

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: P928302

Luminaire Tested: DFN2DIP-HX4F0-070D100US927-RLLONL

Issue Date: 12/12/2024

Test Information

Test Method: LM-79-2019
Report Number: P928302
REPORT IS A COMBINATION OF REPORTS P900934 AND P896187
Test Lab: INNOVATION CENTER
Issue Date: 12/12/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX4F0-070D100US927-RLLONL
Description: 4 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

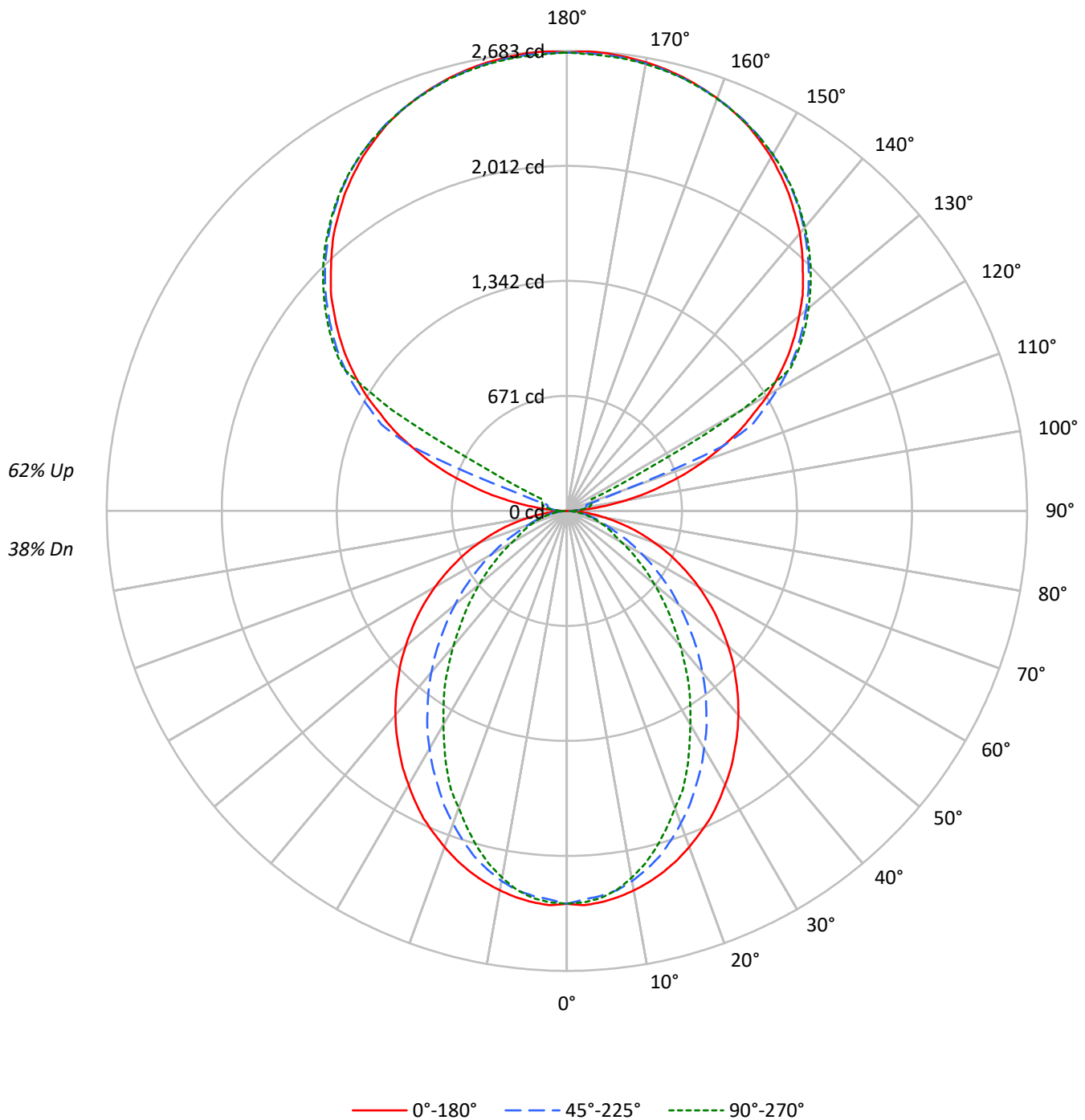
Lumens per Lamp: N/A
Luminaire Lumens: 12553.2 lumens
Efficiency: N/A
Efficacy: 88.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.54' x L: 4.09' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 142.4
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9972
Total Harmonic Distortion (THDi): 0.128
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	104	104	104	104	95	95	95	95	76	76	76	60	60	60	45	45	45
1	95	91	88	84	86	83	80	77	67	65	63	53	52	51	40	39	38
2	87	80	74	69	79	73	68	64	60	56	53	47	45	43	36	34	33
3	80	71	64	58	72	64	58	54	53	48	45	42	39	37	32	30	28
4	73	63	55	49	66	57	51	46	47	42	39	38	34	32	29	27	25
5	67	56	48	42	61	51	44	39	42	37	33	34	30	28	26	24	22
6	62	50	43	37	56	46	39	34	38	33	29	31	27	24	24	21	19
7	57	45	38	32	52	42	35	30	35	30	26	28	24	22	22	19	17
8	53	41	34	29	48	38	31	27	32	27	23	26	22	19	20	18	16
9	49	38	30	26	45	35	28	24	29	24	21	24	20	17	19	16	14
10	46	35	28	23	42	32	26	21	27	22	19	22	18	16	17	15	13

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1704	1704	1704
5°	1707	1677	1688
10°	1690	1644	1633
15°	1667	1590	1548
20°	1636	1515	1444
25°	1605	1431	1343
30°	1563	1345	1216
35°	1521	1253	1104
40°	1479	1157	975
45°	1430	1051	859
50°	1380	944	745
55°	1327	829	636
60°	1266	710	523
65°	1196	588	471
70°	1111	474	426
75°	1004	418	388
80°	850	352	337
85°	594	236	254

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1430 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	214.7	1.7
10°-20°	589.5	4.7
20°-30°	827.7	6.6
30°-40°	902.2	7.2
40°-50°	829.2	6.6
50°-60°	651.2	5.2
60°-70°	423.9	3.4
70°-80°	218.2	1.7
80°-90°	60.4	0.5
90°-100°	88.1	0.7
100°-110°	328.6	2.6
110°-120°	871.4	6.9
120°-130°	1445.3	11.5
130°-140°	1535.2	12.2
140°-150°	1426.8	11.4
150°-160°	1147.1	9.1
160°-170°	739.2	5.9
170°-180°	254.4	2.0
0°-30°	1631.9	13.0
0°-40°	2534.1	20.2
0°-60°	4014.6	32.0
0°-90°	4717.1	37.6
90°-120°	1288.1	10.3
90°-150°	5695.4	45.4
90°-180°	7836.0	62.4
0°-180°	12553.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2291	2291	2291	2291	2291	
5°	2291	2281	2254	2273	2266	217
15°	2179	2156	2086	2047	2026	614
25°	1978	1912	1775	1690	1659	910
35°	1704	1599	1416	1286	1240	1067
45°	1394	1254	1037	890	840	1076
55°	1060	898	674	550	510	947
65°	715	547	361	290	284	709
75°	382	236	166	151	149	403
85°	89	46	39	39	39	102
90°	2	23	39	48	52	12
95°	126	62	75	85	83	149
105°	588	646	118	139	147	628
115°	1112	1145	1193	298	159	1095
125°	1572	1598	1634	1648	1654	1402
135°	1946	1977	1994	2014	2010	1503
145°	2257	2255	2288	2302	2292	1412
155°	2485	2468	2491	2503	2487	1145
165°	2619	2607	2613	2626	2613	740
175°	2679	2665	2669	2683	2663	255
180°	2673	2673	2673	2673	2673	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2291.3	2291.3	2291.3	2291.3	2291.3
2.5°	2301.6	2291.3	2268.4	2289.4	2285.2
5°	2291.3	2281.0	2254.0	2272.6	2266.5
7.5°	2272.6	2260.3	2231.3	2239.4	2229.1
10°	2247.8	2233.3	2191.9	2185.5	2173.2
12.5°	2216.7	2198.0	2142.0	2129.6	2106.7
15°	2179.3	2156.5	2086.0	2046.7	2026.0
17.5°	2135.8	2102.6	2015.5	1969.9	1936.7
20°	2086.0	2044.5	1940.9	1889.2	1843.4
22.5°	2032.2	1984.4	1864.1	1793.6	1762.7
25°	1978.3	1911.8	1775.0	1690.0	1658.8
27.5°	1914.0	1843.4	1692.0	1594.6	1546.9
30°	1845.6	1766.6	1600.7	1495.1	1439.1
32.5°	1779.1	1683.7	1513.8	1389.3	1337.4
35°	1704.5	1598.7	1416.4	1285.7	1240.0
37.5°	1632.0	1517.8	1325.1	1181.8	1130.2
40°	1555.2	1430.9	1229.6	1082.4	1028.5
42.5°	1476.4	1343.8	1134.3	980.7	929.1
45°	1393.5	1254.4	1036.9	889.5	839.8
47.5°	1314.7	1167.6	943.6	796.2	750.7
50°	1227.6	1080.4	852.3	709.1	665.8
52.5°	1142.5	986.9	765.2	628.3	588.9
55°	1059.5	897.8	673.8	549.6	510.2
57.5°	974.6	808.7	593.1	476.9	443.8
60°	887.5	721.6	508.0	402.4	369.2
62.5°	802.5	636.7	435.4	336.0	319.4
65°	715.4	547.4	360.8	290.4	284.0
67.5°	632.5	464.4	290.4	254.9	248.8
70°	545.4	383.6	240.5	219.8	211.4
72.5°	462.4	308.9	201.1	184.6	180.4
75°	381.5	236.3	165.8	151.4	149.4
77.5°	300.7	167.8	130.7	122.3	118.2
80°	226.0	120.3	99.5	91.3	91.3
82.5°	157.5	80.9	68.4	64.2	64.2
85°	89.1	45.5	39.4	39.4	39.4
87.5°	33.2	16.5	16.5	14.5	14.5
90°	1.8	23.2	38.6	48.5	52.1
92.5°	48.5	40.6	46.4	50.3	52.1
95°	125.6	61.8	75.3	85.2	83.2
97.5°	226.2	67.7	98.5	104.5	106.4
100°	342.5	77.4	110.2	125.6	129.6
102.5°	469.9	466.3	114.1	135.3	141.2
105°	588.0	646.0	118.1	139.2	147.0
107.5°	725.3	773.5	122.0	143.1	150.9
110°	856.9	897.3	338.5	145.2	152.7

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	980.7	1015.3	982.6	148.8	154.8
115°	1112.0	1144.9	1193.4	297.9	158.7
117.5°	1226.2	1264.8	1297.9	1021.1	514.5
120°	1353.9	1382.8	1417.8	1441.0	1179.8
122.5°	1462.1	1493.1	1531.9	1543.4	1545.4
125°	1572.4	1597.6	1634.4	1647.9	1653.6
127.5°	1672.9	1700.0	1729.2	1748.5	1750.3
130°	1767.7	1798.8	1819.9	1841.2	1839.4
132.5°	1864.4	1889.7	1910.9	1928.3	1926.5
135°	1945.8	1976.8	1994.0	2013.5	2009.6
137.5°	2030.8	2054.0	2073.5	2092.8	2087.0
140°	2113.8	2129.5	2150.6	2168.1	2158.4
142.5°	2183.7	2197.2	2222.3	2237.6	2228.1
145°	2257.2	2255.1	2288.0	2301.6	2291.9
147.5°	2320.8	2315.1	2347.9	2357.5	2350.0
150°	2382.8	2369.3	2400.3	2411.8	2402.1
152.5°	2434.9	2419.6	2448.5	2460.2	2446.6
155°	2485.3	2468.0	2491.2	2502.7	2487.4
157.5°	2525.9	2510.6	2528.0	2541.5	2525.9
160°	2560.9	2549.1	2560.9	2572.3	2558.8
162.5°	2591.6	2580.1	2589.8	2603.3	2585.9
165°	2618.7	2607.2	2613.0	2626.5	2613.0
167.5°	2640.1	2628.3	2634.4	2647.9	2630.4
170°	2657.5	2645.8	2649.7	2663.3	2645.8
172.5°	2669.0	2657.5	2661.4	2675.0	2657.5
175°	2678.6	2665.1	2669.0	2682.6	2663.3
177.5°	2682.6	2669.0	2671.1	2684.6	2667.1
180°	2672.9	2672.9	2672.9	2672.9	2672.9

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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	7.72	8.45	8.78	9.52	10.96	3.69	4.43	4.75	5.49	6.93
	3H	9.39	10.05	10.46	11.12	12.58	4.87	5.53	5.94	6.60	8.06
	4H	9.99	10.62	11.08	11.69	13.16	5.32	5.94	6.40	7.02	8.48
	6H	10.41	10.99	11.50	12.06	13.54	5.64	6.21	6.73	7.29	8.77
	8H	10.53	11.08	11.63	12.17	13.64	5.73	6.27	6.82	7.36	8.84
	12H	10.59	11.11	11.69	12.20	13.69	5.77	6.29	6.87	7.37	8.87
4H	2H	7.72	8.35	8.81	9.42	10.89	4.27	4.90	5.36	5.97	7.44
	3H	9.55	10.07	10.64	11.16	12.64	5.62	6.14	6.71	7.24	8.71
	4H	10.23	10.71	11.34	11.80	13.30	6.16	6.64	7.26	7.73	9.23
	6H	10.75	11.15	11.86	12.27	13.76	6.58	6.99	7.69	8.10	9.59
	8H	10.92	11.30	12.03	12.41	13.91	6.71	7.09	7.82	8.19	9.70
	12H	11.01	11.36	12.14	12.47	13.99	6.77	7.11	7.90	8.23	9.74
8H	4H	10.20	10.58	11.31	11.68	13.19	6.44	6.82	7.55	7.92	9.43
	6H	10.76	11.07	11.89	12.22	13.73	6.95	7.27	8.09	8.42	9.92
	8H	10.98	11.25	12.11	12.38	13.90	7.15	7.42	8.28	8.55	10.07
	12H	11.11	11.35	12.25	12.48	14.04	7.26	7.51	8.40	8.63	10.19
12H	4H	10.14	10.49	11.27	11.61	13.12	6.44	6.78	7.56	7.90	9.41
	6H	10.74	11.01	11.87	12.14	13.66	7.00	7.28	8.14	8.41	9.93
	8H	10.95	11.19	12.09	12.32	13.88	7.21	7.45	8.35	8.58	10.14

END OF REPORT