

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: P928866

Luminaire Tested: DFN2DIP-HX4F0-050D070US935-RLLONL

Issue Date: 12/12/2024

Test Information

Test Method: LM-79-2019
Report Number: P928866
REPORT IS A COMBINATION OF REPORTS P900876 AND P896187
Test Lab: INNOVATION CENTER
Issue Date: 12/12/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX4F0-050D070US935-RLLONL
Description: 4 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

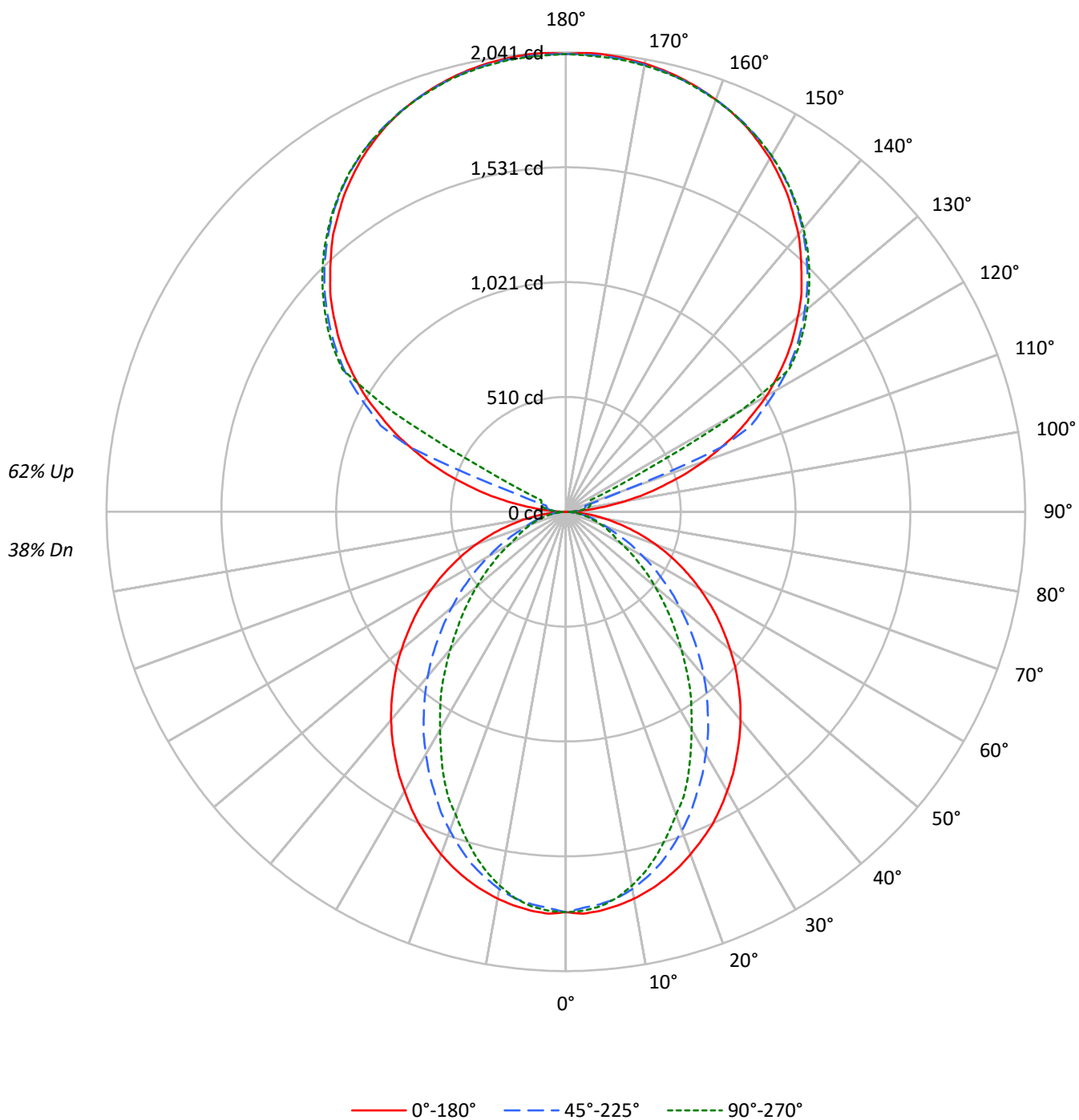
Lumens per Lamp: N/A
Luminaire Lumens: 9626.0 lumens
Efficiency: N/A
Efficacy: 100.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.54' x L: 4.09' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 95.7
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9957
Total Harmonic Distortion (THDi): 0.049
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	77	77	77	60	60	60	45	45	45
1	95	91	88	84	87	83	80	77	68	66	64	54	52	51	40	40	39
2	87	80	74	69	79	73	68	64	60	56	53	47	45	43	36	35	33
3	80	71	64	58	72	65	59	54	53	49	45	42	39	37	32	30	29
4	73	63	55	50	66	57	51	46	47	42	39	38	34	32	29	27	25
5	67	56	48	43	61	51	45	40	42	37	34	34	31	28	26	24	22
6	62	50	43	37	56	46	39	34	38	33	29	31	27	24	24	22	20
7	57	45	38	32	52	42	35	30	35	30	26	28	24	22	22	19	18
8	53	41	34	29	48	38	31	27	32	27	23	26	22	19	20	18	16
9	50	38	31	26	45	35	28	24	29	24	21	24	20	18	19	16	14
10	46	35	28	23	42	32	26	22	27	22	19	22	18	16	17	15	13

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1323	1323	1323
5°	1325	1302	1310
10°	1312	1277	1268
15°	1294	1235	1202
20°	1270	1177	1121
25°	1246	1111	1043
30°	1213	1045	944
35°	1181	973	857
40°	1149	899	757
45°	1111	816	667
50°	1072	733	578
55°	1031	644	494
60°	983	551	406
65°	929	457	366
70°	863	368	331
75°	780	325	301
80°	660	273	262
85°	461	183	197

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1111 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	166.8	1.7
10°-20°	457.8	4.8
20°-30°	642.7	6.7
30°-40°	700.6	7.3
40°-50°	643.9	6.7
50°-60°	505.7	5.3
60°-70°	329.2	3.4
70°-80°	169.5	1.8
80°-90°	46.8	0.5
90°-100°	67.1	0.7
100°-110°	250.0	2.6
110°-120°	663.1	6.9
120°-130°	1099.8	11.4
130°-140°	1168.3	12.1
140°-150°	1085.8	11.3
150°-160°	872.9	9.1
160°-170°	562.5	5.8
170°-180°	193.6	2.0
0°-30°	1267.2	13.2
0°-40°	1967.8	20.4
0°-60°	3117.4	32.4
0°-90°	3662.9	38.1
90°-120°	980.3	10.2
90°-150°	4334.1	45.0
90°-180°	5963.0	61.9
0°-180°	9626.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1779	1779	1779	1779	1779	
5°	1779	1771	1750	1765	1760	169
15°	1692	1675	1620	1589	1573	477
25°	1536	1484	1378	1312	1288	706
35°	1324	1242	1100	998	963	828
45°	1082	974	805	691	652	836
55°	823	697	523	427	396	735
65°	556	425	280	226	221	551
75°	296	184	129	118	116	313
85°	69	35	31	31	31	79
90°	1	18	29	37	40	9
95°	96	47	57	65	63	113
105°	448	492	90	106	112	478
115°	846	871	908	227	121	833
125°	1196	1216	1244	1254	1258	1067
135°	1481	1504	1517	1532	1529	1144
145°	1718	1716	1741	1751	1744	1074
155°	1891	1878	1896	1904	1893	872
165°	1993	1984	1988	1999	1988	563
175°	2038	2028	2031	2041	2027	194
180°	2034	2034	2034	2034	2034	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1779.3	1779.3	1779.3	1779.3	1779.3
2.5°	1787.3	1779.3	1761.5	1777.7	1774.4
5°	1779.3	1771.2	1750.2	1764.7	1760.0
7.5°	1764.7	1755.1	1732.6	1739.0	1730.9
10°	1745.4	1734.1	1702.0	1697.1	1687.5
12.5°	1721.3	1706.8	1663.3	1653.7	1635.9
15°	1692.3	1674.6	1619.9	1589.3	1573.2
17.5°	1658.5	1632.7	1565.0	1529.7	1503.8
20°	1619.9	1587.6	1507.1	1467.0	1431.4
22.5°	1578.0	1540.9	1447.5	1392.8	1368.7
25°	1536.1	1484.5	1378.3	1312.3	1288.1
27.5°	1486.3	1431.4	1313.9	1238.2	1201.2
30°	1433.1	1371.8	1243.0	1161.0	1117.4
32.5°	1381.6	1307.4	1175.5	1078.8	1038.5
35°	1323.6	1241.5	1099.8	998.3	962.9
37.5°	1267.2	1178.6	1029.0	917.7	877.6
40°	1207.6	1111.1	954.8	840.5	798.7
42.5°	1146.5	1043.4	880.8	761.6	721.4
45°	1082.1	974.1	805.1	690.7	652.0
47.5°	1020.9	906.6	732.7	618.3	582.9
50°	953.3	839.0	661.9	550.6	516.9
52.5°	887.2	766.4	594.2	487.9	457.4
55°	822.8	697.2	523.2	426.7	396.1
57.5°	756.8	628.0	460.5	370.4	344.6
60°	689.1	560.3	394.4	312.5	286.6
62.5°	623.2	494.4	338.1	260.9	248.1
65°	555.5	425.1	280.2	225.5	220.6
67.5°	491.1	360.7	225.5	198.0	193.2
70°	423.5	297.9	186.8	170.7	164.2
72.5°	359.1	239.9	156.2	143.4	140.1
75°	296.3	183.5	128.8	117.5	116.0
77.5°	233.5	130.4	101.5	95.0	91.7
80°	175.5	93.4	77.2	70.9	70.9
82.5°	122.3	62.9	53.1	49.9	49.9
85°	69.2	35.4	30.6	30.6	30.6
87.5°	25.8	12.8	12.8	11.3	11.3
90°	1.4	17.7	29.4	36.9	39.7
92.5°	36.9	30.9	35.3	38.3	39.7
95°	95.6	47.0	57.3	64.8	63.3
97.5°	172.1	51.6	75.0	79.6	80.9
100°	260.6	58.9	83.9	95.6	98.6
102.5°	357.6	354.8	86.9	103.0	107.5
105°	447.5	491.6	89.8	105.9	111.8
107.5°	551.9	588.7	92.8	108.9	114.9
110°	652.1	682.9	257.6	110.5	116.2

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	746.3	772.7	747.7	113.2	117.8
115°	846.3	871.2	908.1	226.7	120.8
117.5°	933.2	962.5	987.7	777.1	391.5
120°	1030.3	1052.3	1078.9	1096.6	897.9
122.5°	1112.6	1136.2	1165.8	1174.5	1176.0
125°	1196.5	1215.7	1243.7	1254.0	1258.4
127.5°	1273.1	1293.7	1315.9	1330.6	1332.0
130°	1345.2	1368.8	1384.9	1401.2	1399.8
132.5°	1418.8	1438.0	1454.1	1467.4	1466.0
135°	1480.7	1504.3	1517.4	1532.2	1529.3
137.5°	1545.3	1563.1	1577.9	1592.6	1588.2
140°	1608.6	1620.5	1636.6	1649.8	1642.5
142.5°	1661.7	1672.1	1691.1	1702.8	1695.5
145°	1717.7	1716.1	1741.1	1751.4	1744.1
147.5°	1766.1	1761.8	1786.7	1794.1	1788.3
150°	1813.3	1803.0	1826.6	1835.3	1828.0
152.5°	1853.0	1841.2	1863.3	1872.2	1861.9
155°	1891.3	1878.1	1895.7	1904.5	1892.8
157.5°	1922.2	1910.5	1923.7	1934.1	1922.2
160°	1948.8	1939.8	1948.8	1957.5	1947.2
162.5°	1972.2	1963.4	1970.7	1981.1	1967.8
165°	1992.8	1984.1	1988.4	1998.7	1988.4
167.5°	2009.1	2000.1	2004.7	2015.0	2001.7
170°	2022.3	2013.4	2016.4	2026.7	2013.4
172.5°	2031.1	2022.3	2025.3	2035.6	2022.3
175°	2038.4	2028.1	2031.1	2041.3	2026.7
177.5°	2041.3	2031.1	2032.6	2043.0	2029.6
180°	2034.0	2034.0	2034.0	2034.0	2034.0

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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	6.89	7.63	7.95	8.69	10.13	2.87	3.61	3.92	4.67	6.10
	3H	8.56	9.23	9.63	10.29	11.75	4.05	4.71	5.12	5.78	7.23
	4H	9.17	9.80	10.25	10.87	12.33	4.50	5.12	5.58	6.19	7.65
	6H	9.59	10.16	10.68	11.24	12.71	4.81	5.39	5.90	6.46	7.94
	8H	9.71	10.26	10.80	11.35	12.81	4.90	5.45	6.00	6.54	8.01
	12H	9.77	10.29	10.87	11.37	12.86	4.95	5.47	6.04	6.55	8.04
4H	2H	6.90	7.53	7.99	8.60	10.06	3.45	4.08	4.54	5.15	6.61
	3H	8.72	9.24	9.82	10.34	11.81	4.79	5.32	5.89	6.41	7.89
	4H	9.41	9.89	10.51	10.98	12.47	5.34	5.82	6.44	6.91	8.40
	6H	9.92	10.33	11.03	11.44	12.93	5.76	6.17	6.86	7.28	8.76
	8H	10.10	10.48	11.20	11.58	13.08	5.89	6.27	6.99	7.37	8.87
	12H	10.19	10.53	11.31	11.65	13.16	5.95	6.29	7.07	7.41	8.92
8H	4H	9.37	9.76	10.48	10.86	12.36	5.61	6.00	6.72	7.10	8.60
	6H	9.94	10.25	11.06	11.40	12.90	6.13	6.45	7.26	7.59	9.09
	8H	10.15	10.43	11.29	11.56	13.07	6.32	6.60	7.46	7.73	9.24
	12H	10.29	10.53	11.43	11.65	13.21	6.44	6.68	7.58	7.81	9.36
12H	4H	9.32	9.67	10.44	10.78	12.29	5.62	5.96	6.74	7.08	8.58
	6H	9.91	10.19	11.05	11.31	12.83	6.18	6.46	7.31	7.58	9.10
	8H	10.13	10.37	11.27	11.49	13.05	6.39	6.63	7.53	7.75	9.31