

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269



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: NEO-RAY

Report Number: P913651

Luminaire Tested: DFN2DIP-HX4F0-060D120US927-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P913651
REPORT IS A COMBINATION OF REPORTS P899448 AND P896188
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX4F0-060D120US927-RLLFLL
Description: 4 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

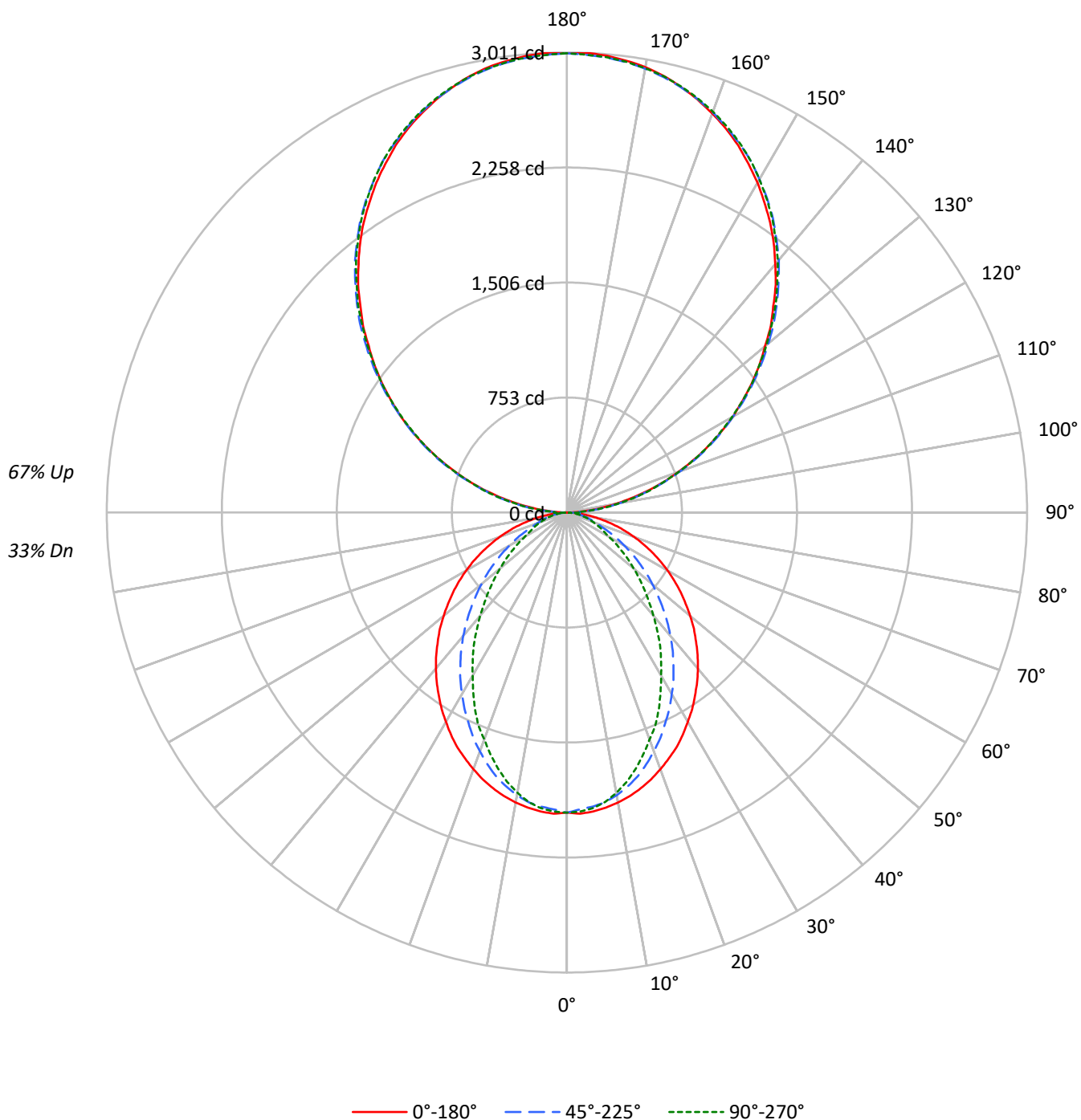
Lumens per Lamp: N/A
Luminaire Lumens: 12453.0 lumens
Efficiency: N/A
Efficacy: 97.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.54' x L: 4.09' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 127.4
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.099
Total Harmonic Distortion (THDi): 0.979
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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Luminous Intensity Polar Plot



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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20
RC	80				70				50				30				10
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10
RCR																	
0	103	103	103	103	93	93	93	93	74	74	74	56	56	56	40	40	40
1	94	90	86	83	85	81	78	75	65	63	61	50	48	47	36	35	34
2	86	79	73	68	77	71	67	62	57	54	51	44	42	40	32	31	29
3	79	70	63	57	71	63	57	52	51	46	43	39	36	34	29	27	25
4	72	62	54	49	65	56	50	45	45	41	37	35	32	29	26	24	22
5	66	55	47	42	59	50	43	38	40	36	32	32	28	26	23	21	19
6	61	49	42	36	55	45	38	33	36	32	28	29	25	23	21	19	17
7	56	45	37	32	51	41	34	29	33	28	25	26	23	20	19	17	15
8	52	40	33	28	47	37	30	26	30	25	22	24	20	18	18	16	14
9	49	37	30	25	44	34	27	23	28	23	20	22	19	16	17	14	13
10	45	34	27	22	41	31	25	21	25	21	18	20	17	15	15	13	11

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1461	1461	1461
5°	1463	1438	1447
10°	1449	1410	1400
15°	1429	1363	1327
20°	1403	1299	1238
25°	1376	1227	1152
30°	1340	1154	1042
35°	1304	1074	946
40°	1268	992	836
45°	1226	901	736
50°	1183	809	639
55°	1138	711	545
60°	1086	608	449
65°	1025	504	404
70°	952	406	366
75°	861	359	333
80°	728	301	289
85°	509	202	217

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 2267 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	184.1	1.5
10°-20°	505.4	4.1
20°-30°	709.6	5.7
30°-40°	773.5	6.2
40°-50°	710.9	5.7
50°-60°	558.3	4.5
60°-70°	363.4	2.9
70°-80°	187.1	1.5
80°-90°	56.3	0.5
90°-100°	186.0	1.5
100°-110°	591.1	4.7
110°-120°	1011.6	8.1
120°-130°	1330.4	10.7
130°-140°	1493.3	12.0
140°-150°	1464.3	11.8
150°-160°	1228.4	9.9
160°-170°	814.6	6.5
170°-180°	284.7	2.3
0°-30°	1399.1	11.2
0°-40°	2172.6	17.4
0°-60°	3441.9	27.6
0°-90°	4048.7	32.5
90°-120°	1788.7	14.4
90°-150°	6076.6	48.8
90°-180°	8404.0	67.5
0°-180°	12453.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1964	1964	1964	1964	1964	
5°	1964	1956	1932	1948	1943	186
15°	1868	1849	1788	1755	1737	527
25°	1696	1639	1522	1449	1422	780
35°	1461	1371	1214	1102	1063	915
45°	1195	1076	889	763	720	923
55°	908	770	578	471	437	812
65°	613	469	309	249	244	608
75°	327	203	142	130	128	346
85°	76	39	34	34	34	88
90°	3	33	89	83	86	12
95°	132	158	162	162	158	147
105°	546	553	558	563	563	576
115°	1015	1030	1025	1022	1015	1004
125°	1476	1499	1492	1484	1481	1319
135°	1910	1938	1943	1940	1933	1476
145°	2318	2337	2351	2354	2344	1449
155°	2651	2658	2667	2679	2671	1220
165°	2884	2881	2881	2900	2887	814
175°	3001	2994	2988	3006	2991	285
180°	3006	3006	3006	3006	3006	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1964.5	1964.5	1964.5	1964.5	1964.5
2.5°	1973.3	1964.5	1944.8	1962.7	1959.1
5°	1964.5	1955.6	1932.4	1948.4	1943.1
7.5°	1948.4	1937.8	1913.0	1919.9	1911.1
10°	1927.1	1914.6	1879.2	1873.7	1863.1
12.5°	1900.5	1884.4	1836.4	1825.8	1806.2
15°	1868.4	1848.8	1788.4	1754.7	1736.9
17.5°	1831.1	1802.6	1727.9	1688.9	1660.4
20°	1788.4	1752.8	1664.0	1619.6	1580.4
22.5°	1742.2	1701.3	1598.1	1537.8	1511.2
25°	1696.1	1639.1	1521.8	1449.0	1422.2
27.5°	1641.0	1580.4	1450.6	1367.1	1326.2
30°	1582.3	1514.6	1372.4	1281.8	1233.7
32.5°	1525.3	1443.5	1297.9	1191.1	1146.6
35°	1461.4	1370.7	1214.3	1102.2	1063.0
37.5°	1399.2	1301.2	1136.1	1013.3	968.9
40°	1333.3	1226.8	1054.2	928.0	881.8
42.5°	1265.8	1152.1	972.5	840.8	796.5
45°	1194.7	1075.5	889.0	762.6	719.9
47.5°	1127.2	1001.0	809.0	682.6	643.6
50°	1052.5	926.3	730.7	607.9	570.8
52.5°	979.5	846.1	656.0	538.7	504.9
55°	908.4	769.8	577.7	471.2	437.4
57.5°	835.6	693.3	508.5	408.9	380.4
60°	760.9	618.7	435.5	345.0	316.5
62.5°	688.1	545.9	373.3	288.0	273.9
65°	613.4	469.3	309.3	249.0	243.5
67.5°	542.2	398.2	249.0	218.6	213.3
70°	467.5	328.9	206.1	188.5	181.3
72.5°	396.5	264.8	172.4	158.3	154.6
75°	327.1	202.6	142.2	129.8	128.1
77.5°	257.9	143.9	112.0	104.9	101.3
80°	193.7	103.1	85.2	78.3	78.3
82.5°	135.1	69.4	58.6	55.1	55.1
85°	76.4	39.1	33.7	33.7	33.7
87.5°	28.5	14.2	14.2	12.4	12.4
90°	2.7	32.6	88.8	83.4	86.1
92.5°	56.2	76.1	78.8	81.6	81.6
95°	132.3	157.7	162.2	162.2	157.7
97.5°	220.2	243.8	253.8	253.8	253.8
100°	321.8	342.6	349.8	349.8	347.1
102.5°	428.7	444.1	454.1	456.9	454.1
105°	545.7	552.9	558.3	562.8	562.8
107.5°	661.6	672.6	672.6	674.3	661.6
110°	774.0	788.5	788.5	788.5	781.3

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	895.5	910.9	908.2	900.9	895.5
115°	1015.1	1029.7	1025.1	1022.4	1015.1
117.5°	1133.8	1153.8	1141.1	1133.8	1126.6
120°	1253.5	1273.4	1253.5	1253.5	1245.4
122.5°	1362.3	1387.7	1375.0	1367.7	1362.3
125°	1476.5	1499.1	1491.9	1483.8	1481.0
127.5°	1588.0	1616.0	1606.1	1595.2	1588.0
130°	1692.2	1724.8	1720.3	1714.8	1704.9
132.5°	1809.1	1834.5	1836.3	1823.6	1816.4
135°	1909.7	1937.8	1943.3	1940.5	1933.3
137.5°	2022.1	2044.8	2049.3	2047.5	2036.6
140°	2120.9	2143.6	2156.2	2156.2	2146.3
142.5°	2222.5	2245.1	2252.3	2255.0	2245.1
145°	2318.5	2336.6	2351.1	2353.9	2343.9
147.5°	2404.6	2427.2	2438.2	2442.7	2432.7
150°	2493.5	2508.8	2518.8	2527.0	2518.8
152.5°	2572.3	2587.7	2600.4	2610.4	2600.4
155°	2651.1	2658.4	2666.6	2679.2	2671.1
157.5°	2719.2	2724.5	2729.1	2747.2	2734.5
160°	2779.8	2785.3	2788.0	2803.4	2792.5
162.5°	2836.0	2836.0	2838.8	2856.0	2843.3
165°	2884.1	2881.4	2881.4	2899.5	2886.8
167.5°	2927.6	2919.4	2919.4	2937.6	2924.9
170°	2960.2	2952.9	2950.2	2968.4	2952.9
172.5°	2982.9	2975.6	2972.9	2991.0	2975.6
175°	3001.0	2993.7	2988.3	3006.4	2991.0
177.5°	3011.0	3003.7	2998.2	3013.7	2998.2
180°	3006.4	3006.4	3006.4	3006.4	3006.4

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CIE UGR TABLE:

Reflectances:											
Ceiling		0.7	0.7	0.5	0.5	0.3	0.7	0.7	0.5	0.5	0.3
Wall		0.5	0.3	0.5	0.3	0.3	0.5	0.3	0.5	0.3	0.3
Reference plane		0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Room dimensions		Viewed crosswise					Viewed endwise				
X=2H	Y=2H	6.56	7.27	7.66	8.36	9.86	2.54	3.24	3.64	4.33	5.84
	3H	8.23	8.86	9.34	9.96	11.48	3.72	4.35	4.82	5.45	6.97
	4H	8.83	9.43	9.95	10.54	12.06	4.16	4.76	5.28	5.86	7.39
	6H	9.25	9.80	10.38	10.91	12.44	4.48	5.03	5.61	6.13	7.67
	8H	9.37	9.90	10.50	11.02	12.55	4.57	5.09	5.70	6.21	7.74
	12H	9.43	9.93	10.57	11.04	12.60	4.61	5.10	5.74	6.22	7.77
4H	2H	6.57	7.16	7.69	8.27	9.79	3.12	3.71	4.24	4.82	6.34
	3H	8.38	8.88	9.52	10.01	11.55	4.46	4.95	5.59	6.08	7.62
	4H	9.07	9.53	10.21	10.65	12.21	5.00	5.46	6.14	6.58	8.14
	6H	9.58	9.97	10.72	11.11	12.66	5.42	5.81	6.56	6.95	8.50
	8H	9.76	10.12	10.90	11.25	12.82	5.54	5.91	6.68	7.04	8.61
	12H	9.85	10.18	11.00	11.32	12.89	5.60	5.94	6.76	7.08	8.65
8H	4H	9.03	9.40	10.17	10.53	12.10	5.27	5.64	6.41	6.77	8.34
	6H	9.59	9.90	10.76	11.07	12.63	5.79	6.09	6.95	7.27	8.83
	8H	9.81	10.07	10.98	11.23	12.81	5.98	6.24	7.15	7.40	8.98
	12H	9.95	10.18	11.12	11.33	12.95	6.10	6.33	7.27	7.48	9.10
12H	4H	8.98	9.31	10.13	10.45	12.02	5.27	5.60	6.43	6.75	8.32
	6H	9.57	9.83	10.74	10.99	12.57	5.84	6.10	7.00	7.26	8.84
	8H	9.79	10.02	10.96	11.17	12.79	6.05	6.28	7.22	7.43	9.05

END OF REPORT