

## eUV and EPSA

### Advantages of Electronic Power Supplies for UV medium pressure lamps



The Electronic Power Supplies of the eUV and EPSA series have been in use for years with more than 30,000 units worldwide. For good reason, because they have numerous advantages over competitive devices or conventional inductive (transformer, transductor, choke, etc.) or capacitive power supply technology:

Advantages in the applications
<ul style="list-style-type: none"> <li> <b>Infinitely adjustable lamp power</b>                      This allows optimum adaptation to the drying process, e.g. at different machine speeds. The result is less heat load on the substrate and the machine as well as energy savings. Compensation of lamp ageing by slightly increasing the lamp power gradually with the lamp ageing.                 </li> </ul>
<ul style="list-style-type: none"> <li> <b>Pulsing</b> with rise/fall times &lt; 3 ms for setting any power, e.g. for adjustment in discontinuous processes. Fast cycling down to 10-15% power in case of gaps in the product flow, resulting in significant energy savings depending on the application.                      When an object is under the UV lamp, the full power of the EPS can be applied to the UV lamp; in the short pauses until the next object is cured, the power is reduced to a minimum (usually 10...20%). The average power for the UV lamp and EPS is the average of max. and min. power, taking into account the respective pulse duration. The average heat development and the <b>lower energy input</b> then correspond to this average value, although the curing process can take place with higher UV power than with conventional, uniform continuous operation.                      Pulsing takes place with rise/fall times &lt; 3 ms for setting any power levels.                 </li> </ul>
<ul style="list-style-type: none"> <li> <b>Constant control</b>                      The set electric lamp output is automatically controlled at a <b>constant level</b>, independent of e.g. mains voltage fluctuations and lamp tolerances.                 </li> </ul>
<ul style="list-style-type: none"> <li> <b>Rectangular lamp current</b>                      The lamp voltage is a <b>low-frequency AC rectangular signal</b>. This protects the UV lamp due to the short dark pause. Operating the lamps with a rectangular current avoids the dark pauses that occur with 50 or 60 Hz standard ballasts every time the current crosses zero.                      As a result, there is no inhomogeneous curing even in systems with very high substrate speeds, e.g. when printing or optical fibres. When objects are observed by means of cameras, no interferences occur.                 </li> </ul>
<ul style="list-style-type: none"> <li> <b>Three-stage status messages</b> (operation, warning, error)                 </li> </ul>
<ul style="list-style-type: none"> <li> <b>Fast but gentle lamp start</b> due to limited run-up current. This can be individually parameterised if required.                 </li> </ul>
<ul style="list-style-type: none"> <li>                     Noise emission ≤ 70 dB(A)                 </li> </ul>
<ul style="list-style-type: none"> <li> <b>Optimally matched</b>, as UV lamps and ballasts both come from uv-technik                 </li> </ul>

Continuation advantages eUV/EPESA:

Advantages for machine manufacturers
<ul style="list-style-type: none"> <li>• <b>Universal usability</b> In the power range between 2,500 and 40,000 watts, only a few eUV/EPESA sizes are necessary.</li> </ul>
<ul style="list-style-type: none"> <li>• <b>Uniform device logic</b> and electrical interfaces for all eUV/EPESA devices</li> </ul>
<ul style="list-style-type: none"> <li>• <b>Installation - Less time required for installation and wiring.</b> You have the option of mounting the ballasts directly in or on the machine, which means that the necessary control cabinet is significantly smaller or can even be omitted altogether.</li> </ul>
<ul style="list-style-type: none"> <li>• <b>Fast lamp start</b> due to defined run-up current. However, the mains load remains limited by symmetrical load.</li> </ul>
<ul style="list-style-type: none"> <li>• <b>Lamp cable lengths</b> up to 300 m possible</li> </ul>
<ul style="list-style-type: none"> <li>• In most cases, the eUV/EPESA are <b>smaller and lighter</b> than comparable conventional ballasts. This means that control cabinets can be optimally equipped. Control cabinet depth 400 mm is sufficient for all sizes. The low weight minimises shipping costs.</li> </ul>
<ul style="list-style-type: none"> <li>• <b>IT network-compatible</b> / insulation resistance &gt; 1GΩ (DC) Thanks to the EfficientSwitch™ technology, IT network-compatible without further technical intervention (complies with the European EMC standards).</li> </ul>
<ul style="list-style-type: none"> <li>• <b>Wide-range mains</b> All eUV/EPESA can be used independently of the mains frequency (48Hz - 62Hz) with three-phase mains between 360 VAC and 530 VAC.</li> </ul>
<ul style="list-style-type: none"> <li>• <b>Control via analogue/digital IO or optional fieldbus</b> In addition to analogue inputs and outputs, all eUV and EPESA have the option to be controlled via fieldbus (CANopen or Modbus).</li> </ul>
<ul style="list-style-type: none"> <li>• <b>Parameterisable</b> via software interface (OPA software)</li> </ul>
<ul style="list-style-type: none"> <li>• <b>Efficiency up to 98%</b> Energy savings and low waste heat due to high efficiency.</li> </ul>
<ul style="list-style-type: none"> <li>• <b>Safety standard PELV</b> The control signals are isolated from the mains, are designed to be short-circuit-proof and have a near-earth ground. The PELV (Protective Extra Low Voltage) protective measure can be implemented with extreme ease.</li> </ul>
<ul style="list-style-type: none"> <li>• No electrolytic capacitor design for maximum service life</li> </ul>
<ul style="list-style-type: none"> <li>• Connector plugs and fixing screws are included with each unit</li> </ul>
<ul style="list-style-type: none"> <li>• <b>Serviceability on site and via www</b> Convenient on-site service possible via 'OPA connection cable' or 'OPA Touch'. The OPA connection cable enables access to the eUV/EPESA with a PC and special software delivers detailed status messages, includes a logging function and allows parameterisation. This also makes it possible to implement support via the internet.</li> </ul>
<ul style="list-style-type: none"> <li>• <b>Competent worldwide support</b> from uv-technik</li> </ul>
<ul style="list-style-type: none"> <li>• <b>CE and UL</b> EPESA units are additionally available with UL approval if required.</li> </ul>