

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: P924553

Luminaire Tested: DFN2DIP-HX4F0-060D070US950-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P924553
REPORT IS A COMBINATION OF REPORTS P899358 AND P896188
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX4F0-060D070US950-RLLFLL
Description: 4 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

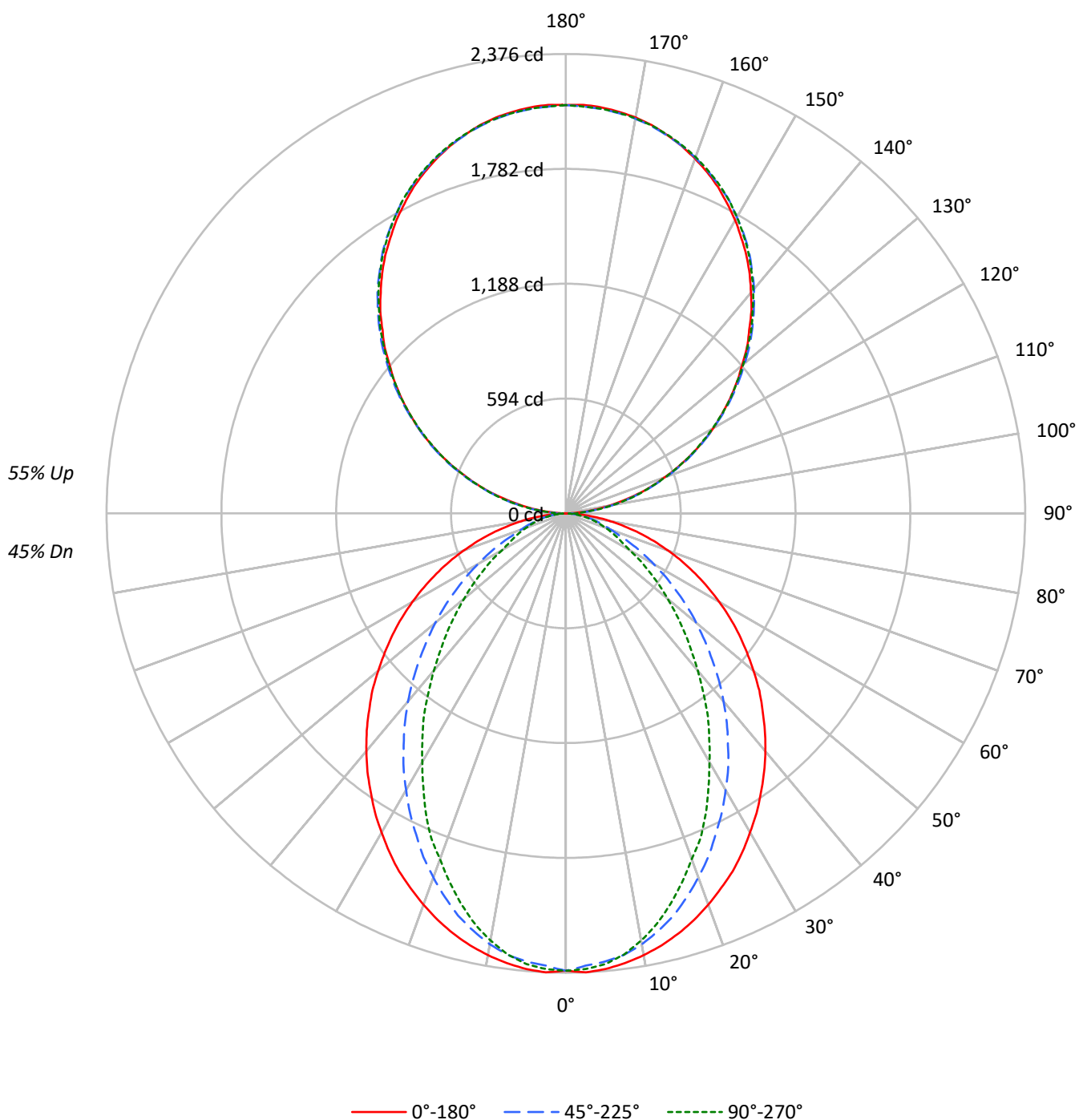
Lumens per Lamp: N/A
Luminaire Lumens: 10775.5 lumens
Efficiency: N/A
Efficacy: 115.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.54' x L: 4.09' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 93.7
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	106	106	106	106	97	97	97	97	81	81	81	66	66	66	52	52	52
1	97	93	89	86	89	85	82	79	71	69	67	58	57	55	46	45	44
2	89	82	76	71	81	75	70	66	63	59	56	52	49	47	41	40	38
3	81	72	65	60	74	67	60	56	56	51	48	46	43	40	37	35	33
4	75	64	57	51	68	59	53	47	50	45	41	41	38	35	33	31	29
5	69	57	50	44	63	53	46	41	45	40	36	37	33	30	30	28	25
6	63	52	44	38	58	48	41	36	41	35	31	34	30	27	28	25	23
7	59	47	39	34	54	43	36	32	37	32	28	31	27	24	25	22	20
8	54	42	35	30	50	39	33	28	34	28	25	28	24	21	23	20	18
9	51	39	32	27	47	36	30	25	31	26	22	26	22	19	22	19	17
10	47	36	29	24	44	33	27	23	29	24	20	24	20	18	20	17	15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1759	1759	1759
5°	1762	1731	1742
10°	1745	1698	1686
15°	1721	1642	1598
20°	1689	1564	1491
25°	1657	1478	1387
30°	1613	1389	1255
35°	1571	1294	1140
40°	1527	1195	1007
45°	1477	1085	887
50°	1425	975	769
55°	1370	856	656
60°	1307	733	540
65°	1235	607	487
70°	1147	489	440
75°	1037	432	401
80°	877	363	348
85°	613	243	262

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1593 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	8.64	9.44	9.65	10.45	11.79	4.62	5.41	5.62	6.42	7.76
	3H	10.32	11.03	11.33	12.05	13.41	5.80	6.51	6.82	7.53	8.89
	4H	10.93	11.60	11.95	12.62	13.99	6.25	6.93	7.28	7.95	9.32
	6H	11.35	11.96	12.38	12.99	14.37	6.58	7.19	7.61	8.22	9.60
	8H	11.47	12.06	12.51	13.10	14.48	6.67	7.25	7.71	8.29	9.67
	12H	11.53	12.09	12.58	13.13	14.53	6.71	7.27	7.76	8.30	9.70
4H	2H	8.66	9.33	9.69	10.35	11.72	5.21	5.88	6.24	6.90	8.27
	3H	10.48	11.04	11.53	12.09	13.47	6.56	7.11	7.60	8.16	9.55
	4H	11.18	11.69	12.22	12.73	14.13	7.11	7.62	8.15	8.66	10.06
	6H	11.69	12.13	12.75	13.19	14.59	7.52	7.96	8.58	9.03	10.43
	8H	11.86	12.27	12.92	13.33	14.75	7.65	8.06	8.71	9.12	10.54
	12H	11.96	12.33	13.03	13.40	14.82	7.72	8.09	8.79	9.16	10.58
8H	4H	11.14	11.55	12.20	12.61	14.02	7.38	7.79	8.44	8.85	10.26
	6H	11.71	12.04	12.79	13.14	14.56	7.90	8.24	8.98	9.34	10.75
	8H	11.92	12.22	13.01	13.30	14.74	8.09	8.39	9.18	9.47	10.91
	12H	12.06	12.32	13.15	13.40	14.87	8.21	8.47	9.30	9.55	11.02
12H	4H	11.09	11.46	12.17	12.53	13.95	7.39	7.76	8.46	8.83	10.25
	6H	11.68	11.98	12.77	13.06	14.49	7.95	8.25	9.04	9.33	10.76
	8H	11.90	12.16	12.99	13.24	14.71	8.16	8.42	9.25	9.50	10.97