

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: P926937

Luminaire Tested: DFN2DIP-HX4F0-050D110US830-RLLFLL

Issue Date: 12/12/2024

Test Information

Test Method: LM-79-2019
Report Number: P926937
REPORT IS A COMBINATION OF REPORTS P899428 AND P896187
Test Lab: INNOVATION CENTER
Issue Date: 12/12/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX4F0-050D110US830-RLLFLL
Description: 4 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

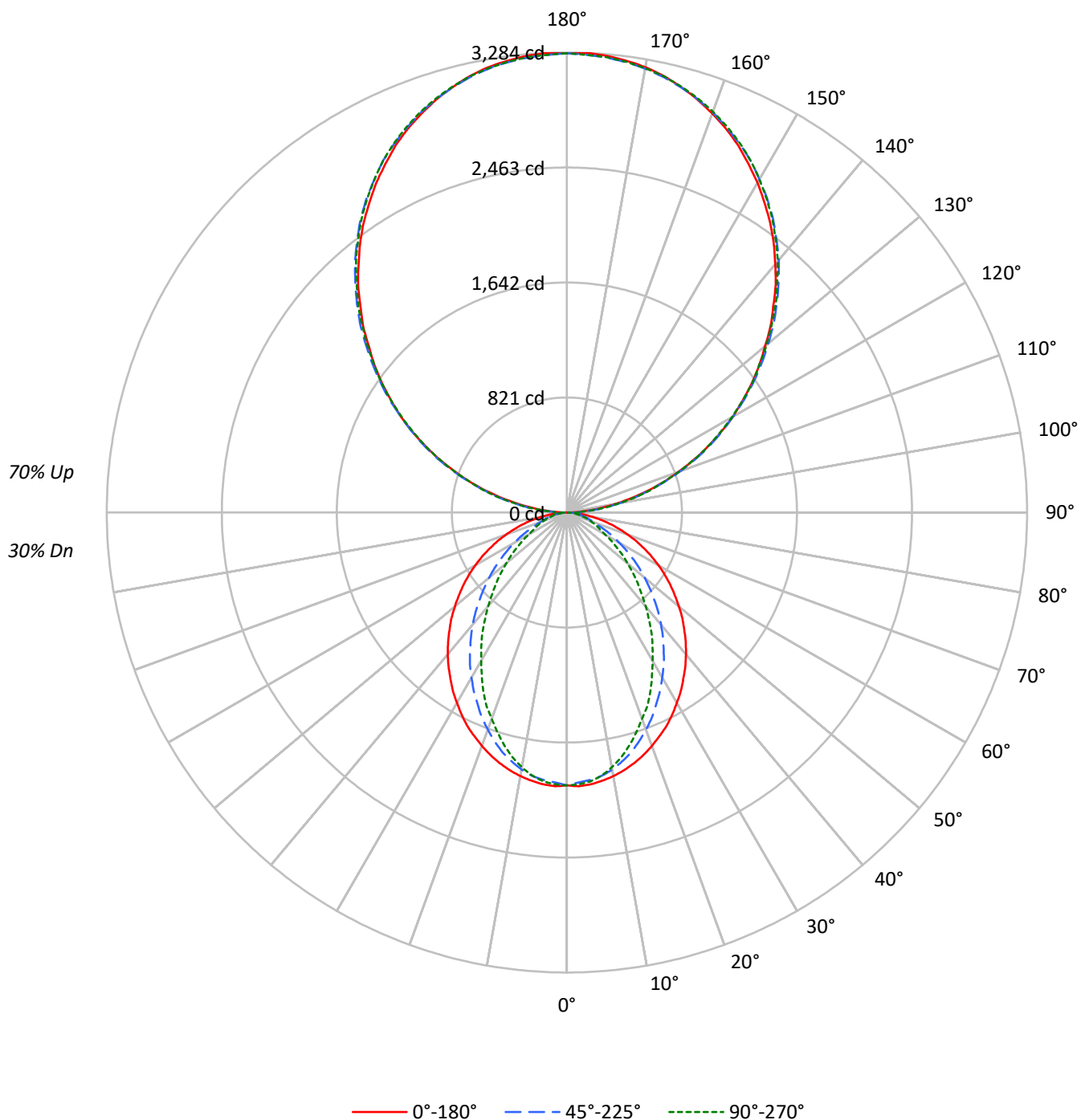
Lumens per Lamp: N/A
Luminaire Lumens: 13180.9 lumens
Efficiency: N/A
Efficacy: 100.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.54' x L: 4.09' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 130.9
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	102	102	102	102	92	92	92	92	72	72	72	55	55	55	38	38	38
1	94	90	86	83	84	81	78	75	64	62	60	48	47	46	34	33	33
2	86	79	73	68	77	71	66	62	56	53	50	43	41	39	30	29	28
3	78	69	62	57	70	62	57	52	50	46	42	38	35	33	27	26	24
4	72	61	54	48	64	55	49	44	44	40	36	34	31	29	24	23	21
5	66	55	47	41	59	50	43	38	40	35	31	31	27	25	22	20	18
6	60	49	41	36	54	44	38	33	36	31	27	28	24	22	20	18	16
7	56	44	37	31	50	40	34	29	32	28	24	25	22	19	18	16	15
8	52	40	33	28	47	36	30	26	30	25	21	23	20	17	17	15	13
9	48	37	29	25	43	33	27	23	27	22	19	21	18	16	16	14	12
10	45	33	27	22	40	31	24	20	25	20	17	20	16	14	15	12	11

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: 2472 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	182.5	1.4
10°-20°	501.1	3.8
20°-30°	703.5	5.3
30°-40°	766.9	5.8
40°-50°	704.9	5.3
50°-60°	553.6	4.2
60°-70°	360.3	2.7
70°-80°	185.5	1.4
80°-90°	56.7	0.4
90°-100°	202.9	1.5
100°-110°	644.7	4.9
110°-120°	1103.2	8.4
120°-130°	1450.9	11.0
130°-140°	1628.6	12.4
140°-150°	1597.0	12.1
150°-160°	1339.7	10.2
160°-170°	888.4	6.7
170°-180°	310.5	2.4
0°-30°	1387.2	10.5
0°-40°	2154.1	16.3
0°-60°	3412.5	25.9
0°-90°	4015.0	30.5
90°-120°	1950.8	14.8
90°-150°	6627.3	50.3
90°-180°	9166.0	69.5
0°-180°	13180.9	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°	3	36	97	91	94	13
95°	144	172	177	177	172	161
105°	595	603	609	614	614	628
115°	1107	1123	1118	1115	1107	1095
125°	1610	1635	1627	1618	1615	1439
135°	2083	2113	2119	2116	2108	1610
145°	2528	2548	2564	2567	2556	1580
155°	2891	2899	2908	2922	2913	1331
165°	3145	3142	3142	3162	3148	887
175°	3273	3265	3259	3279	3262	311
180°	3279	3279	3279	3279	3279	

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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°	2.9	35.6	96.9	91.0	93.9
92.5°	61.3	83.0	86.0	89.0	89.0
95°	144.3	172.0	176.9	176.9	172.0
97.5°	240.2	265.9	276.8	276.8	276.8
100°	350.9	373.6	381.5	381.5	378.6
102.5°	467.6	484.4	495.3	498.2	495.3
105°	595.1	603.0	608.9	613.9	613.9
107.5°	721.6	733.5	733.5	735.4	721.6
110°	844.2	860.0	860.0	860.0	852.1

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	976.6	993.4	990.5	982.6	976.6
115°	1107.2	1122.9	1118.0	1115.1	1107.2
117.5°	1236.7	1258.3	1244.5	1236.7	1228.7
120°	1367.1	1388.9	1367.1	1367.1	1358.2
122.5°	1485.8	1513.4	1499.5	1491.6	1485.8
125°	1610.3	1635.0	1627.0	1618.2	1615.2
127.5°	1731.8	1762.5	1751.6	1739.8	1731.8
130°	1845.5	1881.1	1876.1	1870.2	1859.4
132.5°	1973.0	2000.7	2002.7	1988.9	1980.9
135°	2082.7	2113.4	2119.3	2116.4	2108.5
137.5°	2205.4	2230.0	2235.0	2233.0	2221.2
140°	2313.1	2337.8	2351.6	2351.6	2340.8
142.5°	2423.8	2448.5	2456.4	2459.4	2448.5
145°	2528.5	2548.3	2564.2	2567.1	2556.2
147.5°	2622.5	2647.2	2659.1	2664.0	2653.1
150°	2719.4	2736.2	2747.0	2756.0	2747.0
152.5°	2805.4	2822.1	2836.0	2846.9	2836.0
155°	2891.4	2899.2	2908.2	2922.0	2913.1
157.5°	2965.5	2971.4	2976.3	2996.1	2982.3
160°	3031.7	3037.7	3040.6	3057.5	3045.6
162.5°	3093.0	3093.0	3096.0	3114.8	3100.9
165°	3145.4	3142.4	3142.4	3162.2	3148.3
167.5°	3192.8	3184.0	3184.0	3203.7	3189.9
170°	3228.4	3220.5	3217.6	3237.3	3220.5
172.5°	3253.1	3245.2	3242.3	3262.1	3245.2
175°	3272.9	3265.0	3259.1	3278.9	3262.1
177.5°	3283.8	3275.8	3269.9	3286.8	3269.9
180°	3278.9	3278.9	3278.9	3278.9	3278.9

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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	6.26	6.96	7.38	8.06	9.59	2.24	2.93	3.35	4.03	5.56
	3H	7.93	8.55	9.05	9.66	11.21	3.42	4.03	4.54	5.15	6.69
	4H	8.53	9.12	9.66	10.23	11.78	3.86	4.45	4.99	5.56	7.11
	6H	8.95	9.49	10.09	10.61	12.17	4.18	4.72	5.32	5.83	7.39
	8H	9.07	9.59	10.21	10.72	12.27	4.26	4.78	5.41	5.91	7.46
	12H	9.13	9.62	10.28	10.74	12.32	4.30	4.79	5.45	5.92	7.49
4H	2H	6.26	6.85	7.40	7.97	9.52	2.81	3.40	3.95	4.52	6.07
	3H	8.08	8.57	9.23	9.71	11.27	4.15	4.64	5.30	5.78	7.34
	4H	8.77	9.22	9.92	10.35	11.93	4.70	5.15	5.85	6.28	7.86
	6H	9.28	9.66	10.43	10.81	12.39	5.11	5.50	6.26	6.65	8.22
	8H	9.45	9.81	10.60	10.95	12.54	5.24	5.60	6.39	6.74	8.33
	12H	9.54	9.87	10.71	11.02	12.61	5.30	5.62	6.47	6.78	8.37
8H	4H	8.73	9.09	9.88	10.23	11.82	4.97	5.33	6.12	6.47	8.06
	6H	9.29	9.59	10.46	10.77	12.36	5.48	5.78	6.66	6.97	8.55
	8H	9.51	9.76	10.68	10.93	12.53	5.68	5.93	6.85	7.10	8.70
	12H	9.64	9.87	10.82	11.03	12.67	5.79	6.02	6.97	7.18	8.82
12H	4H	8.67	9.00	9.84	10.15	11.75	4.97	5.29	6.14	6.45	8.04
	6H	9.26	9.52	10.44	10.69	12.29	5.53	5.79	6.71	6.96	8.56
	8H	9.48	9.71	10.66	10.87	12.51	5.74	5.97	6.92	7.13	8.77

END OF REPORT