

Scaled data based on original data using  
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Test Report Prepared for  
Cooper Lighting Solutions

Brand: HALO

Report Number: P670470

Luminaire Tested: ALP90LSFSUNVDGY-60W-4000K

Issue Date: 3/29/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P670470  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA ( 2022-07-22)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/29/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO  
Catalog Number: ALP90LSFSUNVDGY-60W-4000K  
Description: ALP Premium Area Light  
Light Source:  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 9284 lumens  
Efficiency: N/A  
Efficacy: 156.0 lumens/watt  
Luminous Opening: Circular (Dia: 0.66' x H: 0')  
IES Classification: Type IV - Short  
BUG Rating: B3 - U3 - G3

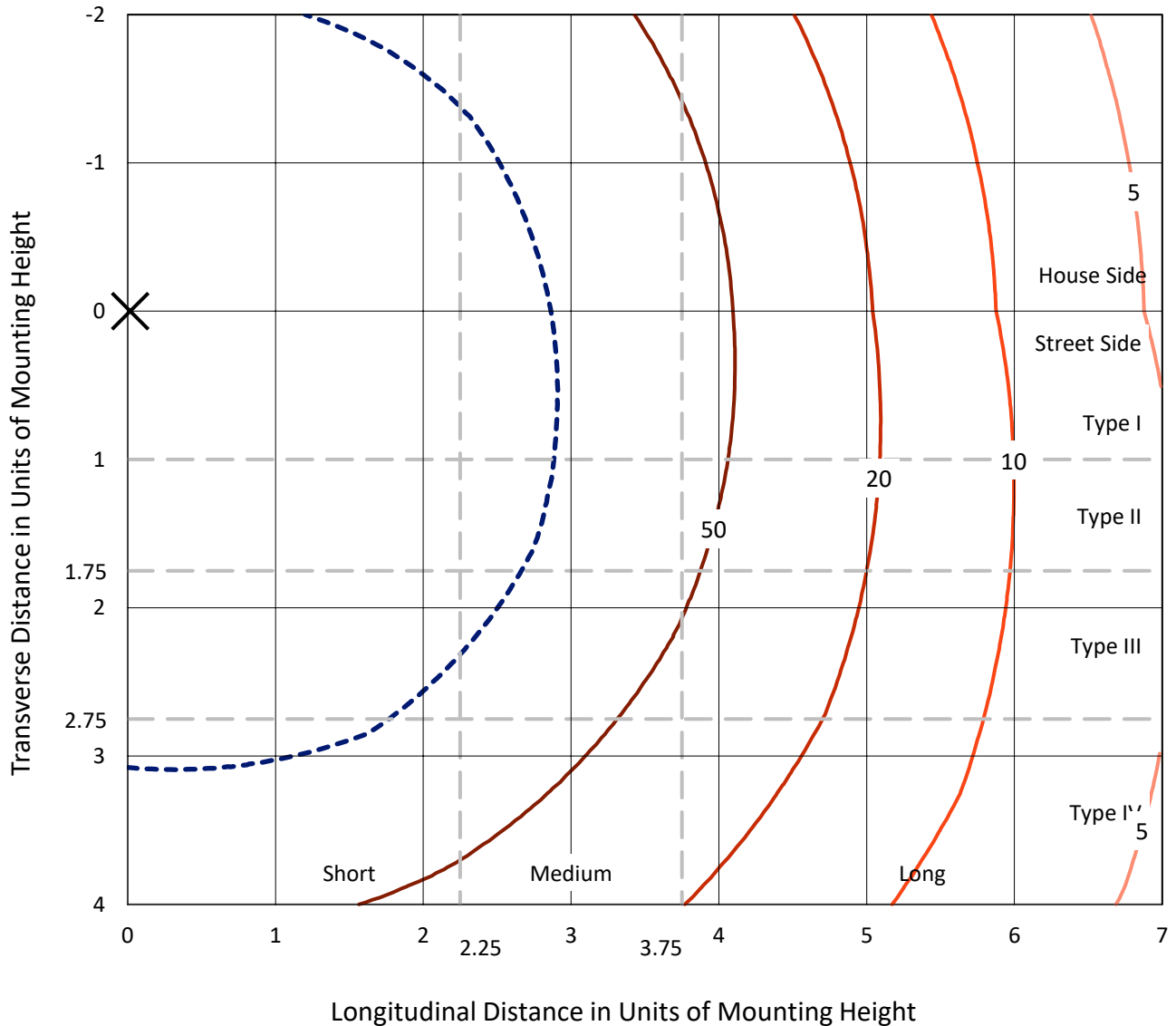
Input Watts (W): 59.5  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT



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### Iso-Footcandle Lines of Horizontal Illumination

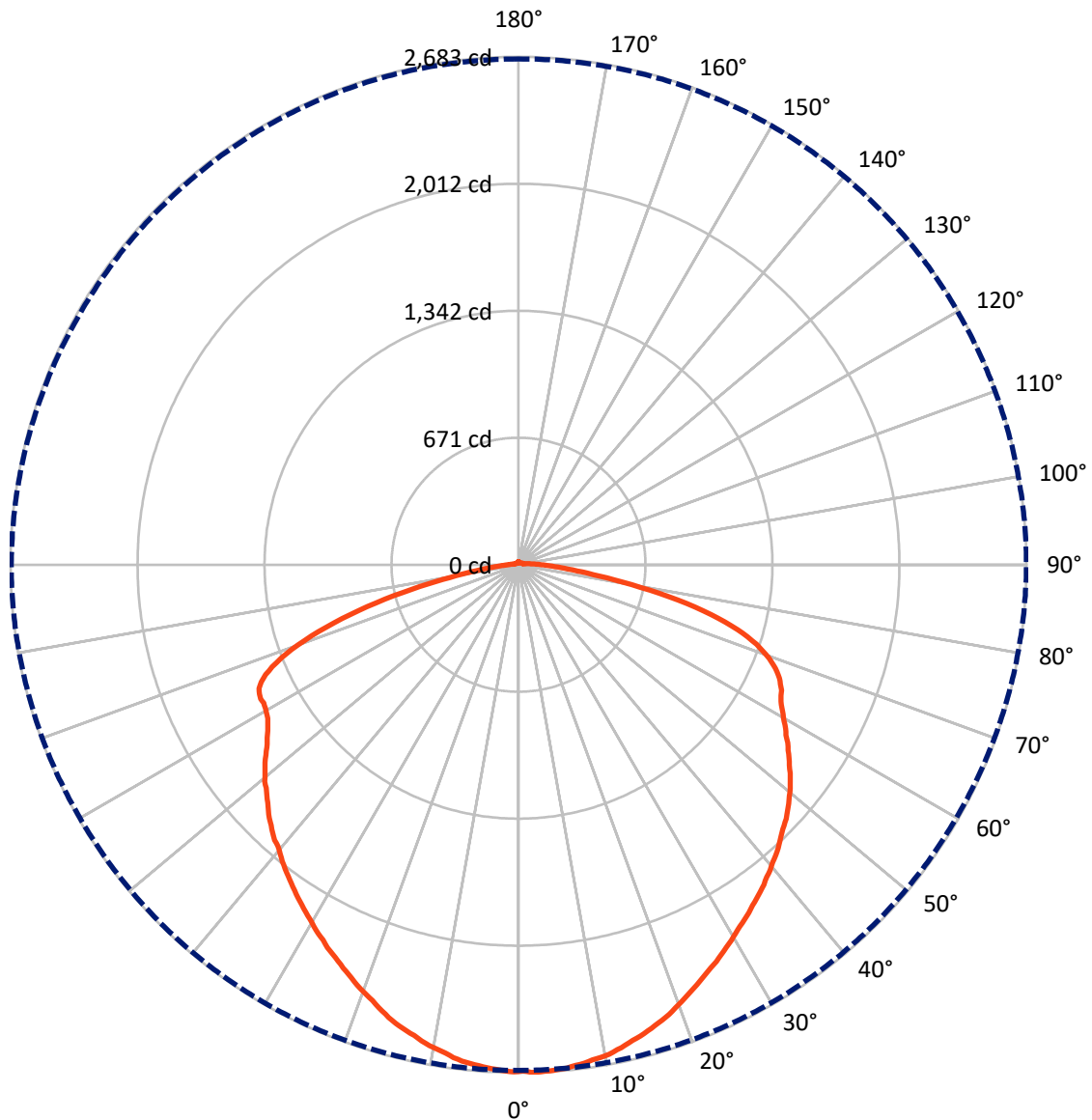
× Max cd  
 - - - 1/2 Max cd



Based on 0.5 foot mounting height. Maximum calculated value = 10693.6 fc  
 Type IV - Short - N/A

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### Luminous Intensity Polar Plot



— Vertical Plane Through 90-Deg Lateral      - - - Horizontal Cone Through 1-Deg Vertical

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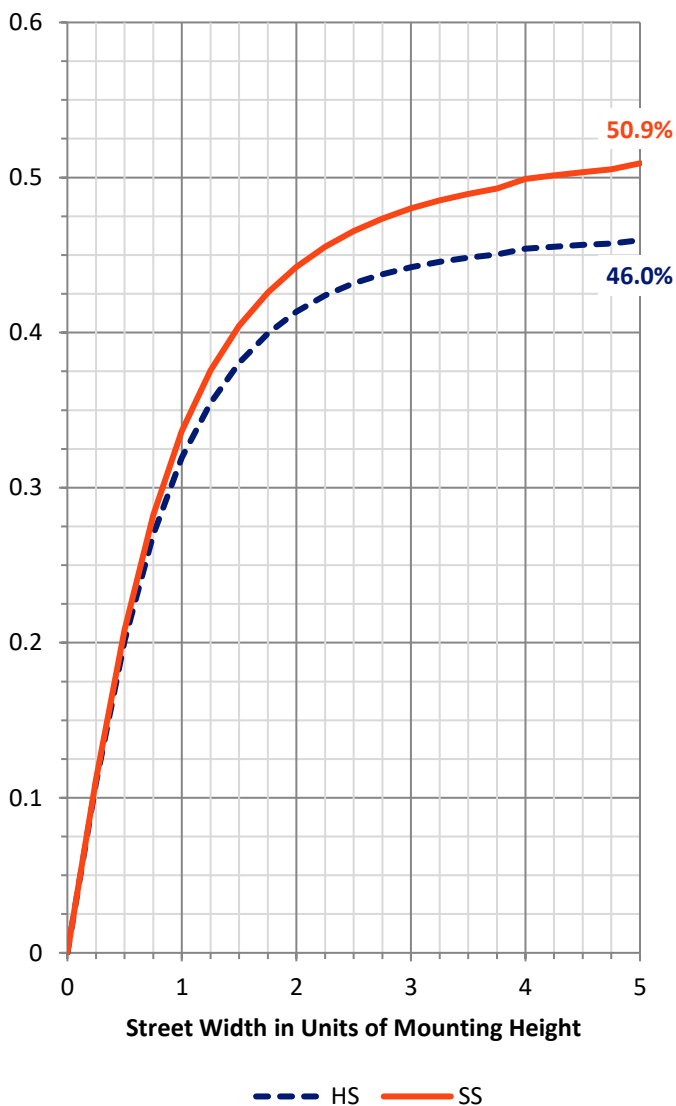
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	4311.8	67.2	4379.0
	% Fixture	46.4	0.7	47.2
<b>Street Side</b>	Lumens	4810.9	94.1	4905.0
	% Fixture	51.8	1.0	52.8
<b>Total</b>	Lumens	9122.7	161.3	9284.0
	% Fixture	98.3	1.7	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	251.7	2.7
10°-20°	716.1	7.7
20°-30°	1081.1	11.6
30°-40°	1334.6	14.4
40°-50°	1477.8	15.9
50°-60°	1509.5	16.3
60°-70°	1460.7	15.7
70°-80°	993.6	10.7
80°-90°	297.5	3.2
90°-100°	64.1	0.7
100°-110°	29.8	0.3
110°-120°	22.9	0.2
120°-130°	15.9	0.2
130°-140°	10.1	0.1
140°-150°	7.5	0.1
150°-160°	5.9	0.1
160°-170°	3.9	0.0
170°-180°	1.4	0.0
0°-90°	9122.7	98.3
0°-180°	9284.0	100.0

**Coefficient of Utilization**

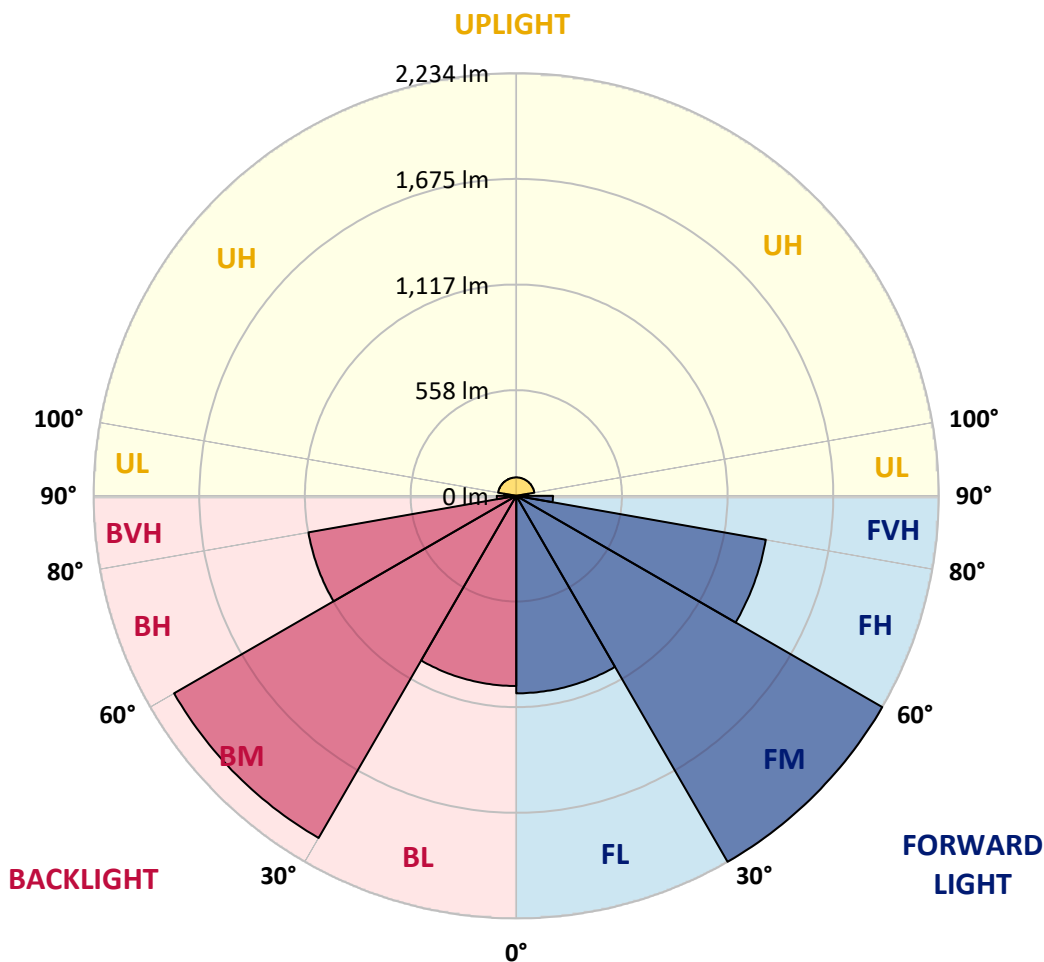


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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	1043.8	11.2			
FM (30°-60°)	2233.5	24.1			
FH (60°-80°)	1339.3	14.4			G1/1800
FVH (80°-90°)	194.2	2.1			G2/225
BL (0°-30°)	1005.1	10.8	B3/2500		
BM (30°-60°)	2088.4	22.5	B2/2500		
BH (60°-80°)	1115.1	12.0	B3/2500		G3/2500
BVH (80°-90°)	103.3	1.1			G2/225
UL (90°-100°)	64.1	0.7		U3/500	
UH (100°-180°)	97.3	1.0		U3/500	

**BUG Rating: B3-U3-G3**  
 Type IV Short





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**CANDELA DISTRIBUTION (FULL):**

	0°	30°	60°	90°	120°	150°	180°	210°	240°	270°	300°
0°	2673.4	2673.4	2673.4	2673.4	2673.4	2673.4	2673.4	2673.4	2673.4	2673.4	2673.4
1°	2671.0	2671.1	2671.2	2683.0	2677.5	2676.4	2671.6	2671.6	2669.2	2679.5	2675.2
2°	2677.1	2675.7	2676.8	2681.4	2680.2	2670.5	2665.4	2666.3	2665.2	2675.5	2672.2
3°	2676.4	2675.3	2675.0	2678.5	2672.6	2664.2	2656.3	2649.5	2659.2	2668.6	2669.7
4°	2674.9	2673.0	2665.4	2674.3	2667.9	2654.1	2640.8	2643.4	2644.2	2663.2	2663.3
5°	2672.3	2676.2	2669.5	2671.0	2660.0	2639.0	2625.3	2626.9	2637.9	2654.7	2659.1
6°	2670.3	2670.9	2664.1	2661.9	2649.4	2625.4	2607.4	2604.1	2626.4	2646.4	2655.1
7°	2656.4	2660.8	2665.8	2655.4	2638.7	2608.3	2593.3	2596.1	2614.1	2638.4	2645.7
8°	2647.1	2655.5	2655.3	2645.0	2623.9	2596.3	2593.7	2580.1	2600.1	2625.4	2644.4
9°	2641.6	2640.7	2653.5	2638.6	2614.4	2581.5	2582.5	2572.8	2584.9	2607.3	2633.9
10°	2631.7	2635.7	2638.2	2629.2	2603.8	2576.4	2569.4	2570.5	2571.9	2595.1	2622.1
11°	2640.4	2626.5	2633.2	2614.6	2590.6	2564.8	2570.2	2552.6	2555.3	2582.7	2611.0
12°	2632.5	2628.8	2627.4	2600.8	2573.0	2561.2	2549.1	2543.6	2534.1	2566.7	2599.2
13°	2628.9	2630.5	2613.1	2583.5	2559.8	2548.8	2537.2	2527.5	2513.8	2546.9	2583.3
14°	2625.8	2615.8	2604.4	2571.3	2543.6	2533.5	2505.9	2517.2	2493.2	2531.6	2564.1
15°	2615.8	2603.1	2594.5	2555.2	2521.7	2514.2	2485.8	2483.4	2474.2	2516.5	2547.9
16°	2592.7	2596.9	2571.7	2538.4	2504.6	2489.1	2450.8	2463.9	2455.2	2497.9	2532.9
17°	2567.2	2581.4	2554.2	2523.0	2482.4	2465.6	2433.7	2436.9	2434.1	2476.3	2515.3
18°	2545.7	2562.4	2528.9	2505.3	2459.9	2435.5	2422.6	2409.3	2423.1	2453.5	2493.8
19°	2527.8	2543.7	2515.5	2482.9	2444.0	2413.1	2410.2	2392.4	2398.6	2427.7	2478.1
20°	2523.5	2528.7	2504.9	2462.1	2424.7	2397.5	2394.2	2365.7	2374.2	2408.4	2458.8
21°	2517.0	2504.9	2487.1	2441.2	2407.6	2381.4	2374.8	2354.0	2357.8	2389.7	2437.5
22°	2508.4	2496.2	2469.9	2421.0	2385.7	2356.9	2339.0	2321.8	2330.7	2366.7	2416.3
23°	2488.7	2485.2	2454.5	2400.2	2366.3	2337.5	2306.8	2312.2	2309.4	2342.5	2398.1
24°	2478.3	2472.2	2436.0	2378.8	2342.0	2310.8	2276.1	2286.0	2284.8	2322.6	2374.6
25°	2449.5	2457.2	2415.4	2358.3	2319.9	2284.0	2255.2	2259.4	2261.1	2299.3	2351.4
26°	2427.3	2433.2	2392.1	2342.0	2297.5	2267.4	2231.6	2226.1	2239.2	2278.7	2335.8
27°	2398.6	2409.5	2371.8	2320.4	2273.2	2233.0	2205.9	2203.4	2216.4	2260.5	2308.7
28°	2374.2	2382.3	2353.0	2300.6	2252.3	2207.2	2195.6	2175.7	2196.9	2234.9	2290.0
29°	2352.4	2361.5	2334.6	2280.8	2232.5	2182.3	2169.6	2156.1	2173.9	2216.8	2268.3
30°	2342.1	2342.6	2315.1	2259.9	2211.1	2165.0	2157.3	2131.8	2150.8	2194.1	2248.6
31°	2325.4	2322.2	2298.6	2239.3	2190.0	2143.8	2126.3	2120.0	2127.5	2171.0	2227.6
32°	2303.5	2299.1	2281.3	2221.8	2167.5	2124.2	2101.9	2096.8	2107.1	2151.3	2207.8
33°	2277.7	2282.7	2264.4	2205.1	2146.2	2103.3	2068.4	2077.9	2083.1	2130.0	2189.6
34°	2252.5	2260.0	2236.3	2183.9	2123.3	2077.1	2042.3	2054.6	2055.3	2110.8	2167.8
35°	2227.4	2242.5	2216.3	2165.7	2100.6	2058.7	2022.9	2032.4	2037.2	2088.6	2147.8
36°	2200.7	2208.3	2202.5	2148.4	2079.0	2043.0	1999.0	2010.8	2012.3	2066.1	2123.0
37°	2173.8	2195.2	2177.2	2129.1	2060.3	2018.9	1977.3	1987.4	1988.6	2045.5	2097.8
38°	2159.9	2174.2	2160.3	2107.2	2034.4	1999.1	1962.1	1969.1	1964.6	2025.1	2073.3
39°	2141.3	2154.9	2139.9	2089.7	2015.9	1981.0	1938.6	1952.9	1946.9	2003.8	2054.6
40°	2125.7	2133.5	2114.3	2068.2	1994.4	1956.3	1918.9	1928.3	1924.3	1978.8	2035.8
41°	2105.6	2111.9	2097.8	2050.0	1973.5	1930.1	1891.6	1899.6	1898.5	1956.2	2018.6
42°	2086.2	2088.4	2075.7	2030.3	1954.9	1911.9	1871.0	1872.2	1877.6	1943.2	1995.0
43°	2058.2	2054.4	2055.4	2008.2	1934.7	1885.1	1843.7	1853.1	1856.4	1922.3	1976.0
44°	2022.9	2040.8	2036.4	1984.2	1914.2	1858.7	1817.0	1831.9	1831.1	1897.7	1951.8



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**CANDELA DISTRIBUTION (continued):**

	0°	30°	60°	90°	120°	150°	180°	210°	240°	270°	300°
45°	1997.1	2025.6	2009.8	1966.0	1893.6	1838.7	1786.0	1815.3	1813.9	1877.1	1926.6
46°	1980.2	2001.2	1991.2	1948.7	1871.9	1810.2	1761.2	1786.5	1792.8	1853.2	1905.0
47°	1953.7	1981.5	1960.2	1926.7	1848.1	1790.0	1739.6	1763.2	1778.3	1826.5	1884.0
48°	1931.5	1956.6	1942.8	1904.8	1826.0	1770.9	1721.9	1739.1	1754.7	1803.1	1860.8
49°	1921.9	1930.6	1917.1	1881.8	1803.8	1748.1	1702.7	1714.8	1731.9	1779.9	1839.6
50°	1896.7	1904.5	1899.0	1859.9	1785.6	1720.5	1693.2	1688.7	1706.3	1762.3	1820.7
51°	1872.7	1890.6	1876.0	1833.8	1763.2	1699.1	1667.7	1667.5	1685.5	1735.4	1798.7
52°	1843.0	1857.7	1850.7	1808.7	1740.4	1673.9	1636.3	1645.6	1659.1	1710.8	1775.7
53°	1811.6	1834.4	1827.9	1779.8	1718.6	1647.7	1608.0	1634.8	1637.6	1685.8	1751.6
54°	1785.0	1800.1	1797.6	1754.7	1694.2	1629.5	1584.3	1613.9	1621.2	1656.8	1727.3
55°	1762.4	1773.8	1775.7	1728.7	1671.8	1607.9	1570.2	1593.9	1598.7	1629.8	1697.6
56°	1737.0	1755.0	1758.9	1705.2	1650.7	1591.4	1559.5	1576.0	1582.5	1611.7	1677.2
57°	1720.8	1736.4	1725.1	1675.4	1629.9	1571.9	1546.3	1563.5	1565.3	1587.7	1655.3
58°	1691.3	1717.6	1703.5	1655.5	1609.6	1552.4	1527.5	1548.9	1547.4	1570.1	1638.9
59°	1665.8	1696.3	1683.6	1628.5	1587.7	1534.0	1506.5	1534.8	1530.2	1553.9	1620.5
60°	1640.9	1670.9	1659.6	1605.4	1572.0	1517.5	1492.7	1524.8	1518.7	1544.4	1605.0
61°	1623.5	1647.7	1637.2	1583.7	1555.0	1496.9	1475.4	1503.8	1505.6	1535.7	1584.6
62°	1611.7	1624.1	1616.5	1562.3	1538.0	1471.3	1443.1	1492.1	1491.4	1531.9	1565.2
63°	1598.5	1605.9	1595.3	1549.5	1524.9	1450.6	1406.2	1470.0	1474.9	1535.4	1549.0
64°	1597.9	1590.5	1571.3	1539.1	1506.4	1419.3	1375.6	1437.0	1458.3	1528.7	1539.0
65°	1597.5	1576.4	1550.3	1520.5	1485.5	1393.6	1345.9	1395.5	1430.0	1518.5	1526.6
66°	1581.1	1559.0	1537.2	1502.8	1465.0	1363.9	1305.8	1360.3	1392.3	1493.1	1517.8
67°	1530.2	1542.1	1511.2	1477.5	1436.0	1324.7	1256.7	1305.6	1340.8	1456.2	1498.4
68°	1476.7	1524.2	1486.6	1448.4	1399.7	1281.6	1206.4	1250.2	1283.5	1408.3	1474.7
69°	1448.3	1502.3	1468.2	1413.3	1355.8	1234.2	1145.2	1192.7	1215.5	1347.2	1437.7
70°	1431.0	1468.8	1439.4	1370.3	1306.0	1180.7	1084.9	1115.6	1137.0	1279.1	1393.8
71°	1392.9	1428.9	1403.0	1325.3	1245.5	1124.2	1019.0	1039.9	1050.5	1199.1	1335.3
72°	1336.2	1383.1	1365.9	1269.2	1177.0	1057.3	947.6	960.7	957.7	1114.3	1265.3
73°	1278.5	1339.4	1310.8	1206.9	1102.2	982.7	868.8	874.1	865.9	1023.1	1185.9
74°	1220.8	1289.9	1258.9	1132.2	1020.7	906.6	780.6	786.6	772.2	927.0	1099.9
75°	1152.5	1235.8	1199.8	1051.7	934.5	825.1	699.4	697.3	678.4	828.4	1010.1
76°	1071.0	1168.8	1132.6	961.8	843.7	741.5	621.8	605.7	588.6	728.3	913.1
77°	981.9	1096.9	1059.5	864.0	755.0	661.4	547.4	522.5	505.2	630.8	819.9
78°	893.0	1030.1	981.9	759.1	665.0	583.8	475.8	444.7	428.6	534.5	722.3
79°	804.5	953.8	895.3	654.5	582.4	512.5	404.1	376.2	361.7	446.2	630.8
80°	709.8	870.8	816.2	559.0	505.7	446.7	333.0	316.3	303.8	367.6	543.4
81°	616.4	789.4	732.2	472.2	437.0	385.6	272.7	262.2	253.8	302.0	464.3
82°	521.5	710.9	655.5	399.7	375.7	332.7	223.3	218.4	211.6	248.0	394.3
83°	434.0	628.9	580.9	340.1	321.7	282.0	181.9	180.8	176.3	203.0	335.6
84°	354.4	551.7	512.2	286.3	276.3	240.2	150.0	150.5	146.9	167.1	280.2
85°	281.1	477.8	449.3	243.7	235.6	203.6	120.6	125.5	121.7	138.3	235.3
86°	226.0	411.2	390.9	207.9	200.1	172.5	98.9	105.4	102.5	112.6	196.1
87°	183.3	351.5	341.3	177.6	169.9	146.9	83.5	89.1	86.9	94.1	162.6
88°	149.9	298.5	294.2	151.9	145.0	125.8	70.7	76.8	74.8	79.5	134.2
89°	124.5	252.7	250.3	130.8	122.7	108.6	59.7	67.1	65.5	68.1	110.5





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**CANDELA DISTRIBUTION (continued):**

	0°	30°	60°	90°	120°	150°	180°	210°	240°	270°	300°
90°	104.3	211.7	212.8	113.1	105.9	95.6	49.6	59.5	58.3	59.4	91.5
91°	87.8	177.2	180.3	98.2	92.5	84.9	39.6	53.1	52.6	52.6	77.4
92°	73.3	147.7	152.2	84.9	82.0	76.2	31.3	47.9	48.1	47.1	66.8
93°	62.2	122.2	128.6	73.8	73.4	69.2	24.6	43.5	44.4	42.6	58.8
94°	53.4	102.5	110.2	64.1	66.3	63.2	19.4	39.8	41.6	38.8	52.9
95°	45.4	87.2	95.4	55.0	60.4	58.2	15.0	36.3	39.2	35.5	48.2
96°	38.5	75.7	84.4	46.8	55.4	54.0	12.1	33.6	37.4	32.5	44.6
97°	32.6	66.9	75.4	39.4	51.2	50.4	11.1	31.5	36.0	29.6	41.7
98°	27.4	60.1	68.2	33.1	47.8	47.4	10.4	29.5	34.9	27.0	39.5
99°	24.6	54.6	62.3	29.0	44.8	44.8	10.1	27.8	34.1	24.5	37.7
100°	23.5	50.2	57.5	27.0	42.4	42.4	9.9	25.9	33.6	21.9	36.4
101°	22.6	46.6	53.4	25.5	40.3	40.1	9.8	24.0	33.2	19.8	35.5
102°	21.9	43.8	49.9	24.2	38.6	37.9	9.4	22.3	32.9	18.5	34.7
103°	21.2	41.4	47.2	23.1	37.2	35.8	9.0	20.4	32.7	17.9	34.2
104°	20.6	39.6	44.9	22.5	36.0	33.6	8.4	18.6	32.4	17.5	33.9
105°	19.4	38.1	43.2	22.2	35.0	31.3	8.1	16.9	32.1	17.2	33.7
106°	18.0	37.1	41.6	22.1	34.1	29.2	8.1	15.3	31.7	17.0	33.6
107°	17.0	36.2	40.4	21.8	33.2	27.2	8.1	14.3	31.3	16.9	33.6
108°	15.7	35.6	39.4	21.6	32.4	25.2	8.2	14.3	30.7	16.9	33.7
109°	14.8	35.1	38.7	21.5	31.6	23.5	8.3	14.4	30.2	17.2	33.8
110°	15.0	34.7	38.0	21.4	30.7	22.0	8.4	14.5	29.5	17.5	33.7
111°	15.9	34.4	37.4	21.4	29.9	20.8	8.6	14.5	28.7	17.6	33.6
112°	16.8	34.2	36.8	21.4	29.1	19.9	8.7	14.4	27.6	17.6	33.4
113°	17.2	33.8	36.4	21.5	28.2	19.0	8.9	14.2	26.2	17.5	33.0
114°	17.4	33.6	35.9	21.4	27.3	18.3	9.0	13.8	24.7	17.4	32.7
115°	17.3	33.1	35.4	21.1	26.4	17.6	9.2	13.5	23.2	17.2	32.1
116°	17.3	32.9	34.8	20.8	25.4	16.9	9.3	13.1	22.0	16.9	31.5
117°	17.3	32.4	34.2	20.5	24.4	16.3	9.5	12.8	21.1	16.6	30.8
118°	17.3	31.8	33.6	20.1	23.4	15.7	9.6	12.5	20.3	16.1	29.9
119°	17.3	31.2	32.8	19.7	22.4	15.2	9.7	12.3	19.6	15.7	29.0
120°	17.1	30.6	32.0	19.3	21.4	14.6	9.9	12.0	19.0	15.3	28.0
121°	17.0	29.7	31.1	18.9	20.4	14.2	10.0	11.8	18.2	14.9	27.0
122°	16.7	28.9	30.3	18.4	19.4	13.7	10.1	11.6	17.3	14.6	25.9
123°	16.4	27.9	29.2	18.0	18.5	13.3	10.3	11.4	16.5	14.2	24.8
124°	16.1	27.0	28.1	17.5	17.7	12.9	10.4	11.3	15.8	13.9	23.6
125°	15.7	25.9	27.0	17.0	16.9	12.6	10.5	11.2	15.1	13.6	22.4
126°	15.2	24.8	25.8	16.5	16.2	12.3	10.6	11.1	14.5	13.3	21.3
127°	14.6	23.7	24.7	16.0	15.5	12.1	10.8	11.0	13.6	13.0	20.3
128°	13.9	22.6	23.5	15.5	14.9	11.9	10.9	10.9	12.3	12.8	19.2
129°	13.2	21.5	22.3	15.0	14.3	11.7	11.0	10.9	12.0	12.5	18.2
130°	12.5	20.5	21.2	14.5	13.9	11.5	11.1	10.9	12.4	12.3	17.3
131°	12.1	19.4	20.1	13.8	13.5	11.4	11.2	11.0	12.4	12.0	16.4
132°	12.0	18.5	19.1	13.3	13.1	11.3	11.3	11.1	12.2	11.8	15.6
133°	12.1	17.5	18.1	13.0	12.8	11.2	11.4	11.2	11.9	11.6	14.9
134°	12.2	16.7	17.1	12.8	12.5	11.2	11.5	11.3	11.8	11.5	14.2



REPORT NUMBER: P670470  
 CATALOG NUMBER: ALP90LSFSUNVDGY-60W-4000K

**CANDELA DISTRIBUTION (continued):**

	0°	30°	60°	90°	120°	150°	180°	210°	240°	270°	300°
135°	12.2	15.9	16.3	12.5	12.3	11.2	11.6	11.4	11.7	11.4	13.7
136°	12.1	15.2	15.4	12.1	12.1	11.3	11.7	11.5	11.6	11.3	13.1
137°	11.9	14.5	14.7	11.8	11.9	11.4	11.8	11.6	11.6	11.3	12.6
138°	11.7	13.9	14.0	11.7	11.8	11.5	11.8	11.7	11.5	11.4	12.2
139°	11.5	13.4	13.3	11.5	11.7	11.6	11.9	11.8	11.6	11.4	11.9
140°	11.4	12.9	12.8	11.5	11.6	11.7	12.0	11.9	11.7	11.5	11.6
141°	11.4	12.5	12.2	11.5	11.6	11.8	12.1	12.0	11.8	11.6	11.5
142°	11.3	12.1	11.8	11.5	11.7	11.9	12.1	12.1	11.9	11.7	11.4
143°	11.3	11.8	11.4	11.6	11.8	12.0	12.2	12.2	12.0	11.8	11.5
144°	11.3	11.6	11.2	11.7	11.8	12.1	12.3	12.3	12.1	11.9	11.7
145°	11.4	11.4	11.1	11.8	11.9	12.2	12.4	12.4	12.2	11.9	11.8
146°	11.5	11.4	11.2	11.8	12.1	12.3	12.5	12.5	12.3	12.0	11.9
147°	11.6	11.5	11.3	12.0	12.2	12.4	12.6	12.6	12.4	12.1	12.0
148°	11.7	11.6	11.4	12.1	12.2	12.5	12.6	12.6	12.5	12.2	12.1
149°	11.8	11.7	11.5	12.2	12.3	12.6	12.7	12.7	12.6	12.3	12.2
150°	11.9	11.8	11.6	12.3	12.4	12.7	12.8	12.8	12.7	12.4	12.3
151°	12.0	11.9	11.7	12.4	12.5	12.8	12.9	12.8	12.8	12.5	12.4
152°	12.1	12.0	11.8	12.5	12.6	12.9	13.0	12.9	12.9	12.6	12.5
153°	12.2	12.1	11.9	12.6	12.7	13.0	13.1	13.0	13.0	12.7	12.6
154°	12.4	12.2	12.0	12.7	12.8	13.1	13.2	13.1	13.1	12.8	12.7
155°	12.4	12.3	12.1	12.8	12.9	13.2	13.3	13.1	13.1	12.9	12.8
156°	12.6	12.4	12.2	12.9	12.9	13.3	13.4	13.2	13.2	13.0	12.9
157°	12.7	12.5	12.3	13.0	13.0	13.4	13.4	13.3	13.3	13.1	13.0
158°	12.8	12.6	12.4	13.1	13.1	13.4	13.5	13.4	13.4	13.2	13.1
159°	12.9	12.7	12.5	13.2	13.2	13.5	13.6	13.4	13.4	13.3	13.2
160°	13.0	12.8	12.6	13.3	13.3	13.6	13.7	13.5	13.5	13.4	13.3
161°	13.1	12.9	12.7	13.4	13.4	13.7	13.8	13.6	13.6	13.5	13.4
162°	13.2	13.0	12.8	13.6	13.5	13.7	13.9	13.6	13.6	13.6	13.5
163°	13.3	13.1	12.9	13.7	13.6	13.8	13.9	13.7	13.7	13.7	13.6
164°	13.4	13.2	13.0	13.8	13.7	13.9	14.0	13.8	13.8	13.8	13.7
165°	13.5	13.3	13.1	13.9	13.7	14.0	14.1	13.8	13.8	13.9	13.8
166°	13.7	13.4	13.2	14.0	13.8	14.0	14.2	13.9	13.9	14.0	13.9
167°	13.8	13.5	13.3	14.1	13.9	14.1	14.2	13.9	13.9	14.1	13.9
168°	13.9	13.6	13.4	14.2	14.0	14.2	14.3	14.0	14.0	14.2	14.0
169°	14.0	13.7	13.5	14.3	14.0	14.2	14.4	14.1	14.1	14.3	14.1
170°	14.1	13.8	13.6	14.4	14.1	14.3	14.5	14.1	14.1	14.4	14.2
171°	14.2	13.8	13.7	14.5	14.2	14.3	14.5	14.2	14.2	14.5	14.2
172°	14.3	13.9	13.8	14.6	14.2	14.4	14.6	14.2	14.2	14.6	14.3
173°	14.4	14.0	13.9	14.6	14.3	14.4	14.6	14.3	14.3	14.6	14.4
174°	14.4	14.1	13.9	14.7	14.4	14.5	14.7	14.3	14.3	14.7	14.4
175°	14.5	14.2	14.0	14.8	14.4	14.5	14.7	14.3	14.3	14.8	14.5
176°	14.6	14.2	14.1	14.9	14.5	14.5	14.8	14.4	14.3	14.8	14.5
177°	14.6	14.3	14.2	14.9	14.6	14.6	14.8	14.4	14.4	14.9	14.6
178°	14.7	14.3	14.2	14.9	14.6	14.6	14.8	14.4	14.4	14.9	14.6
179°	14.7	14.4	14.3	15.0	14.6	14.6	14.8	14.4	14.4	15.0	14.6



REPORT NUMBER: P670470  
CATALOG NUMBER: ALP90LSFSUNVDGY-60W-4000K

**CANDELA DISTRIBUTION (continued):**

	0°	30°	60°	90°	120°	150°	180°	210°	240°	270°	300°
180°	14.8	14.8	14.8	14.8	14.8	14.8	14.8	14.8	14.8	14.8	14.8



REPORT NUMBER: P670470  
CATALOG NUMBER: ALP90LSFSUNVDGY-60W-4000K

**CANDELA DISTRIBUTION (continued):**

	330°	360°
0°	2673.4	2673.4
1°	2674.7	2671.0
2°	2673.4	2677.1
3°	2671.5	2676.4
4°	2674.1	2674.9
5°	2671.9	2672.3
6°	2661.1	2670.3
7°	2650.0	2656.4
8°	2644.3	2647.1
9°	2640.8	2641.6
10°	2630.2	2631.7
11°	2628.1	2640.4
12°	2612.7	2632.5
13°	2604.1	2628.9
14°	2597.3	2625.8
15°	2589.8	2615.8
16°	2574.7	2592.7
17°	2557.3	2567.2
18°	2537.7	2545.7
19°	2518.0	2527.8
20°	2499.0	2523.5
21°	2483.5	2517.0
22°	2468.0	2508.4
23°	2451.1	2488.7
24°	2435.0	2478.3
25°	2415.0	2449.5
26°	2396.5	2427.3
27°	2371.5	2398.6
28°	2348.0	2374.2
29°	2330.3	2352.4
30°	2304.0	2342.1
31°	2281.3	2325.4
32°	2265.3	2303.5
33°	2245.0	2277.7
34°	2230.9	2252.5
35°	2212.9	2227.4
36°	2188.5	2200.7
37°	2163.7	2173.8
38°	2137.1	2159.9
39°	2115.3	2141.3
40°	2092.3	2125.7
41°	2071.7	2105.6
42°	2051.9	2086.2
43°	2031.2	2058.2
44°	2010.6	2022.9



REPORT NUMBER: P670470  
CATALOG NUMBER: ALP90LSFSUNVDGY-60W-4000K

**CANDELA DISTRIBUTION (continued):**

	330°	360°
45°	1989.6	1997.1
46°	1964.5	1980.2
47°	1945.9	1953.7
48°	1918.1	1931.5
49°	1886.3	1921.9
50°	1863.7	1896.7
51°	1838.4	1872.7
52°	1815.8	1843.0
53°	1792.2	1811.6
54°	1771.2	1785.0
55°	1746.7	1762.4
56°	1713.3	1737.0
57°	1688.8	1720.8
58°	1669.0	1691.3
59°	1651.8	1665.8
60°	1637.5	1640.9
61°	1616.1	1623.5
62°	1598.9	1611.7
63°	1582.7	1598.5
64°	1567.3	1597.9
65°	1558.8	1597.5
66°	1542.8	1581.1
67°	1524.7	1530.2
68°	1505.1	1476.7
69°	1473.4	1448.3
70°	1431.6	1431.0
71°	1382.7	1392.9
72°	1331.5	1336.2
73°	1265.5	1278.5
74°	1208.5	1220.8
75°	1140.3	1152.5
76°	1066.9	1071.0
77°	989.4	981.9
78°	902.3	893.0
79°	809.3	804.5
80°	714.0	709.8
81°	618.5	616.4
82°	530.1	521.5
83°	448.9	434.0
84°	379.2	354.4
85°	319.1	281.1
86°	269.3	226.0
87°	226.0	183.3
88°	188.6	149.9
89°	156.2	124.5



REPORT NUMBER: P670470  
CATALOG NUMBER: ALP90LSFSUNVDGY-60W-4000K

**CANDELA DISTRIBUTION (continued):**

	330°	360°
90°	128.2	104.3
91°	105.9	87.8
92°	87.6	73.3
93°	73.6	62.2
94°	63.2	53.4
95°	55.6	45.4
96°	49.7	38.5
97°	45.4	32.6
98°	42.1	27.4
99°	39.6	24.6
100°	37.5	23.5
101°	36.0	22.6
102°	34.9	21.9
103°	34.0	21.2
104°	33.4	20.6
105°	33.0	19.4
106°	32.7	18.0
107°	32.6	17.0
108°	32.5	15.7
109°	32.5	14.8
110°	32.4	15.0
111°	32.3	15.9
112°	32.2	16.8
113°	32.1	17.2
114°	31.9	17.4
115°	31.6	17.3
116°	31.1	17.3
117°	30.7	17.3
118°	30.0	17.3
119°	29.3	17.3
120°	28.6	17.1
121°	27.6	17.0
122°	26.7	16.7
123°	25.7	16.4
124°	24.6	16.1
125°	23.5	15.7
126°	22.5	15.2
127°	21.4	14.6
128°	20.3	13.9
129°	19.3	13.2
130°	18.3	12.5
131°	17.4	12.1
132°	16.5	12.0
133°	15.8	12.1
134°	15.1	12.2



REPORT NUMBER: P670470  
CATALOG NUMBER: ALP90LSFSUNVDGY-60W-4000K

**CANDELA DISTRIBUTION (continued):**

	330°	360°
135°	14.4	12.2
136°	13.9	12.1
137°	13.4	11.9
138°	12.9	11.7
139°	12.5	11.5
140°	12.2	11.4
141°	11.9	11.4
142°	11.7	11.3
143°	11.5	11.3
144°	11.4	11.3
145°	11.5	11.4
146°	11.6	11.5
147°	11.7	11.6
148°	11.8	11.7
149°	11.8	11.8
150°	11.9	11.9
151°	12.0	12.0
152°	12.1	12.1
153°	12.2	12.2
154°	12.3	12.4
155°	12.4	12.4
156°	12.5	12.6
157°	12.6	12.7
158°	12.7	12.8
159°	12.8	12.9
160°	12.9	13.0
161°	13.0	13.1
162°	13.1	13.2
163°	13.2	13.3
164°	13.3	13.4
165°	13.4	13.5
166°	13.5	13.7
167°	13.6	13.8
168°	13.7	13.9
169°	13.8	14.0
170°	13.9	14.1
171°	14.0	14.2
172°	14.1	14.3
173°	14.1	14.4
174°	14.2	14.4
175°	14.3	14.5
176°	14.3	14.6
177°	14.4	14.6
178°	14.5	14.7
179°	14.5	14.7



REPORT NUMBER: P670470  
CATALOG NUMBER: ALP90LSFSUNVDGY-60W-4000K

**CANDELA DISTRIBUTION (continued):**

	330°	360°
180°	14.8	14.8

(END OF REPORT)