

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: P907868

Luminaire Tested: DFN2DIP-4P4F0-080D070US840-RLFL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P907868
REPORT IS A COMBINATION OF REPORTS P899138 AND P895967
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P4F0-080D070US840-RLLFLL
Description: 4 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

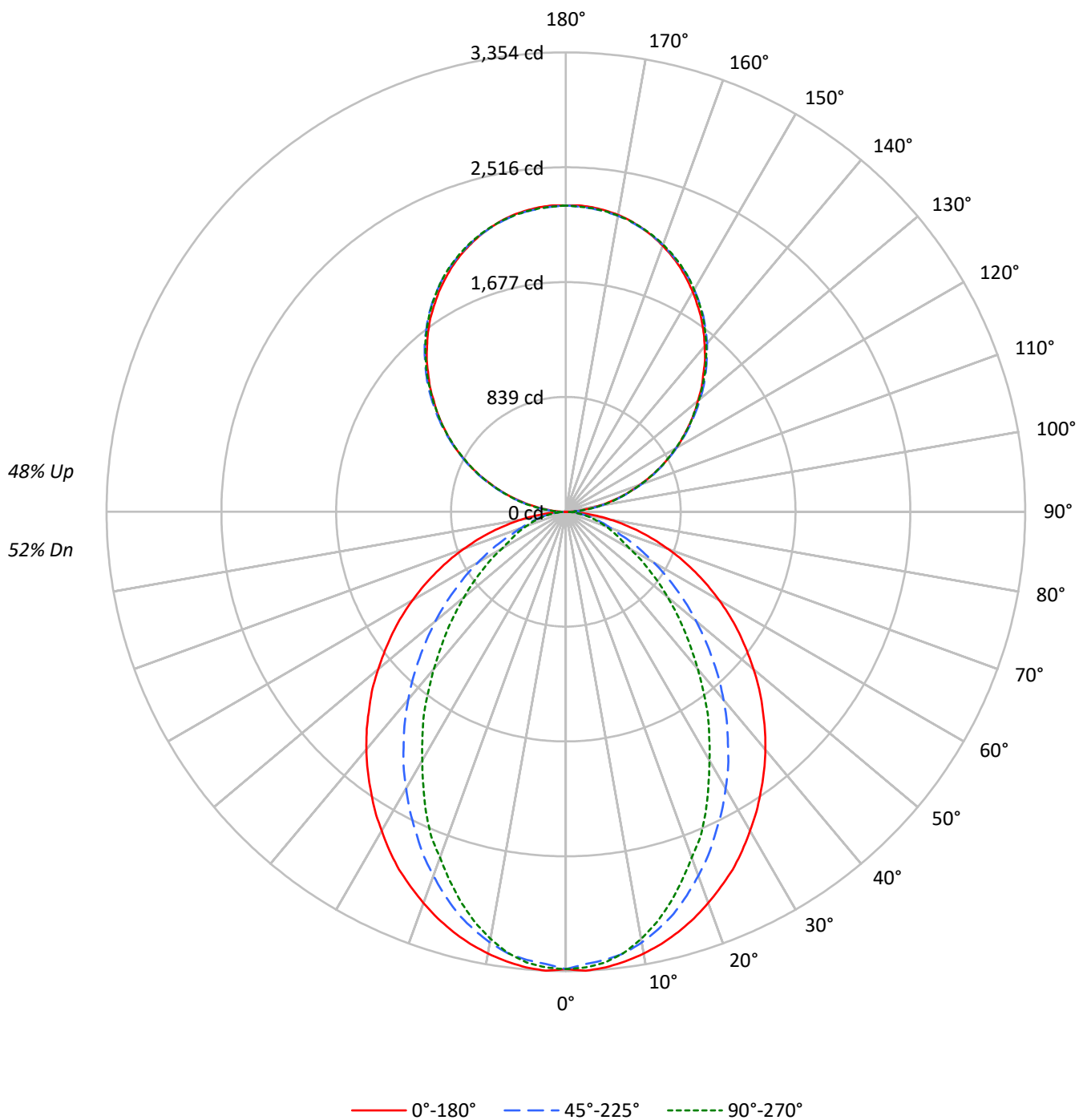
Lumens per Lamp: N/A
Luminaire Lumens: 13123.2 lumens
Efficiency: N/A
Efficacy: 89.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 4.07' x L: 4.07' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 146.9
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9971
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
RCR																	
0	108	108	108	108	100	100	100	100	85	85	85		71	71	71		58
1	99	95	91	88	91	88	85	82	75	73	71		63	62	60		52
2	90	83	77	72	83	77	72	68	66	63	59		56	53	51		47
3	83	74	67	61	76	69	62	57	59	54	50		50	47	44		42
4	76	66	58	52	70	61	54	49	53	48	43		45	41	38		38
5	70	59	51	45	65	55	48	43	47	42	38		41	36	33		34
6	65	53	45	39	60	49	42	37	43	37	33		37	33	29		31
7	60	48	40	35	55	45	38	33	39	34	30		34	29	26		29
8	56	44	36	31	52	41	34	29	36	30	26		31	27	23		26
9	52	40	33	28	48	38	31	26	33	28	24		29	24	21		24
10	49	37	30	25	45	35	28	24	30	25	22		26	22	19		23

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2166	2166	2166
5°	2170	2132	2146
10°	2148	2091	2077
15°	2119	2023	1970
20°	2080	1928	1838
25°	2040	1822	1711
30°	1987	1713	1549
35°	1934	1596	1407
40°	1881	1474	1244
45°	1818	1340	1096
50°	1754	1204	951
55°	1687	1058	812
60°	1609	906	670
65°	1520	751	603
70°	1412	607	547
75°	1276	537	500
80°	1080	452	436
85°	755	306	334

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1818 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	312.9	2.4
10°-20°	859.1	6.5
20°-30°	1206.1	9.2
30°-40°	1314.7	10.0
40°-50°	1208.4	9.2
50°-60°	949.0	7.2
60°-70°	617.7	4.7
70°-80°	318.0	2.4
80°-90°	87.5	0.7
90°-100°	138.3	1.1
100°-110°	439.6	3.3
110°-120°	752.2	5.7
120°-130°	989.3	7.5
130°-140°	1110.5	8.5
140°-150°	1088.9	8.3
150°-160°	913.5	7.0
160°-170°	605.8	4.6
170°-180°	211.7	1.6
0°-30°	2378.1	18.1
0°-40°	3692.9	28.1
0°-60°	5850.2	44.6
0°-90°	6873.4	52.4
90°-120°	1330.1	10.1
90°-150°	4518.8	34.4
90°-180°	6250.0	47.6
0°-180°	13123.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3339	3339	3339	3339	3339	
5°	3339	3324	3284	3312	3303	317
15°	3176	3142	3040	2982	2952	895
25°	2883	2786	2587	2463	2417	1326
35°	2484	2330	2064	1874	1807	1555
45°	2031	1828	1511	1296	1224	1568
55°	1544	1308	982	801	744	1380
65°	1043	798	526	423	414	1034
75°	556	344	242	221	218	588
85°	130	66	57	57	57	149
90°	2	24	66	62	64	13
95°	98	117	121	121	117	109
105°	406	411	415	419	419	428
115°	755	766	762	760	755	747
125°	1098	1115	1109	1103	1101	981
135°	1420	1441	1445	1443	1438	1098
145°	1724	1738	1748	1750	1743	1077
155°	1972	1977	1983	1992	1986	907
165°	2145	2143	2143	2156	2147	605
175°	2232	2226	2222	2236	2224	212
180°	2236	2236	2236	2236	2236	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3339.0	3339.0	3339.0	3339.0	3339.0
2.5°	3354.1	3339.0	3305.7	3336.1	3330.0
5°	3339.0	3324.0	3284.5	3311.8	3302.8
7.5°	3311.8	3293.8	3251.5	3263.4	3248.2
10°	3275.5	3254.4	3194.1	3184.8	3166.8
12.5°	3230.4	3203.1	3121.3	3103.3	3070.0
15°	3175.8	3142.5	3039.9	2982.5	2952.3
17.5°	3112.3	3063.9	2937.0	2870.6	2822.2
20°	3039.9	2979.3	2828.3	2753.0	2686.2
22.5°	2961.3	2891.7	2716.4	2613.8	2568.6
25°	2882.8	2786.0	2586.6	2462.9	2417.3
27.5°	2789.1	2686.2	2465.7	2323.7	2254.1
30°	2689.5	2574.3	2332.7	2178.8	2097.0
32.5°	2592.6	2453.6	2206.1	2024.6	1948.9
35°	2484.0	2329.8	2064.0	1873.6	1806.9
37.5°	2378.1	2211.8	1931.0	1722.2	1646.9
40°	2266.3	2085.2	1791.8	1577.3	1498.7
42.5°	2151.5	1958.2	1652.9	1429.3	1353.8
45°	2030.6	1828.1	1511.0	1296.2	1223.8
47.5°	1915.9	1701.4	1375.0	1160.2	1093.9
50°	1788.9	1574.5	1242.0	1033.3	970.1
52.5°	1664.9	1438.1	1115.0	915.6	858.3
55°	1544.0	1308.4	982.0	800.8	743.5
57.5°	1420.3	1178.5	864.3	695.1	646.6
60°	1293.2	1051.6	740.2	586.3	538.0
62.5°	1169.5	927.8	634.5	489.6	465.5
65°	1042.6	797.6	525.7	423.2	413.8
67.5°	921.7	676.8	423.2	371.5	362.6
70°	794.8	559.2	350.4	320.2	308.1
72.5°	673.9	450.1	293.1	269.0	262.9
75°	555.9	344.4	241.8	220.6	217.7
77.5°	438.3	244.6	190.5	178.2	172.2
80°	329.2	175.4	144.9	133.0	133.0
82.5°	229.5	118.0	99.7	93.6	93.6
85°	129.9	66.3	57.4	57.4	57.4
87.5°	48.4	24.0	24.0	21.2	21.2
90°	2.0	24.2	66.0	62.0	64.0
92.5°	41.8	56.7	58.7	60.7	60.7
95°	98.4	117.2	120.7	120.7	117.2
97.5°	163.8	181.3	188.7	188.7	188.7
100°	239.2	254.8	260.1	260.1	258.1
102.5°	318.8	330.2	337.7	339.7	337.7
105°	405.8	411.1	415.2	418.6	418.6
107.5°	492.0	500.1	500.1	501.5	492.0
110°	575.6	586.4	586.4	586.4	581.0



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	665.9	677.4	675.4	669.9	665.9
115°	754.9	765.7	762.3	760.3	754.9
117.5°	843.1	858.0	848.6	843.1	837.8
120°	932.1	947.0	932.1	932.1	926.0
122.5°	1013.0	1031.9	1022.5	1017.0	1013.0
125°	1097.9	1114.8	1109.4	1103.4	1101.4
127.5°	1180.8	1201.7	1194.4	1186.3	1180.8
130°	1258.4	1282.6	1279.3	1275.3	1267.8
132.5°	1345.3	1364.2	1365.5	1356.1	1350.7
135°	1420.2	1441.0	1445.1	1443.0	1437.6
137.5°	1503.7	1520.6	1523.9	1522.6	1514.5
140°	1577.2	1594.1	1603.5	1603.5	1596.1
142.5°	1652.6	1669.5	1674.9	1676.9	1669.5
145°	1724.1	1737.6	1748.4	1750.4	1743.0
147.5°	1788.2	1805.0	1813.1	1816.4	1809.1
150°	1854.2	1865.6	1873.1	1879.2	1873.1
152.5°	1912.8	1924.3	1933.7	1941.2	1933.7
155°	1971.5	1976.8	1983.0	1992.4	1986.3
157.5°	2022.1	2026.1	2029.4	2043.0	2033.5
160°	2067.2	2071.2	2073.3	2084.7	2076.6
162.5°	2109.0	2109.0	2111.0	2123.7	2114.4
165°	2144.7	2142.6	2142.6	2156.2	2146.7
167.5°	2177.1	2171.0	2171.0	2184.4	2175.0
170°	2201.3	2196.0	2193.9	2207.4	2196.0
172.5°	2218.2	2212.7	2210.7	2224.2	2212.7
175°	2231.6	2226.2	2222.2	2235.6	2224.2
177.5°	2239.1	2233.6	2229.6	2241.1	2229.6
180°	2235.6	2235.6	2235.6	2235.6	2235.6

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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	10.07	10.92	11.01	11.88	13.11	6.03	6.88	6.97	7.84	9.08
	3H	11.75	12.51	12.71	13.48	14.74	7.22	7.98	8.18	8.95	10.21
	4H	12.37	13.09	13.34	14.05	15.33	7.67	8.39	8.64	9.36	10.63
	6H	12.80	13.46	13.78	14.43	15.71	8.00	8.66	8.98	9.63	10.92
	8H	12.93	13.55	13.91	14.54	15.83	8.09	8.72	9.08	9.71	10.99
	12H	12.99	13.59	13.98	14.57	15.88	8.14	8.73	9.13	9.72	11.02
4H	2H	10.09	10.81	11.07	11.78	13.05	6.63	7.35	7.61	8.32	9.59
	3H	11.93	12.53	12.91	13.52	14.81	7.99	8.58	8.97	9.58	10.87
	4H	12.63	13.17	13.62	14.16	15.47	8.54	9.08	9.53	10.07	11.38
	6H	13.15	13.62	14.15	14.63	15.94	8.96	9.43	9.96	10.44	11.75
	8H	13.33	13.76	14.33	14.77	16.09	9.09	9.53	10.09	10.53	11.86
	12H	13.43	13.82	14.45	14.84	16.17	9.16	9.55	10.18	10.57	11.90
8H	4H	12.60	13.03	13.60	14.04	15.36	8.82	9.26	9.83	10.27	11.59
	6H	13.17	13.53	14.20	14.58	15.90	9.34	9.70	10.37	10.75	12.07
	8H	13.39	13.71	14.43	14.74	16.08	9.54	9.85	10.57	10.89	12.23
	12H	13.53	13.81	14.57	14.84	16.23	9.66	9.94	10.70	10.97	12.35
12H	4H	12.55	12.94	13.57	13.97	15.29	8.83	9.22	9.85	10.25	11.57
	6H	13.14	13.46	14.18	14.50	15.84	9.39	9.71	10.43	10.75	12.09
	8H	13.37	13.65	14.41	14.68	16.06	9.61	9.89	10.65	10.92	12.30

END OF REPORT