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TECH BRIEF

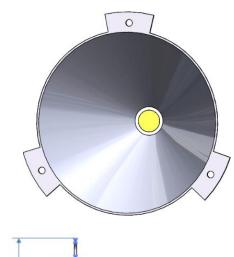
Stamped Reflector 09/02/20

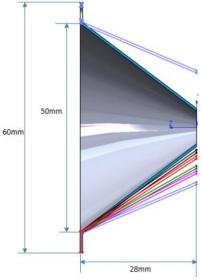
All CoreLed Systems, LLC Optical Components are designed and manufactured in the USA.

- Optical System: Reflector, COB and Optional P95 Diffusive Lens
- Stamped Reflector: 60° 50° 36° 24° 18° 10° Floods
- · Optional Outer Lens: improves lit appearance
- Source: 6mm COB or smaller
 - Lumileds Luxeon COB Core
 - Cree XLamp CXA1304
 - Bridgelux Gen 7 V4 HD LED array
 - Bridgelux Gen 7 V6 HD LED array

60° Prototype Hardware with P95 Outer Lens







Rev A; September 02, 2020

CoreLed Systems, LLC



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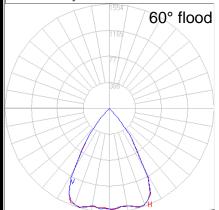
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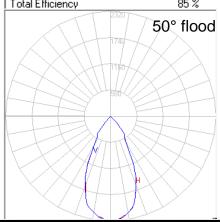
Stamped Reflector 09/02/20

| Characteristics | |
|------------------------------|---------------|
| NEMA Type | 5H×5V |
| Maximum Candela | 1553.8 |
| Maximum Candela Angle | 19.5 H -5 V |
| Horizontal Beam Angle (50%) | 65.1 |
| Vertical Beam Angle (50%) | 54.0 |
| Horizontal Field Angle (10%) | 85.4 |
| Vertical Field Angle (10%) | 79.2 |
| Lumens Per Lamp | 500 (4 lamps) |
| Total Lamp Lumens | 2000 |
| Beam Lumens | 1363 |
| Beam Efficiency | 68 % |
| Field Lumens | 1666 |
| Field Efficiency | 83 % |
| Spill Lumens | 27 |
| Luminaire Lumens | 1693 |
| Total Efficiency | 85 % |

| <u>Characteristics</u> | |
|------------------------------|---------------|
| NEMA Type | 5H x 5 V |
| Maximum Candela | 2319.598 |
| Maximum Candela Angle | 1 H -1 V |
| Horizontal Beam Angle (50%) | 51.2 |
| Vertical Beam Angle (50%) | 51.2 |
| Horizontal Field Angle (10%) | 83.3 |
| Vertical Field Angle (10%) | 83.3 |
| Lumens Per Lamp | 500 (4 lamps) |
| Total Lamp Lumens | 2000 |
| Beam Lumens | 1092 |
| Beam Efficiency | 55 % |
| Field Lumens | 1666 |
| Field Efficiency | 83 % |
| Spill Lumens | 37 |
| Luminaire Lumens | 1703 |
| Total Efficiency | 85 % |
| 23207 | |

| Characteristics | · |
|------------------------------|---------------|
| NEMA Type | 5H x 5 V |
| Maximum Candela | 3441.326 |
| Maximum Candela Angle | 0 H 0 V |
| Horizontal Beam Angle (50%) | 36.8 |
| Vertical Beam Angle (50%) | 36.8 |
| Horizontal Field Angle (10%) | 79.8 |
| Vertical Field Angle (10%) | 79.8 |
| Lumens Per Lamp | 500 (4 lamps) |
| Total Lamp Lumens | 2000 |
| Beam Lumens | 794 |
| Beam Efficiency | 40 % |
| Field Lumens | 1598 |
| Field Efficiency | 80 % |
| Spill Lumens | 107 |
| Luminaire Lumens | 1705 |
| Total Efficiency | 85% |
| | |



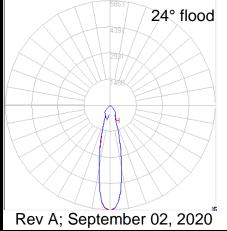


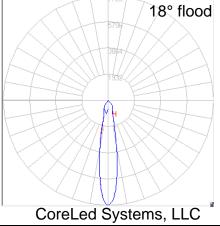
| 3441 | 36° flood |
|------|---------------------------|
| 2587 | |
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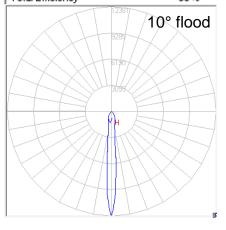
| Characteristics | |
|------------------------------|---------------|
| | 4.11 437 |
| NEMA Type | 4 H × 4 V |
| Maximum Candela | 5862.616 |
| Maximum Candela Angle | 0H 0V |
| Horizontal Beam Angle (50%) | 24.0 |
| Vertical Beam Angle (50%) | 24.0 |
| Horizontal Field Angle (10%) | 56.2 |
| Vertical Field Angle (10%) | 56.2 |
| Lumens Per Lamp | 500 (4 lamps) |
| Total Lamp Lumens | 2000 |
| Beam Lumens | 574 |
| Beam Efficiency | 29 % |
| Field Lumens | 1268 |
| Field Efficiency | 63 % |
| Spill Lumens | 439 |
| Luminaire Lumens | 1707 |
| Total Efficiency | 85 % |
| | |

| 97412 | |
|------------------------------|---------------|
| Characteristics | |
| NEMA Type | 4 H x 4 V |
| Maximum Candela | 7728.323 |
| Maximum Candela Angle | 0H 0V |
| Horizontal Beam Angle (50%) | 19.0 |
| Vertical Beam Angle (50%) | 19.0 |
| Horizontal Field Angle (10%) | 47.2 |
| Vertical Field Angle (10%) | 47.1 |
| Lumens Per Lamp | 500 (4 lamps) |
| Total Lamp Lumens | 2000 |
| Beam Lumens | 475 |
| Beam Efficiency | 24 % |
| Field Lumens | 1095 |
| Field Efficiency | 55 % |
| Spill Lumens | 614 |
| Luminaire Lumens | 1709 |
| Total Efficiency | 85 % |
| 77287 | |

| Characteristics | |
|------------------------------|---------------|
| NEMA Type | 3 H x 3 V |
| Maximum Candela | 12380.59 |
| Maximum Candela Angle | 0H 0V |
| Horizontal Beam Angle (50%) | 9.9 |
| Vertical Beam Angle (50%) | 10.0 |
| Horizontal Field Angle (10%) | 35.8 |
| Vertical Field Angle (10%) | 35.9 |
| Lumens Per Lamp | 500 (4 lamps) |
| Total Lamp Lumens | 2000 |
| Beam Lumens | 218 |
| Beam Efficiency | 11 % |
| Field Lumens | 756 |
| Field Efficiency | 38 % |
| Spill Lumens | 959 |
| Luminaire Lumens | 1715 |
| Total Efficiency | 86 % |

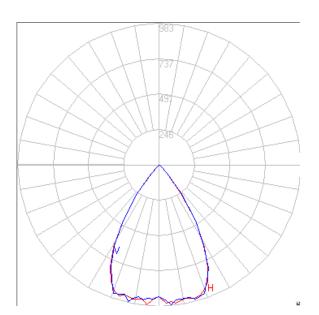






Prototype measurement with Bridgelux Gen7 V6 and **No Outer Lens** with 60° flood reflector

| Characteristics | |
|------------------------------|---------------|
| NEMA Type | 5H×5V |
| Maximum Candela | 982.688 |
| Maximum Candela Angle | -1 H 5 V |
| Horizontal Beam Angle (50%) | 63.7 |
| Vertical Beam Angle (50%) | 64.5 |
| Horizontal Field Angle (10%) | 83.8 |
| Vertical Field Angle (10%) | 84.1 |
| Lumens Per Lamp | 1000 (1 lamp) |
| Total Lamp Lumens | 1000 |
| Beam Lumens | 796 |
| Beam Efficiency | 80 % |
| Field Lumens | 973 |
| Field Efficiency | 97 % |
| Spill Lumens | 24 |
| Luminaire Lumens | 997 |



Prototype measurement with Bridgelux Gen7 V6 and **P95 Outer Lens** with 60° flood reflector

| Characteristics | |
|------------------------------|---------------|
| NEMA Type | 5H×5V |
| Maximum Candela | 1012.887 |
| Maximum Candela Angle | -1 H 5 V |
| Horizontal Beam Angle (50%) | 59.7 |
| Vertical Beam Angle (50%) | 60.9 |
| Horizontal Field Angle (10%) | 91.0 |
| Vertical Field Angle (10%) | 91.2 |
| Lumens Per Lamp | 1000 (1 lamp) |
| Total Lamp Lumens | 1000 |
| Beam Lumens | 667 |
| Beam Efficiency | 67% |
| Field Lumens | 937 |
| Field Efficiency | 94 % |
| Spill Lumens | 59 |
| Luminaire Lumens | 996 |
| | |

