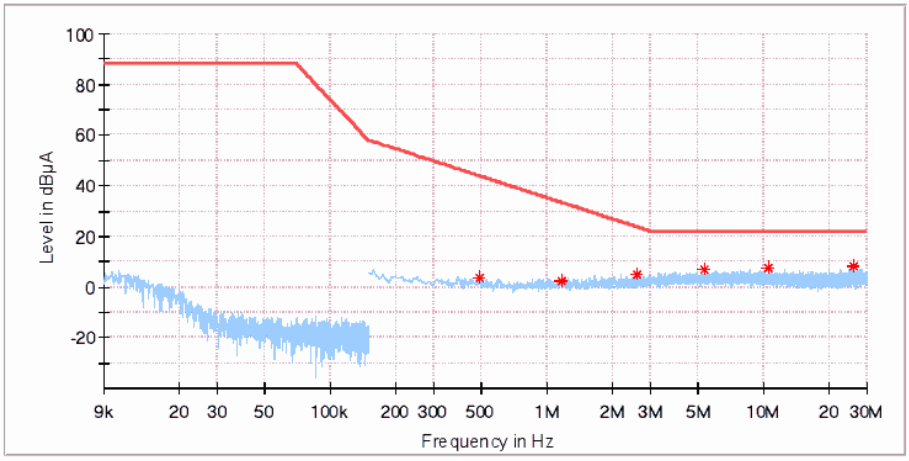

## Critical_Freqs

| Frequency (MHz) | MaxPeak (dBµA) | Limit (dBµA) | Margin (dB) | Axis | Corr. (dB) |
|---|---|---|---|---|---|
| 0.458000 | 3.83 | 44.59 | 40.76 | X | 0.0 |
| 1.156000 | 3.24 | 33.46 | 30.22 | X | 0.0 |
| 2.608000 | 3.19 | 23.68 | 20.49 | X | 0.1 |
| 5.652000 | 6.72 | 22.00 | 15.28 | X | 0.1 |
| 7.952000 | 7.06 | 22.00 | 14.94 | X | 0.1 |
| 23.156000 | 9.72 | 22.00 | 12.28 | X | 0.3 |

# EMC32 Report

## EUT Information

| | |
|---|---|
| EUT Name: | Flexible LED Strip |
| Order Number: | 168434756 10 |
| Model: | SK-ST3Q480V24-c5 |
| Test Mode: | ON |
| Test Voltage: | DC 24V |
| Test Standard: | EN 55015 |
| Test By:/Review By: | Guangshen Cen/Gary Chen |
| Tem./Hum./Pressure: | 24.3°C/51.8%/101kPa |
| Remark: | SR1 |



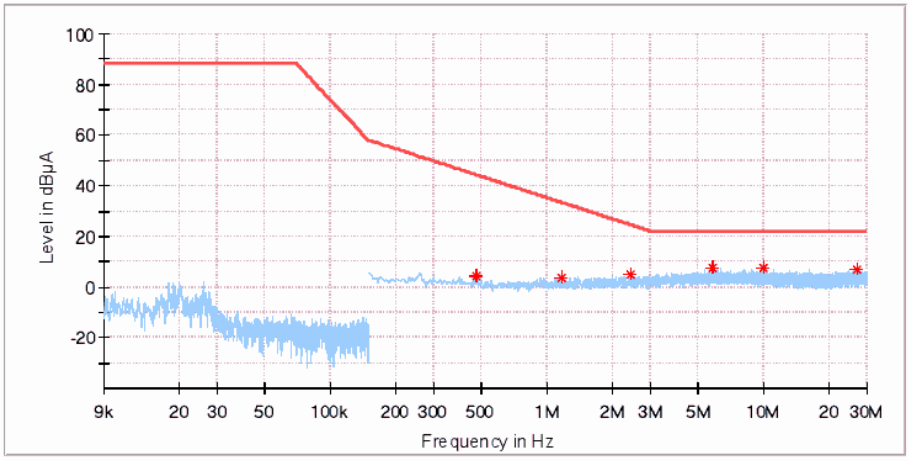

## Critical_Freqs

| Frequency (MHz) | MaxPeak (dBµA) | Limit (dBµA) | Margin (dB) | Axis | Corr. (dB) |
|---|---|---|---|---|---|
| 0.490000 | 3.73 | 43.78 | 40.04 | Y | 0.0 |
| 1.164000 | 2.31 | 33.38 | 31.07 | Y | 0.0 |
| 2.612000 | 4.67 | 23.66 | 19.00 | Y | 0.0 |
| 5.308000 | 6.58 | 22.00 | 15.42 | Y | 0.0 |
| 10.520000 | 7.62 | 22.00 | 14.38 | Y | 0.0 |
| 26.152000 | 8.50 | 22.00 | 13.50 | Y | 0.0 |

# EMC32 Report

## EUT Information

| | |
|---|---|
| EUT Name: | Flexible LED Strip |
| Order Number: | 168434756 10 |
| Model: | SK-ST3Q480V24-c5 |
| Test Mode: | ON |
| Test Voltage: | DC 24V |
| Test Standard: | EN 55015 |
| Test By:/Review By: | Guangshen Cen/Gary Chen |
| Tem./Hum./Pressure: | 24.3°C/51.8%/101kPa |
| Remark: | SR1 |



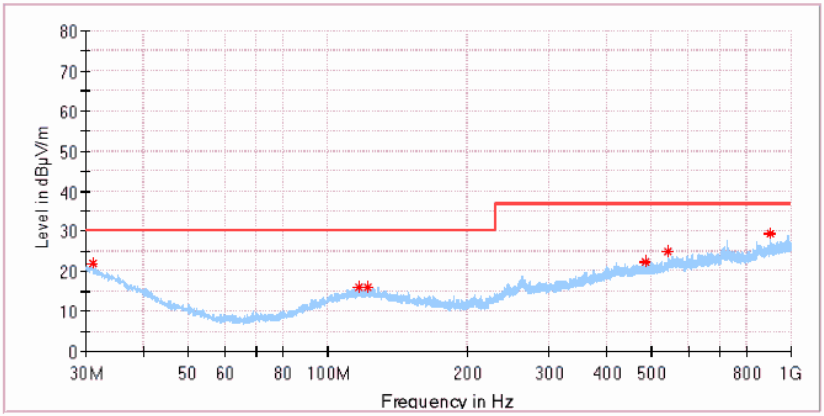

## Critical_Freqs

| Frequency (MHz) | MaxPeak (dBµA) | Limit (dBµA) | Margin (dB) | Axis | Corr. (dB) |
|---|---|---|---|---|---|
| 0.474000 | 4.50 | 44.17 | 39.67 | Z | 0.0 |
| 1.164000 | 3.34 | 33.38 | 30.04 | Z | 0.0 |
| 2.444000 | 4.83 | 24.46 | 19.63 | Z | 0.0 |
| 5.812000 | 7.43 | 22.00 | 14.57 | Z | 0.0 |
| 9.916000 | 7.58 | 22.00 | 14.42 | Z | 0.0 |
| 27.124000 | 7.17 | 22.00 | 14.83 | Z | 0.0 |

# Test Report

## EUT Information

| | |
|---|---|
| EUT Name: | Flexible LED Strip |
| Order Number: | 168434756 10 |
| Model: | SK-ST3Q480V24-c5 |
| Test Mode: | ON |
| Test Voltage: | DC 24V |
| Test Standard: | EN 55015 |
| Test By:/Review By: | Guangshen Cen/Gary Chen |
| Tem./Hum./Pressure: | 23.5°C/51.6%/101kPa |
| Remark: | 10m Chamber |




## Critical_Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|---|---|---|---|---|---|---|---|
| 31.131667 | 22.06 | 30.00 | 7.94 | 200.0 | H | 56.0 | -6.0 |
| 117.030556 | 16.17 | 30.00 | 13.83 | 200.0 | H | 90.0 | -11.0 |
| 485.522778 | 22.44 | 37.00 | 14.56 | 200.0 | H | 150.0 | -5.2 |
| 900.036111 | 29.33 | 37.00 | 7.67 | 100.0 | H | 263.0 | 0.0 |
| 543.453333 | 24.96 | 37.00 | 12.04 | 100.0 | H | 299.0 | -4.2 |
| 122.419444 | 16.12 | 30.00 | 13.88 | 100.0 | H | 334.0 | -11.0 |

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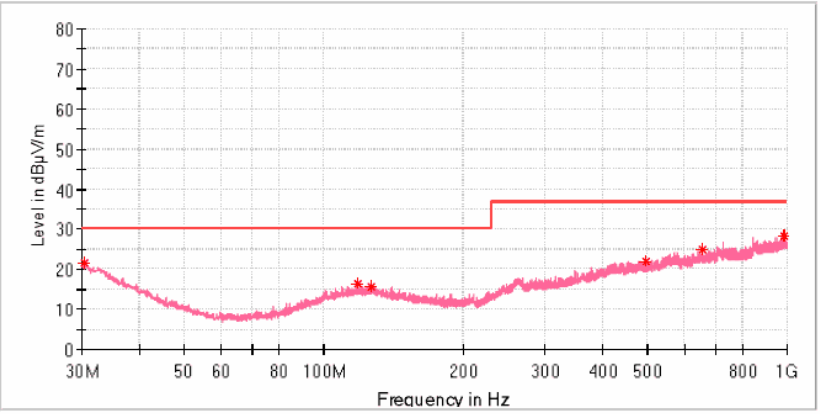
# Test Report

## EUT Information

| | |
|---|---|
| EUT Name: | Flexible LED Strip |
| Order Number: | 168434756 10 |
| Model: | SK-ST3Q480V24-c5 |
| Test Mode: | ON |
| Test Voltage: | DC 24V |
| Test Standard: | EN 55015 |
| Test By:/Review By: | Guangshen Cen/Gary Chen |
| Tem./Hum./Pressure: | 23.5°C/51.6%/101kPa |
| Remark: | 10m Chamber |




## Critical_Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|---|---|---|---|---|---|---|---|
| 118.054444 | 16.55 | 30.00 | 13.45 | 200.0 | V | 86.0 | -11.0 |
| 30.538889 | 21.76 | 30.00 | 8.24 | 100.0 | V | 95.0 | -5.7 |
| 655.165000 | 24.88 | 37.00 | 12.12 | 200.0 | V | 160.0 | -2.9 |
| 126.946111 | 15.74 | 30.00 | 14.26 | 100.0 | V | 168.0 | -11.1 |
| 983.779444 | 28.31 | 37.00 | 8.69 | 100.0 | V | 183.0 | 1.0 |
| 495.600000 | 22.10 | 37.00 | 14.90 | 200.0 | V | 356.0 | -5.2 |

# Measurement Uncertainties

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus.

The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor of k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

**Table 1: Measurement Uncertainty levels**

| Test | Parameters | Expanded uncertainty ($U_{lab}$) | Expanded uncertainty ($U_{cispr}$) |
|---|---|---|---|
| Conducted Emission | Level accuracy<br>(9kHz to 150kHz)<br>(150kHz to 30MHz) | ± 3.70 dB<br>± 3.30 dB | ± 3.8 dB<br>± 3.4 dB |
| Disturbance Power | Level accuracy<br>(30MHz to 300MHz) | ± 4.27 dB | ± 4.5 dB |
| Electromagnetic Radiated Emission (Triple-loop) | Level accuracy<br>(9kHz to 30MHz) | ± 2.67 dB | N/A |
| Radiated Emission (3m SAC) | Level accuracy<br>(30MHz to 1000MHz) | ± 4.52 dB | ± 6.3 dB |
| | Level accuracy<br>(above 1000MHz) | ± 4.37 dB | N/A |
| Radiated Emission (10m SAC) | Level accuracy<br>(30MHz to 1000MHz) | ± 4.66 dB | ± 6.3 dB |
| | Level accuracy<br>(above 1000MHz) | ± 4.35 dB | N/A |
| Mains Harmonic | Current | ± 4.60% | N/A |
| Voltage Fluctuations & Flicker | Voltage | ± 0.64% | N/A |

As $U_{lab}$ in all applicable tests listed above are less than $U_{cispr}$ according to CISPR 16-4-2:2011+A1:2014+A2:2018,

- compliance is deemed to occur if no measured disturbance exceeds the disturbance limit;
- non-compliance is deemed to occur if any measured disturbance exceeds the disturbance limit.