

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: P926926

Luminaire Tested: DFN2DIP-HX4F0-050D080US830-RLLONL

Issue Date: 12/12/2024

Test Information

Test Method: LM-79-2019
Report Number: P926926
REPORT IS A COMBINATION OF REPORTS P900894 AND P896187
Test Lab: INNOVATION CENTER
Issue Date: 12/12/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX4F0-050D080US830-RLLONL
Description: 4 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

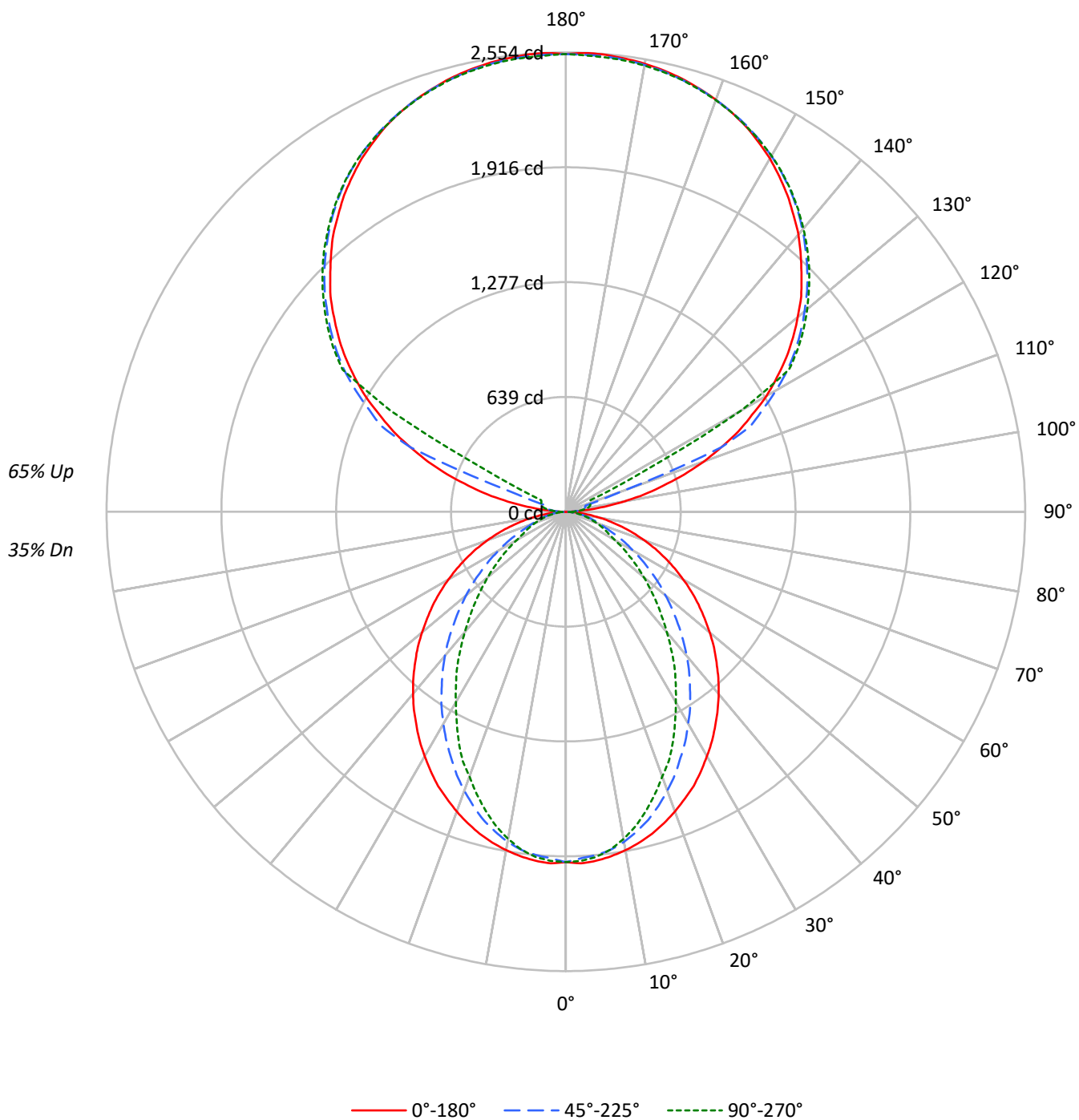
Lumens per Lamp: N/A
Luminaire Lumens: 11470.3 lumens
Efficiency: N/A
Efficacy: 112.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.54' x L: 4.09' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 102
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	94	94	94	94	75	75	75	58	58	58	42	42	42
1	95	91	87	84	86	82	79	76	66	64	62	51	50	49	38	37	36
2	87	80	74	69	78	72	67	63	58	55	52	46	43	41	34	32	31
3	79	70	63	58	71	64	58	53	52	47	44	41	38	35	30	28	27
4	72	62	55	49	65	57	50	45	46	41	38	36	33	30	27	25	23
5	67	56	48	42	60	51	44	39	41	36	33	33	29	27	25	22	21
6	61	50	42	37	55	45	39	34	37	32	29	30	26	23	22	20	18
7	57	45	37	32	51	41	34	30	34	29	25	27	23	21	21	18	16
8	53	41	33	28	48	37	31	26	31	26	22	25	21	19	19	17	15
9	49	37	30	25	44	34	28	23	28	23	20	23	19	17	18	15	13
10	46	34	27	23	41	31	25	21	26	21	18	21	18	15	16	14	12

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1448	1448	1448
5°	1451	1425	1434
10°	1436	1398	1388
15°	1417	1352	1316
20°	1391	1288	1227
25°	1364	1217	1142
30°	1328	1144	1033
35°	1293	1065	938
40°	1257	984	829
45°	1216	893	730
50°	1173	802	633
55°	1128	705	540
60°	1076	603	445
65°	1017	500	401
70°	944	403	363
75°	854	356	330
80°	722	299	286
85°	505	200	216

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1309 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	182.5	1.6
10°-20°	501.1	4.4
20°-30°	703.5	6.1
30°-40°	766.9	6.7
40°-50°	704.9	6.1
50°-60°	553.6	4.8
60°-70°	360.3	3.1
70°-80°	185.5	1.6
80°-90°	51.8	0.5
90°-100°	83.9	0.7
100°-110°	312.8	2.7
110°-120°	829.6	7.2
120°-130°	1375.9	12.0
130°-140°	1461.6	12.7
140°-150°	1358.3	11.8
150°-160°	1092.1	9.5
160°-170°	703.7	6.1
170°-180°	242.2	2.1
0°-30°	1387.2	12.1
0°-40°	2154.1	18.8
0°-60°	3412.5	29.8
0°-90°	4010.1	35.0
90°-120°	1226.3	10.7
90°-150°	5422.1	47.3
90°-180°	7460.0	65.0
0°-180°	11470.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1948	1948	1948	1948	1948	
5°	1948	1939	1916	1932	1927	185
15°	1852	1833	1773	1740	1722	522
25°	1682	1625	1509	1437	1410	773
35°	1449	1359	1204	1093	1054	907
45°	1184	1066	881	756	714	915
55°	901	763	573	467	434	805
65°	608	465	307	247	242	603
75°	324	201	141	129	127	343
85°	76	39	34	34	34	87
90°	2	22	37	46	50	11
95°	120	59	72	81	79	142
105°	560	615	112	132	140	598
115°	1059	1090	1136	284	151	1042
125°	1497	1521	1556	1569	1574	1335
135°	1852	1882	1898	1917	1913	1431
145°	2149	2147	2178	2191	2182	1344
155°	2366	2350	2372	2383	2368	1090
165°	2493	2482	2488	2500	2488	704
175°	2550	2537	2541	2554	2536	243
180°	2545	2545	2545	2545	2545	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1947.7	1947.7	1947.7	1947.7	1947.7
2.5°	1956.4	1947.7	1928.3	1946.0	1942.4
5°	1947.7	1938.9	1915.9	1931.7	1926.6
7.5°	1931.7	1921.3	1896.6	1903.6	1894.7
10°	1910.6	1898.3	1863.1	1857.8	1847.2
12.5°	1884.2	1868.4	1820.7	1810.3	1790.8
15°	1852.5	1833.1	1773.2	1739.8	1722.1
17.5°	1815.4	1787.3	1713.2	1674.4	1646.2
20°	1773.2	1737.9	1649.8	1605.8	1566.9
22.5°	1727.4	1686.8	1584.5	1524.7	1498.3
25°	1681.5	1625.1	1508.8	1436.6	1410.0
27.5°	1626.9	1566.9	1438.3	1355.4	1314.9
30°	1568.8	1501.7	1360.7	1270.9	1223.2
32.5°	1512.3	1431.2	1286.8	1181.0	1136.8
35°	1448.9	1359.0	1203.9	1092.8	1054.0
37.5°	1387.2	1290.2	1126.4	1004.6	960.7
40°	1322.0	1216.3	1045.1	920.1	874.3
42.5°	1255.0	1142.2	964.2	833.6	789.7
45°	1184.5	1066.3	881.3	756.1	713.8
47.5°	1117.5	992.5	802.1	676.8	638.1
50°	1043.5	918.4	724.5	602.7	565.9
52.5°	971.2	838.9	650.4	534.1	500.7
55°	900.7	763.1	572.8	467.1	433.6
57.5°	828.5	687.5	504.1	405.5	377.2
60°	754.4	613.4	431.8	342.0	313.8
62.5°	682.2	541.2	370.1	285.6	271.5
65°	608.1	465.3	306.7	246.8	241.5
67.5°	537.6	394.8	246.8	216.8	211.5
70°	463.6	326.1	204.4	186.8	179.7
72.5°	393.1	262.6	171.0	156.9	153.3
75°	324.3	200.8	141.0	128.7	127.0
77.5°	255.6	142.7	111.1	104.0	100.4
80°	192.1	102.3	84.5	77.6	77.6
82.5°	133.9	68.8	58.2	54.6	54.6
85°	75.8	38.7	33.5	33.5	33.5
87.5°	28.3	14.0	14.0	12.3	12.3
90°	1.8	22.1	36.8	46.1	49.7
92.5°	46.1	38.7	44.2	47.9	49.7
95°	119.6	58.8	71.7	81.1	79.2
97.5°	215.4	64.5	93.8	99.5	101.2
100°	326.0	73.7	105.0	119.6	123.3
102.5°	447.4	443.8	108.7	128.7	134.5
105°	559.8	615.1	112.3	132.5	140.0
107.5°	690.5	736.4	116.1	136.2	143.6
110°	815.8	854.3	322.3	138.2	145.4



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	933.6	966.6	935.4	141.7	147.4
115°	1058.7	1090.0	1136.1	283.6	151.1
117.5°	1167.4	1204.1	1235.6	972.1	489.8
120°	1289.0	1316.5	1349.8	1371.8	1123.2
122.5°	1391.9	1421.5	1458.4	1469.4	1471.3
125°	1496.9	1520.9	1555.9	1568.8	1574.3
127.5°	1592.6	1618.5	1646.3	1664.5	1666.3
130°	1682.9	1712.4	1732.6	1753.0	1751.2
132.5°	1775.0	1799.0	1819.2	1835.8	1834.0
135°	1852.4	1881.9	1898.3	1917.0	1913.2
137.5°	1933.4	1955.4	1974.0	1992.4	1986.9
140°	2012.4	2027.3	2047.5	2064.1	2054.8
142.5°	2079.0	2091.8	2115.6	2130.3	2121.1
145°	2148.9	2146.9	2178.2	2191.1	2181.9
147.5°	2209.5	2204.0	2235.2	2244.5	2237.2
150°	2268.5	2255.6	2285.1	2296.0	2286.9
152.5°	2318.2	2303.5	2331.0	2342.2	2329.3
155°	2366.1	2349.7	2371.7	2382.6	2368.0
157.5°	2404.7	2390.1	2406.7	2419.6	2404.7
160°	2438.0	2426.8	2438.0	2448.9	2436.0
162.5°	2467.3	2456.3	2465.5	2478.4	2461.8
165°	2493.1	2482.2	2487.6	2500.5	2487.6
167.5°	2513.4	2502.2	2507.9	2520.8	2504.2
170°	2530.0	2518.8	2522.6	2535.5	2518.8
172.5°	2541.0	2530.0	2533.7	2546.6	2530.0
175°	2550.1	2537.2	2541.0	2553.8	2535.5
177.5°	2553.8	2541.0	2542.9	2555.8	2539.2
180°	2544.7	2544.7	2544.7	2544.7	2544.7

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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	6.84	7.56	7.93	8.64	10.12	2.82	3.54	3.90	4.62	6.09
	3H	8.51	9.16	9.60	10.24	11.74	4.00	4.64	5.09	5.73	7.22
	4H	9.12	9.73	10.22	10.82	12.31	4.45	5.06	5.55	6.14	7.64
	6H	9.53	10.10	10.64	11.19	12.70	4.76	5.32	5.87	6.42	7.92
	8H	9.66	10.19	10.77	11.30	12.80	4.85	5.38	5.96	6.49	7.99
	12H	9.72	10.22	10.83	11.32	12.85	4.89	5.40	6.01	6.50	8.02
4H	2H	6.85	7.46	7.96	8.55	10.04	3.40	4.01	4.51	5.10	6.60
	3H	8.67	9.18	9.78	10.29	11.80	4.74	5.25	5.86	6.36	7.87
	4H	9.36	9.82	10.48	10.93	12.46	5.29	5.75	6.40	6.86	8.39
	6H	9.87	10.27	10.99	11.39	12.92	5.70	6.10	6.83	7.23	8.75
	8H	10.04	10.41	11.17	11.53	13.07	5.83	6.20	6.95	7.32	8.86
	12H	10.13	10.47	11.27	11.60	13.14	5.89	6.23	7.03	7.36	8.90
8H	4H	9.32	9.69	10.44	10.81	12.35	5.56	5.93	6.68	7.05	8.59
	6H	9.88	10.19	11.03	11.35	12.88	6.08	6.38	7.22	7.54	9.08
	8H	10.10	10.37	11.25	11.51	13.06	6.27	6.54	7.42	7.68	9.23
	12H	10.23	10.47	11.39	11.61	13.20	6.38	6.62	7.54	7.76	9.35
12H	4H	9.26	9.60	10.41	10.73	12.28	5.56	5.90	6.70	7.03	8.57
	6H	9.86	10.12	11.01	11.27	12.82	6.12	6.39	7.28	7.54	9.09
	8H	10.07	10.31	11.23	11.45	13.04	6.33	6.57	7.49	7.71	9.30

END OF REPORT