

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: P924432

Luminaire Tested: DFN2DIP-HX3F0-060D070US950-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P924432
REPORT IS A COMBINATION OF REPORTS P899264 AND P896089
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX3F0-060D070US950-RLLFLL
Description: 3 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

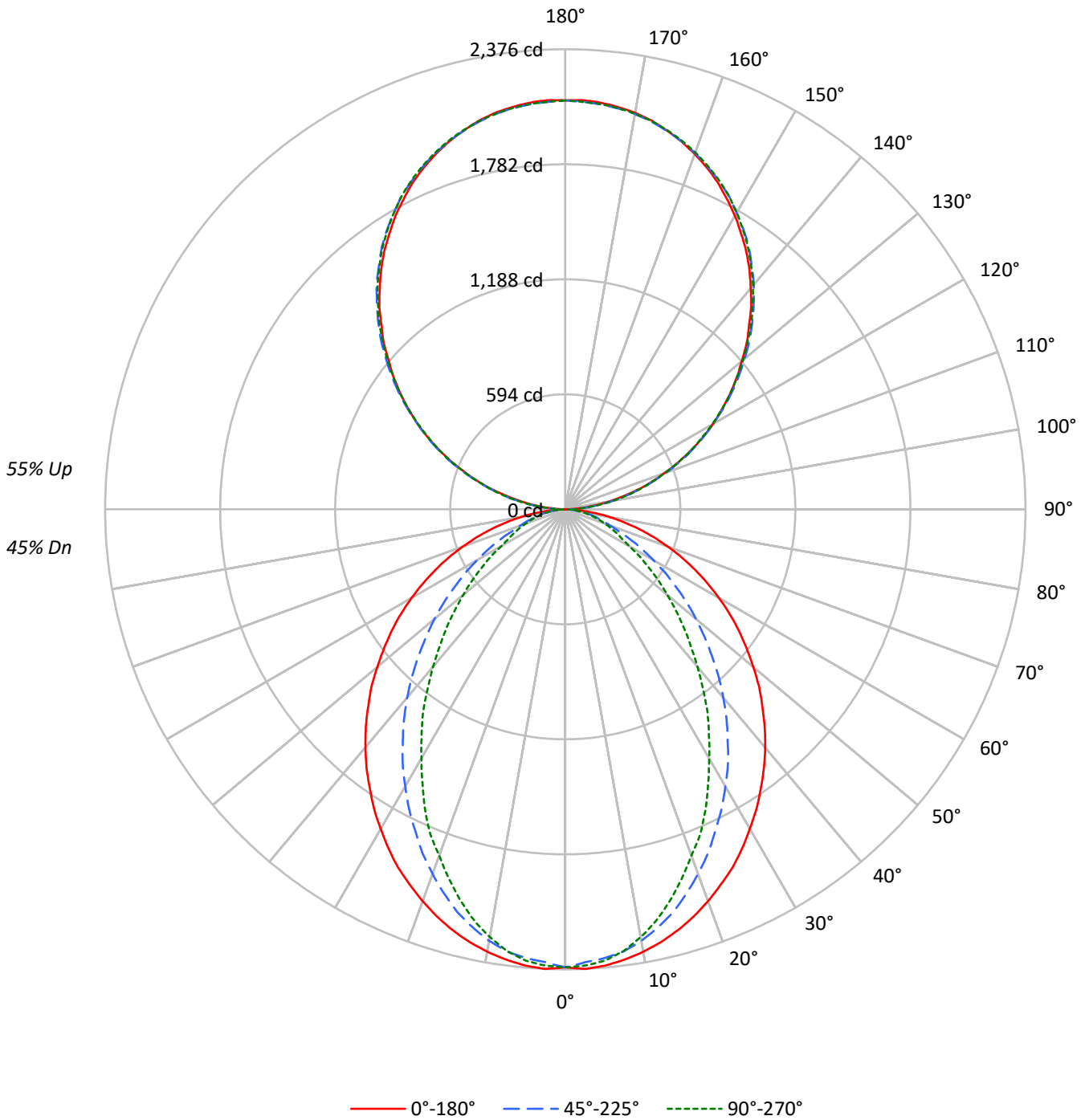
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 10775.5 lumens
Efficiency: N/A
Efficacy: 97.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.84' x L: 3.28' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 110.1
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9933
Total Harmonic Distortion (THDi): 0.066
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			0	
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																					
0	106	106	106	106	97	97	97	97	81	81	81	66	66	66	52	52	52	45	45	45	45
1	97	93	89	86	89	85	82	79	71	69	67	58	57	55	46	45	44	39	39	39	39
2	89	82	76	71	81	75	70	66	63	59	56	52	49	47	41	40	38	33	33	33	33
3	81	72	65	60	74	67	60	56	56	51	48	46	43	40	37	35	33	29	29	29	29
4	75	64	57	51	68	59	53	47	50	45	41	41	38	35	33	31	29	25	25	25	25
5	69	57	50	44	63	53	46	41	45	40	36	37	33	30	30	28	25	22	22	22	22
6	63	52	44	38	58	48	41	36	41	35	31	34	30	27	28	25	23	20	20	20	20
7	59	47	39	34	54	43	36	32	37	32	28	31	27	24	25	22	20	18	18	18	18
8	54	42	35	30	50	39	33	28	34	28	25	28	24	21	23	20	18	16	16	16	16
9	51	39	32	27	47	36	30	25	31	26	22	26	22	19	22	19	17	14	14	14	14
10	47	36	29	24	44	33	27	23	29	24	20	24	20	18	20	17	15	13	13	13	13

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2740	2740	2740
5°	2743	2695	2713
10°	2715	2640	2623
15°	2676	2551	2485
20°	2626	2429	2316
25°	2574	2293	2154
30°	2505	2153	1948
35°	2437	2003	1767
40°	2367	1848	1560
45°	2287	1676	1372
50°	2204	1503	1189
55°	2117	1318	1013
60°	2016	1125	832
65°	1900	928	747
70°	1760	745	674
75°	1583	653	610
80°	1327	542	524
85°	906	352	385

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 2287 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	221.7	2.1
10°-20°	608.7	5.6
20°-30°	854.5	7.9
30°-40°	931.5	8.6
40°-50°	856.2	7.9
50°-60°	672.4	6.2
60°-70°	437.7	4.1
70°-80°	225.3	2.1
80°-90°	63.5	0.6
90°-100°	130.7	1.2
100°-110°	415.3	3.9
110°-120°	710.6	6.6
120°-130°	934.6	8.7
130°-140°	1049.0	9.7
140°-150°	1028.7	9.5
150°-160°	862.9	8.0
160°-170°	572.3	5.3
170°-180°	200.0	1.9
0°-30°	1684.9	15.6
0°-40°	2616.4	24.3
0°-60°	4144.9	38.5
0°-90°	4871.4	45.2
90°-120°	1256.6	11.7
90°-150°	4268.9	39.6
90°-180°	5904.0	54.8
0°-180°	10775.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2366	2366	2366	2366	2366	
5°	2366	2355	2327	2346	2340	224
15°	2250	2226	2154	2113	2092	634
25°	2042	1974	1833	1745	1713	939
35°	1760	1651	1462	1327	1280	1102
45°	1439	1295	1071	918	867	1111
55°	1094	927	696	567	527	978
65°	739	565	372	300	293	732
75°	394	244	171	156	154	417
85°	92	47	41	41	41	106
90°	2	23	62	59	60	11
95°	93	111	114	114	111	103
105°	383	388	392	395	395	405
115°	713	723	720	718	713	705
125°	1037	1053	1048	1042	1040	927
135°	1342	1361	1365	1363	1358	1037
145°	1629	1642	1652	1654	1647	1018
155°	1862	1868	1873	1882	1876	857
165°	2026	2024	2024	2037	2028	572
175°	2108	2103	2099	2112	2101	200
180°	2112	2112	2112	2112	2112	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2365.7	2365.7	2365.7	2365.7	2365.7
2.5°	2376.4	2365.7	2342.1	2363.6	2359.3
5°	2365.7	2355.0	2327.1	2346.5	2340.1
7.5°	2346.5	2333.7	2303.7	2312.1	2301.4
10°	2320.7	2305.7	2263.1	2256.5	2243.7
12.5°	2288.7	2269.4	2211.5	2198.8	2175.1
15°	2250.1	2226.4	2153.8	2113.1	2091.7
17.5°	2205.2	2170.8	2080.9	2033.8	1999.6
20°	2153.8	2110.8	2003.9	1950.5	1903.2
22.5°	2098.1	2048.8	1924.6	1851.9	1819.9
25°	2042.5	1973.9	1832.6	1745.0	1712.7
27.5°	1976.2	1903.2	1747.0	1646.3	1597.1
30°	1905.5	1824.0	1652.7	1543.7	1485.8
32.5°	1836.9	1738.4	1563.0	1434.4	1380.8
35°	1759.9	1650.7	1462.4	1327.4	1280.2
37.5°	1685.0	1567.0	1368.1	1220.3	1166.8
40°	1605.7	1477.4	1269.5	1117.5	1061.9
42.5°	1524.4	1387.4	1171.1	1012.6	959.2
45°	1438.7	1295.2	1070.6	918.3	867.0
47.5°	1357.4	1205.5	974.2	822.1	775.0
50°	1267.5	1115.5	880.0	732.1	687.4
52.5°	1179.5	1019.0	790.0	648.7	608.1
55°	1094.0	927.0	695.8	567.4	526.7
57.5°	1006.3	834.9	612.4	492.5	458.1
60°	916.3	745.1	524.5	415.5	381.1
62.5°	828.6	657.4	449.5	346.9	329.8
65°	738.7	565.1	372.5	299.8	293.3
67.5°	653.0	479.5	299.8	263.3	256.9
70°	563.1	396.1	248.2	227.0	218.3
72.5°	477.5	318.9	207.6	190.6	186.2
75°	393.9	243.9	171.2	156.3	154.3
77.5°	310.5	173.3	134.9	126.3	122.0
80°	233.3	124.2	102.7	94.3	94.3
82.5°	162.7	83.6	70.6	66.3	66.3
85°	92.0	47.0	40.6	40.6	40.6
87.5°	34.3	17.1	17.1	15.0	15.0
90°	1.9	22.9	62.4	58.6	60.5
92.5°	39.5	53.5	55.4	57.3	57.3
95°	92.9	110.8	114.0	114.0	110.8
97.5°	154.7	171.2	178.3	178.3	178.3
100°	226.0	240.7	245.8	245.8	243.8
102.5°	301.2	312.0	319.0	320.9	319.0
105°	383.3	388.4	392.2	395.4	395.4
107.5°	464.8	472.4	472.4	473.8	464.8
110°	543.8	554.0	554.0	554.0	548.8



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	629.1	639.9	638.0	632.9	629.1
115°	713.1	723.3	720.2	718.3	713.1
117.5°	796.5	810.5	801.6	796.5	791.4
120°	880.5	894.6	880.5	880.5	874.8
122.5°	957.0	974.8	965.9	960.8	957.0
125°	1037.2	1053.1	1048.1	1042.3	1040.4
127.5°	1115.5	1135.3	1128.3	1120.7	1115.5
130°	1188.8	1211.7	1208.5	1204.7	1197.7
132.5°	1270.9	1288.8	1290.0	1281.1	1276.0
135°	1341.6	1361.3	1365.2	1363.2	1358.1
137.5°	1420.5	1436.4	1439.6	1438.3	1430.7
140°	1490.0	1505.9	1514.8	1514.8	1507.8
142.5°	1561.2	1577.2	1582.2	1584.1	1577.2
145°	1628.8	1641.5	1651.7	1653.6	1646.6
147.5°	1689.2	1705.2	1712.8	1716.0	1709.0
150°	1751.6	1762.4	1769.5	1775.2	1769.5
152.5°	1807.0	1817.8	1826.7	1833.8	1826.7
155°	1862.4	1867.5	1873.3	1882.1	1876.4
157.5°	1910.2	1914.0	1917.2	1929.9	1921.0
160°	1952.8	1956.7	1958.6	1969.3	1961.7
162.5°	1992.3	1992.3	1994.2	2006.3	1997.4
165°	2026.0	2024.1	2024.1	2036.9	2027.9
167.5°	2056.6	2050.9	2050.9	2063.6	2054.7
170°	2079.5	2074.5	2072.6	2085.3	2074.5
172.5°	2095.5	2090.3	2088.4	2101.2	2090.3
175°	2108.1	2103.1	2099.3	2112.0	2101.2
177.5°	2115.2	2110.1	2106.2	2117.1	2106.2
180°	2112.0	2112.0	2112.0	2112.0	2112.0



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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	10.14	10.93	11.14	11.94	13.28	6.12	6.91	7.12	7.92	9.26
	3H	11.81	12.51	12.82	13.53	14.89	7.30	8.01	8.31	9.02	10.39
	4H	12.41	13.08	13.43	14.10	15.47	7.74	8.41	8.77	9.44	10.80
	6H	12.82	13.44	13.86	14.46	15.85	8.06	8.68	9.10	9.70	11.08
	8H	12.94	13.53	13.98	14.57	15.95	8.15	8.73	9.19	9.77	11.15
	12H	13.00	13.56	14.05	14.59	15.99	8.19	8.74	9.23	9.78	11.18
4H	2H	10.15	10.82	11.18	11.84	13.21	6.70	7.37	7.74	8.39	9.76
	3H	11.97	12.53	13.01	13.58	14.96	8.04	8.60	9.08	9.65	11.03
	4H	12.65	13.16	13.70	14.21	15.61	8.59	9.10	9.63	10.14	11.54
	6H	13.16	13.60	14.22	14.66	16.06	9.00	9.44	10.06	10.50	11.90
	8H	13.33	13.74	14.39	14.80	16.21	9.12	9.53	10.18	10.59	12.01
	12H	13.42	13.79	14.49	14.86	16.28	9.19	9.55	10.26	10.63	12.05
8H	4H	12.62	13.03	13.68	14.08	15.50	8.86	9.27	9.92	10.33	11.74
	6H	13.17	13.51	14.25	14.61	16.02	9.37	9.71	10.45	10.81	12.22
	8H	13.38	13.68	14.47	14.76	16.20	9.56	9.85	10.65	10.94	12.37
	12H	13.52	13.78	14.61	14.85	16.33	9.67	9.93	10.76	11.01	12.48
12H	4H	12.57	12.94	13.64	14.01	15.43	8.86	9.23	9.94	10.30	11.72
	6H	13.15	13.44	14.24	14.53	15.96	9.42	9.71	10.51	10.80	12.23
	8H	13.36	13.62	14.45	14.70	16.17	9.62	9.88	10.71	10.96	12.43