

BAD61 Series Flameproof Lighting



BAD61 series is our latest updated integral lighting, entitled with exclusive property right and related patents. It conforms to IEC, EN standard and 94/9/EC instruction.

BAD61 series lighting has passed type test by LCIE and has gained LCIE certificate of conformity.

For use in hazardous area Zone 1, Zone 2 and Zone 20, Zone 21, Zone 22; IIA, IIB and IIC explosive gas atmospheres.

Typical application includes chemical and petrochemical processing facilities, off-shore and dockside installations, military industry and warehouse.



100 type



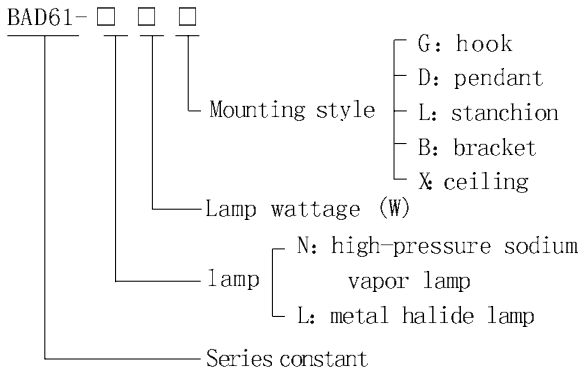
250 type



400 type



◇ Catalog number logic



◇ Compliances

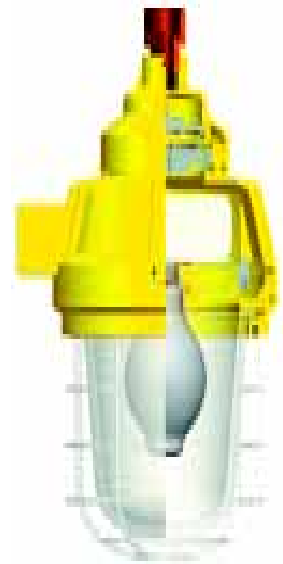
94/9/EC instruction
 IEC 60079-0, IEC60079-1, IEC60079-7
 EN 50014, EN50018, EN50019
 GB3836.1-2000, GB3836.2-2000, GB3836.3-2000

◇ Certificates of conformity No:

LCIE 05 ATEX 6142

◇ Features

- Housings made of die-cast aluminum alloy, with semi-auto hydraulic facilities one-off formation under high temperature and high-pressure for strength and resistance to corrosion. Most compact in size and smooth in surface.
- Roboblast and epoxy resin finish by semi-auto high-voltage electrostatic spray applied for housings, corrosion-free and exposure free.
- Toughened glass transparent cover for 4J impact and more than 98% light transmittance.
- Glass guard supplied with galvanized, epoxy resin finish for resistance to corrosion.
- All external hardware-stainless steel for resistance to corrosion.
- The ballast is integral of the lighting with isolator between the ballast and the lamp, offering heat removal, long service life and easy installation.
- Wireless connection between lamp and through feed ensuring easy installation and maintenance.
- Specially designed trigger outside permitting heat removal and long service life.
- Offering a choice of 100 type, 250 type and 400 type, available with sodium and metal halide lamp of 400W and below.
- Five mounting styles-ceiling mounting, pendant mounting, hook mounting, stanchion mounting and bracket mounting are available to satisfy all mounting requirements.
- Globe and doom reflector selected for lighting requirements.
- Both steel pipe wiring and cable wiring are available.



◇ Technical data

| Description | Marking | Power | Lamp holder | Weight | Protection | Hub size | Cable O.Dφ(mm) |
|--------------|---------------------|----------------|-------------|--------|------------|----------|----------------|
| BAD61- □ 100 | ⊕ II 2G EExd II CT4 | AC220V 50Hz | E27 | 9kg | IP65 | G3/4" | 10~14 |
| BAD61- □ 250 | | | E40 | 15kg | | | |
| BAD61- □ 400 | ⊕ II 2G EExd II CT3 | | E40 | 19kg | | | |

◇ Lamp power available

| Description | High-pressure sodium vapor lamp | Metal halide lamp | lamp holder | Lamp brand |
|--------------|---------------------------------|-------------------|-------------|------------|
| BAD61- □ 100 | 70W、100W | 70W、100W | E27 | PHILIPS |
| BAD61- □ 250 | 150W、250W | 175W、250W | E40 | |
| BAD61- □ 400 | 400W | 400W | E40 | |

BAD61 Series Flameproof Lighting



◇ Dimension versions

| Description | Size | Pendant (A × B) | Ceiling (C × D) | Hook (E × F) | Bracket (G × H) | Stanchion (I × J) |
|--------------|------|-----------------|-----------------|--------------|-----------------|-------------------|
| BAD61- □ 100 | | 490 × 210 | 440 × 210 | 580 × 210 | 435 × 440 | 260 × 425 |
| BAD61- □ 250 | | 625 × 275 | 570 × 275 | 710 × 275 | 545 × 510 | |
| BAD61- □ 400 | | 690 × 310 | 635 × 310 | 780 × 310 | / | / |

◇ Mounting

| Pendant | Ceiling | Hook | Bracket | Stanchion |
|---|--|--|--|---|
| | | | | |
| Mounting diagram | Mounting diagram | Mounting diagram | Mounting diagram | Mounting diagram |
| | | | | |
| Accessories | Accessories | Accessories | Accessories | Accessories |
| <ol style="list-style-type: none"> 1 BHD explosion-proof terminal box. Should be ordered separately, details can be found in our catalogue. 2 Mounting pole, included with lightings when ex-work. 3 Shaft coupling. Included when ex-work as connector of lighting and mounting pole. | <ol style="list-style-type: none"> 1 Stopping plug. 4 stopping plugs included when ex-work. Screw off if required. Hub size is G3/4". Cable gland provided by Warom, details can be found in our catalogue. | <ol style="list-style-type: none"> 1 Pendant ring or steel tube of G1/2", equipped by user. 2 Hook. Included when ex-work. 3 Shaft coupling Included when ex-work as connector of lighting and mounting pole. | <ol style="list-style-type: none"> 1 Stopping plug. 4 stopping plugs included when ex-work. Screw off if required. Hub size is G3/4". Cable gland provided by Warom, details can be found in our catalogue. | <ol style="list-style-type: none"> 1 Stanchion. Equipped by user. Insert into the lighting, through G1/4" opening of $\varnothing 32$ dia. Through stanchion of 2300mm, G1/2, cable entry the lighting. |
| Note: Lighting Lamp is not included when ex-work. | | | | |

LIGHTING

◇ Photometric data



Luminous intensity data for 100W sodium lamp

70W High-pressure sodium vapor lamp: rated luminous flux 6000lm
 100W High-pressure sodium vapor lamp: rated luminous flux 8500lm
 70W Metal halide lamp: rated luminous flux 5600lm
 100W Metal halide lamp: rated luminous flux 8000lm
 The rated luminous flux from PHILIPS lamp



Luminous intensity data for 100W sodium lamp with globe and doom reflector

70W High-pressure sodium vapor lamp: rated luminous flux 6000lm
 100W High-pressure sodium vapor lamp: rated luminous flux 8500lm
 70W Metal halide lamp: rated luminous flux 5600lm
 100W Metal halide lamp: rated luminous flux 8000lm
 The rated luminous flux from PHILIPS lamp



Luminous intensity data for 100W sodium lamp with globe and doom reflector

70W High-pressure sodium vapor lamp: rated luminous flux 6000lm
 100W High-pressure sodium vapor lamp: rated luminous flux 8500lm
 70W Metal halide lamp: rated luminous flux 5600lm
 100W Metal halide lamp: rated luminous flux 8000lm
 The rated luminous flux from PHILIPS lamp

Luminous intensity distribution (cd/1000lm)

For a 70W High-pressure sodium vapor lamp multiply by 0.70
 For a 70W Metal halide lamp multiply by 0.66
 For a 100W Metal halide lamp multiply by 0.94

Lighting efficiency 73.4%

Luminous intensity distribution (cd/1000lm)

For a 70W High-pressure sodium vapor lamp multiply by 0.70
 For a 70W Metal halide lamp multiply by 0.66
 For a 100W Metal halide lamp multiply by 0.94

Lighting efficiency 52.7%

Luminous intensity distribution (cd/1000lm)

For a 70W High-pressure sodium vapor lamp multiply by 0.70
 For a 70W Metal halide lamp multiply by 0.66
 For a 100W Metal halide lamp multiply by 0.94

Lighting efficiency 54.2%

Luminous intensity data

| Angle | CP | Angle | CP | Angle | CP |
|-------|-----|-------|-----|-------|----|
| 0 | 220 | 60 | 746 | 120 | 94 |
| 5 | 200 | 65 | 808 | 125 | 13 |
| 10 | 210 | 70 | 808 | 130 | 3 |
| 15 | 243 | 75 | 844 | 135 | 1 |
| 20 | 352 | 80 | 879 | 140 | 0 |
| 25 | 401 | 85 | 894 | 145 | 0 |
| 30 | 444 | 90 | 901 | 150 | 0 |
| 35 | 465 | 95 | 901 | 155 | 0 |
| 40 | 468 | 100 | 875 | 160 | 0 |
| 45 | 469 | 105 | 820 | 165 | 0 |
| 50 | 554 | 110 | 652 | 170 | 0 |
| 55 | 652 | 115 | 361 | 175 | 0 |
| | | | | 180 | 0 |

Luminous intensity data



| Angle | CP | Angle | CP | Angle | CP |
|-------|------|-------|------|-------|----|
| 0 | 1067 | 60 | 1106 | 120 | 0 |
| 5 | 1080 | 65 | 845 | 125 | 0 |
| 10 | 1129 | 70 | 415 | 130 | 0 |
| 15 | 1197 | 75 | 216 | 135 | 0 |
| 20 | 1213 | 80 | 121 | 140 | 0 |
| 25 | 1205 | 85 | 45 | 145 | 0 |
| 30 | 1175 | 90 | 12 | 150 | 0 |
| 35 | 1126 | 95 | 43 | 155 | 0 |
| 40 | 1067 | 100 | 85 | 160 | 0 |
| 45 | 1024 | 105 | 75 | 165 | 0 |
| 50 | 1066 | 110 | 26 | 170 | 0 |
| 55 | 1092 | 115 | 1 | 175 | 0 |
| | | | | 180 | 0 |

Luminous intensity data

| 0° reflecting angle CP | | | | 90° reflecting angle CP | | | |
|------------------------|------|-----|-----|-------------------------|-----|-----|---|
| 0 | 741 | 95 | 938 | 0 | 741 | 95 | 0 |
| 5 | 775 | 105 | 163 | 5 | 692 | 105 | 0 |
| 15 | 928 | 115 | 54 | 15 | 744 | 115 | 0 |
| 25 | 1099 | 125 | 0 | 25 | 895 | 125 | 0 |
| 35 | 1249 | 135 | 0 | 35 | 776 | 135 | 0 |
| 45 | 1239 | 145 | 0 | 45 | 776 | 145 | 0 |
| 55 | 1305 | 155 | 0 | 55 | 764 | 155 | 0 |
| 65 | 1258 | 165 | 0 | 65 | 454 | 165 | 0 |
| 75 | 1218 | 175 | 0 | 75 | 70 | 175 | 0 |
| 85 | 1262 | 180 | 0 | 85 | 2 | 180 | 0 |
| 90 | 1119 | | | 90 | 0 | | |

All lighting designs and lighting data come from DIALUX software of Germany upon stimulated situation and working condition.

◇ Photometric data

|  <p>Luminous intensity data for 175W Metal halide lamp</p> <p>150W High-pressure sodium vapor lamp: rated luminous flux 16000lm 250W High-pressure sodium vapor lamp: rated luminous flux 28000lm 175W Metal halide lamp: rated luminous flux 14000lm 250W Metal halide lamp: rated luminous flux 20500lm</p> <p>The rated luminous flux from PHILIPS lamp</p> |  <p>Luminous intensity data for 175W Metal halide lamp with globe and doom reflector</p> <p>150W High-pressure sodium vapor lamp: rated luminous flux 16000lm 250W High-pressure sodium vapor lamp: rated luminous flux 28000lm 175W Metal halide lamp: rated luminous flux 14000lm 250W Metal halide lamp: rated luminous flux 20500lm</p> <p>The rated luminous flux from PHILIPS lamp</p> |  <p>Luminous intensity data for 400W Metal halide lamp</p> <p>400W High-pressure sodium vapor lamp: rated luminous flux 48000lm 400W Metal halide lamp: rated luminous flux 35000lm</p> <p>The rated luminous flux from PHILIPS lamp</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|-------|-------|-------|----|---|-----|----|------|-----|-----|---|-----|----|------|-----|-----|----|-----|----|------|-----|-----|----|-----|----|------|-----|----|----|-----|----|------|-----|---|----|------|----|------|-----|---|----|------|----|------|-----|---|----|------|----|------|-----|---|----|------|-----|------|-----|---|----|------|-----|------|-----|---|----|------|-----|-----|-----|---|----|------|-----|-----|-----|---|--|--|--|--|-----|---|---|-------|----|-------|----|-------|----|---|------|----|------|-----|----|---|------|----|------|-----|---|----|------|----|-----|-----|---|----|------|----|-----|-----|---|----|------|----|-----|-----|---|----|------|----|----|-----|---|----|------|----|----|-----|---|----|------|----|----|-----|---|----|------|-----|----|-----|---|----|------|-----|----|-----|---|----|------|-----|----|-----|---|----|------|-----|----|-----|---|--|--|--|--|-----|---|---|-------|----|-------|----|-------|----|---|-----|----|------|-----|------|---|-----|----|------|-----|------|----|-----|----|------|-----|------|----|------|----|------|-----|-----|----|------|----|------|-----|-----|----|------|----|------|-----|---|----|------|----|------|-----|---|----|------|----|------|-----|---|----|------|-----|------|-----|---|----|------|-----|------|-----|---|----|------|-----|------|-----|---|----|------|-----|------|-----|---|--|--|--|--|-----|---|
| <p>Luminous intensity distribution (cd/1000lm)</p> <p>For a 150W High-pressure sodium vapor lamp multiply by 1.14 For a 250W High-pressure sodium vapor lamp multiply by 2 For a 250W Metal halide lamp multiply by 1.46</p> <p>Lighting efficiency: 75.3%</p> | <p>Luminous intensity distribution (cd/1000lm)</p> <p>For a 150W High-pressure sodium vapor lamp multiply by 1.14 For a 250W High-pressure sodium vapor lamp multiply by 2 For a 250W Metal halide lamp multiply by 1.46</p> <p>Lighting efficiency: 61.8%</p> | <p>Luminous intensity distribution (cd/1000lm)</p> <p>For a 400W High-pressure sodium vapor lamp multiply by 1.37</p> <p>Lighting efficiency: 58.9%</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>Luminous intensity data</p> <table border="1"> <thead> <tr> <th>Angle</th><th>CP</th><th>Angle</th><th>CP</th><th>Angle</th><th>CP</th></tr> </thead> <tbody> <tr><td>0</td><td>755</td><td>60</td><td>1258</td><td>120</td><td>504</td></tr> <tr><td>5</td><td>786</td><td>65</td><td>1279</td><td>125</td><td>307</td></tr> <tr><td>10</td><td>853</td><td>70</td><td>1291</td><td>130</td><td>143</td></tr> <tr><td>15</td><td>933</td><td>75</td><td>1299</td><td>135</td><td>34</td></tr> <tr><td>20</td><td>983</td><td>80</td><td>1293</td><td>140</td><td>2</td></tr> <tr><td>25</td><td>1008</td><td>85</td><td>1282</td><td>145</td><td>0</td></tr> <tr><td>30</td><td>1038</td><td>90</td><td>1275</td><td>150</td><td>0</td></tr> <tr><td>35</td><td>1075</td><td>95</td><td>1246</td><td>155</td><td>0</td></tr> <tr><td>40</td><td>1126</td><td>100</td><td>1169</td><td>160</td><td>0</td></tr> <tr><td>45</td><td>1167</td><td>105</td><td>1046</td><td>165</td><td>0</td></tr> <tr><td>50</td><td>1199</td><td>110</td><td>892</td><td>170</td><td>0</td></tr> <tr><td>55</td><td>1228</td><td>115</td><td>714</td><td>175</td><td>0</td></tr> <tr><td></td><td></td><td></td><td></td><td>180</td><td>0</td></tr> </tbody> </table> | Angle | CP | Angle | CP | Angle | CP | 0 | 755 | 60 | 1258 | 120 | 504 | 5 | 786 | 65 | 1279 | 125 | 307 | 10 | 853 | 70 | 1291 | 130 | 143 | 15 | 933 | 75 | 1299 | 135 | 34 | 20 | 983 | 80 | 1293 | 140 | 2 | 25 | 1008 | 85 | 1282 | 145 | 0 | 30 | 1038 | 90 | 1275 | 150 | 0 | 35 | 1075 | 95 | 1246 | 155 | 0 | 40 | 1126 | 100 | 1169 | 160 | 0 | 45 | 1167 | 105 | 1046 | 165 | 0 | 50 | 1199 | 110 | 892 | 170 | 0 | 55 | 1228 | 115 | 714 | 175 | 0 | | | | | 180 | 0 | <p>Luminous intensity data</p> <table border="1"> <thead> <tr> <th>Angle</th><th>CP</th><th>Angle</th><th>CP</th><th>Angle</th><th>CP</th></tr> </thead> <tbody> <tr><td>0</td><td>2324</td><td>60</td><td>1711</td><td>120</td><td>19</td></tr> <tr><td>5</td><td>2353</td><td>65</td><td>1299</td><td>125</td><td>4</td></tr> <tr><td>10</td><td>2417</td><td>70</td><td>851</td><td>130</td><td>3</td></tr> <tr><td>15</td><td>2464</td><td>75</td><td>493</td><td>135</td><td>0</td></tr> <tr><td>20</td><td>2477</td><td>80</td><td>234</td><td>140</td><td>0</td></tr> <tr><td>25</td><td>2440</td><td>85</td><td>94</td><td>145</td><td>0</td></tr> <tr><td>30</td><td>2374</td><td>90</td><td>30</td><td>150</td><td>0</td></tr> <tr><td>35</td><td>2311</td><td>95</td><td>37</td><td>155</td><td>0</td></tr> <tr><td>40</td><td>2248</td><td>100</td><td>56</td><td>160</td><td>0</td></tr> <tr><td>45</td><td>2184</td><td>105</td><td>69</td><td>165</td><td>0</td></tr> <tr><td>50</td><td>2114</td><td>110</td><td>64</td><td>170</td><td>0</td></tr> <tr><td>55</td><td>1988</td><td>115</td><td>41</td><td>175</td><td>0</td></tr> <tr><td></td><td></td><td></td><td></td><td>180</td><td>0</td></tr> </tbody> </table> | Angle | CP | Angle | CP | Angle | CP | 0 | 2324 | 60 | 1711 | 120 | 19 | 5 | 2353 | 65 | 1299 | 125 | 4 | 10 | 2417 | 70 | 851 | 130 | 3 | 15 | 2464 | 75 | 493 | 135 | 0 | 20 | 2477 | 80 | 234 | 140 | 0 | 25 | 2440 | 85 | 94 | 145 | 0 | 30 | 2374 | 90 | 30 | 150 | 0 | 35 | 2311 | 95 | 37 | 155 | 0 | 40 | 2248 | 100 | 56 | 160 | 0 | 45 | 2184 | 105 | 69 | 165 | 0 | 50 | 2114 | 110 | 64 | 170 | 0 | 55 | 1988 | 115 | 41 | 175 | 0 | | | | | 180 | 0 | <p>Luminous intensity data</p> <table border="1"> <thead> <tr> <th>Angle</th><th>CP</th><th>Angle</th><th>CP</th><th>Angle</th><th>CP</th></tr> </thead> <tbody> <tr><td>0</td><td>788</td><td>60</td><td>2984</td><td>120</td><td>2971</td></tr> <tr><td>5</td><td>846</td><td>65</td><td>3085</td><td>125</td><td>2320</td></tr> <tr><td>10</td><td>998</td><td>70</td><td>3200</td><td>130</td><td>1340</td></tr> <tr><td>15</td><td>1152</td><td>75</td><td>3288</td><td>135</td><td>575</td></tr> <tr><td>20</td><td>1256</td><td>80</td><td>3316</td><td>140</td><td>132</td></tr> <tr><td>25</td><td>1335</td><td>85</td><td>3349</td><td>145</td><td>8</td></tr> <tr><td>30</td><td>1427</td><td>90</td><td>3406</td><td>150</td><td>0</td></tr> <tr><td>35</td><td>1725</td><td>95</td><td>3484</td><td>155</td><td>0</td></tr> <tr><td>40</td><td>2443</td><td>100</td><td>3525</td><td>160</td><td>0</td></tr> <tr><td>45</td><td>2937</td><td>105</td><td>3518</td><td>165</td><td>0</td></tr> <tr><td>50</td><td>2960</td><td>110</td><td>3444</td><td>170</td><td>0</td></tr> <tr><td>55</td><td>2925</td><td>115</td><td>3295</td><td>175</td><td>0</td></tr> <tr><td></td><td></td><td></td><td></td><td>180</td><td>0</td></tr> </tbody> </table> | Angle | CP | Angle | CP | Angle | CP | 0 | 788 | 60 | 2984 | 120 | 2971 | 5 | 846 | 65 | 3085 | 125 | 2320 | 10 | 998 | 70 | 3200 | 130 | 1340 | 15 | 1152 | 75 | 3288 | 135 | 575 | 20 | 1256 | 80 | 3316 | 140 | 132 | 25 | 1335 | 85 | 3349 | 145 | 8 | 30 | 1427 | 90 | 3406 | 150 | 0 | 35 | 1725 | 95 | 3484 | 155 | 0 | 40 | 2443 | 100 | 3525 | 160 | 0 | 45 | 2937 | 105 | 3518 | 165 | 0 | 50 | 2960 | 110 | 3444 | 170 | 0 | 55 | 2925 | 115 | 3295 | 175 | 0 | | | | | 180 | 0 |
| Angle | CP | Angle | CP | Angle | CP | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0 | 755 | 60 | 1258 | 120 | 504 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | 786 | 65 | 1279 | 125 | 307 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | 853 | 70 | 1291 | 130 | 143 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 15 | 933 | 75 | 1299 | 135 | 34 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 20 | 983 | 80 | 1293 | 140 | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 25 | 1008 | 85 | 1282 | 145 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 30 | 1038 | 90 | 1275 | 150 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 35 | 1075 | 95 | 1246 | 155 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 40 | 1126 | 100 | 1169 | 160 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 45 | 1167 | 105 | 1046 | 165 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 50 | 1199 | 110 | 892 | 170 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 55 | 1228 | 115 | 714 | 175 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | 180 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Angle | CP | Angle | CP | Angle | CP | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0 | 2324 | 60 | 1711 | 120 | 19 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | 2353 | 65 | 1299 | 125 | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | 2417 | 70 | 851 | 130 | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 15 | 2464 | 75 | 493 | 135 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 20 | 2477 | 80 | 234 | 140 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 25 | 2440 | 85 | 94 | 145 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 30 | 2374 | 90 | 30 | 150 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 35 | 2311 | 95 | 37 | 155 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 40 | 2248 | 100 | 56 | 160 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 45 | 2184 | 105 | 69 | 165 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 50 | 2114 | 110 | 64 | 170 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 55 | 1988 | 115 | 41 | 175 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | 180 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Angle | CP | Angle | CP | Angle | CP | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0 | 788 | 60 | 2984 | 120 | 2971 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | 846 | 65 | 3085 | 125 | 2320 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | 998 | 70 | 3200 | 130 | 1340 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 15 | 1152 | 75 | 3288 | 135 | 575 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 20 | 1256 | 80 | 3316 | 140 | 132 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 25 | 1335 | 85 | 3349 | 145 | 8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 30 | 1427 | 90 | 3406 | 150 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 35 | 1725 | 95 | 3484 | 155 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 40 | 2443 | 100 | 3525 | 160 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 45 | 2937 | 105 | 3518 | 165 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 50 | 2960 | 110 | 3444 | 170 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 55 | 2925 | 115 | 3295 | 175 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | 180 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

All lighting designs and lighting data come from DIALUX software of Germany upon stimulated situation and working condition.

◇ Power connection



Loosen locknut on the mounting box, screw open, and then take off clamp spring with screwdriver as well as wireless connection panel.



Through the mounting box through feed, cable connected to L, N pole of wireless connection panel, assemble the connection panel and spring ensuring electrical clearance. Lock inlet shaft coupling ensuring seal ring keep the cable stationary.



Cable mounting box fixed by selected mounting style after connection, ensuring reliable mounting for stationary.



The power circuit and the insulation of fixed mounting box available in working condition. Lighting and the mounting box is connected by thread. Ensuring both directional arrow on lighting and mounting box respectively aim at each other and two pairs wireless electrical contactor linked reliably.



Screw locknut on the mounting box tighten.

◇ Lamp installation



Lamp of proper power selected according to the description on nameplate. Lamp of other power is not available! Otherwise, damage the ballast and trigger.



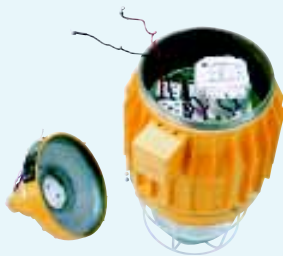
Screw the lamp into the holder after screwing the locknut off and taking off globe ensuring good contact.



Slip and tighten globe on lighting. Available with relamping.

◇ Internal components maintenance

For trouble shooting, the lighting should be put down off mounting position, repaired and maintained by professionals.



Loosen locknut on the housing, open the cover check the internal ballast and trigger are broken or not, lead is loosen or not.



Defective component must be replaced with Warom components through local exclusive agency. The component other than Warom is not allowed.

◇ Accessories

| Picture | Description | Ordering code | Picture | Description | Ordering code | |
|---------|--------------------------|---------------|---------|---------------------------------|-----------------|-------|
| | 125 type doom reflector | 61001 | | Hook | 61020 | |
| | 250 type doom reflector | 61002 | | | | |
| | 400 type doom reflector | / | | | | |
| | 125 type angle reflector | 61004 | | Shaft coupling | 61021 | |
| | 250 type angle reflector | / | | | | |
| | 400 type angle reflector | / | | | | |
| | 125 type glass guard | 61007 | | Upper wireless connection panel | 61022 | |
| | 250 type glass guard | 61008 | | Down wireless connection panel | 61023 | |
| | 400 type glass guard | 61009 | | | | |
| | 125 type steel guard | 61010 | | 125 type ballast | N70 | 61024 |
| | 250 type steel guard | 61011 | | | L70 | 61025 |
| | 400 type steel guard | 61012 | | | N100 | 61026 |
| | 125 type glass globe | 61013 | | 250 type ballast | L100 | 61027 |
| | 250 type glass globe | 61014 | | | N150 | 61028 |
| | 400 type glass globe | 61015 | | | N250 | 61029 |
| | Pendant mounting box | 61016 | | 400 type ballast | L175 | 61030 |
| | | | | | L250 | 61031 |
| | Ceiling mounting box | 61017 | | Trigger | N400 | 61032 |
| | | | | | L400 | 61033 |
| | Mounting box | 61018 | | | E27 lamp holder | 61035 |
| | Stanchion mounting box | 61019 | | | | |

◇ Ordering information

- Select the product according to catalog number logic such as proper lamp, lamp wattage and mounting style.
- Please note if any special requirements for power.
- If any mounting parts required, please order separately according to the model referred in our mounting instruction.
- Components ordering code below as a reference. Not included if no code.
- Lamp is not included when ex-works. Please adopt suitable lamp, technical requirements provided for reference. PHILIPS is recommended.
- Ordering example:
Enquiry: 250W sodium lighting, ceiling mounting style, with globe, AC220V/50Hz.
Ordering code: BAD61-N250X+61002.
- For BAD61-250 and BAD61-400, bracket mounting style and stanchion mounting style are both not favorable due to weight.
- We reserve the power of final interpretation and to make alterations to the technical data, weights, dimensions, designs and products available without notice.