Component Systems for Lighting Applications

January 2018

- Magnetic and Electronic Ballasts
- Ignitors
- Capacitors
- Electronic LVH Converters
- Emergency Lighting Modules
- Electronic Fluorescent Ballasts
- Lampholders
- Accessories
- Terminal Blocks
- Starters
- Wires
- Surge Protection Devices
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<td>RX7s lampholders</td>
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<td>Fc2 lampholder</td>
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</table>
Magnetic ballasts for fluorescent and compact fluorescent lamps

Low-loss Ballasts
5–65 W, 230 V

For compact fluorescent lamps and fluorescent lamps
Shape: 28x41 mm

Vacuum-impregnated with polyester resin
Push-in terminal for leads: 0.5–1 mm²
For the automatic luminaire wiring:
IDC terminals for leads H05V-U 0.5 tw 130
Protection class I

Low-loss ballasts for compact fluorescent lamps

<table>
<thead>
<tr>
<th>Lamp</th>
<th>Output W</th>
<th>Type</th>
<th>Base</th>
<th>Current mA</th>
<th>Ref. No.</th>
<th>V, Hz</th>
<th>Drawing a mm</th>
<th>Drawing b mm</th>
<th>Drawing c mm</th>
<th>Weight kg</th>
<th>Δt/Δtan. K</th>
<th>EEI*</th>
<th>Cp μF</th>
<th>Current mA</th>
<th>EEI*</th>
<th>Pieces per box/pallet</th>
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</thead>
<tbody>
<tr>
<td>5/7/ 9/11</td>
<td>TCS</td>
<td>G23</td>
<td>180/175/170/155</td>
<td>L 7/9/11.307*</td>
<td>163694</td>
<td>230, 50</td>
<td>A</td>
<td>85</td>
<td>75</td>
<td>34</td>
<td>0.32</td>
<td>60/85</td>
<td>B2</td>
<td>2.0</td>
<td>50</td>
<td>10/2250</td>
</tr>
<tr>
<td>2x5/ 7/9</td>
<td>TCS</td>
<td>G23</td>
<td>180/160/140</td>
<td>L N 13.313*</td>
<td>163711</td>
<td>230, 50</td>
<td>A</td>
<td>85</td>
<td>75</td>
<td>34</td>
<td>0.32</td>
<td>55/80</td>
<td>B2</td>
<td>2.0</td>
<td>70</td>
<td>10/2250</td>
</tr>
<tr>
<td>10</td>
<td>TCD</td>
<td>G24d-1</td>
<td>190</td>
<td>L N 13.313*</td>
<td>163711</td>
<td>230, 50</td>
<td>A</td>
<td>85</td>
<td>75</td>
<td>34</td>
<td>0.32</td>
<td>55/80</td>
<td>B2</td>
<td>2.0</td>
<td>70</td>
<td>10/2250</td>
</tr>
<tr>
<td>13</td>
<td>TCD/ TCT</td>
<td>G24d-1/ GX24d-1</td>
<td>175</td>
<td>L N 13.313*</td>
<td>163711</td>
<td>230, 50</td>
<td>A</td>
<td>85</td>
<td>75</td>
<td>34</td>
<td>0.32</td>
<td>55/80</td>
<td>B2</td>
<td>2.0</td>
<td>80</td>
<td>10/2250</td>
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<tr>
<td>16</td>
<td>TCDD</td>
<td>GR8/ GR10q</td>
<td>195</td>
<td>L N 16.316*</td>
<td>163730</td>
<td>230, 50</td>
<td>A</td>
<td>85</td>
<td>75</td>
<td>34</td>
<td>0.32</td>
<td>60/125</td>
<td>B1</td>
<td>2.0</td>
<td>100</td>
<td>10/2250</td>
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<tr>
<td>18</td>
<td>TCD/ TCT</td>
<td>G24d-2/ GX24d-2</td>
<td>220</td>
<td>L N 18.319*</td>
<td>163763</td>
<td>230, 50</td>
<td>B</td>
<td>85</td>
<td>75</td>
<td>34</td>
<td>0.32</td>
<td>60/140</td>
<td>B1</td>
<td>2.0</td>
<td>110</td>
<td>10/2250</td>
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<tr>
<td>26</td>
<td>TCD/ TCT</td>
<td>G24d-3/ GX24d-3</td>
<td>325</td>
<td>L N 26.813*</td>
<td>509502</td>
<td>230, 50</td>
<td>B</td>
<td>110</td>
<td>100</td>
<td>45</td>
<td>0.41</td>
<td>55/145</td>
<td>B2</td>
<td>3.5</td>
<td>140</td>
<td>10/2100</td>
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</tbody>
</table>

* Energy efficiency: Ballasts without CE marking for replacements or markets outside of the EU

Low-loss ballasts for fluorescent lamps

<table>
<thead>
<tr>
<th>Lamp</th>
<th>Output W</th>
<th>Type</th>
<th>Base</th>
<th>Current mA</th>
<th>Ref. No.</th>
<th>V, Hz</th>
<th>Drawing a mm</th>
<th>Drawing b mm</th>
<th>Drawing c mm</th>
<th>Weight kg</th>
<th>Δt/Δtan. K</th>
<th>EEI*</th>
<th>Cp μF</th>
<th>Current mA</th>
<th>EEI*</th>
<th>Pieces per box/pallet</th>
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</thead>
<tbody>
<tr>
<td>18/20</td>
<td>T8 (T26)</td>
<td>G13</td>
<td>370</td>
<td>L N 18.114*</td>
<td>508183</td>
<td>230, 50</td>
<td>B</td>
<td>150</td>
<td>140</td>
<td>60</td>
<td>0.55</td>
<td>55/90</td>
<td>B2</td>
<td>4.5</td>
<td>120</td>
<td>10/1500</td>
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<tr>
<td>30</td>
<td>T8 (T26)</td>
<td>G13</td>
<td>365</td>
<td>L N 30.801*</td>
<td>169645</td>
<td>230, 50</td>
<td>B</td>
<td>150</td>
<td>140</td>
<td>60</td>
<td>0.55</td>
<td>55/110</td>
<td>B2</td>
<td>4.5</td>
<td>180</td>
<td>10/1500</td>
</tr>
<tr>
<td>36/40</td>
<td>T8 (T26)/T12 (T38)</td>
<td>G13</td>
<td>430</td>
<td>L N 36.149*</td>
<td>529029</td>
<td>230, 50</td>
<td>B</td>
<td>150</td>
<td>140</td>
<td>60</td>
<td>0.55</td>
<td>55/150</td>
<td>B2</td>
<td>4.5</td>
<td>210</td>
<td>10/1500</td>
</tr>
<tr>
<td>58/65</td>
<td>T8 (T26)/T12 (T38)</td>
<td>G13</td>
<td>670</td>
<td>L N 58.116*</td>
<td>508186</td>
<td>230, 50</td>
<td>B</td>
<td>190</td>
<td>180</td>
<td>92</td>
<td>0.80</td>
<td>55/160</td>
<td>B2</td>
<td>7.0</td>
<td>320</td>
<td>10/1200</td>
</tr>
</tbody>
</table>

* Energy efficiency: Ballasts without CE marking for replacements or markets outside of the EU
## Ballasts for HM Lamps 80 to 1000 W

*Shape: 53x66 mm Shape: 92x102 mm*

For mercury vapour lamps (HM)
Vacuum-impregnated with polyester resin
Screw terminals: 0.5–2.5 mm²
Protection class I
tw 130

### Lamp Ballast Capacitor Packaging

<table>
<thead>
<tr>
<th>Lamp</th>
<th>Output W</th>
<th>Type</th>
<th>Current A</th>
<th>Ref. No.</th>
<th>V, Hz</th>
<th>Current Type</th>
<th>Drawing a mm</th>
<th>b mm</th>
<th>c mm</th>
<th>Weight kg</th>
<th>Δat K</th>
<th>Power factor</th>
<th>EEI*</th>
<th>C µF</th>
<th>Current A</th>
<th>Packaging unit</th>
<th>Pieces per box/pallet</th>
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</thead>
<tbody>
<tr>
<td>80</td>
<td>HM</td>
<td>0.80</td>
<td>Q 80.588*</td>
<td>167304</td>
<td>230, 50</td>
<td>A</td>
<td>108</td>
<td>86</td>
<td>36</td>
<td>1.07</td>
<td>70</td>
<td>0.51</td>
<td>EEI=A3</td>
<td>8</td>
<td>0.41</td>
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<td>10/770</td>
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<tr>
<td>125</td>
<td>HM</td>
<td>1.15</td>
<td>Q 125.568*</td>
<td>167263</td>
<td>230, 50</td>
<td>A</td>
<td>108</td>
<td>86</td>
<td>36</td>
<td>1.07</td>
<td>75</td>
<td>0.54</td>
<td>EEI=A3</td>
<td>10</td>
<td>0.60</td>
<td></td>
<td>10/770</td>
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<td>250</td>
<td>HM</td>
<td>2.13</td>
<td>Q 250.528</td>
<td>167367</td>
<td>230, 50</td>
<td>A</td>
<td>145</td>
<td>120</td>
<td>75</td>
<td>2.10</td>
<td>75</td>
<td>0.56</td>
<td>A2</td>
<td>18</td>
<td>1.20</td>
<td>6/462</td>
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<td>400</td>
<td>HM</td>
<td>3.25</td>
<td>Q 400.612</td>
<td>167330</td>
<td>230, 50</td>
<td>A</td>
<td>180</td>
<td>155</td>
<td>110</td>
<td>2.88</td>
<td>75</td>
<td>0.56</td>
<td>A2</td>
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<td>1.90</td>
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<tr>
<td>1000</td>
<td>HM</td>
<td>7.50</td>
<td>Q 1000.096</td>
<td>528761</td>
<td>230, 50</td>
<td>B</td>
<td>173</td>
<td>160</td>
<td>96</td>
<td>6.90</td>
<td>65</td>
<td>0.60</td>
<td>A2</td>
<td>60</td>
<td>4.80</td>
<td>1/126</td>
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</tbody>
</table>

* Energy efficiency: Ballasts without CE marking for replacements or markets outside of the EU
Ballasts for HS and HI Lamps
35 to 250 W
Shape: 53x66 mm
Shape: 92x102 mm

For high pressure sodium lamps (HS), metal halide lamps (HI) and ceramic discharge lamps (C-HI)
Vacuum-impregnated with polyester resin
Protection class I

<table>
<thead>
<tr>
<th>Lamp</th>
<th>Current A</th>
<th>Type</th>
<th>Output W</th>
<th>Ref. No.</th>
<th>Output Type</th>
<th>Current factor</th>
<th>EEI*</th>
<th>Current unit</th>
<th>Pieces per box/pallet</th>
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</thead>
<tbody>
<tr>
<td>35 HS/H</td>
<td>0.53</td>
<td>NaH 35.485*</td>
<td>161367</td>
<td>230/240, 50 K</td>
<td>B 108</td>
<td>66 36 1.07 60</td>
<td>0.40 EEI=A3</td>
<td>6 0.22/0.21 16/770</td>
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<td>50 HS/H</td>
<td>0.76</td>
<td>NaH 50.486*</td>
<td>161379</td>
<td>230/240, 50 K</td>
<td>B 108</td>
<td>66 36 1.07 65</td>
<td>0.37 EEI=A3</td>
<td>8 0.30/0.29 16/770</td>
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<tr>
<td>70 HS/H</td>
<td>0.98</td>
<td>NaH 70.128*</td>
<td>539434</td>
<td>230/240, 50 K</td>
<td>B 108</td>
<td>66 36 1.07 70/75</td>
<td>0.36 EEI=A3</td>
<td>12 0.38/0.37 16/770</td>
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<tr>
<td>100 HS/H</td>
<td>1.20</td>
<td>NaH 100.941*</td>
<td>161707</td>
<td>230/240, 50 K</td>
<td>B 108</td>
<td>66 42 1.24 75/80</td>
<td>0.42 EEI=A3</td>
<td>12 0.55/0.53 16/770</td>
<td></td>
</tr>
<tr>
<td>150 HS/H</td>
<td>1.80</td>
<td>NaH 150.620</td>
<td>553173</td>
<td>230/240, 50 K</td>
<td>B 113</td>
<td>90 63 1.8 75/80</td>
<td>0.4 EEI=A3</td>
<td>20 0.76/0.72 16/528</td>
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<tr>
<td>250 HS/H</td>
<td>3.00</td>
<td>NaH 250.340*</td>
<td>504109</td>
<td>230/240, 50 K</td>
<td>B 180</td>
<td>155 110 2.84 80</td>
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<td>32 1.26/1.21 6/330</td>
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<tr>
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<td>3.00</td>
<td>NaH 250.727*</td>
<td>178771</td>
<td>230, 50 K</td>
<td>C 131</td>
<td>120 44 3.53 70</td>
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<td>32 1.26 6/168</td>
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<td>With temperature cut-out</td>
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<tr>
<td>35 HS/H</td>
<td>0.53</td>
<td>NaH 35.485*</td>
<td>503010</td>
<td>230/240, 50 K</td>
<td>B 117</td>
<td>92 48 1.39 70</td>
<td>0.42 EEI=A3</td>
<td>12 0.55/0.53 6/720</td>
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<td>70 HS/H</td>
<td>0.98</td>
<td>NaH 70.128*</td>
<td>506258</td>
<td>230, 50 K</td>
<td>A 108</td>
<td>86 36 1.22 70</td>
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<td>12 0.38 6/720</td>
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<td>100 HS/H</td>
<td>1.20</td>
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<td>230/240, 50 K</td>
<td>A 108</td>
<td>86 42 1.23 75/80</td>
<td>0.42 EEI=A3</td>
<td>12 0.55/0.53 6/616</td>
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<td>150 HS/H</td>
<td>1.80</td>
<td>NaH 150.620*</td>
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<td>230, 50 K</td>
<td>A 145</td>
<td>120 75 2.02 70</td>
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<td>20 0.77 6/396</td>
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<td>3.00</td>
<td>NaH 250.915*</td>
<td>505054</td>
<td>230, 50 K</td>
<td>B 180</td>
<td>155 110 2.84 80</td>
<td>0.40 EEI=A3</td>
<td>32 1.26 4/330</td>
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</tbody>
</table>

* Energy efficiency: Ballasts without CE marking for replacements or markets outside of the EU
Ballasts for HS and HI Lamps
400 to 2000 W

Shape: 92x102 mm
Shape: 150x155 mm

For high pressure sodium lamps (HS), metal halide lamps (HI), and ceramic discharge lamps (C-HI)
Vacuum-impregnated with polyester resin
Screw terminals: 0.75–2.5 mm²
Protection class I
tw 1 30

<table>
<thead>
<tr>
<th>Lamp Type</th>
<th>Current (A)</th>
<th>Output (W)</th>
<th>Ref. No.</th>
<th>V, Hz</th>
<th>Draw. a (mm)</th>
<th>Draw. b (mm)</th>
<th>Draw. c (mm)</th>
<th>Weight (kg)</th>
<th>Efl. factor</th>
<th>Protection</th>
<th>Capacitor (µF)</th>
<th>Current (A)</th>
<th>Pieces per box/pallet</th>
</tr>
</thead>
<tbody>
<tr>
<td>400 HS, HI</td>
<td>4.45</td>
<td>400</td>
<td>NaHJ 400.737</td>
<td>504114</td>
<td>230/240, 50</td>
<td>148</td>
<td>135</td>
<td>68</td>
<td>5.2</td>
<td>70</td>
<td>0.43</td>
<td>A2</td>
<td>50</td>
</tr>
<tr>
<td>600 HS</td>
<td>6.20</td>
<td>600</td>
<td>NaHJ 600.003</td>
<td>533484</td>
<td>230/240, 50</td>
<td>173</td>
<td>160</td>
<td>96</td>
<td>6.8</td>
<td>70</td>
<td>0.44</td>
<td>A2</td>
<td>65</td>
</tr>
<tr>
<td>1000 HS</td>
<td>10.30</td>
<td>1000</td>
<td>NaHJ 1000.089</td>
<td>528548</td>
<td>230, 50</td>
<td>203</td>
<td>188</td>
<td>124</td>
<td>8.9</td>
<td>80</td>
<td>0.45</td>
<td>A2</td>
<td>100</td>
</tr>
<tr>
<td>1500 Hi</td>
<td>9.50</td>
<td>1500</td>
<td>NaHJ 1500.509</td>
<td>553404</td>
<td>380/400/415, 50</td>
<td>122</td>
<td>135</td>
<td>160</td>
<td>14</td>
<td>70</td>
<td>0.58</td>
<td>A2</td>
<td>37</td>
</tr>
<tr>
<td>2000 Hi</td>
<td>8.8</td>
<td>2000</td>
<td>D 2000.81</td>
<td>554306</td>
<td>380/400/415, 50</td>
<td>122</td>
<td>135</td>
<td>160</td>
<td>14</td>
<td>75</td>
<td>0.52</td>
<td>A2</td>
<td>60</td>
</tr>
<tr>
<td>2000 Hi</td>
<td>10.3/11.3</td>
<td>2000</td>
<td>D 2000.81</td>
<td>554306</td>
<td>380/400/415, 50</td>
<td>122</td>
<td>135</td>
<td>160</td>
<td>14</td>
<td>75</td>
<td>0.52</td>
<td>A2</td>
<td>60</td>
</tr>
</tbody>
</table>

Note: A = A1  
B = A2  
C = A3  
D = A4
Control Gear Units for HS and HI Lamps 35 to 150 W

Compact plastic casing
Shape: 64x72 mm

For high pressure sodium lamps (HS), metal halide lamps (HI) and ceramic discharge lamps (C-HI)
Compact control gear unit with ballast with patented, intelligent thermal cut-out with automatic reset (which evaluates the temperature and current of the ballast), digital timer ignitor with IPP++ technology and compensation capacitor with thermal fuse
As individual components no longer need to be wired, there is a significant reduction in assembly time and costs.

Protection class II
Degree of protection: IP40
Permissible load capacity: 20–1000 pF
Lead length to the lamp: max. 10 m
Tw 130
Push-in terminals: 0.5–2.5 mm²
Cord grips for mains and lamp leads
Further outputs and voltages on request

IPP++ Technology
This technology offers effective protection against installation and wiring errors.
It monitors the temperature switch, especially when a high-pressure discharge lamp displays end-of-life behaviour, and stops additional ignition attempts.

<table>
<thead>
<tr>
<th>Lamp</th>
<th>Output W</th>
<th>Type</th>
<th>Current A</th>
<th>Reference No.</th>
<th>Voltage AC V, Hz</th>
<th>Mains current A</th>
<th>a mm</th>
<th>b mm</th>
<th>Weight kg</th>
<th>Power factor</th>
<th>Energy efficiency</th>
<th>Packaging unit</th>
<th>Pieces per box/pallet</th>
</tr>
</thead>
<tbody>
<tr>
<td>35 HS</td>
<td>0.53</td>
<td>VNaHJ 35PZTG.568*</td>
<td>230, 50</td>
<td>0.210</td>
<td>175</td>
<td>166</td>
<td>1.32</td>
<td>55</td>
<td>0.92 EEI=A3</td>
<td>2/480</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>70 HS</td>
<td>0.98</td>
<td>VNaHJ 70PZTG.566*</td>
<td>230, 50</td>
<td>0.380</td>
<td>175</td>
<td>166</td>
<td>1.32</td>
<td>45</td>
<td>0.91 EEI=A3</td>
<td>2/480</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>150 HS</td>
<td>1.80</td>
<td>VNaHJ 150PZTG.567*</td>
<td>230, 50</td>
<td>0.720</td>
<td>214</td>
<td>205</td>
<td>2.25</td>
<td>45</td>
<td>0.91 EEI=A3</td>
<td>2/400</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Ballasts without CE marking for replacements or markets outside of the EU
Electronic Superimposed Ignitors for HS and HI Lamps

Standard version

Ignition voltage: 4–5 kV
Phasing of the ignition voltage:
60–90 °el and 240–270 °el
Max. permitted casing temperature: 105 °C
Screw terminals: 0.75–4 mm²
(Z 2000: 0.75–2.5 mm²)
Fastening: male nipple with pre-assembled washer and nut
For luminaires of protection class I and II

For HS Lamps 70 (DE) to 400 W and HI Lamps 35 to 400 W
For high pressure sodium lamps (HS), metal halide lamps (HI) and ceramic discharge lamps [C-HI]

<table>
<thead>
<tr>
<th>Type</th>
<th>Ref. No.</th>
<th>Voltage AC 50–60 Hz V</th>
<th>Max. lamp current A</th>
<th>Internal loss W</th>
<th>Inherent heating K</th>
<th>Ignition voltage kV</th>
<th>Load capacity A</th>
<th>Switch-off time sec./Hz</th>
<th>Casing d (Ø) mm</th>
<th>a</th>
<th>b</th>
<th>c</th>
<th>Weight g</th>
<th>Packaging unit Box/pallet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plastic casing (PC)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Z 70 K D20</td>
<td>141580*</td>
<td>220–240</td>
<td>2</td>
<td>&lt; 0.6</td>
<td>&lt; 5</td>
<td>1.8–2.3</td>
<td>20–100</td>
<td>1216/50–60</td>
<td>—</td>
<td>80</td>
<td>34</td>
<td>30</td>
<td>145</td>
<td>48/2880</td>
</tr>
<tr>
<td>Z 400 M K</td>
<td>142894</td>
<td>220–240</td>
<td>5</td>
<td>&lt; 3</td>
<td>&lt; 35</td>
<td>4–5</td>
<td>20–50</td>
<td>—</td>
<td>78</td>
<td>34</td>
<td>27</td>
<td>130</td>
<td>60/3600</td>
<td></td>
</tr>
<tr>
<td>Z 400 M K D20</td>
<td>141582*</td>
<td>220–240</td>
<td>5</td>
<td>&lt; 3</td>
<td>&lt; 35</td>
<td>4–5</td>
<td>20–50</td>
<td>1216/50–60</td>
<td>—</td>
<td>80</td>
<td>34</td>
<td>30</td>
<td>145</td>
<td>48/2880</td>
</tr>
</tbody>
</table>
| Recommended for outdoor lighting
* With IPP technology

For HS and HI Lamps 1000 to 2000 W
For high pressure sodium lamps (HS) and metal halide lamps (HI)

<table>
<thead>
<tr>
<th>Type</th>
<th>Ref. No.</th>
<th>Voltage AC 50–60 Hz V</th>
<th>Max. lamp current A</th>
<th>Internal loss W</th>
<th>Inherent heating K</th>
<th>Ignition voltage kV</th>
<th>Load capacity A</th>
<th>Switch-off time sec./Hz</th>
<th>Casing d (Ø) mm</th>
<th>a</th>
<th>b</th>
<th>c</th>
<th>Weight g</th>
<th>Packaging unit Box/pallet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminium casing (Al)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Z 1000 S</td>
<td>140430</td>
<td>220–240</td>
<td>12</td>
<td>&lt; 6</td>
<td>&lt; 35</td>
<td>4–5</td>
<td>20–100</td>
<td>—</td>
<td>50</td>
<td>80</td>
<td>—</td>
<td>—</td>
<td>340</td>
<td>10/990</td>
</tr>
</tbody>
</table>

For HS Lamps 1000 to 2000 W
For high pressure sodium lamps (HS) and metal halide lamps (HI)
Parallel Connected Capacitors with Leads
250 V, 50/60 Hz

Capacitors type A

Casing: plastics, white
Fastening: male nipple with nut and washer included
Discharge resistance
Fixing centres: 20 mm

On request with alternative capacities, connection terminals, mounting options, casing materials

<table>
<thead>
<tr>
<th>Ref. No.</th>
<th>Capacity (µF)</th>
<th>Temperature range (°C)</th>
<th>Ø (D) (mm)</th>
<th>Length (L) (mm)</th>
<th>Male nipple/length (mm)</th>
<th>Lead length (mm)</th>
<th>Weight (g)</th>
<th>Packaging unit Pieces per box/pallet</th>
</tr>
</thead>
<tbody>
<tr>
<td>552774</td>
<td>2.0</td>
<td>-25 to 85</td>
<td>25</td>
<td>57</td>
<td>M8x10</td>
<td>150</td>
<td>22</td>
<td>400/12000</td>
</tr>
<tr>
<td>539225</td>
<td>4.0</td>
<td>-25 to 85</td>
<td>30</td>
<td>57</td>
<td>M8x10</td>
<td>150</td>
<td>31</td>
<td>340/10200</td>
</tr>
<tr>
<td>526170</td>
<td>6.0</td>
<td>-40 to 85</td>
<td>28</td>
<td>54</td>
<td>M8x10</td>
<td>250</td>
<td>22</td>
<td>150/4500</td>
</tr>
<tr>
<td>526171</td>
<td>8.0</td>
<td>-40 to 85</td>
<td>32</td>
<td>67</td>
<td>M8x10</td>
<td>250</td>
<td>24</td>
<td>100/3000</td>
</tr>
<tr>
<td>529665</td>
<td>10.0</td>
<td>-40 to 85</td>
<td>32</td>
<td>67</td>
<td>M8x10</td>
<td>200</td>
<td>32</td>
<td>100/3000</td>
</tr>
<tr>
<td>536742</td>
<td>12.0</td>
<td>-25 to 85</td>
<td>30</td>
<td>78</td>
<td>M8x10</td>
<td>150</td>
<td>42</td>
<td>120/3600</td>
</tr>
<tr>
<td>536741</td>
<td>20.0</td>
<td>-40 to 85</td>
<td>36</td>
<td>92</td>
<td>M8x10</td>
<td>150</td>
<td>85</td>
<td>100/3000</td>
</tr>
<tr>
<td>508484</td>
<td>25.0</td>
<td>-25 to 85</td>
<td>40</td>
<td>93</td>
<td>M8x10</td>
<td>250</td>
<td>89</td>
<td>80/2400</td>
</tr>
<tr>
<td>528553</td>
<td>30.0</td>
<td>-25 to 85</td>
<td>40</td>
<td>93</td>
<td>M8x10</td>
<td>250</td>
<td>108</td>
<td>80/2400</td>
</tr>
<tr>
<td>528554</td>
<td>35.0</td>
<td>-25 to 85</td>
<td>45</td>
<td>94</td>
<td>M8x10</td>
<td>250</td>
<td>173</td>
<td>60/1800</td>
</tr>
<tr>
<td>536813</td>
<td>40.0</td>
<td>-25 to 85</td>
<td>45</td>
<td>94</td>
<td>M8x10</td>
<td>400</td>
<td>166</td>
<td>60/1800</td>
</tr>
<tr>
<td>528555</td>
<td>45.0</td>
<td>-25 to 85</td>
<td>50</td>
<td>94</td>
<td>M8x10</td>
<td>250</td>
<td>167</td>
<td>50/1500</td>
</tr>
</tbody>
</table>
Parallel Connected Capacitors with Break-action Mechanism

Capacitors type B

Casing: aluminium
Filling material: based on vegetable oil
Fastening: male nipple with nut and washer included
Discharge resistance
Overpressure protection
On request further capacities or connectors

<table>
<thead>
<tr>
<th>Ref. No.</th>
<th>Capacity</th>
<th>Temperature range</th>
<th>Drawing</th>
<th>Ø (D)</th>
<th>Length (L)</th>
<th>Male nipple/length (mm)</th>
<th>Weight</th>
<th>Packaging unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>536387</td>
<td>20.0</td>
<td>-40 to 100</td>
<td>A</td>
<td>35</td>
<td>78</td>
<td>M8 x 10</td>
<td>90</td>
<td>81/3402</td>
</tr>
<tr>
<td>536389</td>
<td>30.0</td>
<td>-40 to 100</td>
<td>A</td>
<td>35</td>
<td>103</td>
<td>M8 x 10</td>
<td>100</td>
<td>81/2430</td>
</tr>
<tr>
<td>536390</td>
<td>32.0</td>
<td>-40 to 100</td>
<td>A</td>
<td>35</td>
<td>103</td>
<td>M8 x 10</td>
<td>120</td>
<td>81/2430</td>
</tr>
<tr>
<td>536401</td>
<td>37.0</td>
<td>-40 to 100</td>
<td>A</td>
<td>50</td>
<td>103</td>
<td>M12 x 12</td>
<td>200</td>
<td>36/1080</td>
</tr>
<tr>
<td>536404</td>
<td>60.0</td>
<td>-40 to 85</td>
<td>B</td>
<td>55</td>
<td>128</td>
<td>M12 x 12</td>
<td>250</td>
<td>36/1080</td>
</tr>
</tbody>
</table>
Independent
Electronic
Converters – LiteLine

Electronic safety converters for low-voltage halogen incandescent lamps 12 V
Casing: heat-resistant polyamide
Mains frequency: 50–60 Hz
Protection against “no load” operation
Protection against short-circuit: electronic switch-off with automatic restart
Electronically controlled overload and temperature protection
Suitable for installation in furniture and on combustible surfaces
Power factor: > 0.95
Efficiency: ≥ 94%
Dimming: optional with phase-cutting leading-edge or phase-cutting trailing-edge dimmer
Screw terminals: 2.5 mm² (EST 60/12.635 primary: 4 mm²)
Quantity of screw terminals:
1x2-poles primary
1x2-poles secondary
With integrated cord grip
Protection class II
SELV
Degree of protection: IP20
RFI-suppressed

<table>
<thead>
<tr>
<th>Type</th>
<th>Ref. No.</th>
<th>Capacity range (W)</th>
<th>Voltage (V) prim.</th>
<th>Nominal current A</th>
<th>Ambient temperature ( t_a ) (°C)</th>
<th>Casing temperature ( t_c ) (°C)</th>
<th>Drawing</th>
<th>Weight g</th>
<th>Packaging unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions: 22x36x103.5 mm</td>
<td>EST 60/12.635</td>
<td>186173</td>
<td>10–60</td>
<td>220–240</td>
<td>10.2–12</td>
<td>0.258–0.260</td>
<td>-20 to 45</td>
<td>max. 85</td>
<td>A</td>
</tr>
<tr>
<td>Dimensions: 28x37x128 mm</td>
<td>EST 105/12.381</td>
<td>186077</td>
<td>20–105</td>
<td>230–240</td>
<td>11.2–11.7</td>
<td>0.435–0.445</td>
<td>-20 to 40</td>
<td>max. 85</td>
<td>B</td>
</tr>
</tbody>
</table>
Emergency Lighting Modules 6 to 80 W with Self-Diagnosis Function

EMXs – Emergency lighting modules

For one-, two-, three- or four-lamp operation with standard and dimmable electronic or magnetic ballasts
EB phase is switched off during emergency operation
Short circuit protection
RoHS-compliant (excluding rechargeable batteries)
5-pin technology and therefore EMC-compliant even during emergency operation
Suitable for protection class I
EN 61347-1, EN 61347-2-7
Suitable for systems in accordance with
VDE 0108 or EN 50172
Not suitable for lamps with an integrated starter
Dimensions (LxWxH): 210x31.4x21.5 mm
Fixing hole distance: 205.5 mm
Nominal voltage: 230 V ±10%, 50–60 Hz
Ambient temperature ta: 0 to 50 °C
Unit: 25 pcs.

These VS emergency lighting modules include an automatic self-diagnosis feature that performs a two-minute function test of the device, the lamp and the battery every seven days.
In addition, the operating period is tested every 12 months with subsequent battery reactivation.

Optical status display
- Red LED, flashing intermittently: defective lamp. The status display will be reset approx. one minute after the fault has been rectified.
- White LED, not illuminated: if connected to the power supply, the LED must turn green after a maximum of five minutes. If not, the device either has no voltage supply or the emergency lighting module is defective.
- Red LED, permanently flashing: battery capacity is too low or the battery supply line has been interrupted.
- Green LED: fully functional.
Emergency Lighting Modules 6 to 80 W with Self-Diagnosis Function

EMXs – Emergency lighting modules

<table>
<thead>
<tr>
<th>Type</th>
<th>Ref. No. Module</th>
<th>Ref. No. Battery</th>
<th>Nominal operating period (hrs.)</th>
<th>Rechargeable battery type</th>
<th>Dimensions LxD (Ø) of battery</th>
<th>Test function</th>
<th>Weight module g</th>
<th>Weight battery g</th>
<th>Packaging unit Pieces per box</th>
<th>Battery</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMX 180.000</td>
<td>188792</td>
<td>188823</td>
<td>1</td>
<td>4.8V 1.8Ah NiCd</td>
<td>1 / 190 x 23</td>
<td>automatic</td>
<td>160</td>
<td>200</td>
<td>72</td>
<td>36</td>
</tr>
<tr>
<td>EMX 180.001</td>
<td>188793</td>
<td>188824</td>
<td>3</td>
<td>4.8V 4.5Ah NiCd</td>
<td>1 / 240 x 33</td>
<td>automatic</td>
<td>160</td>
<td>490</td>
<td>72</td>
<td>18</td>
</tr>
</tbody>
</table>

Circuit diagrams see page 336–338

Holders for Rechargeable Batteries for Emergency Lighting Modules

Material: PC (188828: PBT)
Type: Rechargeable Battery Holder
Packaging unit per box: 144 pcs.

<table>
<thead>
<tr>
<th>Ref. No.</th>
<th>For rechargeable battery type</th>
<th>Dimensions (mm)</th>
<th>a</th>
<th>b</th>
<th>c</th>
<th>d</th>
<th>e</th>
<th>l</th>
</tr>
</thead>
<tbody>
<tr>
<td>188827</td>
<td>4.8V 1.8Ah NiCd</td>
<td>35</td>
<td>18.0</td>
<td>26.3</td>
<td>26.7</td>
<td>13.0</td>
<td>5.5</td>
<td></td>
</tr>
<tr>
<td>188828</td>
<td>4.8V 4.5Ah NiCd</td>
<td>39</td>
<td>23.2</td>
<td>36.2</td>
<td>37.3</td>
<td>12.4</td>
<td>6.0</td>
<td></td>
</tr>
</tbody>
</table>

It is recommended to use two holders per rechargeable battery to ensure optimum hold.

Table of suitable lamp types

<table>
<thead>
<tr>
<th>Lamp type</th>
<th>Lamp nominal output W</th>
</tr>
</thead>
<tbody>
<tr>
<td>T8</td>
<td>15, 18, 32, 36, 58, 70</td>
</tr>
<tr>
<td>T3 HE</td>
<td>14, 21, 28, 35</td>
</tr>
<tr>
<td>T3 HO</td>
<td>24, 39, 49, 54, 80</td>
</tr>
<tr>
<td>T3</td>
<td>6, 8, 13</td>
</tr>
<tr>
<td>TR5 (TR16)</td>
<td>22, 40, 55, 60</td>
</tr>
<tr>
<td>TR (T29R)</td>
<td>22, 32, 40</td>
</tr>
<tr>
<td>TCL/TCF</td>
<td>18, 24, 36, 40, 55, 80</td>
</tr>
<tr>
<td>TC-DEL</td>
<td>10, 13, 18, 26</td>
</tr>
<tr>
<td>TC-TEL</td>
<td>13, 18, 26, 32, 44, 57, 70</td>
</tr>
<tr>
<td>TC-SEL</td>
<td>7, 9, 11</td>
</tr>
<tr>
<td>TC-DD (2D)</td>
<td>10, 16, 21, 28, 38, 55</td>
</tr>
</tbody>
</table>

Luminous flux factor of lamps during emergency operation

<table>
<thead>
<tr>
<th>Lamp nominal output W</th>
<th>Luminous flux factor* %</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>43.0</td>
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<td>8</td>
<td>32.0</td>
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<td>28</td>
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<td>54</td>
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<tr>
<td>58</td>
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<td>70</td>
<td>4.3</td>
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<td>80</td>
<td>3.7</td>
</tr>
</tbody>
</table>

* Theoretically defined reference values at 25 °C ambient temperature
**Electronic Built-in Ballasts for Compact Fluorescent Lamps**

**ELXs – Warm Start**

- Casing: heat-resistant polyamide
- Power factor: approx. 0.6 (depending on the lamp output)
- DC voltage operation: 198–264 V
- Push-in terminals with lever opener: 0.5–1.5 mm²
- RFI-suppressed
- For luminaires of protection class I and II
- Degree of protection: IP20
- Fixing slots for screws M4
- For lighting systems with high switching frequency (> 5/day)
- EOL shut down approved acc. to EN 61347 Test 2

<table>
<thead>
<tr>
<th>Lamp</th>
<th>Electronic Ballast</th>
<th>Output W Type</th>
<th>Output Type Base</th>
<th>Type</th>
<th>Ref. No.</th>
<th>Voltage AC 50, 60 Hz, %, 10 %</th>
<th>Energy Efficiency</th>
<th>Ambient Temperature 75°C</th>
<th>Casing Temperature 20°C</th>
<th>Casing K</th>
<th>Output W System</th>
<th>Packaging Unit Pieces per box/pallet</th>
</tr>
</thead>
<tbody>
<tr>
<td>7/9/11</td>
<td>TCDEL</td>
<td>G24q-1</td>
<td>ED6 121 901</td>
<td>A2/A3</td>
<td>188663</td>
<td>220–240 A2 –15 to 55</td>
<td>max. 80</td>
<td>K20 15.5</td>
<td>66/3960</td>
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</tr>
<tr>
<td>10</td>
<td>TCDEL/TEL</td>
<td>G24q-1/GX24q1</td>
<td>ED6 124 905</td>
<td>A3</td>
<td>188666</td>
<td>220–240 A2 –15 to 55</td>
<td>max. 85</td>
<td>K20 22.9</td>
<td>66/3960</td>
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</tr>
<tr>
<td>10/16</td>
<td>TCDD</td>
<td>G24q-2</td>
<td>ED6 121 905</td>
<td>A3</td>
<td>188667</td>
<td>220–240 A2 –15 to 55</td>
<td>max. 85</td>
<td>K20 23.4</td>
<td>66/3960</td>
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</tr>
</tbody>
</table>

**Lamp Output Type Base Type**

- **K20**
- **K21**
Electronic Built-in Ballasts for Compact Fluorescent Lamps

**ELXc – Warm Start**

Casing: heat-resistant polyamide (K2, K3) or heat-resistant polycarbonate (K2.1)

DC voltage
- for operation: 176–264 V
- for ignition: 198–264 V

(ELXc 242.837: DC voltage cannot be reduced to 176 V)

Second earth terminal to ground the luminaires for example

Power factor: > 0.96 (K2.1: 0.98)

Push-in terminals with lever opener: 0.5–1.5 mm²

RFI-suppressed

Constant power consumption

For luminaires of protection class I

Degree of protection: IP20

Fixing brackets for screws M4

for lateral or base mounting

For lighting systems with high switching frequency (> 5/day)

EOL shut down approved acc. to EN 61347 Test 2

<table>
<thead>
<tr>
<th>Lamp</th>
<th>Electronic ballast</th>
<th>Output W</th>
<th>Type</th>
<th>Base</th>
<th>Type</th>
<th>Ref. No.</th>
<th>Voltage AC 50, 60 Hz</th>
<th>Energetic efficiency 10%</th>
<th>Ambient temperature (°C)</th>
<th>Casing temperature (°C)</th>
<th>Casing</th>
<th>Output W</th>
<th>System</th>
<th>Packaging unit</th>
<th>Pieces per box/pallet</th>
</tr>
</thead>
<tbody>
<tr>
<td>2x9/11</td>
<td>188699</td>
<td>TC-DEL/-TEL</td>
<td>G24q-1/GX24q-1</td>
<td>ELXc 218.871</td>
<td>220–240</td>
<td>A2 BAT</td>
<td>-20 to 50</td>
<td>max. 65</td>
<td>K2</td>
<td>21/38</td>
<td>34/43</td>
<td>34/47</td>
<td>26/41</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10/13</td>
<td>188700</td>
<td>TC-F/TCL</td>
<td>G210/2G11</td>
<td>ELXc 142.872</td>
<td>220–240</td>
<td>A2 BAT</td>
<td>-20 to 50</td>
<td>max. 65</td>
<td>K2</td>
<td>18/27</td>
<td>53/68</td>
<td>33/45</td>
<td>26/53</td>
<td>2x18/24</td>
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</tr>
<tr>
<td>2x18/24</td>
<td>18843</td>
<td>220–240</td>
<td>A2 BAT</td>
<td>-20 to 50</td>
<td>max. 65</td>
<td>K3</td>
<td>36/40</td>
<td>70.5/88</td>
<td>33/45</td>
<td>35/48.5/70.5/88</td>
<td>12/900</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22/40</td>
<td>183040</td>
<td>TC-DEL/-TEL</td>
<td>G24q-3/GX24q-3</td>
<td>220–240</td>
<td>A2 BAT</td>
<td>-20 to 55</td>
<td>max. 65</td>
<td>K2</td>
<td>20/28</td>
<td>68/69</td>
<td>51.0</td>
<td>52/68/70.5/94.5/70.5</td>
<td>15/1200</td>
<td></td>
<td></td>
</tr>
<tr>
<td>22+40/</td>
<td>183041</td>
<td>2G11</td>
<td>ELXc 226.878</td>
<td>220–240</td>
<td>A2 BAT</td>
<td>-20 to 55</td>
<td>max. 65</td>
<td>K2</td>
<td>28/50</td>
<td>52/62</td>
<td>60/88</td>
<td>60/66</td>
<td>12/900</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Dimmable Electronic Built-in Ballasts for TC-DEL/-TEL Lamps

ELXd – Dimmable with push key or DALI

Complete implementation of the DALI-standard: addressable, memory store for scenes and groups, retractive information communication, physical and RND-selection, standardized lamp characteristic.

Low-power design ensures very low standby power consumption of ≤ 0.5 W

PUSH: dimmable with usual push key and sensor

DALI: poles are not polarity sensitive (protected if connected to mains voltage)

for use with DALI compatible control units

Dimming range: approx. 3–100% of lamp power

Compatible with IEC 62386

Casing: heat-resistant polycarbonate

DC voltage

for operation: 176–264 V

for ignition: 198–264 V

Power factor: > 0.95 at 100% operation

Push-in terminals with lever opener: 0.5–1.5 mm²

RFI-suppressed

Degree of protection: IP20

For luminaires of protection class I

Fixing brackets for screws M4 for lateral or base mounting

For lighting systems with high switching frequency (> 5/day)

EOL shut down approved acc. to EN 61347 Test 2

Automatic restart after lamp has been changed

<table>
<thead>
<tr>
<th>Lamp</th>
<th>Output Ref. No.</th>
<th>Base Type</th>
<th>Output Voltage</th>
<th>Energy Efficiency</th>
<th>Ambient Temperature</th>
<th>Casing Temperature</th>
<th>Casing</th>
<th>Output Unit</th>
<th>Packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>2x18 TC-DEL/-TEL G24q-2/GX24q-2 ELXd</td>
<td>218.707</td>
<td></td>
<td>220–240 A1 BAT</td>
<td>10 to 50</td>
<td>max. 70</td>
<td>K3</td>
<td>40.0</td>
<td>12/900</td>
<td></td>
</tr>
<tr>
<td>26 TC-DEL/-TEL G24q-3/GX24q-3 ELXd</td>
<td>142.709</td>
<td></td>
<td>220–240 A1 BAT</td>
<td>10 to 50</td>
<td>max. 65</td>
<td>K2</td>
<td>27.5</td>
<td>15/1200</td>
<td></td>
</tr>
<tr>
<td>32/42 TC-TEL GX24q-3</td>
<td>242.711</td>
<td></td>
<td>220–240 A1 BAT</td>
<td>10 to 50</td>
<td>max. 70</td>
<td>K3</td>
<td>56</td>
<td>12/900</td>
<td></td>
</tr>
<tr>
<td>2x32/42 TC-TEL GX24q-3</td>
<td>69/90</td>
<td></td>
<td>220–240 A1 BAT</td>
<td>10 to 50</td>
<td>max. 70</td>
<td>K3</td>
<td>56</td>
<td>12/900</td>
<td></td>
</tr>
</tbody>
</table>

Electronic ballasts for compact fluorescent lamps
Electronic Built-in Ballasts for T8 Lamps

**ELXc – Warm Start**

- **Casing:** metal
- **DC voltage**
  - for operation: 176–264 V
  - for ignition: 198–264 V
- **Power factor:** ≥ 0.95
- **Push-in terminals:** 0.5–1 mm²
- **For the automatic luminaire wiring:**
  - IDC terminals for leads H05V-U 0.5
  - RFI-suppressed
- **For luminaires of protection class I**
- **Degree of protection:** IP20
- **For lighting systems with high switching frequency (> 5/day)**
- **EOL shut down (for T8)**

<table>
<thead>
<tr>
<th>Lamp</th>
<th>Output W</th>
<th>Type</th>
<th>Base</th>
<th>Type</th>
<th>Ref. No.</th>
<th>Voltage AC 50, 60 Hz ±10%</th>
<th>Energy efficiency</th>
<th>Ambient temperature tₐ (°C)</th>
<th>Casing temperature t_c (°C)</th>
<th>Casing</th>
<th>Output W</th>
<th>System</th>
<th>Packaging unit Pieces per box/pallet</th>
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</thead>
<tbody>
<tr>
<td>3x18</td>
<td>T8</td>
<td>G13</td>
<td>ELXc</td>
<td>418.204</td>
<td>188744</td>
<td>220–240</td>
<td>A2 BAT</td>
<td>-15 to 55</td>
<td>max. 70</td>
<td>M8</td>
<td>56.0</td>
<td>10/1200</td>
<td></td>
</tr>
<tr>
<td>4x18</td>
<td>T8</td>
<td>G13</td>
<td>ELXc</td>
<td>336.214</td>
<td>188595</td>
<td>220–240</td>
<td>A2 BAT</td>
<td>-15 to 50</td>
<td>max. 65</td>
<td>M8</td>
<td>105.0</td>
<td>10/1200</td>
<td></td>
</tr>
</tbody>
</table>

**ELXc EffectLine – Warm start**

- **Push-in terminals with lever opener:** 0.5–1.5 mm²

<table>
<thead>
<tr>
<th>Lamp</th>
<th>Output W</th>
<th>Type</th>
<th>Base</th>
<th>Type</th>
<th>Ref. No.</th>
<th>Voltage AC 50, 60 Hz ±10%</th>
<th>Energy efficiency</th>
<th>Ambient temperature tₐ (°C)</th>
<th>Casing temperature t_c (°C)</th>
<th>Casing</th>
<th>Output W</th>
<th>System</th>
<th>Packaging unit Pieces per box/pallet</th>
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<tbody>
<tr>
<td>18</td>
<td>T8</td>
<td>G13</td>
<td>ELXc</td>
<td>136.207</td>
<td>188704</td>
<td>220–240</td>
<td>A2 BAT</td>
<td>-20 to 55</td>
<td>max. 60</td>
<td>M8</td>
<td>18.4</td>
<td>10/1200</td>
<td></td>
</tr>
<tr>
<td>36</td>
<td>T8</td>
<td>G13</td>
<td>ELXc</td>
<td>236.208</td>
<td>188705</td>
<td>220–240</td>
<td>A2 BAT</td>
<td>-20 to 50</td>
<td>max. 60</td>
<td>M8</td>
<td>35.2</td>
<td>10/1200</td>
<td></td>
</tr>
<tr>
<td>2x18</td>
<td>T8</td>
<td>G13</td>
<td>ELXc</td>
<td>158.209</td>
<td>188706</td>
<td>220–240</td>
<td>A2 BAT</td>
<td>-20 to 50</td>
<td>max. 60</td>
<td>M8</td>
<td>52.6</td>
<td>10/1200</td>
<td></td>
</tr>
<tr>
<td>2x36</td>
<td>T8</td>
<td>G13</td>
<td>ELXc</td>
<td>258.210</td>
<td>188707</td>
<td>220–240</td>
<td>A2</td>
<td>-20 to 50</td>
<td>max. 65</td>
<td>M8</td>
<td>109.9</td>
<td>10/1200</td>
<td></td>
</tr>
</tbody>
</table>
Electronic ballasts for compact fluorescent lamps

Electronic Built-in Ballasts for T5 Lamps

**ELXc – Warm Start**

- Casing: metal
- DC voltage for operation: 176–264 V
  - for ignition: 198–264 V
  - (ELXc 235.857, 149.858, 154.864, 180.866, 280.538: DC voltage cannot be reduced to 176 V)
- Push-in terminals: 0.5–1 mm²
  - (M6: push-in terminals with lever opener: 0.5–1.5 mm²)
  - (M8, M10/M11: for the automatic luminaire wiring: IDC terminals for leads H05V-U 0.5)
- Power factor: ≥ 0.95
- RFI-suppressed
- For luminaires of protection class I
- Degree of protection: IP20
- For lighting systems with high switching frequency (> 5/day)
- EOL shut down approved acc. to EN 61347 Test 2 (M7.2: Test 1)
- M7.2: suitable for use in luminaires for emergency lighting systems acc. to VDE 0108

<table>
<thead>
<tr>
<th>Lamp</th>
<th>Electronic ballast</th>
<th>System</th>
<th>Packaging</th>
</tr>
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<tbody>
<tr>
<td>Output</td>
<td>Type</td>
<td>Base</td>
<td>Ref. No.</td>
</tr>
<tr>
<td>W</td>
<td>Type</td>
<td>Type</td>
<td></td>
</tr>
<tr>
<td>14/21/28/35</td>
<td>T5</td>
<td>GS</td>
<td>ELXc 135.220</td>
</tr>
<tr>
<td>2x14/21/28/35</td>
<td>T5</td>
<td>GS</td>
<td>ELXc 235.857</td>
</tr>
<tr>
<td>3/4x14</td>
<td>T5</td>
<td>GS</td>
<td>ELXc 414.868</td>
</tr>
<tr>
<td>24/39</td>
<td>T5</td>
<td>GS</td>
<td>ELXc 140.862</td>
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<tr>
<td>2x24/39</td>
<td>T5</td>
<td>GS</td>
<td>ELXc 240.863</td>
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<tr>
<td>3/4x24</td>
<td>T5</td>
<td>GS</td>
<td>ELXc 424.223</td>
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<tr>
<td>3x28</td>
<td>T5 HE</td>
<td>GS</td>
<td>ELXc 328.230</td>
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<td>49</td>
<td>T5</td>
<td>GS</td>
<td>ELXc 149.858</td>
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<td>T5</td>
<td>GS</td>
<td>ELXc 249.859</td>
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<td>54</td>
<td>T5</td>
<td>GS</td>
<td>ELXc 154.864</td>
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<td>2x54</td>
<td>T5</td>
<td>GS</td>
<td>ELXc 254.865</td>
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<td>80</td>
<td>T5</td>
<td>GS</td>
<td>ELXc 180.866</td>
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<tr>
<td>2x80</td>
<td>T5</td>
<td>GS</td>
<td>ELXc 280.538</td>
</tr>
</tbody>
</table>
Electronic ballasts for compact fluorescent lamps

Electronic Built-in Ballasts for T5 and T8 Lamps

**ELXd – Dimmable with push key or DALI**

Complete implementation of the DALI-standard
Low-power design ensures very low standby power consumption of ≤ 0.2 W
Compatible with IEC 62386

**PUSH:** dimmable with usual push key
**DALI:** poles are not polarity sensitive (protected if connected to mains voltage) for use with DALI compatible control units

Dimming range: approx. 1–100 % of lamp power
Casing: metal
DC voltage for operation: 154–276 V for ignition: 198–264 V

Power factor: > 0.95 at 100 % operation
Push terminals: 0.5–1 mm²
For the automatic luminaire wiring: IDC terminals for leads H05V-U 0.5
RFI-suppressed
For luminaires of protection class I
Degree of protection: IP20
For lighting systems with high switching frequency (> 5/day)
Suitable for use in luminaires for emergency lighting systems acc. to VDE 0108
EOL shut down approved acc. to EN 61347 Test 2 (for T5)
EOL 2 shut down (for T8)

**Lamp Electronic ballast System Packaging**

<table>
<thead>
<tr>
<th>Output W</th>
<th>Type</th>
<th>Base Type</th>
<th>Ref. No.</th>
<th>Voltage AC 50, 60 Hz Va10%</th>
<th>Energy efficiency</th>
<th>Ambient temperature Uambient (°C)</th>
<th>Casing temperature Up (°C)</th>
<th>Casing</th>
<th>System</th>
<th>Packaging unit Pieces per box/pallet</th>
</tr>
</thead>
<tbody>
<tr>
<td>18</td>
<td>T8</td>
<td>G13 ELXd 118.615</td>
<td>188344</td>
<td>220-240</td>
<td>A1</td>
<td>-20 to 50</td>
<td>max. 75</td>
<td>W22</td>
<td>19</td>
<td>10/840</td>
</tr>
<tr>
<td>2x18</td>
<td>T8</td>
<td>G13 ELXd 218.616</td>
<td>188345</td>
<td>220-240</td>
<td>A1</td>
<td>-20 to 50</td>
<td>max. 75</td>
<td>W24</td>
<td>37</td>
<td>10/720</td>
</tr>
<tr>
<td>3x18</td>
<td>T8</td>
<td>G13 ELXd 318.627</td>
<td>188601</td>
<td>220-240</td>
<td>A1</td>
<td>-20 to 50</td>
<td>max. 75</td>
<td>W23</td>
<td>53.6</td>
<td>10/600</td>
</tr>
<tr>
<td>4x18</td>
<td>T8</td>
<td>G13 ELXd 418.629</td>
<td>188603</td>
<td>220-240</td>
<td>A1</td>
<td>-20 to 50</td>
<td>max. 75</td>
<td>W23</td>
<td>69.3</td>
<td>10/600</td>
</tr>
<tr>
<td>36</td>
<td>T8</td>
<td>G13 ELXd 136.617</td>
<td>188346</td>
<td>220-240</td>
<td>A1</td>
<td>-20 to 50</td>
<td>max. 75</td>
<td>W22</td>
<td>36</td>
<td>10/840</td>
</tr>
<tr>
<td>2x36</td>
<td>T8</td>
<td>G13 ELXd 236.618</td>
<td>188347</td>
<td>220-240</td>
<td>A1</td>
<td>-20 to 50</td>
<td>max. 75</td>
<td>W24</td>
<td>69</td>
<td>10/720</td>
</tr>
<tr>
<td>58</td>
<td>T8</td>
<td>G13 ELXd 158.619</td>
<td>188348</td>
<td>220-240</td>
<td>A1</td>
<td>-20 to 50</td>
<td>max. 75</td>
<td>W22</td>
<td>56</td>
<td>10/840</td>
</tr>
<tr>
<td>2x58</td>
<td>T8</td>
<td>G13 ELXd 258.620</td>
<td>188349</td>
<td>220-240</td>
<td>A1</td>
<td>-20 to 50</td>
<td>max. 75</td>
<td>W24</td>
<td>108</td>
<td>10/720</td>
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</table>

**For T5 lamps – with lamp detection**

<table>
<thead>
<tr>
<th>Output W</th>
<th>Type</th>
<th>Base Type</th>
<th>Ref. No.</th>
<th>Voltage AC 50, 60 Hz Va10%</th>
<th>Energy efficiency</th>
<th>Ambient temperature Uambient (°C)</th>
<th>Casing temperature Up (°C)</th>
<th>Casing</th>
<th>System</th>
<th>Packaging unit Pieces per box/pallet</th>
</tr>
</thead>
<tbody>
<tr>
<td>2x14/24</td>
<td>T5</td>
<td>G5 ELXd 235.725</td>
<td>188933</td>
<td>220-240</td>
<td>A1 BAT</td>
<td>10 to 50</td>
<td>max. 75</td>
<td>W22</td>
<td>16/26</td>
<td>10/840</td>
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<td>3x14/24</td>
<td>T5</td>
<td>G5 ELXd 324.626</td>
<td>188600</td>
<td>220-240</td>
<td>A1 BAT</td>
<td>10 to 50</td>
<td>max. 75</td>
<td>W23</td>
<td>45/37</td>
<td>10/600</td>
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<td>4x14/24</td>
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<td>G5 ELXd 424.628</td>
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<td>220-240</td>
<td>A1 BAT</td>
<td>10 to 50</td>
<td>max. 75</td>
<td>W23</td>
<td>60/97</td>
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<td>21/39</td>
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<td>G5 ELXd 139.602</td>
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<td>max. 75</td>
<td>W22</td>
<td>23/42</td>
<td>10/840</td>
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<td>G5 ELXd 239.621</td>
<td>188330</td>
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<td>A1 BAT</td>
<td>10 to 50</td>
<td>max. 75</td>
<td>W24</td>
<td>45/82</td>
<td>10/720</td>
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<td>28/54</td>
<td>T5</td>
<td>G5 ELXd 154.603</td>
<td>188332</td>
<td>220-240</td>
<td>A1 BAT</td>
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<td>max. 75</td>
<td>W22</td>
<td>31/59</td>
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<td>G5 ELXd 254.604</td>
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<td>A1 BAT</td>
<td>10 to 50</td>
<td>max. 75</td>
<td>W24</td>
<td>61/115</td>
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<td>G5 ELXd 180.605</td>
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<td>220-240</td>
<td>A1 BAT</td>
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<td>A1 BAT</td>
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<td>max. 75</td>
<td>W24</td>
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<td>A1 BAT</td>
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<td>max. 75</td>
<td>W24</td>
<td>75/104</td>
<td>10/720</td>
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</table>
Electronic Ballasts for HI Lamps
35, 70 and 150 W

Shape: M3 / K34 / K31

Casing: aluminium (M3), heat-resistant polycarbonate (K31, K34)
For ceramic discharge tube lamps (C-HI)
Power factor: ≥ 0.95 (K31: 0.98)
Ignition voltage: max. 5 kV
Operation frequency: 173 Hz (K31: 170 Hz)
Push-in terminals with lever opener: 0.75–2.5 mm²
Total harmonic distortion: < 10%
Temperature protection
Constant power consumption
Protection against “no load” operation
For luminaires of protection class I (metal casing)
For luminaires of protection class I and II (plastic casing)
Degree of protection: IP20
Permissible load capacity: 20–120 pF (K31: 20–240 pF)
RFI-suppressed
Fixing brackets for screws M4
for base mounting
No flickering of defective lamps

<table>
<thead>
<tr>
<th>Lamp</th>
<th>Output Type</th>
<th>Ref. No.</th>
<th>Voltage AC 50, 60 Hz</th>
<th>Mains current A</th>
<th>Energy efficiency %</th>
<th>Ambient temperature, °C</th>
<th>Casing temperature, °C</th>
<th>Weight g</th>
<th>Permissible load capacity, pF</th>
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</thead>
<tbody>
<tr>
<td>M3 – Electronic built-in ballast (with cap)</td>
<td>35 HI</td>
<td>GU6.5, G8.5, GU8.5, G9X.5, G12, G12, E27</td>
<td>G9x.35.325</td>
<td>183033</td>
<td>220–240</td>
<td>0.20–0.18</td>
<td>A2</td>
<td>-20 to 65</td>
<td>max. 80</td>
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<tr>
<td></td>
<td>70 HI</td>
<td>GU8.5, GU8.5, G9X.5, G12, G12, PG12-2, E27, RX7s</td>
<td>G9x.70.326</td>
<td>183036</td>
<td>220–240</td>
<td>0.36–0.34</td>
<td>A2</td>
<td>-20 to 55</td>
<td>max. 80</td>
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<tr>
<td>K34 – Independent electronic ballasts with cord grip</td>
<td>35 HI</td>
<td>GU6.5, G8.5, GU8.5, G9X.5, G12, G12, E27</td>
<td>G9x.35.325</td>
<td>183035</td>
<td>220–240</td>
<td>0.20–0.18</td>
<td>A2</td>
<td>-20 to 65</td>
<td>max. 75</td>
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<tr>
<td></td>
<td>70 HI</td>
<td>GU8.5, GU8.5, G9X.5, G12, G12, PG12-2, E27, RX7s</td>
<td>G9x.70.326</td>
<td>183038</td>
<td>220–240</td>
<td>0.36–0.34</td>
<td>A2</td>
<td>-20 to 55</td>
<td>max. 75</td>
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<tr>
<td>K31 built-in</td>
<td>1x150 HI</td>
<td>G12, G12, G12, E27, E40, RX7s</td>
<td>G9x.150G.334</td>
<td>183046</td>
<td>220–240</td>
<td>0.73–0.67</td>
<td>A2</td>
<td>-25 to 45</td>
<td>max. 85</td>
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<tr>
<td>K31 independent – with cord grip</td>
<td>1x150 HI</td>
<td>G12, G12, G12, E27, E40, RX7s</td>
<td>G9x.150G.334</td>
<td>183047</td>
<td>220–240</td>
<td>0.73–0.67</td>
<td>A2</td>
<td>-25 to 45</td>
<td>max. 85</td>
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</tbody>
</table>
Lampholders for halogen incandescent lamps

**R7s Metal Lampholders**

*For mains voltage halogen incandescent lamps*

R7s lampholder  
Casing: Al, T300, contact pin: Cu, silver bulb  
Nominal rating: 10/250  
Lead: Cu nickel-plated, stranded conductors  
1 mm², PTFE-insulation, length: 300 mm  
Fixing flange  
Fixing holes for screws M3  
Weight: 15.7 g  
Packaging unit per box/pallet: 50/1000 pcs.  
Type: 30523  
Ref. No.: 100710

**R7s Ceramic Lampholders**

*For mains voltage halogen incandescent lamps*

The luminaire design must ensure protection from electric shock as well as sufficient creepage distances and clearances from live parts on the back of lampholder.  

If the central hole on the bracket is used for fixing there must be a support within the luminaire to ensure that the bracket cannot be deformed.

Partly enclosed R7s lampholder  
Casing: ceramic, T350  
Contact pin: Cu, silver bulb  
Nominal rating: 8/250  
Leads: Cu nickel-plated, stranded conductors  
0.75 mm², PTFE-insulation, length: 200 mm  
With fixing screw M4  
Weight: 25.4 g  
Packaging unit per box/pallet: 50/400 pcs.  
Type: 32300  
Ref. No.: 100912  
Lampholders with brackets on request
GU10, GZ10 Lampholders, Accessories

For mains voltage halogen incandescent lamps

GU10, GZ10 lampholders
Casing: LCP, natural, T270, nominal rating: 2/250
Push-in twin terminals for stranded conductors
with ferrule on bare end of core Ø 1.4–1.8 mm
Fixing holes for screws M3
Weight: 7 g
Packaging unit per box/pallet: 50/1000 pcs.
Type: 31000
Ref. No.: 108979
E14 Thermoplastic Lampholders, One-piece, and Cover Caps

For incandescent lamps with base E14

E14 lampholders, for cover caps
Plain casing
Casing: PET GF, T210, nominal rating: 2/250
Push-in twin terminals: 0.5–1.5 mm²
Rear fixing holes for self-tapping screws
acc. to ISO 1481/7049-ST2.9-C/F
Weight: 11.3 g
Packaging unit per box/pallet: 50/1000 pcs.
Type: 64001
Ref. No.: 109384 white
Ref. No.: 109383 black

E14 lampholders, for cover caps
External thread 28x2 IEC 60399
Casing: PET GF, T210, nominal rating: 2/250
Push-in twin terminals: 0.5–1.5 mm²
Rear fixing holes for self-tapping screws
acc. to ISO 1481/7049-ST2.9-C/F
Weight: 12.2 g
Packaging unit per box/pallet: 50/1000 pcs.
Type: 64101
Ref. No.: 109387 white
Ref. No.: 109386 black

Cover caps
Material: PA GF
Female nipple: M10x1
Weight: 7.6 g
Packaging unit per box/pallet: 50/1000 pcs.
Type: 85075
Ref. No.: 109110 white
Ref. No.: 109112 black

Plastic screw rings
For E14 lampholders
with external thread 28x2 IEC 60399
Weight: 3.2/1.6 g
Packaging unit per box/pallet: 50/1000 pcs.
Type: 03210 Ø 43 mm, height: 15 mm
Ref. No.: 100125 PET GF, white
Ref. No.: 109162 PA GF, black
Type: 05202 Ø 34 mm, height: 7.5 mm
Ref. No.: 107154 PET GF, white
Ref. No.: 109166 PA GF, black
E14 Thermoplastic Lampholders, Three-piece

For incandescent lamps with base E14

Nominal rating: 2/250
Temperature marking: T190

Plain casings
Material: PET GF
Weight: 8.5 g
Packaging unit per box/pallet: 50/1000 pcs.
Type: 81093
Ref. No.: 103415  white
Ref. No.: 103414  black

Threaded casings 28x2 IEC 60399
Material: PET GF
Weight: 9.8/9.6 g
Packaging unit per box/pallet: 50/1000 pcs.
Type: 81109
Ref. No.: 103431  white
Ref. No.: 103430  black

Inserts
Material: PET GF, black
Casing lock
Weight: 3.9 g
Packaging unit per box/pallet: 50/1000 pcs.
Type: 81095 screw terminals: 0.5–2.5 mm²
Ref. No.: 103424

Caps
Material: PA GF
Female nipple: M10x1
Height: 13.7 mm
Weight: 7.2 g
Packaging unit per box/pallet: 50/1000 pcs.
Type: 81002
Ref. No.: 109102  white
Ref. No.: 109103  black
E27 Thermoplastic Lampholders, One-piece, and Cover Caps

For incandescent lamps with base E27

E27 lampholders, for cover caps
Plain casing
Casing: PET GF, T210
Nominal rating: 4/250
Push-in twin terminals: 0.5–2.5 mm²
Fixing holes for screws M4
Weight: 17.4 g
Packaging unit per box/pallet: 50/500 pcs.
Type: 64401
Ref. No.: 108936 white
Ref. No.: 500810 black

E27 lampholders, for cover caps
External thread 40x2.5 IEC 60399
Casing: PET GF, T210
Nominal rating: 4/250
Push-in twin terminals: 0.5–2.5 mm²
Fixing holes for screws M4
Weight: 19.1/18.8 g
Packaging unit per box/pallet: 50/500 pcs.
Type: 64501
Ref. No.: 108965 white
Ref. No.: 109429 black

E27 lampholders, for cover caps
External thread 40x2.5 IEC 60399, with flange
Casing: PET GF, T210
Nominal rating: 4/250
Push-in twin terminals: 0.5–2.5 mm²
Fixing holes for screws M4
Weight: 21.4 g
Packaging unit per box/pallet: 50/500 pcs.
Type: 64601
Ref. No.: 501358 white

E27 lampholder, profiled shape, external thread 40x2.5 IEC 60399
Casing: PET GF, T210, nominal rating: 4/250
Push-in twin terminals: 0.5–2.5 mm²
Fixing holes for screws M3
Rear fixing holes for self-tapping screws acc. to ISO 1481/7049-ST3.9-C/F
Weight: 20.1 g
Packaging unit per box/pallet: 50/500 pcs.
Type: 64719
Ref. No.: 549559 black
Cover caps
Material: PA GF
Female nipple: M10x1
Weight: 9.6/9.9 g
Packaging unit per box/pallet: 50/500 pcs.
Type: 85070
Ref. No.: 109077 white
Ref. No.: 109092 black

Cover caps
Material: PA GF
Moulded thread: M10x1
Cross groove for rotation stop: external
Weight: 4.4/4.6 g
Packaging unit per box/pallet: 50/500 pcs.
Type: 97665
Ref. No.: 109679 white
Ref. No.: 109680 black

Plastic screw rings
For E27 and B22d lampholders
Weight: 4.9/4.4/3.3/3 g
Packaging unit per box/pallet: 50/500 pcs.
Type: 08610 Ø 55 mm, height: 15 mm
Ref. No.: 100270 PET GF, white
Ref. No.: 109285 PA GF, black
Type: 08701 Ø 47.8 mm, height: 9 mm
Ref. No.: 100273 PET GF, white
Ref. No.: 109291 PA GF, black
E27 Thermoplastic Lampholders, 
Three-piece

For incandescent lamps with base E27

Nominal rating: 4/250
Temperature marking: T190

Threaded casings 40x2.5 IEC 60399
Material: PET GF
Weight: 17/16.1 g
Packaging unit per box/pallet: 50/500 pcs.
Type: 83002
Ref. No.: 103484 white
Ref. No.: 103483 black

Plain casings
Material: PET GF
Weight: 14.5/14.3 g, unit: 500 pcs.
Type: 83000
Ref. No.: 103468 white
Ref. No.: 103467 black

Inserts
Material: PET GF, black
Casing lock
Weight: 5.7/6.1 g
Packaging unit per box/pallet: 50/500 pcs.
Type: 83285 push-in terminals: 0.5–1.5 mm²
Ref. No.: 103643
Type: 83011 screw terminals: 0.5–2.5 mm²
Ref. No.: 103520

Caps
Material: PA GF
Female nipple: M10x1
Height: 17 mm
Weight: 9.8 g
Packaging unit per box/pallet: 50/500 pcs.
Type: 83007
Ref. No.: 109052 white
Ref. No.: 109039 black
G24, GX24 Lampholders

For single-ended compact fluorescent lamps TC-D, TC-T, TC-DEL, TC-TEL

The drawings and photos contained in this chapter only show lampholders for lamps with base G24q1. When mounting the lampholder it has to be considered that the TC-T and TC-TEL lamp is wider than the lampholder. When using the central hole for mounting additional depressions for anti-rotation pips have to be provided.

G24, GX24 lampholders

External thread 40x2.5 IEC 60399
Casing: PBT GF, white, T140
Nominal rating: 2/500
Push-in twin terminals: 0.5–1 mm² (lamp circuit)
In addition for G24q, GX24q lampholders:
push-in terminals: 0.5–1 mm² (starter circuit)
Rear fixing holes for self-tapping screws acc. to ISO 1481/7049-ST4.2-C/F
Front fixing holes for screws M3
Central fixing hole for screw M3
Rotation stop

---

### Lampholder Specifications

<table>
<thead>
<tr>
<th>Type</th>
<th>Ref. No.</th>
<th>Base</th>
<th>Lamp</th>
<th>Output (W)</th>
<th>Weight (g)</th>
<th>Packaging unit per box/pallet (pcs.)</th>
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</thead>
<tbody>
<tr>
<td>71001</td>
<td>527502</td>
<td>G24d-1/GX24d-1</td>
<td>TC-D/TC-T</td>
<td>10, 13 / 13</td>
<td>12.7</td>
<td>50/500</td>
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<tr>
<td>71002</td>
<td>527503</td>
<td>G24d-2/GX24d-2</td>
<td>TC-D/TC-T</td>
<td>18 / 18</td>
<td>12.7</td>
<td>50/500</td>
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<tr>
<td>71003</td>
<td>527504</td>
<td>G24d-3/GX24d-3</td>
<td>TC-D/TC-T</td>
<td>20 / 20</td>
<td>12.7</td>
<td>50/500</td>
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<td>71011</td>
<td>527506</td>
<td>G24q1,2/GX24q1,2</td>
<td>TC-DEL/TC-TEL</td>
<td>10, 13 / 13</td>
<td>15.2</td>
<td>50/500</td>
</tr>
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<td>71012</td>
<td>527507</td>
<td>G24q3,4/GX24q3,4</td>
<td>TC-DEL/TC-TEL</td>
<td>18 / 18</td>
<td>15.2</td>
<td>50/500</td>
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<td>71019</td>
<td>527512</td>
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<td>TC-TEL</td>
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<td>50/500</td>
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<td>527509</td>
<td>G24q5/GX24q5</td>
<td>TC-TEL</td>
<td>42</td>
<td>15.2</td>
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<tr>
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<td>527510</td>
<td>G24q5/GX24q5</td>
<td>TC-TEL</td>
<td>57</td>
<td>15.8</td>
<td>50/500</td>
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</table>

* Lampholder 527512 may only be used in luminaires that are operated with electronic ballasts that have been certified according to the applicable standards and that cover the luminaire performance range of 26, 32 and 42 W.

G24, GX24 surface-mounted lampholders

Casing: PBT GF, white, T140, Nominal rating: 2/500
Push-in twin terminals: 0.5–1 mm² (lamp circuit)
In addition for G24q, GX24q lampholders:
push-in terminals: 0.5–1 mm² (starter circuit)
Base fixing holes for self-tapping screws acc. to ISO 1481/7049-ST4.2-C/F
Base oblong holes for screws M4
Rear fixing holes for self-tapping screws acc. to ISO 1481/7049-ST2.9-C/F and ST4.2-C/F
Front fixing holes for screws M3

---

### Lampholder Specifications

<table>
<thead>
<tr>
<th>Type</th>
<th>Ref. No.</th>
<th>Base</th>
<th>Lamp</th>
<th>Output (W)</th>
<th>Weight (g)</th>
<th>Packaging unit per box/pallet (pcs.)</th>
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<tbody>
<tr>
<td>71701</td>
<td>527790</td>
<td>G24d-1/GX24d-1</td>
<td>TC-D/TC-T</td>
<td>10, 13 / 13</td>
<td>14.2</td>
<td>50/500</td>
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<td>71702</td>
<td>527791</td>
<td>G24d-2/GX24d-2</td>
<td>TC-D/TC-T</td>
<td>18 / 18</td>
<td>14.2</td>
<td>50/500</td>
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<td>71703</td>
<td>527792</td>
<td>G24d-3/GX24d-3</td>
<td>TC-D/TC-T</td>
<td>20 / 20</td>
<td>14.2</td>
<td>50/500</td>
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<td>TC-DEL/TC-TEL</td>
<td>10, 13 / 13</td>
<td>15.2</td>
<td>50/500</td>
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<td>50/500</td>
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<td>71719</td>
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<td>TC-TEL</td>
<td>26, 32 / 42</td>
<td>15.2</td>
<td>50/500</td>
</tr>
</tbody>
</table>

* Lampholder 527800 may only be used in luminaires that are operated with electronic ballasts that have been certified according to the applicable standards and that cover the luminaire performance range of 26, 32 and 42 W.
Lampholders for single-ended compact fluorescent lamps

G24, GX24 push-fit lampholders
Casing: PBT GF, white, T140
Nominal rating: 2/500
Push-in twin terminals: 0.5–1 mm² (lamp circuit)
In addition for G24q, GX24q lampholders:
push-in terminals: 0.5–1 mm² (starter circuit)
Push-fit foot for cut-out 10x20 mm
for wall thickness 0.6–1 mm
Foot with facility for cable routing

<table>
<thead>
<tr>
<th>Type</th>
<th>Ref. No.</th>
<th>Base Lamp</th>
<th>Output (W)</th>
<th>Weight (g)</th>
<th>Packaging unit per box/pallet (pcs.)</th>
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<tbody>
<tr>
<td>71802</td>
<td>528030</td>
<td>G24d-2/GX24d-2 TC-D/TC-T</td>
<td>18 / 18</td>
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<td>528035</td>
<td>G24q-3/GX24q-3 TC-DEL/TC-TEL</td>
<td>26 / 26, 32</td>
<td>12.1</td>
<td>50/500</td>
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</tbody>
</table>

2G7 Lampholders

For single-ended compact fluorescent lamps TC-SEL

2G7 surface-mounted lampholder
Casing: PBT GF, white, T140, nominal rating: 2/250
Push-in twin terminals: 0.5–1 mm² (lamp circuit)
Push-in terminals: 0.5–1 mm² (starter circuit)
Fixing holes for screws M4
Lateral and rear fixing holes for self-tapping screws acc. to ISO 1481/7049-ST4-2C/F
Front fixing holes for screws M3
Weight: 18.1 g
Packaging unit per box/pallet: 50/500 pcs.
Type: 35611
Ref. No.: 109238

2G7 surface-mounted lampholder
Casing: PBT GF, white, T140
Nominal rating: 2/250
Push-in twin terminals: 0.5–1 mm² (lamp circuit)
Push-in terminals: 0.5–1 mm² (starter circuit)
Rear fixing holes for self-tapping screws acc. to ISO 1481/7049-ST4-2C/F
Front fixing holes for screws M3
Weight: 14 g
Packaging unit per box/pallet: 50/500 pcs.
Type: 35612
Ref. No.: 109240
Lampholders for single-ended compact fluorescent lamps

G23 Lampholders

For single-ended compact fluorescent lamps TC-S

If the central hole is used for mounting, make sure there is no risk of rotation.
Casing: PBT GF, white, T140
Nominal rating: 2/250
Push-in twin terminals: 0.5–1 mm²

G23 surface-mounted lampholder
Fixing holes for screws M4
Central fixing hole for screw M3
Weight: 12.4 g
Packaging unit per box/pallet: 50/500 pcs.
Type: 35006
Ref. No.: 101306

G23 surface-mounted lampholder
Front fixing holes for screws M3
Rear fixing holes for self-tapping screws acc. to ISO 1481/7049-ST4.2-C/F
Weight: 11.9 g
Packaging unit per box/pallet: 50/500 pcs.
Type: 35012
Ref. No.: 108898

G23 push-fit lampholder
Split pins for wall thickness up to 1.2 mm
Central fixing hole for screw M3
Weight: 12 g
Packaging unit per box/pallet: 50/500 pcs.
Type: 35004
Ref. No.: 101298

G23 push-fit lampholder
Push-fit foot for wall thickness 0.8–1.3 mm
Central fixing hole for screw M3
Weight: 11 g
Packaging unit per box/pallet: 50/500 pcs.
Type: 35051
Ref. No.: 101344
G23 lampholder, for cover caps
External thread 40x2.5 IEC 60399
Central fixing hole for screw M3
When using the central hole for mounting additional depressions for anti-rotation pips have to be provided.
Weight: 16.3 g
Packaging unit per box/pallet: 50/500 pcs.
Type: 35010
Ref. No.: 101320
2G11 Lampholders

For single-ended compact fluorescent lamps TC-L

2G11 surface-mounted lampholder
Casing: PBT GF, white, T140, nominal rating: 2/500
Push-in twin terminals: 0.5–1 mm² (lamp circuit)
Push-in terminals: 0.5–1 mm² (starter circuit)
Base fixing holes for screws M4
Rear fixing holes for self-tapping screws
acc. to ISO 1481/7049-ST4.2-C/F
Front fixing holes for screws M3
Weight: 13.7 g
Packaging unit per box/pallet: 50/500 pcs.
Type: 36050
Ref. No.: 101485

2G11 surface-mounted lampholder
Casing: PBT GF, white, T140, nominal rating: 2/500
Push-in twin terminals: 0.5–1 mm² (lamp circuit)
Push-in terminals: 0.5–1 mm² (starter circuit)
Rear fixing holes for self-tapping screws
acc. to ISO 1481/7049-ST4.2-C/F
Front fixing holes for screws M3
Weight: 12.7 g
Packaging unit per box/pallet: 50/500 pcs.
Type: 36051
Ref. No.: 101489

2G11 push-fit lampholder
Casing: PBT GF, white, T140, nominal rating: 2/500
Push-in twin terminals: 0.5–1 mm² (lamp circuit)
Push-in terminals: 0.5–1 mm² (starter circuit)
Lamp position: vertical
Rear fixing holes for self-tapping screws
acc. to ISO 1481/7049-ST4.2-C/F
Front fixing holes for screws M3
Weight: 14.3 g
Packaging unit per box/pallet: 50/500 pcs.
Type: 36052
Ref. No.: 101491

2G11 push-fit lampholder
Casing: PBT GF, white, T140, nominal rating: 2/500
Push-in twin terminals: 0.5–1 mm² (lamp circuit)
Push-in terminals: 0.5–1 mm² (starter circuit)
Rear fixing holes for self-tapping screws
acc. to ISO 1481/7049-ST4.2-C/F
Front fixing holes for screws M3
Option for base wiring
Weight: 14.1 g
Packaging unit per box/pallet: 50/500 pcs.
Type: 36053
Ref. No.: 101493
Lampholders for tubular fluorescent lamps

**G5 Lampholders, Accessories**

For fluorescent lamps T5 (T16)

Max. permitted temperature $T_m$
on the rear side of the lampholder: 110 °C

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G5 push-through/surface-mounted lampholder
Lamp axis push-through lampholder: 13.2 mm
Lamp axis surface-mounted lampholder: 15.2 mm
Casing: PC, white, T110
Nominal rating: 2/500
Push-in terminals: 0.5–1 mm²
Lateral fixing clips for wall thickness 0.5–1.5 mm
Fixing slot for screw M3
Weight: 3.2 g, packaging unit per box/pallet: 50/1000 pcs., type: 09105

**Ref. No.: 100305**

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G5 built-in lampholders
Casing: PBT GF, white, rotor: PBT GF, white
T140, nominal rating: 2/500
Push-in twin terminals: 0.5–1 mm²
Rear split pins for wall thickness up to 1.2 mm
Weight: 2.9/3.3 g
Packaging unit per box/pallet: 50/1000 pcs.
Type: 09405

**Ref. No.: 505733**
Type: 09406 with spring adjustment

**Ref. No.: 505734**

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G5 built-in lampholders
Casing: PBT GF, white, rotor: PBT GF, white
T140, nominal rating: 2/500
Push-in twin terminals: 0.5–1 mm²
Rear split pins for wall thickness up to 1.2 mm
Weight: 2.9/3.2 g
Packaging unit per box/pallet: 50/1000 pcs.
Type: 09415

**Ref. No.: 505735**
Type: 09416 with spring adjustment

**Ref. No.: 505736**

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G5 push-through lampholders
Lamp axis: 15 mm
Casing: PBT GF, white, rotor: PBT GF, white
T140, nominal rating: 2/500
Push-in twin terminals: 0.5–1 mm²
Lateral fixing clips for wall thickness 0.5–1.5 mm
Weight: 3.5/3.4 g
Packaging unit per box/pallet: 50/1000 pcs.
Type: 09420/09421

**Ref. No.: 505737** with stop

**Ref. No.: 505739** without stop
Lampholders for tubular fluorescent lamps

G5 push-through lampholders
Lamp axis: 20 mm
Casing: PBT GF, white, rotor: PBT GF, white
T140, nominal rating: 2/500
Push-in twin terminals: 0.5–1 mm²
Lateral fixing clips for wall thickness 0.5–1.5 mm
Weight: 3.7 g
Packaging unit per box/pallet: 50/1000 pcs.
Type: 09422/09423
Ref. No.: 505740 with stop
Ref. No.: 505741 without stop

G5 push-through lampholders
Lamp axis: 35 mm
Casing: PBT GF, white, rotor: PBT GF, white
T140, nominal rating: 2/500
Push-in twin terminals: 0.5–1 mm²
Lateral fixing clips for wall thickness 0.5–1.5 mm
Weight: 4.6 g
Packaging unit per box/pallet: 50/1000 pcs.
Type: 09426
Ref. No.: 505745 with stop

G5 push-fit lampholder
Lamp axis: 14 mm
Casing: PBT GF, white, rotor: PBT GF, white
T140, nominal rating: 2/500
Push-in twin terminals: 0.5–1 mm²
Rear fixing clips for wall thickness 0.6–1 mm
Base or lateral wiring
Weight: 3.3 g
Packaging unit per box/pallet: 50/1000 pcs.
Type: 09440
Ref. No.: 505747

G5 push-fit lampholder
Lamp axis: 18 mm
Casing: PBT GF, white, rotor: PBT GF, white
T140, nominal rating: 2/500
Push-in twin terminals: 0.5–1 mm²
Rear fixing clips for wall thickness 0.6–1 mm
Base or lateral wiring
Weight: 3.9 g
Packaging unit per box/pallet: 50/1000 pcs.
Type: 09446
Ref. No.: 545894

G5 push-fit lampholder
Lamp axis: 23 mm
Casing: PBT GF, white, rotor: PBT GF, white
T140, nominal rating: 2/500
Push-in twin terminals: 0.5–1 mm²
Rear fixing clips for wall thickness 0.6–1 mm
Base or lateral wiring
Weight: 4.2 g
Packaging unit per box/pallet: 50/1000 pcs.
Type: 09447
Ref. No.: 545896
G5 push-fit lampholder
Lamp axis: 15 mm
Casing: PBT GF, white, rotor: PBT GF, white
T140, nominal rating: 2/500
Push-in twin terminals: 0.5–1 mm²
Base split pins for wall thickness 0.6–1 mm
Weight: 3.4 g
Packaging unit per box/pallet: 50/1000 pcs.
Type: 09450
Ref. No.: 505750

G5 push-fit lampholder
Lamp axis: 11.8 mm
Casing: PBT GF, white, rotor: PBT GF, white
T140, nominal rating: 2/500
Push-in twin terminals: 0.5–1 mm²
Base split pins for wall thickness up to 1 mm
Lateral wiring
Weight: 3.1 g
Packaging unit per box/pallet: 50/1000 pcs.
Type: 09460
Ref. No.: 505751

G5 lampholder
For push-fit onto the lamp
Casing: PBT GF, white, T130
Nominal rating: 2/500
Push-in twin terminals: 0.5–1 mm²
Pin support for reliable contact
Lamp support 109685 (see page 44)
Weight: 3.7 g
Packaging unit per box/pallet: 50/1000 pcs.
Type: 09170
Ref. No.: 109686
**G5 Twin Lampholder**

For fluorescent lamps T5 (T16)

Max. permitted temperature $T_m$
on the rear side of the lampholder: 110 °C

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G5 built-in lampholder
Casing: PBT GF, white, rotor: PBT GF, white
T140, nominal rating: 2/500
Push-in twin terminals: 0.5–1 mm²
Lateral fixing clips
Weight: 2.8 g
Packaging unit per box/pallet: 50/1000 pcs.
Type: 09404
**Ref. No.: 505732**

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Push-fit bracket
For two G5 built-in lampholders 505732
Material: PC, white
Lamp axis: 20 mm
Distance between two lamp axes: 24 mm
Push-fit foot for wall thickness 0.5–1 mm
Weight: 3.5 g
Packaging unit per box/pallet: 50/500 pcs.
Type: 97677
**Ref. No.: 507562**
Lampholders for tubular fluorescent lamps

G13 Push-through Lampholders

For fluorescent lamps T8 (T26), T12 (T38)

Lampholders with integrated starter holder have push-in terminals for the lamp circuit and push-in terminals for the the starter circuit.

Pin support for reliable contact
Max. permitted temperature $T_m$ on the rear side of the lampholder: 110 °C

G13 push-through lampholders for lamps T8 and T12
Casing: PC, white, rotor: PBT GF, white
T130, nominal rating: 2/500
Push-in terminals: 0.5–1 mm²
Lateral fixing clips for wall thickness 0.6–2 mm
Weight: 7.5/7.4/9.6/9.6 g
Packaging unit per box/pallet: 50/500 pcs.
Type: 27700/27701/28740/28741
Ref. No.: 100562 lamp axis H: 22.5 mm, with stop
Ref. No.: 100564 lamp axis H: 22.5 mm, without stop
Ref. No.: 542983 lamp axis H: 31 mm, with stop
Ref. No.: 542984 lamp axis H: 31 mm, without stop

G13 Rotoclic push-through lampholders for lamps T8 and T12
Lamp axis: 23 mm
Casing: PC, white, frontplate: PBT GF, white
T140, nominal rating: 2/500
Push-in terminals: 0.5–1 mm²
Lateral fixing clips for wall thickness 0.4–2 mm
Weight: 6.8 g, packaging unit per box/pallet: 50/1000 pcs., type: 27700/27701
Ref. No.: 546641 with stop
Ref. No.: 546642 without stop

G13 Rotoclic push-through lampholders for lamps T8, with starter attachment
Lamp axis: 23 mm
Casing: PC, white, frontplate: PBT GF, white
T140, nominal rating: 2/500
Push-in terminals: 0.5–1 mm²
Lateral fixing clips for wall thickness 0.4–2 mm
Weight: 10.4 g, packaging unit per box/pallet: 50/500 pcs., type: 27800/27801
Ref. No.: 546647 with stop
Ref. No.: 546648 without stop

G13 push-through lampholders for lamps T8 and T12
Lamp axis: 22.5 mm
Casing: PC, white, rotor: PBT GF, white
T130, nominal rating: 2/500
Push-in terminals: 0.5–1 mm²
Lateral fixing clips for wall thickness 0.4–2 mm
Right or left side entry
Ideal use for display and undercabinet application
Weight: 6 g, packaging unit per box/pallet: 50/500 pcs.
Type: 29000/29010 with stop
Ref. No.: 108328 side entry right
Ref. No.: 108331 side entry left
G13 Push-fit Lampholders

For fluorescent lamps T8 (T26), T12 (T38)

Lampholders with integrated starter holder are equipped with big rotor and have push-in twin terminals for the lamp circuit and push-in terminals for the the starter circuit. Pin support for reliable contact

G13 Rotoclic push-fit lampholders for lamps T8 and T12 T140, nominal rating: 2/500, suitable for Top Test
Lateral push-in terminals: 0.5–1 mm²
Push-fit foot for luminaire cut-out 13.3x25.5 mm with wall thickness 0.6–1 mm
Lampholder foot/Luminaire: IP40 (537135: IP50)
Weight: 5.9/5.9/6/6 g
Packaging unit per box/pallet: 50/1000 pcs.
Type: 24100/24110/24170/24150
Ref. No.: 537132 lamp axis H: 25 mm
Ref. No.: 537135 lamp axis H: 25 mm, IP50
Ref. No.: 537150 lamp axis H: 21 mm
Ref. No.: 537144 lamp axis H: 18 mm

G13 Rotoclic push-fit lampholders for lamps T8 T140, nominal rating: 2/500
Suitable for Top Test
Lateral push-in terminals: 0.5–1 mm²
Base split pins for wall thickness up to 1.2 mm
Lampholder foot/Luminaire: IP40
Weight: 6/5.8/5.3 g, packaging unit per box/pallet: 50/1000 pcs., type: 23360/23350/23370
Ref. No.: 537160 lamp axis H: 30 mm
Ref. No.: 537157 lamp axis H: 23.5 mm
Ref. No.: 539128 lamp axis H: 18 mm

G13 push-fit lampholders with starter attachment for lamps T8 T130, nominal rating: 2/250
Base push-in terminals: 0.5–1 mm²
Base split pins for wall thickness up to 1.2 mm
Lampholder foot/Luminaire: IP40
Weight: 9.7/9.5 g
Packaging unit per box/pallet: 50/1000 pcs.
Type: 27460/27450
Ref. No.: 100557 lamp axis H: 23.5 mm

Casing: PC, white, frontplate/rotor: PBT GF, white
Max. permitted temperature Tₘ on the rear side of the lampholder: 110 °C
T-Marking acc. to IEC
IP50 version: push-fit foot with gasket
G13 Push-fit Twin Lampholders, Accessories

For fluorescent lamps T8 (T26), T12 (T38)

Casing: PC, white, rotor: PBT GF, white
Pin support for reliable contact
Max. permitted temperature $T_m$
on the rear side of the lampholder: 110 °C

G13 twin lampholder for lamps T8
Lamp axis: 22 mm
Distance between two lamp axes: 50 mm
T130, nominal rating: 2/500
Base wiring
Push-in terminals: 0.5–1 mm²
Push-fit foot for wall thickness 1 mm
Weight: 14 g
Packaging unit per box/pallet: 400/32000 pcs.
Type: 22900
Ref. No.: 108984

G13 twin lampholders for lamps T8 and T12
Lamp axis: 25 mm
Distance between two lamp axes: 76 mm
T130, nominal rating: 2/500
Base push-in twin terminals: 0.5–1 mm² (lamp circuit)
Base push-in terminals: 0.5–1 mm² (starter circuit)
Push-fit foot for wall thickness 0.6–1 mm
Weight: 21 g
Packaging unit per box: 200 pcs.
Type: 22604 without starter attachment
Ref. No.: 108816 with stop

G13 Built-in Lampholders

For fluorescent lamps T8 (T26), T12 (T38)

Lampholders with integrated starter holder
are equipped with big rotor and have
push-in twin terminals for the lamp circuit and
push-in terminals for the the starter circuit.
Pin support for reliable contact

Casing: PC, white, frontplate/rotor: PBT GF, white
Max. permitted temperature $T_m$
on the rear side of the lampholder: 110 °C
T-Marking acc. to IEC

G13 Rotoclic built-in lampholders for lamps T8 and T12
T410, nominal rating: 2/500
Base push-in terminals: 0.5–1 mm²
Rear split pins for wall thickness up to 1.2 mm
Weight: 5.1/5.9/5.5 g
Packaging unit per box/pallet: 50/1000 pcs.
Type: 49105/49106 lampholder thickness: 13 mm
Ref. No.: S37166
Ref. No.: S37167 with spring adjustment
Type: 49505/49506 lampholder thickness: 9.5 mm
Ref. No.: S37174
Ref. No.: S37175 with spring adjustment
G13 lampholder
For push-fitting onto lamps T8
Lampholder thickness: 9.5 mm
Casing: PC, white, T110
Front cover plate: PBT GF, white
Nominal rating: 2/500
Push-in terminals: 0.5–1 mm²
Fixing hole for screw M3
Weight: 5.3 g, packaging unit per box/pallet: 50/1000 pcs., type: 47900
Ref. No.: 101784

G13 lampholder with starter attachment
For push-fitting onto lamps T8
Lampholder thickness: 9.5 mm
Casing: PC, white, T110
Front cover plate: PBT GF, white
Nominal rating: 2/250
Push-in terminals: 0.5–1 mm²
Fixing hole for screw M3
Weight: 8.1 g, packaging unit per box/pallet: 50/500 pcs., type: 47920
Ref. No.: 101785

Lampholders for tubular fluorescent lamps
Lampholders for discharge lamps

E27 Lampholders

For discharge lamps with base E27

E27 lampholder, casing: porcelain, white, T270
Nominal rating: 4/250/5 kV
Screw terminals: 0.5–2.5 mm², spring loaded central contact, fixing oblong holes for screws M4
Weight: 60.6 g, Packaging unit per box: 200 pcs.
Type: 62050
Ref. No.: 102599

E27 lampholder, profiled shape, external thread 40x2.5 IEC 60399
Casing: PET GF, T210, nominal rating: 4/250
Push-in twin terminals: 0.5–2.5 mm²
Fixing holes for screws M3
Rear fixing holes for self-tapping screws acc. to ISO 1481/7049-ST3.9-C/F
Weight: 20.1 g, packaging unit per box/pallet: 50/500 pcs., type: 64719
Ref. No.: 549559 black

E40 Lampholders

For discharge lamps with base E40

Nominal rating: 18/500/5 kV
Screw terminals: 1.5–4 mm²
Spring loaded central contact

E40 lampholders
Casing: PPS, black, T240
Oblong holes for screws M5
Weight: 111.7 g, packaging unit per box: 40 pcs.
Type: 12601
Ref. No.: 400914 with lamp safety catch

E40 lampholders
Casing: PPS, black, T240
Fixing bracket with slots for screws M5
Weight: 122.3 g, packaging unit per box: 40 pcs.
Type: 12611
Ref. No.: 400916 with lamp safety catch

E40 lampholders
Only for lamps with base E40/E45
Casing: porcelain, white, T270
Oblong holes for screws M5
Weight: 206 g, packaging unit per box: 50 pcs.
Type: 12901
Ref. No.: 528958 with lamp safety catch
G12 Lampholders

For discharge lamps with base G12

G12 lampholders
Casing: ceramic
T250, nominal rating: 5/500/5 kV
Contacts: CrNi
Welded leads: Cu tinned, stranded conductors 1 mm²
Silinsulation, white, length: 300 mm
Weight: 43 g
Packaging unit per box: 25 pcs.
Type: 42222
Ref. No.: 535755  cover plate: LCP

RX7s Lampholders

If the central hole on the bracket is used for fixing it has to be ensured by an additional support within the luminaire that the bracket cannot be deformed. If the lampholders are used for lamps with ignition voltage max. 20 kV the luminaire manufacturer is responsible for sufficient creepage distances and clearances.

Partly enclosed RX7s lampholder
Casing: ceramic, T350
Contact pin: Cu, silver bulb
Nominal rating: 4/500/5 kV
Leads: Cu tinned, stranded conductors 1 mm²
Silinsulation max. Ø 3.6 mm, length: 200 mm
Fixing screw M4
Weight: 26.2 g
Packaging unit per box/pallet: 50/300 pcs.
Type: 32301
Ref. No.: 100913

Partly enclosed RX7s lampholder
Casing: ceramic, T350
Contact pin: Cu, silver bulb
Nominal rating: 4/500/5 kV
Leads: Cu tinned, stranded conductors 1 mm²
Silinsulation max. Ø 3.6 mm, length: 200 mm
Oblong holes for screws M4
Central hole for screw M4
Weight: 74 g
Packaging unit per box/pallet: 50/200 pcs.
Type: 32341 contact distance: 114.2 mm
Ref. No.: 100932

Remark on lampholders type 323:
The luminaire design must ensure protection from electric shock as well as sufficient creepage distances and clearances from live parts on the back of lampholder.
Partly enclosed RX7s lampholder
Casing: ceramic, T350
Contact pin: Cu, silver bulb
Nominal rating: 4/500/5 kV
Leads: Cu tinned, stranded conductors 1 mm²,
Si-insulation max. Ø 3.6 mm, length: 200 mm
Oblong holes for screws M4
Central hole for screw M5
Weight: 75.7 g
Packaging unit per box/pallet: 50/200 pcs.
Type: 32336 contact distance: 132 mm
Ref. No.: 100931

RX7's lampholder
Casing: ceramic, T250
Contact pin: Ni
Nominal rating: 10/500/5 kV
Lead: Cu tinned, stranded conductors 1 mm²,
Si-insulation max. Ø 3.6 mm, length: 300 mm
Fixing holes for screws M4
Weight: 72 g, packaging unit per box: 25 pcs.
Type: 30602
Ref. No.: 100723

**Fc2 Lampholders**

*For discharge lamps with base Fc2*

If the lampholders are used for lamps with
ignition voltage max. 20 kV the luminaire manufac-
turer is responsible for sufficient creepage
distances and clearances.

Fc2 lampholder
Casing: ceramic, T250
Nominal rating: 10/500/5 kV, contacts: Ni
Lead: Cu tinned, stranded conductors 1 mm²,
Si-insulation max. Ø 3.6 mm, length: 300 mm
Fixing screws M4, captive
Weight: 102 g, packaging unit per box: 25 pcs.
Type: 02574 rigid fixing
Ref. No.: 100096
Accessories

The luminaire manufacturer is responsible for the right choice of accessories.

Lamp support for lamps Ø 16 mm
Material: zinc-coated polished steel
Fixing hole for screw M3.5
Weight: 1.3 g
Packaging unit per box/pallet: 50/1000 pcs.
Type: 94088
Ref. No.: 109685

Lamp supports
Fixing hole for screw M4
Weight: 4.3/6.8 g
Packaging unit per box/pallet: 50/500 pcs.
Type: 20400 for lamps T8
Ref. No.: 100442 material: zinc-coated polished steel
Type: 20401 for lamps T12
Ref. No.: 100444 material: CrNi-steel

Cable grips
For leads H03VV-F and H03VVH2-F 2X0.5 or 2X0.75
Material: PA
Male nipple: M10x1, length: 11 mm
With locking screw
Weight: 1.6/1.5 g
Packaging unit per box: 1000 pcs.
Type: 09701
Ref. No.: 109248 white
Ref. No.: 109253 black

Lamp supports for TC-S, TC-SEL lamps
Height adjustable H: 17.5/20.5/23.5 mm
Push-fit foot for cut-out Ø 5.5 mm
for wall thickness up to 1 mm
Weight: 0.4/0.8/0.8 g
Packaging unit per box: 500 pcs.
Type: 35060
Ref. No.: 105775 foot, PC, white
Ref. No.: 105776 bracket, PC, crystal-clear, UV-stabilised
Lamp supports for TC-L lamps
Height adjustable H: 21/24/27 mm
Push-fit foot for cut-out Ø 5.5 mm
for wall thickness up to 1 mm
Weight: 0.4/1.3/1.1 g, packaging unit
per box: 500 pcs., type: 35760
Ref. No.: 105775 foot, PC, white
Ref. No.: 105777 bracket, PC, crystal-clear,
UV-stabilised

Wires
The luminaire manufacturer is responsible for
the right choice of accessories.

<table>
<thead>
<tr>
<th>Ref. No.</th>
<th>Material</th>
<th>Cross section</th>
<th>Ignition voltage</th>
<th>Max. temperature</th>
<th>Colour</th>
<th>Length</th>
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<td>Wire 1000</td>
<td>SIF</td>
<td>1 mm²</td>
<td>5 kV</td>
<td>180 °C</td>
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<td>3000 m</td>
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<td>5 kV Cab Tyre</td>
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<td>—</td>
<td>180 °C</td>
<td>yellow-green</td>
<td>8000 m</td>
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</table>
Starter and Starter Holders

For starters acc. to DIN VDE 0712 part 101, IEC 60155

Starter holders with central studs, suitable for luminaires of protection class II, are available on request.

Single starter 4–65 W
Mains voltage: 220–240 V, 50 Hz
Packaging unit per box: 250 pcs.
Ref. No.: GE42760

Tandem starter 2–8/15–22 W
Mains voltage: 220–240 V, 50 Hz
Packaging unit per box: 250 pcs.
Ref. No.: GE36714

Starter holder with integrated extension piece
Material: PC, white
T110, nominal rating: 2/250
Push-in terminals: 0.5–1 mm²
Front split pins for wall thickness up to 0.8 mm
Weight: 5.4 g
Packaging unit per box/pallet: 50/1000 pcs.
Type: 43300
Ref. No.: 101636

Starter holder
Material: PC, white
T110, nominal rating: 2/250
Push-in terminals: 0.5–1 mm²
Fixing holes for screws M3
Weight: 3.8 g
Packaging unit per box/pallet: 50/1000 pcs.
Type: 02150
Ref. No.: 100069

Starter holder
Material: PC, white
T110, nominal rating: 2/250
Push-in terminals: 0.5–1 mm², single-core
Front and rear split pins for wall thickness up to 1.2 mm
Rear of starter holder/luminaire: IP40
Weight: 2.8 g
Packaging unit per box/pallet: 50/1000 pcs.
Type: 02110
Ref. No.: 109784
Starter holder
Material: PC, white
T110, nominal rating: 2/250
Push-in terminals: 0.5–1 mm², single-core
Rear split pins for wall thickness up to 1.2 mm
Lateral split pins for wall thickness up to 1 mm
Rear of starter holder/luminaire: IP40
Weight: 3.7 g
Packaging unit per box/pallet: 50/1000 pcs.
Type: 43210
Ref. No.: 109792

Terminal Blocks, Accessories

Terminal blocks
Casing: PA, white
Primary and secondary connection:
  screw terminals
Packaging unit per box: 100 pcs.
Ref. No.: 542501 3-poles, 2.5 mm², 24 A
Ref. No.: 550057 12-poles, 2.5 mm², 24 A
Ref. No.: 556201 12-poles, 6 mm², 41 A

Terminal blocks with fuse holder
  3 poles, earth strap M4
  Suitable only for solid conductors on the secondary connection
Material: PC, white, T70
Nominal rating: 250 V
Primary connection: screw terminals 2.5 mm²
Secondary connection:
  push-in twin terminals 1.5 mm²
  push-in terminal 0.5 mm²
With retaining clip for fuses 5x20 mm
With integrated fuse on request
Base split pins for wall thickness 0.6–1.2 mm
Weight: 1.5 g, packaging unit per box/pallet: 100/1000 pcs., type: 40672
Ref. No.: 543805
Luminaire Protection Devices – Type 3

For electronic devices
When electronic components form part of lighting systems, it is often necessary to protect such components against power-supply interruptions and electric overloads (power surges).

These can be caused by switching inductive loads or by atmospheric discharges such as lightning striking the mains or the ground. A further cause can be induced voltages from neighbouring cables when working with leading-edge phase-cutting controls.

The protection unit reduces over-voltages at the connection terminals of electronic components. The remaining residual voltage is then reduced to a respective protective level, based on the discharge current.

SP 230/10 K
With integrated thermal fuse
Suitable for luminaires of protection class II
Dimensions (LxWxH): 32x22x13 mm
Connecting: solid wire, length: 50 mm
Weight: 20 g
Ref. No.: 147230

SP 230/10 K/HS/i
The green LED indicator will go out if the protective function fails and the protective component has to be replaced
Dimensions (LxWxH): 90x17.2x63 mm
Screw terminals: 0.5–2.5 mm²
Fixation on DIN installation rail
Weight: 45 g
Ref. No.: 147240

SPC 3/230/10 K/i
Once the end of the component’s life has been reached, the green LED indicator goes out and the protective component has to be replaced.
Screw terminals: 0.75–2.5 mm²
Lead ground terminal: stranded conductors, 2.5 mm², silicone insulation, length: 150 mm
Degree of protection: IP20
Ref. No.: 142738

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<th>Max. load current (A)</th>
<th>Max. impulse voltage (Uocc (V))</th>
<th>Discharge current* (I/I max. (A))</th>
<th>Protection level at discharge current of 1000 A (V)</th>
<th>Safety fuse max. A</th>
<th>Max. permitted casing temperature (°C)</th>
<th>Packaging unit (pieces) per box/pallet</th>
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* Discharge current: at 5000 A min. 10 strikes; at 10,000 A min. 1 strike
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LED components are just as much a part of our product range as light control systems. Our extensive range of powerful LED modules, LED drivers, LiCS controllers and sensors is presented in our separate Innovative Systems catalogue.

We'll be happy to help you dimension your lighting project. Contact us.
<table>
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<tr>
<th>Subsidiaries</th>
<th>Adress</th>
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<td>Vossloh-Schwabe Deutschland GmbH</td>
<td>P.O. Box 28 69</td>
<td>Phone: +49/(0)2351/10 10 10, Fax: +49/(0)2351/10 12 17, <a href="mailto:info.vsv@vsv.vossloh-schwabe.com">info.vsv@vsv.vossloh-schwabe.com</a></td>
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<tr>
<td>Germany, Benelux, CIS, Georgia, Great Britain, Ireland, Austria, Switzerland, Scandinavia, Turkey, Ukraine</td>
<td>D-58478 Ludenscheid, Germany</td>
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<tr>
<td>Africa</td>
<td>Vossloh-Schwabe Deutschland GmbH</td>
<td>Branch Office Johannesburg, Phone: +27/11/31 44 340, Fax: +27/11/31 45 287, <a href="mailto:barry.hall@vsaf.vossloh-schwabe.com">barry.hall@vsaf.vossloh-schwabe.com</a></td>
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<td>Phone: +61/02/88 43 07 00, Fax: +61/02/88 43 07 77, <a href="mailto:sales-aus@vsaus.vossloh-schwabe.com">sales-aus@vsaus.vossloh-schwabe.com</a></td>
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<td>#608, Ardong, M state, 114, Beobwon-ro, Songpa-gu, Seoul, Korea (zip: 05854), Phone: +82/2 2283 1750-4, Fax: +82/2 2283 1755, <a href="mailto:sales.vk@vs.vossloh-schwabe.com">sales.vk@vs.vossloh-schwabe.com</a></td>
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<td>Sales Office Belgrade/Serbia, Phone: +381/63/286 330, Fax: +381/63/286 330, <a href="mailto:goran.stankovic@vsv.vossloh-schwabe.com">goran.stankovic@vsv.vossloh-schwabe.com</a></td>
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<tr>
<td>Singapore</td>
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Whenever an electric light goes on around the world, Vossloh-Schwabe is likely to have made a key contribution to ensuring that everything works at the flick of a switch.

Headquartered in Germany, Vossloh-Schwabe has been a member of the global Panasonic group since 2002 and counts as a technology leader within the lighting sector. Top-quality, high-performance products form the basis of the company’s success.

Whether cost-effective standard components or tailor-made product developments are needed, Vossloh-Schwabe can satisfy even the most diverse market and customer requirements. Vossloh-Schwabe’s extensive product portfolio covers all lighting components: LED systems with matching control gear units and state-of-the-art control systems (LiCS) as well as electronic and magnetic ballasts and lampholders.