

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: P927574

Luminaire Tested: DFN2DIP-HX4F0-050D080US840-RLLONL

Issue Date: 12/12/2024

Test Information

Test Method: LM-79-2019
Report Number: P927574
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-HX4F0-050D080US840-RLLONL
Description: 4 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

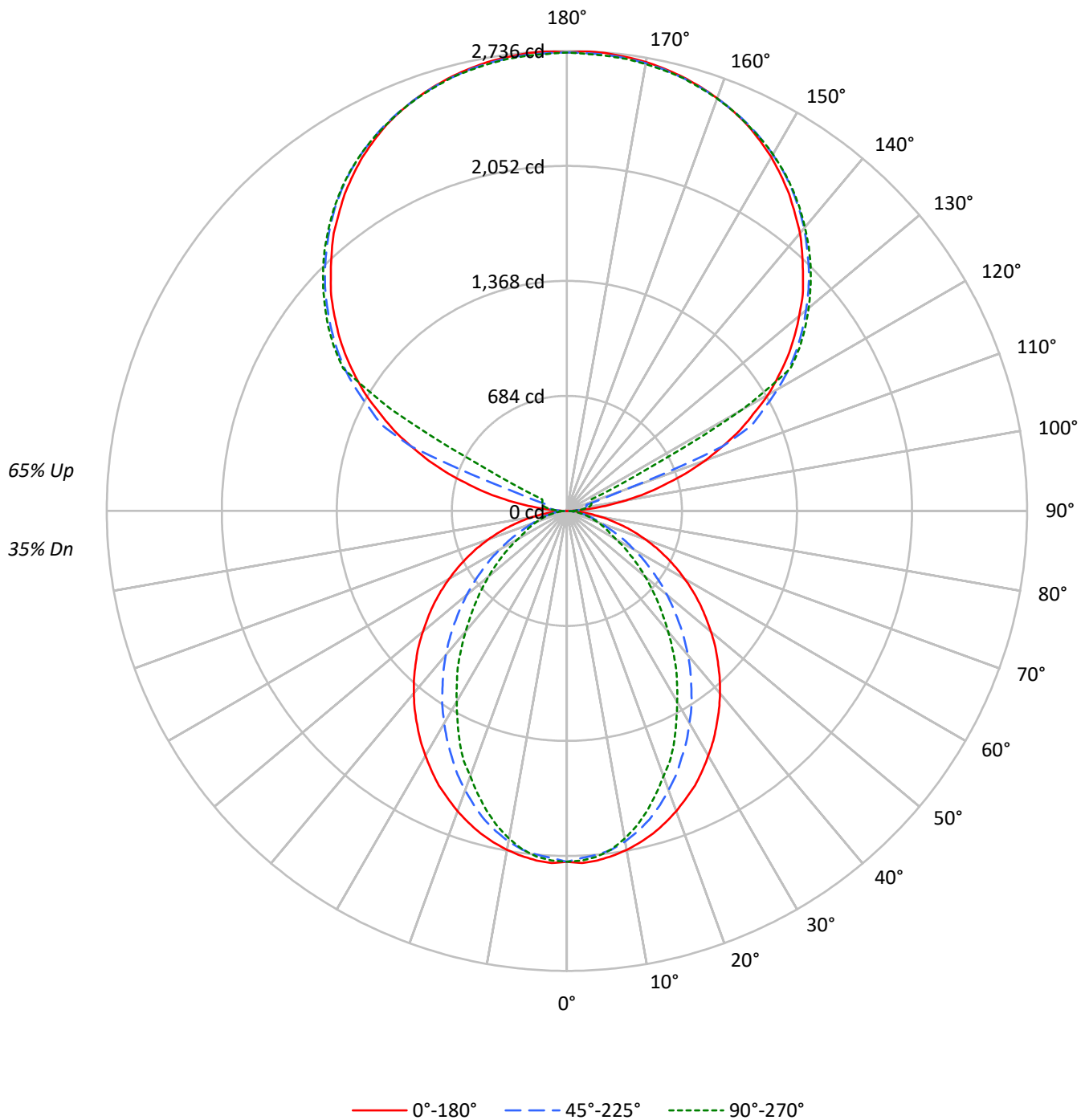
Lumens per Lamp: N/A
Luminaire Lumens: 12289.3 lumens
Efficiency: N/A
Efficacy: 120.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.54' x L: 4.09' x H: 0.1')
CIE Type: Semi-Indirect

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°	1552	1552	1552
5°	1554	1527	1537
10°	1539	1497	1487
15°	1518	1448	1410
20°	1490	1380	1315
25°	1461	1304	1223
30°	1423	1225	1107
35°	1385	1141	1005
40°	1347	1054	888
45°	1303	957	782
50°	1257	860	679
55°	1209	755	579
60°	1153	646	477
65°	1089	535	429
70°	1012	432	389
75°	915	381	353
80°	774	320	307
85°	541	214	231

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1401 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	195.6	1.6
10°-20°	536.9	4.4
20°-30°	753.8	6.1
30°-40°	821.7	6.7
40°-50°	755.2	6.1
50°-60°	593.1	4.8
60°-70°	386.0	3.1
70°-80°	198.7	1.6
80°-90°	55.5	0.5
90°-100°	89.9	0.7
100°-110°	335.1	2.7
110°-120°	888.8	7.2
120°-130°	1474.2	12.0
130°-140°	1565.9	12.7
140°-150°	1455.3	11.8
150°-160°	1170.1	9.5
160°-170°	754.0	6.1
170°-180°	259.5	2.1
0°-30°	1486.2	12.1
0°-40°	2307.9	18.8
0°-60°	3656.2	29.8
0°-90°	4296.5	35.0
90°-120°	1313.9	10.7
90°-150°	5809.3	47.3
90°-180°	7993.0	65.0
0°-180°	12289.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2087	2087	2087	2087	2087	
5°	2087	2077	2053	2070	2064	198
15°	1985	1964	1900	1864	1845	559
25°	1802	1741	1616	1539	1511	829
35°	1552	1456	1290	1171	1129	972
45°	1269	1142	944	810	765	980
55°	965	818	614	500	465	862
65°	652	498	329	264	259	646
75°	348	215	151	138	136	368
85°	81	42	36	36	36	93
90°	2	24	39	49	53	11
95°	128	63	77	87	85	152
105°	600	659	120	142	150	641
115°	1134	1168	1217	304	162	1117
125°	1604	1630	1667	1681	1687	1430
135°	1985	2016	2034	2054	2050	1533
145°	2302	2300	2334	2348	2338	1440
155°	2535	2517	2541	2553	2537	1168
165°	2671	2659	2665	2679	2665	755
175°	2732	2718	2722	2736	2717	260
180°	2726	2726	2726	2726	2726	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2086.8	2086.8	2086.8	2086.8	2086.8
2.5°	2096.1	2086.8	2065.9	2084.9	2081.1
5°	2086.8	2077.4	2052.7	2069.7	2064.1
7.5°	2069.7	2058.5	2032.0	2039.5	2030.0
10°	2047.1	2033.8	1996.2	1990.4	1979.1
12.5°	2018.8	2001.8	1950.7	1939.5	1918.6
15°	1984.8	1964.0	1899.8	1864.0	1845.1
17.5°	1945.1	1914.9	1835.5	1794.0	1763.7
20°	1899.8	1862.0	1767.6	1720.5	1678.8
22.5°	1850.8	1807.2	1697.7	1633.6	1605.3
25°	1801.6	1741.1	1616.5	1539.1	1510.7
27.5°	1743.1	1678.8	1541.0	1452.2	1408.8
30°	1680.8	1608.9	1457.8	1361.6	1310.5
32.5°	1620.3	1533.4	1378.7	1265.3	1218.0
35°	1552.4	1456.0	1289.9	1170.9	1129.3
37.5°	1486.2	1382.3	1206.8	1076.3	1029.3
40°	1416.3	1303.1	1119.8	985.8	936.7
42.5°	1344.6	1223.8	1033.0	893.2	846.1
45°	1269.1	1142.5	944.3	810.1	764.7
47.5°	1197.3	1063.3	859.3	725.1	683.6
50°	1118.1	983.9	776.2	645.8	606.3
52.5°	1040.5	898.8	696.9	572.3	536.4
55°	965.0	817.6	613.7	500.5	464.6
57.5°	887.6	736.5	540.1	434.4	404.1
60°	808.2	657.2	462.6	366.5	336.2
62.5°	730.9	579.8	396.5	306.0	290.9
65°	651.5	498.5	328.6	264.5	258.7
67.5°	576.0	423.0	264.5	232.3	226.6
70°	496.7	349.4	219.0	200.1	192.6
72.5°	421.2	281.3	183.2	168.1	164.3
75°	347.5	215.2	151.1	137.8	136.0
77.5°	273.9	152.9	119.1	111.4	107.5
80°	205.8	109.6	90.6	83.1	83.1
82.5°	143.5	73.7	62.3	58.5	58.5
85°	81.2	41.5	35.8	35.8	35.8
87.5°	30.3	15.0	15.0	13.2	13.2
90°	1.9	23.6	39.4	49.4	53.2
92.5°	49.4	41.5	47.4	51.3	53.2
95°	128.1	63.0	76.8	86.9	84.8
97.5°	230.7	69.1	100.5	106.6	108.5
100°	349.3	79.0	112.5	128.1	132.1
102.5°	479.4	475.5	116.4	137.9	144.1
105°	599.7	659.0	120.4	142.0	150.0
107.5°	739.8	789.0	124.4	145.9	153.9
110°	874.1	915.3	345.4	148.0	155.8

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1000.3	1035.7	1002.2	151.8	157.9
115°	1134.3	1167.8	1217.2	303.8	161.9
117.5°	1250.7	1290.1	1323.8	1041.5	524.8
120°	1381.0	1410.5	1446.1	1469.8	1203.4
122.5°	1491.3	1523.0	1562.6	1574.3	1576.4
125°	1603.8	1629.5	1667.0	1680.8	1686.7
127.5°	1706.4	1734.0	1763.8	1783.4	1785.3
130°	1803.1	1834.7	1856.3	1878.1	1876.2
132.5°	1901.8	1927.5	1949.1	1966.9	1965.0
135°	1984.7	2016.3	2033.8	2053.8	2049.8
137.5°	2071.4	2095.0	2114.9	2134.6	2128.8
140°	2156.1	2172.1	2193.7	2211.5	2201.6
142.5°	2227.4	2241.2	2266.7	2282.5	2272.6
145°	2302.3	2300.2	2333.7	2347.6	2337.7
147.5°	2367.3	2361.4	2394.8	2404.7	2397.0
150°	2430.5	2416.7	2448.3	2460.0	2450.2
152.5°	2483.7	2468.0	2497.4	2509.5	2495.6
155°	2535.0	2517.4	2541.1	2552.8	2537.1
157.5°	2576.4	2560.8	2578.5	2592.4	2576.4
160°	2612.0	2600.1	2612.0	2623.8	2609.9
162.5°	2643.5	2631.7	2641.5	2655.4	2637.6
165°	2671.1	2659.4	2665.3	2679.0	2665.3
167.5°	2692.8	2680.9	2687.0	2700.8	2683.0
170°	2710.7	2698.7	2702.7	2716.6	2698.7
172.5°	2722.4	2710.7	2714.6	2728.5	2710.7
175°	2732.2	2718.4	2722.4	2736.2	2716.6
177.5°	2736.2	2722.4	2724.4	2738.3	2720.5
180°	2726.4	2726.4	2726.4	2726.4	2726.4

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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	7.08	7.80	8.16	8.88	10.35	3.06	3.78	4.14	4.85	6.33
	3H	8.75	9.40	9.84	10.48	11.97	4.24	4.88	5.33	5.97	7.46
	4H	9.36	9.97	10.46	11.06	12.55	4.68	5.30	5.79	6.38	7.88
	6H	9.77	10.34	10.88	11.43	12.94	5.00	5.56	6.11	6.65	8.16
	8H	9.90	10.43	11.01	11.54	13.04	5.09	5.62	6.20	6.73	8.23
	12H	9.96	10.46	11.07	11.56	13.09	5.13	5.64	6.25	6.74	8.26
4H	2H	7.09	7.70	8.20	8.79	10.28	3.64	4.25	4.75	5.34	6.83
	3H	8.91	9.42	10.02	10.53	12.04	4.98	5.49	6.09	6.60	8.11
	4H	9.60	10.06	10.72	11.17	12.70	5.53	5.99	6.64	7.10	8.63
	6H	10.11	10.51	11.23	11.63	13.16	5.94	6.34	7.07	7.47	8.99
	8H	10.28	10.65	11.41	11.77	13.31	6.07	6.44	7.19	7.56	9.10
	12H	10.37	10.71	11.51	11.84	13.38	6.13	6.47	7.27	7.60	9.14
8H	4H	9.56	9.93	10.68	11.05	12.59	5.80	6.17	6.92	7.29	8.83
	6H	10.12	10.43	11.27	11.59	13.12	6.31	6.62	7.46	7.78	9.32
	8H	10.34	10.61	11.49	11.75	13.30	6.51	6.77	7.66	7.92	9.47
	12H	10.47	10.71	11.63	11.85	13.44	6.62	6.86	7.78	8.00	9.59
12H	4H	9.50	9.84	10.65	10.97	12.52	5.80	6.14	6.94	7.27	8.81
	6H	10.10	10.36	11.25	11.51	13.06	6.36	6.63	7.52	7.77	9.33
	8H	10.31	10.55	11.47	11.69	13.28	6.57	6.81	7.73	7.94	9.54

END OF REPORT