OVERVIEW

The L12542 is a newly developed electrostatic charge remover that makes use of VUV (vacuum ultraviolet) light. Due to its wide irradiation angle about 3 times larger than our current VUV light source, the L12542 efficiently removes electrostatic charges over large areas in depressurized or vacuum environments. Up until now two or more VUV light sources were needed to neutralize electrostatic charges in large areas due to their limited irradiation angle. The L12542 solves this problem and efficiently neutralizes large areas in a vacuum.

FEATURES

- Large irradiation (neutralizing) area
- Highly efficient ion generation in a vacuum
- No air flow needed
- No overshoot (generates no opposite-polarity static charges)
- No dust and electromagnetic noise emissions
- Long life

APPLICATIONS

- Dechucking of electrostatic chucks
- Semiconductor manufacturing equipment (vacuum process)
- LCD manufacturing equipment
- Organic EL manufacturing equipment
- Hard disk manufacturing equipment
- Film manufacturing equipment
**ELECTROSTATIC CHARGE REMOVAL EFFECT**

**NEUTRALIZATION TIME VS. DISTANCE**

- Operating conditions
  - Charged plate: 55 mm
  - Charged voltage: 1 kV → 100 V
  - Vacuum level: $1 \times 10^{-2}$ Pa

**NEUTRALIZATION TIME VS. VACUUM LEVEL**

- Operating conditions
  - Charged plate: 55 mm
  - Charged voltage: 1 kV → 100 V
  - Distance between light source output window and charged plate: 300 mm

**SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description / Value</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spectral distribution</td>
<td>115 to 400</td>
<td>nm</td>
</tr>
<tr>
<td>Window material</td>
<td>MgF2</td>
<td></td>
</tr>
<tr>
<td>Cooling method</td>
<td>Forced air cooling by fan</td>
<td></td>
</tr>
<tr>
<td>Operating temperature range</td>
<td>+10 to +40</td>
<td>°C</td>
</tr>
<tr>
<td>Storage temperature range</td>
<td>0 to +60</td>
<td>°C</td>
</tr>
<tr>
<td>Operating humidity range</td>
<td>Below 80 % (no condensation)</td>
<td></td>
</tr>
<tr>
<td>Storage humidity range</td>
<td>Below 85 % (no condensation)</td>
<td></td>
</tr>
</tbody>
</table>

**RECOMMENDED OPERATING CONDITIONS AND CHARACTERISTICS** (at 25 °C)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description / Value</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Warm-up time</td>
<td>25 ± 5</td>
<td>s</td>
</tr>
<tr>
<td>Light source guaranteed life</td>
<td>2000</td>
<td>h</td>
</tr>
<tr>
<td>Input voltage (AC)</td>
<td>100 V to 240 V (100 V/200 V auto switching), single phase 50 Hz / 60 Hz</td>
<td></td>
</tr>
<tr>
<td>Power consumption (Max.)</td>
<td>90</td>
<td>VA</td>
</tr>
</tbody>
</table>

1. End of life is defined as the time when light output at 230 nm falls below 50 % of its initial value. Note that the light output attenuation depends greatly on the environment of the vacuum equipment.

* When replacing the light source, please specify the type No. L12565.

**SPECTRAL DISTRIBUTION**

**DIRECTIVITY (LIGHT DISTRIBUTION)**
**LIGHT SOURCE** (WEIGHT: Approx. 530 g)

- **VACUUM FLANGE MOUNT**
- **CONNECTOR** (CONNECTION TO POWER SUPPLY)
- **COOLING FAN**
- **ARC POINT**

**POWER SUPPLY** (WEIGHT: Approx. 1.8 kg)

- **CONNECTOR** (CONNECTION TO LIGHT SOURCE)
- **POWER SWITCH**
- **COOLING FAN**
- **EXTERNAL CONTROL TERMINALS**
  - DEUTERIUM LAMP STATUS SIGNAL
  - DEUTERIUM LAMP ON/OFF CONTROL

*DIMENSIONAL OUTLINES (Unit: mm)*

- LIGHT SOURCE (WEIGHT: Approx. 530 g)
  - Dimensions: 160 ± 4 mm, 42 ± 4 mm, 19 mm, 78 ± 2 mm, and 60 mm
  - LIGHT SOURCE (WEIGHT: Approx. 530 g)
  - POWER SUPPLY (WEIGHT: Approx. 1.8 kg)
  - Dimensions: 200 mm, 117 mm, 90 mm, and 117 mm

LIGHT SOURCE TO POWER SUPPLY CONNECTION CABLE LENGTH: 1800 ± 50 mm
Various vacuum flanges are available for the L12542 VUV ionizer. The E3444-02 mount flange meets ICF114 flange specifications and so easily attaches to ports of most vacuum equipment. We also provide other vacuum flanges including flanges made to JIS (Japanese Industrial Standards) specifications, so users can select the best flange that matches their vacuum vessel.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>E3444</th>
<th>E3444-01</th>
<th>E3444-02</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sealing method</td>
<td>O-ring</td>
<td>JIS VF50</td>
<td>ICF114</td>
</tr>
<tr>
<td>Flange</td>
<td>Regular</td>
<td>JIS VG50</td>
<td>ICF114</td>
</tr>
<tr>
<td>Mount flange</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Sealing force retention</td>
<td>$1.33 \times 10^{-4}$ Pa L/s or less ($1 \times 10^{-6}$ Torr L/s)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**DIMENSIONAL OUTLINE (Unit: mm)**

E3444

E3444-01

E3444-02

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