

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: P908993

Luminaire Tested: DFN2DIP-SQ2F0-050D080US840-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P908993
REPORT IS A COMBINATION OF REPORTS P901355 AND P898215
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ2F0-050D080US840-FLLONL
Description: 2 foot, Square Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

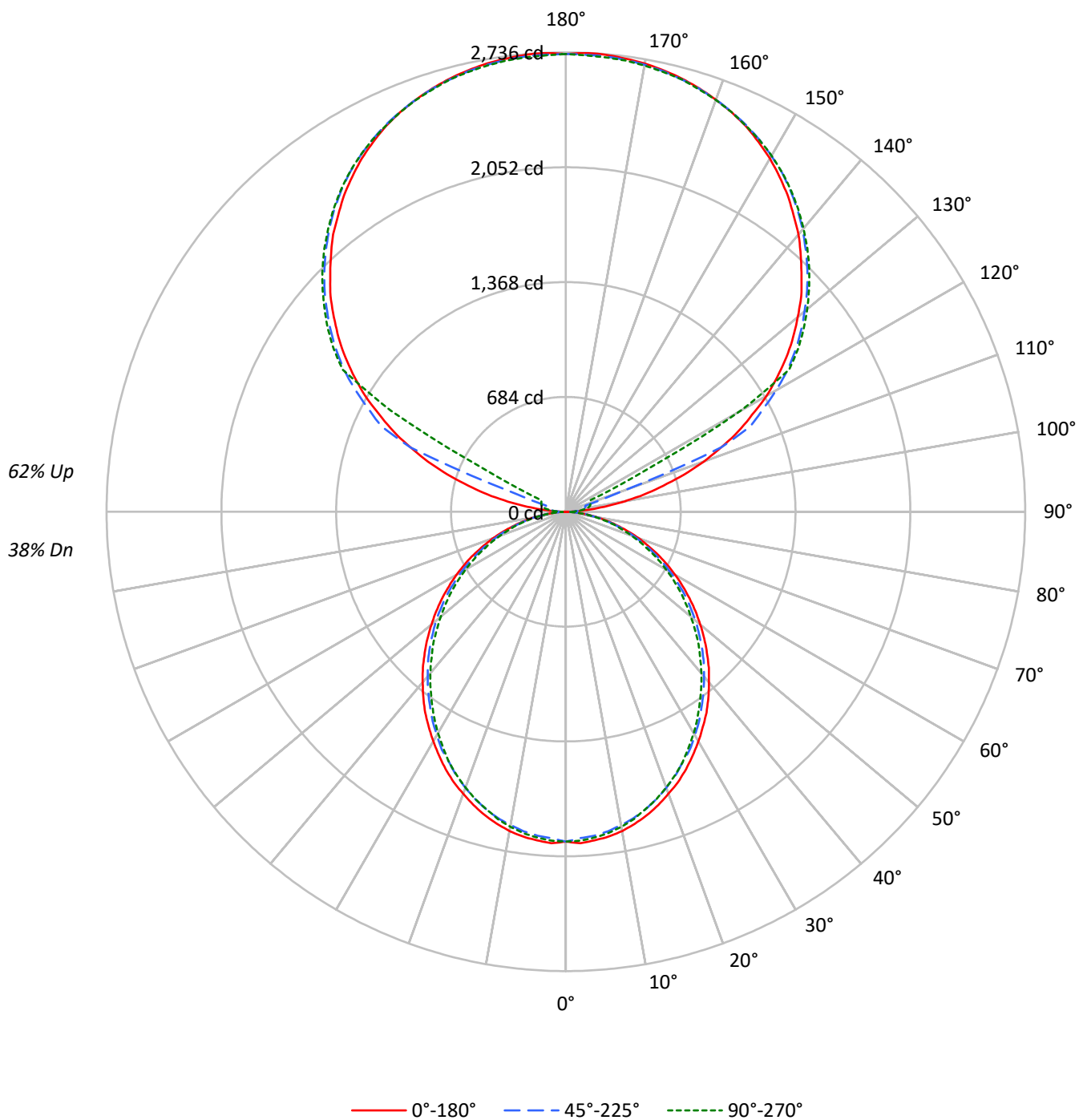
Lumens per Lamp: N/A
Luminaire Lumens: 12997.0 lumens
Efficiency: N/A
Efficacy: 119.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.21' x L: 2.21' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 109.2
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.996
Total Harmonic Distortion (THDi): 0.064
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	95	95	95	95	77	77	77	61	61	61	46	46	46
1	95	91	87	84	86	83	80	77	67	65	63	53	52	50	40	39	38
2	87	79	73	68	78	72	67	63	59	55	52	47	44	42	35	34	32
3	79	70	63	57	71	64	57	52	52	48	44	41	38	36	31	29	28
4	72	62	54	48	65	56	50	44	46	41	37	37	33	30	28	26	24
5	66	55	47	41	60	50	43	38	41	36	32	33	29	26	25	23	21
6	61	49	41	36	55	45	38	33	37	32	28	30	26	23	23	20	18
7	56	44	36	31	51	41	34	29	34	28	25	27	23	20	21	18	16
8	52	40	33	27	47	37	30	25	31	25	22	25	21	18	19	16	14
9	49	37	29	24	44	34	27	23	28	23	19	23	19	16	18	15	13
10	45	33	26	22	41	31	25	20	26	21	17	21	17	15	16	14	12

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4320	4320	4320
5°	4320	4250	4283
10°	4277	4184	4219
15°	4207	4106	4122
20°	4114	4001	4023
25°	4022	3877	3910
30°	3908	3761	3768
35°	3800	3626	3618
40°	3668	3489	3475
45°	3536	3352	3327
50°	3391	3207	3158
55°	3239	3040	3001
60°	3066	2843	2821
65°	2877	2637	2608
70°	2636	2387	2378
75°	2307	2086	2157
80°	1905	1703	1752
85°	1288	1074	1100

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3536 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	184.9	1.4
10°-20°	520.3	4.0
20°-30°	764.6	5.9
30°-40°	888.1	6.8
40°-50°	887.0	6.8
50°-60°	773.4	6.0
60°-70°	571.7	4.4
70°-80°	323.5	2.5
80°-90°	90.2	0.7
90°-100°	89.9	0.7
100°-110°	335.1	2.6
110°-120°	888.9	6.8
120°-130°	1474.3	11.3
130°-140°	1566.0	12.0
140°-150°	1455.4	11.2
150°-160°	1170.1	9.0
160°-170°	754.0	5.8
170°-180°	259.5	2.0
0°-30°	1469.8	11.3
0°-40°	2357.9	18.1
0°-60°	4018.3	30.9
0°-90°	5003.6	38.5
90°-120°	1314.0	10.1
90°-150°	5809.7	44.7
90°-180°	7993.0	61.5
0°-180°	12997.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1965	1965	1965	1965	1965	
5°	1965	1957	1936	1952	1948	187
15°	1870	1859	1834	1842	1833	527
25°	1693	1678	1646	1649	1646	779
35°	1460	1442	1411	1400	1390	912
45°	1188	1175	1147	1126	1118	917
55°	899	888	865	843	833	804
65°	606	595	576	559	550	600
75°	317	314	304	293	297	339
85°	77	76	74	68	66	86
90°	2	24	39	49	53	12
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	2518	2541	2553	2537	1168
165°	2671	2660	2665	2679	2665	755
175°	2732	2719	2723	2736	2717	260
180°	2726	2726	2726	2726	2726	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1964.7	1964.7	1964.7	1964.7	1964.7
2.5°	1976.1	1966.7	1945.9	1964.7	1961.2
5°	1964.7	1957.3	1936.4	1951.5	1947.9
7.5°	1951.5	1940.3	1919.5	1934.7	1930.9
10°	1930.9	1917.6	1895.0	1910.0	1904.4
12.5°	1902.4	1891.2	1868.6	1877.9	1874.1
15°	1870.3	1859.1	1834.4	1842.1	1832.6
17.5°	1830.6	1819.4	1794.7	1804.1	1794.7
20°	1787.2	1775.9	1749.5	1755.0	1747.7
22.5°	1743.8	1726.8	1702.1	1702.1	1698.3
25°	1692.7	1677.7	1645.6	1649.2	1645.6
27.5°	1636.0	1622.8	1598.3	1592.7	1583.3
30°	1579.4	1564.3	1536.0	1530.4	1522.8
32.5°	1518.9	1507.7	1477.4	1466.0	1458.4
35°	1460.4	1441.6	1411.3	1399.9	1390.5
37.5°	1394.2	1377.3	1347.0	1333.7	1324.3
40°	1326.4	1311.1	1280.8	1263.9	1256.4
42.5°	1260.2	1245.0	1214.9	1195.8	1184.6
45°	1188.4	1175.2	1146.7	1126.1	1118.4
47.5°	1118.4	1105.2	1075.0	1054.1	1042.9
50°	1044.7	1035.3	1008.9	982.4	972.9
52.5°	972.9	959.7	935.2	914.4	901.2
55°	899.4	888.0	865.3	842.6	833.2
57.5°	825.6	816.2	791.5	768.9	761.2
60°	751.8	744.5	718.0	697.1	691.6
62.5°	680.1	666.9	648.0	629.1	621.6
65°	606.5	595.1	576.2	559.3	549.8
67.5°	531.0	521.4	504.5	491.3	483.6
70°	461.0	453.4	436.4	423.1	415.8
72.5°	389.3	381.6	372.2	359.0	353.4
75°	317.3	313.7	304.1	292.9	296.7
77.5°	253.2	245.5	241.8	236.1	230.6
80°	189.0	187.0	183.2	177.6	173.8
82.5°	128.5	128.5	126.6	119.1	119.1
85°	77.4	75.5	73.7	68.0	66.1
87.5°	34.0	30.3	26.5	20.8	18.9
90°	1.9	23.6	39.4	49.4	53.2
92.5°	49.4	41.5	47.4	51.3	53.2
95°	128.2	63.0	76.9	86.9	84.8
97.5°	230.8	69.1	100.5	106.6	108.5
100°	349.3	79.0	112.5	128.2	132.1
102.5°	479.4	475.5	116.4	137.9	144.1
105°	599.8	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°	1000.4	1035.7	1002.3	151.8	157.9
115°	1134.4	1167.9	1217.3	303.9	161.9
117.5°	1250.8	1290.2	1323.9	1041.6	524.8
120°	1381.1	1410.6	1446.2	1469.9	1203.5
122.5°	1491.4	1523.1	1562.7	1574.4	1576.5
125°	1603.9	1629.6	1667.1	1680.9	1686.8
127.5°	1706.5	1734.1	1763.9	1783.5	1785.4
130°	1803.2	1834.8	1856.4	1878.2	1876.3
132.5°	1901.9	1927.6	1949.2	1967.0	1965.1
135°	1984.8	2016.4	2034.0	2054.0	2049.9
137.5°	2071.5	2095.2	2115.1	2134.8	2128.9
140°	2156.3	2172.2	2193.8	2211.6	2201.7
142.5°	2227.6	2241.3	2266.8	2282.6	2272.7
145°	2302.5	2300.4	2333.9	2347.7	2337.8
147.5°	2367.4	2361.6	2395.0	2404.9	2397.1
150°	2430.6	2416.8	2448.4	2460.1	2450.3
152.5°	2483.9	2468.1	2497.6	2509.6	2495.8
155°	2535.2	2517.6	2541.2	2552.9	2537.3
157.5°	2576.6	2560.9	2578.7	2592.5	2576.6
160°	2612.2	2600.3	2612.2	2623.9	2610.1
162.5°	2643.6	2631.9	2641.7	2655.5	2637.8
165°	2671.3	2659.6	2665.4	2679.2	2665.4
167.5°	2693.0	2681.1	2687.2	2701.0	2683.2
170°	2710.9	2698.9	2702.9	2716.7	2698.9
172.5°	2722.6	2710.9	2714.8	2728.7	2710.9
175°	2732.4	2718.6	2722.6	2736.3	2716.7
177.5°	2736.3	2722.6	2724.6	2738.5	2720.7
180°	2726.5	2726.5	2726.5	2726.5	2726.5

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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	11.07	11.84	12.12	12.90	14.32	10.63	11.40	11.68	12.45	13.88
	3H	12.71	13.40	13.77	14.46	15.90	12.22	12.90	13.28	13.97	15.41
	4H	13.28	13.93	14.35	15.00	16.45	12.78	13.44	13.86	14.50	15.95
	6H	13.66	14.26	14.74	15.33	16.79	13.16	13.76	14.24	14.83	16.29
	8H	13.75	14.32	14.84	15.41	16.87	13.25	13.82	14.34	14.91	16.37
	12H	13.79	14.33	14.88	15.41	16.89	13.28	13.82	14.37	14.90	16.39
4H	2H	11.51	12.16	12.59	13.23	14.68	11.16	11.81	12.23	12.87	14.33
	3H	13.35	13.89	14.43	14.98	16.45	12.94	13.48	14.02	14.57	16.04
	4H	14.04	14.54	15.13	15.62	17.11	13.62	14.12	14.71	15.20	16.69
	6H	14.53	14.96	15.63	16.07	17.55	14.10	14.53	15.20	15.64	17.11
	8H	14.67	15.07	15.77	16.17	17.66	14.23	14.63	15.33	15.73	17.23
	12H	14.73	15.09	15.85	16.20	17.70	14.28	14.64	15.40	15.76	17.26
8H	4H	14.22	14.62	15.32	15.72	17.21	13.84	14.24	14.94	15.34	16.83
	6H	14.82	15.15	15.94	16.29	17.79	14.44	14.77	15.56	15.91	17.40
	8H	15.03	15.32	16.16	16.44	17.95	14.64	14.93	15.76	16.05	17.56
	12H	15.14	15.40	16.27	16.52	18.06	14.73	14.99	15.86	16.11	17.65
12H	4H	14.20	14.56	15.31	15.67	17.17	13.83	14.19	14.94	15.30	16.80
	6H	14.85	15.14	15.97	16.26	17.77	14.47	14.76	15.60	15.88	17.40
	8H	15.07	15.32	16.20	16.44	17.99	14.69	14.94	15.82	16.06	17.61

END OF REPORT