

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: P927534

Luminaire Tested: DFN2DIP-HX4F0-040D070US840-RLLONL

Issue Date: 12/12/2024

Test Information

Test Method: LM-79-2019
Report Number: P927534
REPORT IS A COMBINATION OF REPORTS P900874 AND P896187
Test Lab: INNOVATION CENTER
Issue Date: 12/12/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX4F0-040D070US840-RLLONL
Description: 4 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

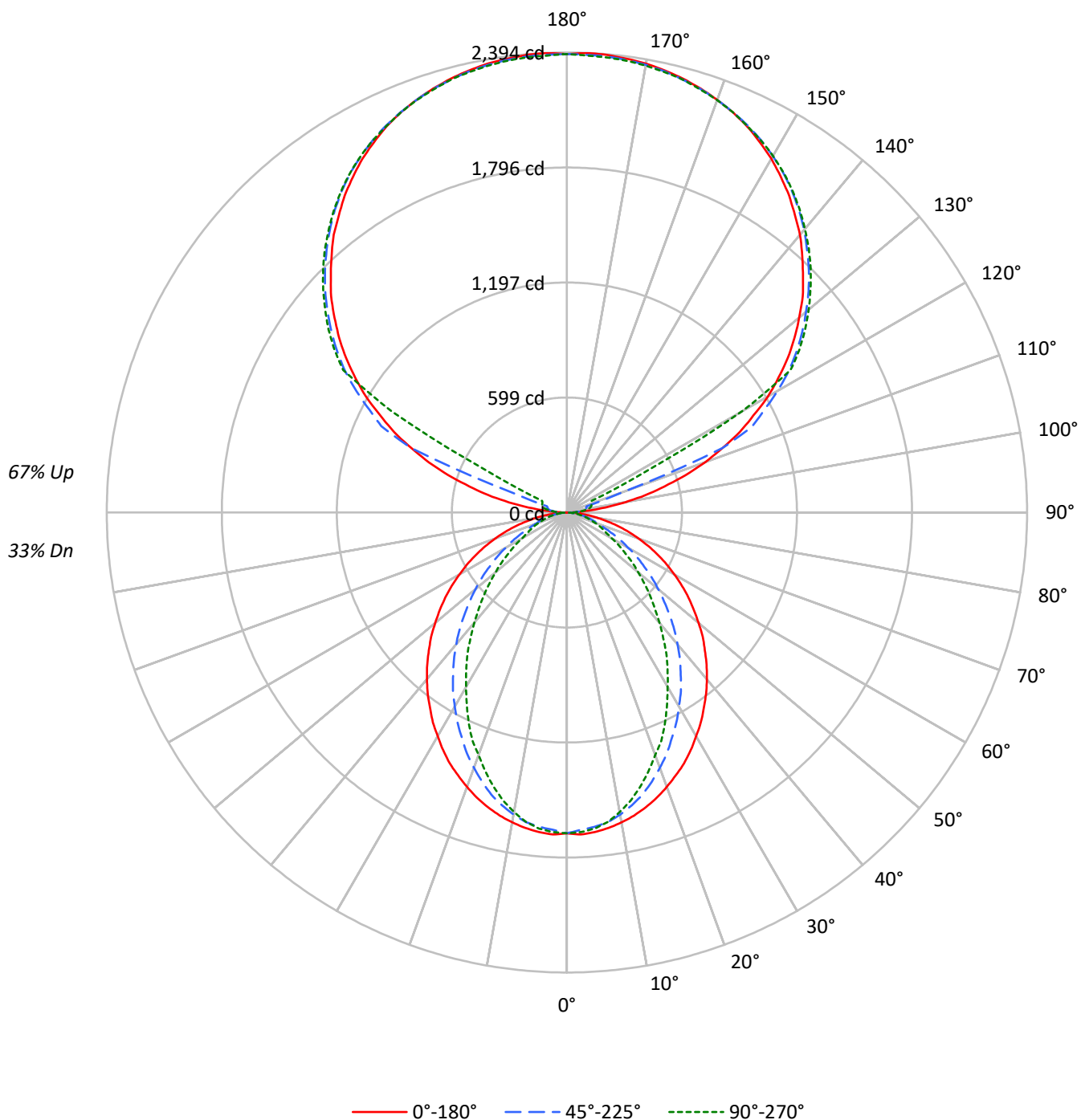
Lumens per Lamp: N/A
Luminaire Lumens: 10431.3 lumens
Efficiency: N/A
Efficacy: 122.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.54' x L: 4.09' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 85.3
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9977
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	103	103	103	103	93	93	93	93	74	74	74	56	56	56	40	40	40
1	94	90	87	83	85	81	78	76	65	63	61	50	49	48	36	35	35
2	86	79	73	68	77	72	67	62	57	54	51	44	42	40	32	31	30
3	79	70	63	57	71	63	57	53	51	47	43	39	37	34	29	27	26
4	72	62	54	49	65	56	50	45	45	41	37	35	32	30	26	24	22
5	66	55	47	42	59	50	43	38	41	36	32	32	28	26	24	21	20
6	61	49	42	36	55	45	38	33	37	32	28	29	25	23	21	19	17
7	56	45	37	32	51	41	34	29	33	28	25	26	23	20	20	17	16
8	52	41	33	28	47	37	31	26	30	25	22	24	21	18	18	16	14
9	49	37	30	25	44	34	27	23	28	23	20	22	19	16	17	14	13
10	45	34	27	22	41	31	25	21	26	21	18	20	17	15	16	13	12

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1241	1241	1241
5°	1243	1222	1229
10°	1231	1198	1190
15°	1214	1158	1128
20°	1192	1104	1052
25°	1169	1043	979
30°	1138	980	886
35°	1108	913	804
40°	1078	843	711
45°	1042	766	626
50°	1005	688	543
55°	967	604	463
60°	922	517	381
65°	871	428	343
70°	810	346	311
75°	732	305	283
80°	619	256	245
85°	433	172	185

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1227 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	156.5	1.5
10°-20°	429.5	4.1
20°-30°	603.0	5.8
30°-40°	657.3	6.3
40°-50°	604.2	5.8
50°-60°	474.5	4.5
60°-70°	308.9	3.0
70°-80°	159.0	1.5
80°-90°	44.8	0.4
90°-100°	78.7	0.8
100°-110°	293.2	2.8
110°-120°	777.7	7.5
120°-130°	1289.9	12.4
130°-140°	1370.2	13.1
140°-150°	1273.4	12.2
150°-160°	1023.8	9.8
160°-170°	659.7	6.3
170°-180°	227.1	2.2
0°-30°	1189.0	11.4
0°-40°	1846.3	17.7
0°-60°	2924.9	28.0
0°-90°	3437.5	33.0
90°-120°	1149.6	11.0
90°-150°	5083.2	48.7
90°-180°	6994.0	67.0
0°-180°	10431.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1669	1669	1669	1669	1669	
5°	1669	1662	1642	1656	1651	158
15°	1588	1571	1520	1491	1476	447
25°	1441	1393	1293	1231	1208	663
35°	1242	1165	1032	937	903	777
45°	1015	914	755	648	612	784
55°	772	654	491	400	372	690
65°	521	399	263	212	207	517
75°	278	172	121	110	109	294
85°	65	33	29	29	29	75
90°	2	21	34	43	47	10
95°	112	55	67	76	74	133
105°	525	577	105	124	131	561
115°	992	1022	1065	266	142	977
125°	1403	1426	1459	1471	1476	1252
135°	1737	1764	1780	1797	1794	1341
145°	2015	2013	2042	2054	2046	1260
155°	2218	2203	2223	2234	2220	1022
165°	2337	2327	2332	2344	2332	660
175°	2391	2379	2382	2394	2377	228
180°	2386	2386	2386	2386	2386	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1669.4	1669.4	1669.4	1669.4	1669.4
2.5°	1677.0	1669.4	1652.7	1668.0	1664.9
5°	1669.4	1661.8	1642.1	1655.8	1651.3
7.5°	1655.8	1646.8	1625.7	1631.5	1624.1
10°	1637.7	1627.1	1596.9	1592.3	1583.4
12.5°	1615.1	1601.4	1560.5	1551.6	1534.9
15°	1587.8	1571.1	1519.8	1491.2	1476.1
17.5°	1556.1	1531.9	1468.4	1435.2	1411.0
20°	1519.8	1489.6	1414.0	1376.4	1343.0
22.5°	1480.6	1445.8	1358.1	1306.8	1284.3
25°	1441.3	1392.9	1293.1	1231.4	1208.5
27.5°	1394.5	1343.0	1232.8	1161.8	1126.9
30°	1344.6	1287.1	1166.2	1089.3	1048.5
32.5°	1296.3	1226.7	1102.9	1012.2	974.4
35°	1242.0	1164.8	1031.9	936.7	903.4
37.5°	1189.0	1105.8	965.4	861.1	823.4
40°	1133.1	1042.5	895.9	788.7	749.4
42.5°	1075.6	979.0	826.4	714.5	676.9
45°	1015.3	914.0	755.4	648.1	611.8
47.5°	957.9	850.7	687.5	580.1	546.9
50°	894.4	787.1	620.9	516.6	485.0
52.5°	832.4	719.1	557.5	457.7	429.1
55°	772.0	654.1	491.0	400.4	371.7
57.5°	710.1	589.2	432.1	347.5	323.3
60°	646.6	525.7	370.1	293.1	269.0
62.5°	584.8	463.9	317.2	244.8	232.8
65°	521.3	398.8	262.9	211.6	206.9
67.5°	460.9	338.4	211.6	185.8	181.3
70°	397.4	279.5	175.2	160.2	154.0
72.5°	337.0	225.1	146.5	134.5	131.5
75°	277.9	172.2	120.9	110.3	108.9
77.5°	219.1	122.3	95.2	89.2	86.0
80°	164.6	87.7	72.4	66.5	66.5
82.5°	114.8	59.0	49.9	46.8	46.8
85°	64.9	33.2	28.7	28.7	28.7
87.5°	24.2	12.0	12.0	10.6	10.6
90°	1.6	20.7	34.4	43.2	46.6
92.5°	43.2	36.3	41.4	44.9	46.6
95°	112.1	55.1	67.3	76.0	74.2
97.5°	201.9	60.5	88.0	93.3	94.9
100°	305.7	69.1	98.4	112.1	115.6
102.5°	419.4	416.1	101.9	120.8	126.0
105°	524.8	576.6	105.3	124.2	131.2
107.5°	647.3	690.4	108.9	127.7	134.7
110°	764.8	800.9	302.1	129.6	136.3

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	875.3	906.2	876.9	132.8	138.1
115°	992.5	1021.8	1065.0	265.9	141.7
117.5°	1094.4	1128.9	1158.3	911.3	459.2
120°	1208.3	1234.2	1265.4	1286.1	1053.0
122.5°	1304.9	1332.5	1367.3	1377.5	1379.3
125°	1403.3	1425.8	1458.7	1470.8	1475.8
127.5°	1493.1	1517.2	1543.3	1560.5	1562.2
130°	1577.7	1605.4	1624.3	1643.3	1641.7
132.5°	1664.0	1686.6	1705.5	1721.0	1719.4
135°	1736.6	1764.2	1779.7	1797.0	1793.6
137.5°	1812.4	1833.2	1850.6	1867.8	1862.7
140°	1886.6	1900.5	1919.4	1935.0	1926.4
142.5°	1948.9	1961.0	1983.3	1997.1	1988.5
145°	2014.6	2012.7	2042.0	2054.1	2045.6
147.5°	2071.3	2066.3	2095.5	2104.1	2097.4
150°	2126.6	2114.6	2142.3	2152.5	2143.9
152.5°	2173.2	2159.5	2185.3	2195.7	2183.7
155°	2218.1	2202.7	2223.4	2233.7	2219.9
157.5°	2254.4	2240.6	2256.2	2268.3	2254.4
160°	2285.6	2275.1	2285.6	2295.8	2283.7
162.5°	2313.0	2302.7	2311.3	2323.4	2307.9
165°	2337.2	2327.0	2332.0	2344.1	2332.0
167.5°	2356.3	2345.8	2351.1	2363.2	2347.7
170°	2371.8	2361.4	2364.9	2377.0	2361.4
172.5°	2382.1	2371.8	2375.4	2387.4	2371.8
175°	2390.7	2378.6	2382.1	2394.1	2377.0
177.5°	2394.1	2382.1	2383.9	2396.1	2380.4
180°	2385.6	2385.6	2385.6	2385.6	2385.6

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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	6.06	6.77	7.15	7.86	9.35	2.03	2.74	3.13	3.83	5.33
	3H	7.73	8.36	8.83	9.46	10.97	3.21	3.84	4.32	4.94	6.46
	4H	8.33	8.93	9.45	10.03	11.55	3.66	4.26	4.77	5.36	6.88
	6H	8.75	9.30	9.87	10.40	11.93	3.97	4.53	5.10	5.63	7.16
	8H	8.87	9.39	10.00	10.51	12.04	4.06	4.59	5.19	5.71	7.23
	12H	8.93	9.43	10.06	10.54	12.09	4.10	4.60	5.23	5.71	7.26
4H	2H	6.06	6.66	7.18	7.76	9.28	2.61	3.21	3.73	4.31	5.83
	3H	7.88	8.38	9.01	9.51	11.04	3.95	4.45	5.08	5.58	7.11
	4H	8.57	9.03	9.70	10.14	11.70	4.50	4.96	5.63	6.07	7.63
	6H	9.08	9.47	10.22	10.61	12.15	4.91	5.30	6.05	6.44	7.99
	8H	9.25	9.62	10.39	10.75	12.31	5.04	5.41	6.18	6.54	8.10
	12H	9.34	9.67	10.50	10.82	12.38	5.10	5.43	6.25	6.57	8.14
8H	4H	8.53	8.89	9.67	10.02	11.59	4.77	5.14	5.91	6.27	7.83
	6H	9.09	9.39	10.25	10.57	12.12	5.29	5.59	6.44	6.76	8.32
	8H	9.31	9.57	10.47	10.72	12.30	5.48	5.74	6.64	6.89	8.47
	12H	9.44	9.67	10.61	10.82	12.44	5.59	5.82	6.76	6.97	8.59
12H	4H	8.47	8.81	9.63	9.95	11.51	4.77	5.10	5.92	6.24	7.81
	6H	9.07	9.33	10.23	10.48	12.06	5.33	5.60	6.50	6.75	8.33
	8H	9.28	9.51	10.45	10.66	12.28	5.54	5.77	6.71	6.92	8.53

END OF REPORT