

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: P907821

Luminaire Tested: DFN2DIP-4P4F0-060D070US840-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P907821
REPORT IS A COMBINATION OF REPORTS P900654 AND P897523
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P4F0-060D070US840-RLLONL
Description: 4 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open
No Lens
Light Source: -
Ballast/Driver: -

Summary

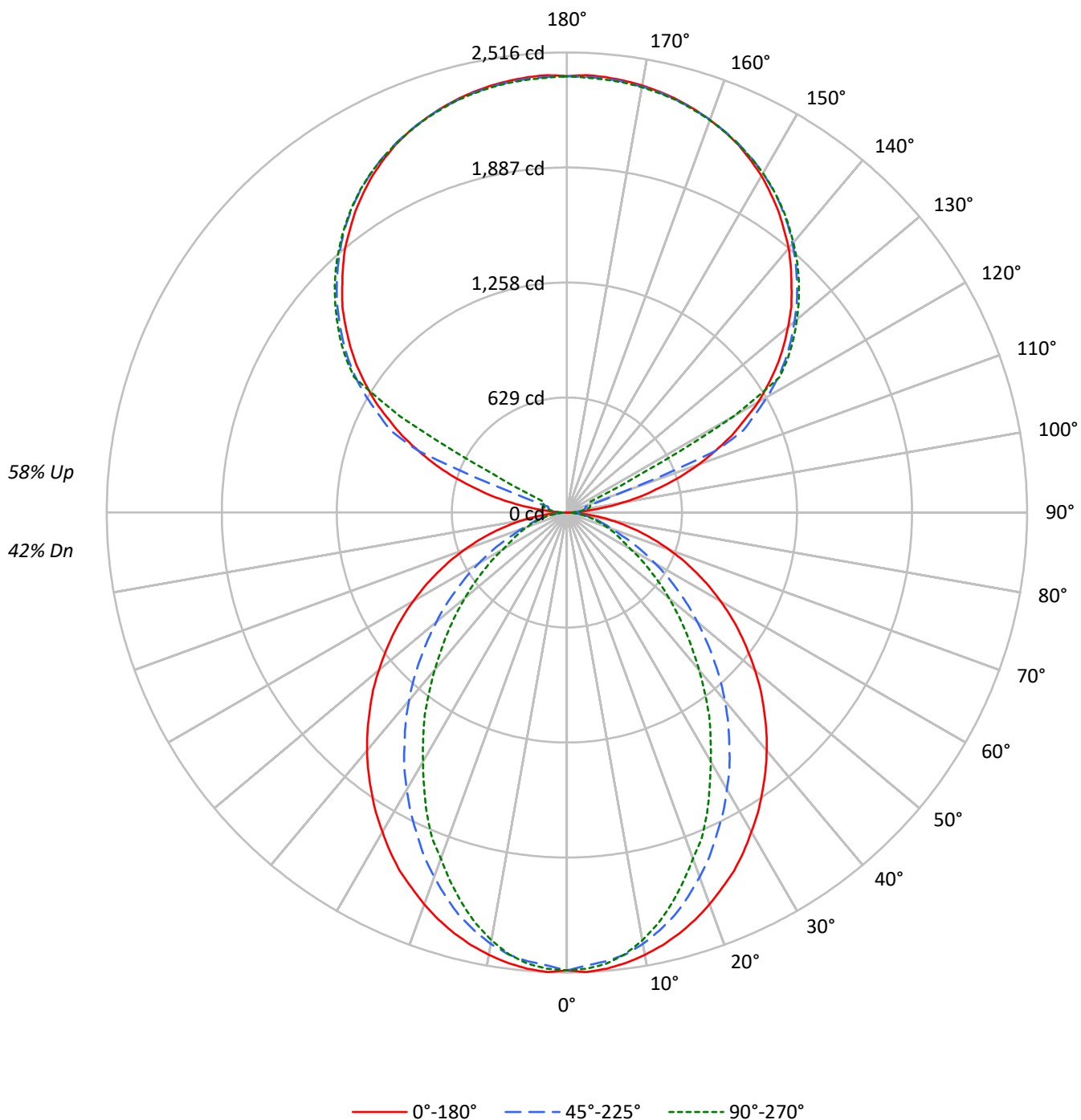
Lumens per Lamp: N/A
Luminaire Lumens: 12148.7 lumens
Efficiency: N/A
Efficacy: 99.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 4.07' x L: 4.07' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 122.6
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9933
Total Harmonic Distortion (THDi): 0.066
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	105	105	105	105	96	96	96	96	79	79	79	64	64	64	49	49	49
1	96	92	89	85	88	85	81	79	70	68	66	56	55	54	44	43	42
2	88	81	75	70	80	74	69	65	62	58	55	50	48	45	39	38	36
3	81	72	65	59	74	66	60	55	55	50	47	45	42	39	35	33	31
4	74	64	56	50	67	59	52	47	49	44	40	40	36	34	32	29	27
5	68	57	49	43	62	52	46	40	44	39	35	36	32	29	29	26	24
6	63	51	43	38	57	47	40	35	40	34	31	33	29	26	26	23	21
7	58	46	39	33	53	43	36	31	36	31	27	30	26	23	24	21	19
8	54	42	35	29	49	39	32	28	33	28	24	27	24	21	22	19	17
9	50	38	31	26	46	36	29	25	30	25	22	25	21	19	21	18	16
10	47	35	28	24	43	33	26	22	28	23	20	23	20	17	19	16	14

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1625	1625	1625
5°	1627	1599	1610
10°	1611	1568	1558
15°	1589	1517	1477
20°	1560	1446	1379
25°	1530	1367	1283
30°	1490	1285	1162
35°	1450	1197	1055
40°	1410	1106	933
45°	1364	1005	822
50°	1316	903	713
55°	1265	794	609
60°	1207	679	502
65°	1140	563	453
70°	1059	455	411
75°	957	402	375
80°	810	339	327
85°	566	229	250

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 1364 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	234.7	1.9
10°-20°	644.3	5.3
20°-30°	904.6	7.4
30°-40°	986.1	8.1
40°-50°	906.3	7.5
50°-60°	711.7	5.9
60°-70°	463.3	3.8
70°-80°	238.5	2.0
80°-90°	65.1	0.5
90°-100°	78.7	0.6
100°-110°	293.3	2.4
110°-120°	777.8	6.4
120°-130°	1290.0	10.6
130°-140°	1370.3	11.3
140°-150°	1273.5	10.5
150°-160°	1023.9	8.4
160°-170°	659.7	5.4
170°-180°	227.1	1.9
0°-30°	1783.6	14.7
0°-40°	2769.6	22.8
0°-60°	4387.7	36.1
0°-90°	5154.5	42.4
90°-120°	1149.7	9.5
90°-150°	5083.5	41.8
90°-180°	6994.0	57.6
0°-180°	12148.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2504	2504	2504	2504	2504	
5°	2504	2493	2463	2484	2477	237
15°	2382	2357	2280	2237	2214	671
25°	2162	2090	1940	1847	1813	994
35°	1863	1747	1548	1405	1355	1166
45°	1523	1371	1133	972	918	1176
55°	1158	981	736	601	558	1035
65°	782	598	394	317	310	775
75°	417	258	181	165	163	441
85°	97	50	43	43	43	112
90°	2	21	34	43	47	11
95°	112	55	67	76	74	133
105°	525	577	105	124	131	561
115°	993	1022	1065	266	142	977
125°	1403	1426	1459	1471	1476	1252
135°	1737	1764	1780	1797	1794	1342
145°	2015	2013	2042	2054	2046	1260
155°	2218	2203	2224	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°	2504.3	2504.3	2504.3	2504.3	2504.3
2.5°	2515.6	2504.3	2479.2	2502.0	2497.5
5°	2504.3	2493.0	2463.4	2483.9	2477.1
7.5°	2483.9	2470.3	2438.6	2447.5	2436.2
10°	2456.6	2440.7	2395.6	2388.6	2375.1
12.5°	2422.8	2402.3	2341.0	2327.5	2302.5
15°	2381.9	2356.8	2279.9	2236.9	2214.2
17.5°	2334.3	2297.9	2202.7	2152.9	2116.7
20°	2279.9	2234.4	2121.2	2064.7	2014.7
22.5°	2221.0	2168.8	2037.3	1960.4	1926.4
25°	2162.1	2089.5	1940.0	1847.1	1813.0
27.5°	2091.9	2014.7	1849.3	1742.7	1690.6
30°	2017.1	1930.8	1749.5	1634.1	1572.8
32.5°	1944.5	1840.2	1654.6	1518.4	1461.7
35°	1863.0	1747.4	1548.0	1405.1	1355.1
37.5°	1783.6	1658.8	1448.2	1291.7	1235.2
40°	1699.7	1563.9	1343.8	1183.0	1124.1
42.5°	1613.7	1468.6	1239.7	1071.9	1015.4
45°	1523.0	1371.0	1133.3	972.1	917.8
47.5°	1436.9	1276.1	1031.3	870.2	820.4
50°	1341.7	1180.8	931.5	775.0	727.6
52.5°	1248.6	1078.6	836.3	686.7	643.7
55°	1158.0	981.3	736.5	600.7	557.5
57.5°	1065.2	883.8	648.2	521.3	484.9
60°	970.0	788.7	555.2	439.8	403.4
62.5°	877.2	695.9	475.8	367.2	349.1
65°	781.9	598.2	394.4	317.4	310.4
67.5°	691.3	507.6	317.4	278.7	272.0
70°	596.0	419.3	262.8	240.2	231.1
72.5°	505.4	337.6	219.7	201.8	197.1
75°	417.0	258.2	181.3	165.4	163.3
77.5°	328.7	183.5	142.8	133.7	129.2
80°	246.9	131.5	108.7	99.8	99.8
82.5°	172.2	88.5	74.7	70.2	70.2
85°	97.4	49.8	43.0	43.0	43.0
87.5°	36.4	18.1	18.1	15.9	15.9
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	416.2	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°	764.9	800.9	302.2	129.6	136.3

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	875.4	906.3	877.0	132.8	138.1
115°	992.6	1021.9	1065.1	265.9	141.7
117.5°	1094.5	1128.9	1158.4	911.4	459.2
120°	1208.4	1234.3	1265.5	1286.2	1053.1
122.5°	1304.9	1332.6	1367.4	1377.6	1379.4
125°	1403.4	1425.9	1458.8	1470.9	1475.9
127.5°	1493.2	1517.3	1543.4	1560.6	1562.3
130°	1577.8	1605.5	1624.4	1643.5	1641.8
132.5°	1664.2	1686.7	1705.6	1721.1	1719.5
135°	1736.7	1764.3	1779.8	1797.2	1793.7
137.5°	1812.5	1833.3	1850.7	1867.9	1862.8
140°	1886.7	1900.7	1919.6	1935.1	1926.5
142.5°	1949.0	1961.2	1983.5	1997.2	1988.6
145°	2014.7	2012.9	2042.2	2054.3	2045.7
147.5°	2071.4	2066.4	2095.7	2104.3	2097.5
150°	2126.8	2114.8	2142.4	2152.6	2144.0
152.5°	2173.3	2159.6	2185.5	2195.9	2183.8
155°	2218.3	2202.8	2223.5	2233.8	2220.1
157.5°	2254.5	2240.8	2256.3	2268.5	2254.5
160°	2285.7	2275.2	2285.7	2295.9	2283.8
162.5°	2313.2	2302.9	2311.5	2323.6	2308.0
165°	2337.3	2327.1	2332.2	2344.3	2332.2
167.5°	2356.4	2345.9	2351.3	2363.4	2347.8
170°	2372.0	2361.6	2365.0	2377.1	2361.6
172.5°	2382.3	2372.0	2375.5	2387.5	2372.0
175°	2390.9	2378.7	2382.3	2394.3	2377.1
177.5°	2394.3	2382.3	2384.1	2396.2	2380.6
180°	2385.7	2385.7	2385.7	2385.7	2385.7

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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	8.10	8.87	9.13	9.90	11.28	4.06	4.83	5.09	5.86	7.24
	3H	9.78	10.47	10.82	11.51	12.91	5.25	5.94	6.28	6.98	8.37
	4H	10.39	11.04	11.44	12.08	13.49	5.70	6.35	6.75	7.39	8.80
	6H	10.81	11.41	11.87	12.46	13.88	6.02	6.62	7.07	7.66	9.08
	8H	10.94	11.51	12.00	12.57	13.99	6.11	6.68	7.17	7.74	9.15
	12H	11.00	11.55	12.07	12.60	14.04	6.15	6.69	7.22	7.75	9.18
4H	2H	8.11	8.77	9.17	9.81	11.21	4.65	5.31	5.71	6.35	7.75
	3H	9.94	10.49	11.01	11.56	12.97	6.00	6.54	7.06	7.61	9.03
	4H	10.64	11.13	11.71	12.19	13.63	6.55	7.05	7.62	8.11	9.55
	6H	11.15	11.58	12.23	12.66	14.10	6.97	7.39	8.04	8.48	9.91
	8H	11.33	11.73	12.41	12.81	14.26	7.10	7.49	8.17	8.57	10.02
	12H	11.43	11.79	12.52	12.88	14.33	7.16	7.52	8.25	8.61	10.06
8H	4H	10.60	11.00	11.68	12.07	13.52	6.83	7.23	7.90	8.30	9.75
	6H	11.17	11.50	12.27	12.62	14.06	7.35	7.68	8.45	8.79	10.24
	8H	11.39	11.68	12.50	12.78	14.25	7.54	7.83	8.65	8.93	10.39
	12H	11.53	11.79	12.64	12.88	14.39	7.66	7.91	8.77	9.01	10.51
12H	4H	10.55	10.91	11.65	12.00	13.45	6.83	7.19	7.93	8.28	9.73
	6H	11.15	11.44	12.25	12.54	14.00	7.40	7.69	8.50	8.79	10.25
	8H	11.37	11.62	12.48	12.72	14.22	7.61	7.86	8.72	8.96	10.46

END OF REPORT