Light efficiency: 

- Output: 37682 lm
- Peak: 18403 cd

Light quality:

- CRI: 81.9

Color temperature:

- 5228 K

Beam angle: 77.5°

Product name:
ALD-50K30W-C-BRC3 Type III-S

Date and time:
4/17/2019 12:35:44 PM

Spectra

Power

Voltage: 116 V
Current: 0.000 A
Frequency: 60.1 Hz
**Color Specifications**

![Color Specifications Diagram](image-url)

**CRI: 81.9 (R1-R8)**

<table>
<thead>
<tr>
<th>R1</th>
<th>R2</th>
<th>R3</th>
<th>R4</th>
<th>R5</th>
<th>R6</th>
<th>R7</th>
<th>R8</th>
<th>R9</th>
<th>R10</th>
<th>R11</th>
<th>R12</th>
<th>R13</th>
<th>R14</th>
<th>R15</th>
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</thead>
<tbody>
<tr>
<td>81.1</td>
<td>86.4</td>
<td>88.7</td>
<td>82.5</td>
<td>81.2</td>
<td>80.0</td>
<td>86.5</td>
<td>86.9</td>
<td>9.7</td>
<td>66.3</td>
<td>81.2</td>
<td>56.7</td>
<td>82.4</td>
<td>93.7</td>
<td>76.5</td>
</tr>
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</table>

**TM30: 79.3**

<table>
<thead>
<tr>
<th>C1</th>
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<th>C4</th>
<th>C5</th>
<th>C6</th>
<th>C7</th>
<th>C8</th>
<th>C9</th>
<th>C10</th>
<th>C11</th>
<th>C12</th>
<th>C13</th>
<th>C14</th>
<th>C15</th>
<th>C16</th>
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<tbody>
<tr>
<td>73</td>
<td>74</td>
<td>82</td>
<td>84</td>
<td>92</td>
<td>90</td>
<td>84</td>
<td>81</td>
<td>67</td>
<td>65</td>
<td>84</td>
<td>82</td>
<td>72</td>
<td>78</td>
<td>55</td>
<td></td>
</tr>
</tbody>
</table>

**CRI R values, only R1-R8 are used to calculate final CRI value**

**CQS: 78.6**

<table>
<thead>
<tr>
<th>Q1</th>
<th>Q2</th>
<th>Q3</th>
<th>Q4</th>
<th>Q5</th>
<th>Q6</th>
<th>Q7</th>
<th>Q8</th>
<th>Q9</th>
<th>Q10</th>
<th>Q11</th>
<th>Q12</th>
<th>Q13</th>
<th>Q14</th>
<th>Q15</th>
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</thead>
<tbody>
<tr>
<td>83.8</td>
<td>96.5</td>
<td>70.7</td>
<td>67.5</td>
<td>87.5</td>
<td>80.6</td>
<td>83.9</td>
<td>88.8</td>
<td>93.8</td>
<td>81.4</td>
<td>77.2</td>
<td>77.1</td>
<td>76.7</td>
<td>70.1</td>
<td>75.3</td>
</tr>
</tbody>
</table>

**Color parameters**

| Color temperature | Color rendering index | Red component | Color fidelity | Color gamut | Color quality scale | Color coordinates (cie 1931) | Color coordinates (cie 1931) | Color coordinates | Color coordinate | Color coordinate | Color coordinate | Color coordinate | Color coordinate | Color coordinate | Color deviation from black body |
|-------------------|-----------------------|---------------|----------------|-------------|---------------------|-------------------------------|-------------------------------|------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|--------------------------|
| 5228 K            | 81.9                  | 9.7           | 79.3           | 95.6        | 78.6                | 0.339                         | 0.346                         | 0.210            | 0.321          | -0.0036              |
TM30 Report

Rf 79.3
Fidelity index Rf

Rg 95.6
Gammut index Rg

Graphic shifts (%)

<table>
<thead>
<tr>
<th>Hue Bin</th>
<th>Rf</th>
<th>Chroma</th>
<th>Hue</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>73</td>
<td>-13%</td>
<td>-1%</td>
</tr>
<tr>
<td>2</td>
<td>81</td>
<td>-8%</td>
<td>7%</td>
</tr>
<tr>
<td>3</td>
<td>74</td>
<td>-5%</td>
<td>12%</td>
</tr>
<tr>
<td>4</td>
<td>82</td>
<td>0%</td>
<td>10%</td>
</tr>
<tr>
<td>5</td>
<td>84</td>
<td>2%</td>
<td>6%</td>
</tr>
<tr>
<td>6</td>
<td>92</td>
<td>3%</td>
<td>-1%</td>
</tr>
<tr>
<td>7</td>
<td>90</td>
<td>-3%</td>
<td>-4%</td>
</tr>
<tr>
<td>8</td>
<td>84</td>
<td>-8%</td>
<td>-1%</td>
</tr>
<tr>
<td>9</td>
<td>81</td>
<td>-11%</td>
<td>10%</td>
</tr>
<tr>
<td>10</td>
<td>67</td>
<td>-7%</td>
<td>17%</td>
</tr>
<tr>
<td>11</td>
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<td>1%</td>
<td>19%</td>
</tr>
<tr>
<td>12</td>
<td>84</td>
<td>5%</td>
<td>8%</td>
</tr>
<tr>
<td>13</td>
<td>85</td>
<td>10%</td>
<td>2%</td>
</tr>
<tr>
<td>14</td>
<td>82</td>
<td>6%</td>
<td>-7%</td>
</tr>
<tr>
<td>15</td>
<td>72</td>
<td>1%</td>
<td>-19%</td>
</tr>
<tr>
<td>16</td>
<td>78</td>
<td>-3%</td>
<td>-12%</td>
</tr>
</tbody>
</table>

T 314.743.3067
F 314.972.6202
email: commercial-sales@superbrightleds.com
www.superbrightleds.com/
**Beam intensities from 1-20m**

- **Distance feet (meter)**
  - 31.5 ft (9.6 m) to 19.7 ft (6 m)
  - 39.5 ft (12 m) to 24.6 ft (7.5 m)
  - 47.3 ft (14.4 m) to 29.5 ft (9 m)
  - 55.2 ft (16.8 m) to 34.4 ft (10.5 m)
  - 63.2 ft (19.3 m) to 39.4 ft (12 m)

- **Foot-candles* (Lux)**
  - 77.5°
    - 19 fc (208 lx)
    - 12 fc (133 lx)
    - 9 fc (92 lx)
    - 6 fc (68 lx)
    - 5 fc (52 lx)

- **Beam Width feet (meter)**
  - 31.5 ft (9.6 m) to 3.3 ft (1.0 m)
  - 39.5 ft (12 m) to 4.9 ft (1.5 m)
  - 47.3 ft (14.4 m) to 6.6 ft (2.0 m)
  - 55.2 ft (16.8 m) to 8.3 ft (2.5 m)
  - 63.2 ft (19.3 m) to 10.0 ft (3.0 m)

- **Beam angle 50%**
  - 77.5°

- **Field angle 10%**
  - 151.8°

- **Cutoff angle 2.5%**
  - 172.3°

- **Intensity ratio in 120° cone**
  - 68.7%

- **Intensity ratio in 90° cone**
  - 37.3%

---

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ISO Diagrams

ISO candela diagram

Vertical angles

-90°
-75°
-60°
-45°
-30°
-15°
 0°
 15°
 30°
 45°
 60°
 75°
 90°

Horizontal angles

Lux distribution on a surface when lamp is mounted at 10 meters from the surface.

Conditions:
Number of c-planes: 16
Lux at center: 74.7 lx

Mounting height: 10 meters (33 feet)

Conditions:
Number of c-planes: 16
Candela at center: 7474 cd
### Light Planning

#### Coefficients of Utilization

<table>
<thead>
<tr>
<th>Ceiling reflectance</th>
<th>80</th>
<th>70</th>
<th>50</th>
<th>30</th>
<th>10</th>
<th>0</th>
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<tr>
<td>Wall reflectance</td>
<td>70</td>
<td>50</td>
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<tr>
<td>Floor reflectance</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>20</td>
</tr>
</tbody>
</table>

#### RCR (Room Cavity Ratio)

Room Values are expressed as percentage of Lumens delivered to the task surface

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<thead>
<tr>
<th>0</th>
<th>109</th>
<th>119</th>
<th>119</th>
<th>119</th>
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<td>18</td>
<td>29</td>
<td>23</td>
<td>18</td>
<td>16</td>
<td></td>
</tr>
</tbody>
</table>

#### LAMPS (number of lamps)

Luminaire budgetary diagram

#### Zonal Lumen Summary

<table>
<thead>
<tr>
<th>AREA m² (area of the room)</th>
<th>0°-10°</th>
<th>10°-20°</th>
<th>20°-30°</th>
<th>30°-40°</th>
<th>40°-50°</th>
<th>50°-60°</th>
<th>60°-70°</th>
<th>70°-80°</th>
<th>80°-90°</th>
</tr>
</thead>
<tbody>
<tr>
<td>0°-10°</td>
<td>674 lm</td>
<td>2060 lm</td>
<td>3412 lm</td>
<td>4925 lm</td>
<td>6635 lm</td>
<td>8179 lm</td>
<td>7632 lm</td>
<td>3425 lm</td>
<td>599 lm</td>
</tr>
<tr>
<td>90°-100°</td>
<td>51.7 lm</td>
<td>12.3 lm</td>
<td>15.0 lm</td>
<td>15.0 lm</td>
<td>13.9 lm</td>
<td>13.8 lm</td>
<td>10.3 lm</td>
<td>7.07 lm</td>
<td>2.55 lm</td>
</tr>
</tbody>
</table>
### Road Report

**LCS table**

<table>
<thead>
<tr>
<th>BUG rating:</th>
<th>B5 U3 G5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Forward light</strong></td>
<td>Lumens</td>
</tr>
<tr>
<td>Low (0-30)</td>
<td>3194.9</td>
</tr>
<tr>
<td>Medium (30-60)</td>
<td>9943.4</td>
</tr>
<tr>
<td>High (60-80)</td>
<td>5358.5</td>
</tr>
<tr>
<td>Very high (80-90)</td>
<td>281.4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Back light</strong></th>
<th>Lumens</th>
<th>Lumens %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low (0-30)</td>
<td>3194.9</td>
<td>8.5%</td>
</tr>
<tr>
<td>Medium (30-60)</td>
<td>9943.4</td>
<td>26.4%</td>
</tr>
<tr>
<td>High (60-80)</td>
<td>5358.5</td>
<td>14.2%</td>
</tr>
<tr>
<td>Very high (80-90)</td>
<td>281.4</td>
<td>0.7%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Uplight</strong></th>
<th>Lumens</th>
<th>Lumens %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low (90-100)</td>
<td>49.3</td>
<td>0.1%</td>
</tr>
<tr>
<td>High (100-180)</td>
<td>89.6</td>
<td>0.2%</td>
</tr>
</tbody>
</table>

**LCS graph**

![LCS Graph](image-url)
Stabilization

Warmup curve

-4.3% variation in 21 min 35 sec

Warmup result

<table>
<thead>
<tr>
<th>Warmup time:</th>
<th>21 min 35 sec</th>
</tr>
</thead>
<tbody>
<tr>
<td>Warmup variation</td>
<td>-4.3%</td>
</tr>
</tbody>
</table>

Warmup conditions

<table>
<thead>
<tr>
<th>Stable period:</th>
<th>15 min</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stable change max:</td>
<td>2.0%</td>
</tr>
<tr>
<td>Minimum time:</td>
<td>15 min</td>
</tr>
</tbody>
</table>

Color temperature change

<table>
<thead>
<tr>
<th>CCT start</th>
<th>CCT change</th>
<th>CCT end</th>
</tr>
</thead>
<tbody>
<tr>
<td>5143 K</td>
<td>+85 K</td>
<td>5228 K</td>
</tr>
</tbody>
</table>

Output change

<table>
<thead>
<tr>
<th>Output start</th>
<th>Output change</th>
<th>Output end</th>
</tr>
</thead>
<tbody>
<tr>
<td>39341 lm</td>
<td>-1659 lm</td>
<td>37682 lm</td>
</tr>
</tbody>
</table>
Flicker

Flicker curve (complete sampled flicker signal)

Flicker frame (frame of one flicker period)

Flicker FFT (frequency scope of flicker curve)

Flicker results:

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Flicker frequency:</td>
<td>119.76 Hz</td>
</tr>
<tr>
<td>Flicker index:</td>
<td>0</td>
</tr>
<tr>
<td>Flicker percentage:</td>
<td>0.9 %</td>
</tr>
<tr>
<td>SVM: (Visual flicker)</td>
<td>0.03</td>
</tr>
</tbody>
</table>

Flicker conditions:

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample rate</td>
<td>40000 samples/second</td>
</tr>
</tbody>
</table>