

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: P925387

Luminaire Tested: DFN2DIP-SQ2F0-060D080US950-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P925387
REPORT IS A COMBINATION OF REPORTS P901358 AND P898215
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ2F0-060D080US950-RLLONL
Description: 2 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

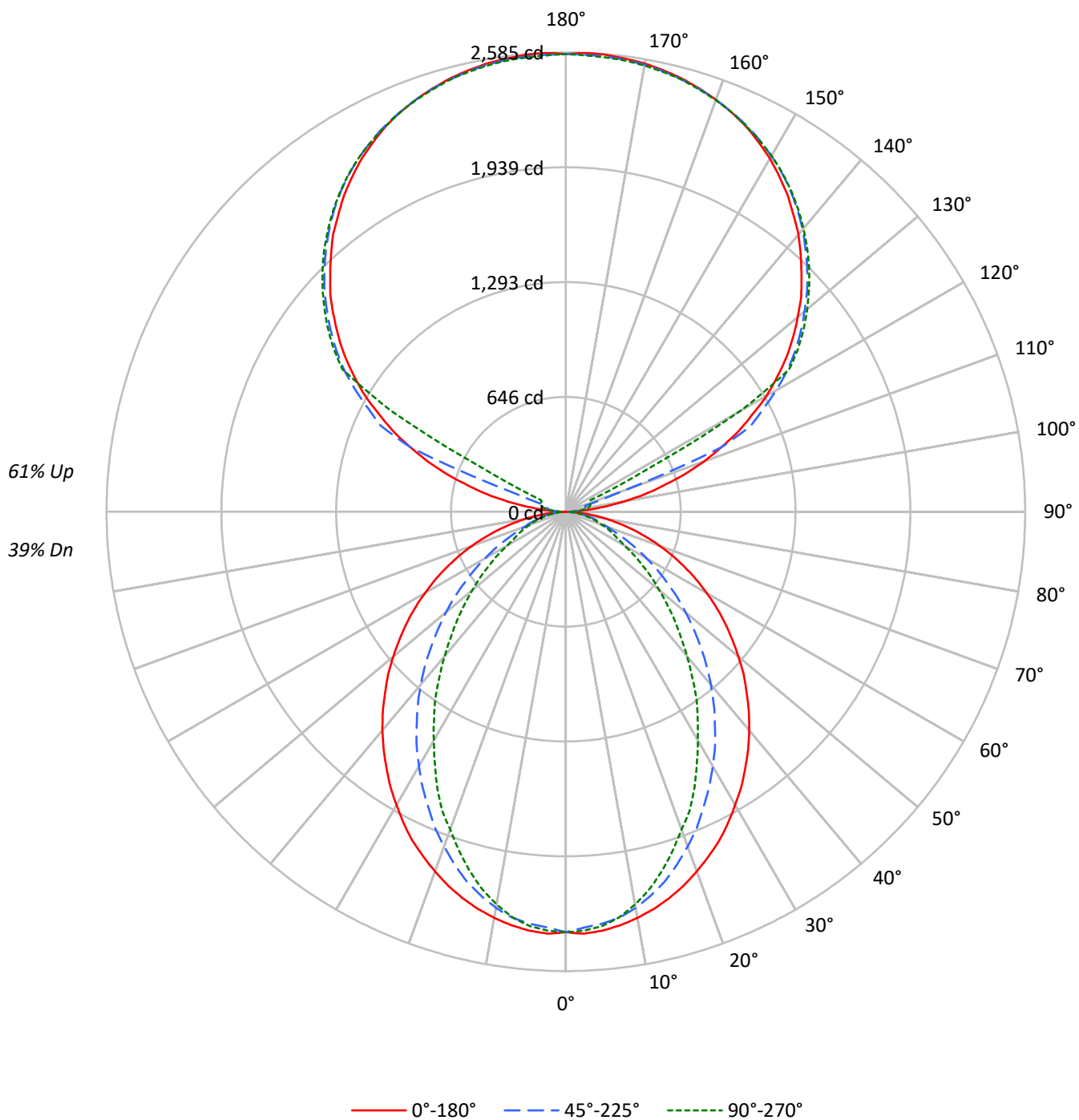
Lumens per Lamp: N/A
Luminaire Lumens: 12421.1 lumens
Efficiency: N/A
Efficacy: 103.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.21' x L: 2.21' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 120
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9781
Total Harmonic Distortion (THDi): 0.075
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	95	95	95	95	77	77	77	61	61	61	46	46	46
1	96	92	88	85	87	83	80	78	68	66	64	54	53	52	41	41	40
2	87	80	75	70	79	73	68	64	60	57	54	48	46	44	37	35	34
3	80	71	64	58	73	65	59	54	53	49	46	43	40	37	33	31	29
4	73	63	55	50	67	58	51	46	48	43	39	38	35	32	30	27	26
5	67	56	48	43	61	52	45	40	43	38	34	35	31	28	27	25	23
6	62	51	43	37	56	46	40	35	39	34	30	31	28	25	25	22	20
7	57	46	38	33	52	42	35	31	35	30	26	29	25	22	23	20	18
8	53	42	34	29	49	38	32	27	32	27	23	26	22	20	21	18	16
9	50	38	31	26	45	35	29	24	29	24	21	24	20	18	19	17	15
10	46	35	28	23	42	32	26	22	27	22	19	22	19	16	18	15	13

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	5202	5202	5202
5°	5201	5108	5145
10°	5141	4997	4970
15°	5061	4820	4705
20°	4958	4583	4381
25°	4853	4318	4070
30°	4715	4047	3677
35°	4579	3757	3331
40°	4441	3459	2937
45°	4280	3129	2580
50°	4114	2797	2231
55°	3940	2444	1897
60°	3737	2077	1554
65°	3504	1704	1391
70°	3220	1357	1248
75°	2864	1174	1122
80°	2351	954	950
85°	1530	592	675

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 4280 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	221.7	1.8
10°-20°	608.7	4.9
20°-30°	854.5	6.9
30°-40°	931.5	7.5
40°-50°	856.2	6.9
50°-60°	672.4	5.4
60°-70°	437.7	3.5
70°-80°	225.3	1.8
80°-90°	62.0	0.5
90°-100°	84.9	0.7
100°-110°	316.6	2.5
110°-120°	839.7	6.8
120°-130°	1392.7	11.2
130°-140°	1479.4	11.9
140°-150°	1374.9	11.1
150°-160°	1105.4	8.9
160°-170°	712.3	5.7
170°-180°	245.2	2.0
0°-30°	1684.9	13.6
0°-40°	2616.4	21.1
0°-60°	4144.9	33.4
0°-90°	4869.9	39.2
90°-120°	1241.3	10.0
90°-150°	5488.3	44.2
90°-180°	7551.0	60.8
0°-180°	12421.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2366	2366	2366	2366	2366	
5°	2366	2355	2327	2346	2340	224
15°	2250	2226	2154	2113	2092	634
25°	2042	1974	1833	1745	1713	939
35°	1760	1651	1462	1327	1280	1102
45°	1439	1295	1071	918	867	1111
55°	1094	927	696	567	527	978
65°	739	565	372	300	293	732
75°	394	244	171	156	154	417
85°	92	47	41	41	41	106
90°	2	22	37	47	50	12
95°	121	60	73	82	80	143
105°	567	623	114	134	142	605
115°	1072	1103	1150	287	153	1055
125°	1515	1540	1575	1588	1594	1351
135°	1875	1905	1922	1940	1936	1448
145°	2175	2173	2205	2218	2208	1360
155°	2395	2378	2401	2412	2397	1104
165°	2524	2512	2518	2531	2518	713
175°	2581	2568	2572	2585	2566	246
180°	2576	2576	2576	2576	2576	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2365.7	2365.7	2365.7	2365.7	2365.7
2.5°	2376.4	2365.7	2342.1	2363.6	2359.3
5°	2365.7	2355.0	2327.1	2346.5	2340.1
7.5°	2346.5	2333.7	2303.7	2312.1	2301.4
10°	2320.7	2305.7	2263.1	2256.5	2243.7
12.5°	2288.7	2269.4	2211.5	2198.8	2175.1
15°	2250.1	2226.4	2153.8	2113.1	2091.7
17.5°	2205.2	2170.8	2080.9	2033.8	1999.6
20°	2153.8	2110.8	2003.9	1950.5	1903.2
22.5°	2098.1	2048.8	1924.6	1851.9	1819.9
25°	2042.5	1973.9	1832.6	1745.0	1712.7
27.5°	1976.2	1903.2	1747.0	1646.3	1597.1
30°	1905.5	1824.0	1652.7	1543.7	1485.8
32.5°	1836.9	1738.4	1563.0	1434.4	1380.8
35°	1759.9	1650.7	1462.4	1327.4	1280.2
37.5°	1685.0	1567.0	1368.1	1220.3	1166.8
40°	1605.7	1477.4	1269.5	1117.5	1061.9
42.5°	1524.4	1387.4	1171.1	1012.6	959.2
45°	1438.7	1295.2	1070.6	918.3	867.0
47.5°	1357.4	1205.5	974.2	822.1	775.0
50°	1267.5	1115.5	880.0	732.1	687.4
52.5°	1179.5	1019.0	790.0	648.7	608.1
55°	1094.0	927.0	695.8	567.4	526.7
57.5°	1006.3	834.9	612.4	492.5	458.1
60°	916.3	745.1	524.5	415.5	381.1
62.5°	828.6	657.4	449.5	346.9	329.8
65°	738.7	565.1	372.5	299.8	293.3
67.5°	653.0	479.5	299.8	263.3	256.9
70°	563.1	396.1	248.2	227.0	218.3
72.5°	477.5	318.9	207.6	190.6	186.2
75°	393.9	243.9	171.2	156.3	154.3
77.5°	310.5	173.3	134.9	126.3	122.0
80°	233.3	124.2	102.7	94.3	94.3
82.5°	162.7	83.6	70.6	66.3	66.3
85°	92.0	47.0	40.6	40.6	40.6
87.5°	34.3	17.1	17.1	15.0	15.0
90°	1.8	22.3	37.2	46.7	50.3
92.5°	46.7	39.2	44.7	48.5	50.3
95°	121.1	59.5	72.6	82.1	80.1
97.5°	218.0	65.3	94.9	100.7	102.5
100°	330.0	74.6	106.3	121.1	124.8
102.5°	452.9	449.2	110.0	130.3	136.1
105°	566.6	622.6	113.7	134.1	141.7
107.5°	698.9	745.4	117.5	137.9	145.4
110°	825.8	864.7	326.3	139.9	147.2

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	945.0	978.4	946.8	143.4	149.2
115°	1071.6	1103.3	1150.0	287.1	152.9
117.5°	1181.6	1218.8	1250.7	984.0	495.8
120°	1304.7	1332.5	1366.2	1388.5	1136.9
122.5°	1408.9	1438.8	1476.2	1487.3	1489.3
125°	1515.1	1539.5	1574.9	1587.9	1593.5
127.5°	1612.1	1638.2	1666.4	1684.9	1686.7
130°	1703.5	1733.3	1753.7	1774.3	1772.5
132.5°	1796.7	1821.0	1841.4	1858.2	1856.4
135°	1875.0	1904.9	1921.5	1940.3	1936.5
137.5°	1956.9	1979.3	1998.1	2016.7	2011.1
140°	2037.0	2052.1	2072.5	2089.3	2079.9
142.5°	2104.3	2117.3	2141.4	2156.3	2147.0
145°	2175.1	2173.1	2204.8	2217.9	2208.5
147.5°	2236.5	2230.9	2262.5	2271.9	2264.5
150°	2296.2	2283.1	2313.0	2324.0	2314.8
152.5°	2346.5	2331.6	2359.4	2370.8	2357.7
155°	2394.9	2378.3	2400.6	2411.7	2396.9
157.5°	2434.0	2419.2	2436.0	2449.1	2434.0
160°	2467.7	2456.5	2467.7	2478.8	2465.7
162.5°	2497.4	2486.3	2495.6	2508.6	2491.8
165°	2523.5	2512.5	2518.0	2531.0	2518.0
167.5°	2544.0	2532.8	2538.5	2551.6	2534.8
170°	2560.9	2549.6	2553.4	2566.5	2549.6
172.5°	2572.0	2560.9	2564.6	2577.7	2560.9
175°	2581.2	2568.2	2572.0	2585.0	2566.5
177.5°	2585.0	2572.0	2573.9	2587.0	2570.2
180°	2575.7	2575.7	2575.7	2575.7	2575.7

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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	11.66	12.41	12.71	13.46	14.88	7.62	8.37	8.67	9.42	10.84
	3H	13.31	13.98	14.37	15.04	16.48	8.79	9.46	9.85	10.52	11.96
	4H	13.91	14.54	14.98	15.60	17.05	9.22	9.86	10.29	10.92	12.36
	6H	14.31	14.89	15.39	15.96	17.41	9.52	10.11	10.60	11.17	12.63
	8H	14.42	14.98	15.51	16.06	17.51	9.60	10.16	10.69	11.24	12.69
	12H	14.47	15.00	15.56	16.08	17.55	9.63	10.16	10.72	11.24	12.71
4H	2H	11.67	12.30	12.74	13.36	14.81	8.20	8.83	9.28	9.90	11.34
	3H	13.47	13.99	14.55	15.08	16.54	9.52	10.05	10.61	11.14	12.60
	4H	14.14	14.62	15.23	15.70	17.18	10.05	10.53	11.14	11.61	13.09
	6H	14.63	15.05	15.73	16.15	17.62	10.45	10.86	11.54	11.96	13.44
	8H	14.79	15.18	15.89	16.28	17.76	10.56	10.95	11.66	12.04	13.53
	12H	14.87	15.22	15.99	16.33	17.83	10.61	10.96	11.73	12.07	13.56
8H	4H	14.10	14.48	15.19	15.58	17.07	10.31	10.70	11.41	11.79	13.28
	6H	14.64	14.96	15.76	16.09	17.58	10.80	11.12	11.92	12.26	13.74
	8H	14.84	15.12	15.97	16.24	17.74	10.98	11.26	12.11	12.38	13.88
	12H	14.96	15.21	16.09	16.32	17.87	11.08	11.33	12.21	12.44	13.98
12H	4H	14.04	14.39	15.16	15.50	17.00	10.31	10.66	11.43	11.77	13.26
	6H	14.61	14.89	15.74	16.01	17.51	10.85	11.13	11.97	12.25	13.75
	8H	14.81	15.06	15.94	16.17	17.72	11.04	11.28	12.17	12.40	13.94