

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: P914663

Luminaire Tested: DFN2DIP-SQ3F0-070D110US927-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P914663
REPORT IS A COMBINATION OF REPORTS P901514 AND P898289
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-070D110US927-RLLONL
Description: 3 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

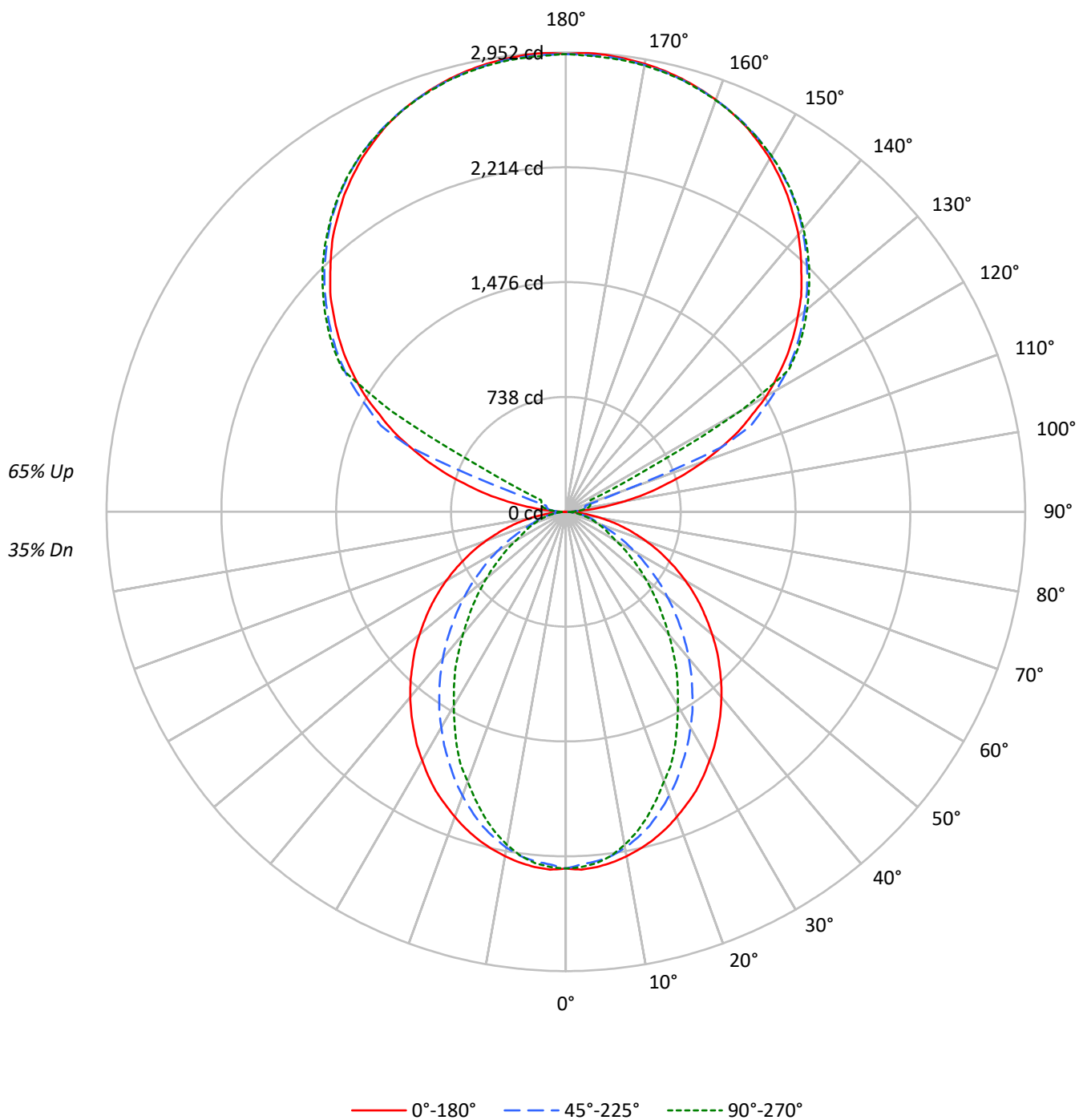
Lumens per Lamp: N/A
Luminaire Lumens: 13340.3 lumens
Efficiency: N/A
Efficacy: 88.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 151.5
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9963
Total Harmonic Distortion (THDi): 0.065
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	94	94	94	94	75	75	75	58	58	58	43	43	43
1	95	91	87	84	86	82	79	76	66	64	62	52	50	49	38	37	37
2	87	80	74	69	78	72	67	63	58	55	52	46	44	41	34	33	31
3	79	70	63	58	71	64	58	53	52	48	44	41	38	35	30	29	27
4	73	62	55	49	65	57	50	45	46	42	38	36	33	31	27	25	24
5	67	56	48	42	60	51	44	39	41	37	33	33	29	27	25	23	21
6	61	50	42	37	55	46	39	34	37	32	29	30	26	24	23	20	18
7	57	45	37	32	51	41	35	30	34	29	25	27	24	21	21	18	16
8	53	41	33	28	48	37	31	26	31	26	23	25	21	19	19	17	15
9	49	37	30	25	44	34	28	24	28	24	20	23	19	17	18	15	13
10	46	34	27	23	42	31	25	21	26	21	18	21	18	15	16	14	12

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2626	2626	2626
5°	2629	2583	2600
10°	2601	2530	2515
15°	2563	2445	2383
20°	2514	2328	2222
25°	2464	2197	2066
30°	2397	2063	1869
35°	2331	1920	1696
40°	2265	1771	1498
45°	2187	1606	1318
50°	2107	1440	1143
55°	2023	1263	974
60°	1925	1078	801
65°	1813	890	720
70°	1677	715	650
75°	1506	627	590
80°	1258	520	508
85°	853	339	377

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2187 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	214.8	1.6
10°-20°	589.7	4.4
20°-30°	827.9	6.2
30°-40°	902.4	6.8
40°-50°	829.4	6.2
50°-60°	651.4	4.9
60°-70°	424.0	3.2
70°-80°	218.2	1.6
80°-90°	60.9	0.5
90°-100°	97.0	0.7
100°-110°	361.5	2.7
110°-120°	958.7	7.2
120°-130°	1590.2	11.9
130°-140°	1689.1	12.7
140°-150°	1569.9	11.8
150°-160°	1262.1	9.5
160°-170°	813.3	6.1
170°-180°	279.9	2.1
0°-30°	1632.3	12.2
0°-40°	2534.7	19.0
0°-60°	4015.5	30.1
0°-90°	4718.6	35.4
90°-120°	1417.2	10.6
90°-150°	6266.3	47.0
90°-180°	8622.0	64.6
0°-180°	13340.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2292	2292	2292	2292	2292	
5°	2292	2282	2254	2273	2267	217
15°	2180	2157	2086	2047	2026	614
25°	1979	1912	1775	1690	1659	910
35°	1705	1599	1417	1286	1240	1067
45°	1394	1255	1037	890	840	1076
55°	1060	898	674	550	510	947
65°	716	548	361	290	284	709
75°	382	236	166	151	149	404
85°	89	46	39	39	39	102
90°	2	26	42	53	57	12
95°	138	68	83	94	92	164
105°	647	711	130	153	162	691
115°	1224	1260	1313	328	175	1205
125°	1730	1758	1798	1813	1819	1543
135°	2141	2175	2194	2215	2211	1654
145°	2484	2481	2517	2532	2522	1553
155°	2734	2715	2741	2754	2737	1260
165°	2881	2869	2875	2890	2875	814
175°	2947	2932	2936	2952	2930	280
180°	2941	2941	2941	2941	2941	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2291.9	2291.9	2291.9	2291.9	2291.9
2.5°	2302.2	2291.9	2269.0	2289.9	2285.7
5°	2291.9	2281.5	2254.5	2273.2	2267.0
7.5°	2273.2	2260.8	2231.8	2239.9	2229.6
10°	2248.3	2233.8	2192.4	2186.0	2173.7
12.5°	2217.2	2198.5	2142.5	2130.1	2107.2
15°	2179.8	2157.0	2086.5	2047.2	2026.5
17.5°	2136.3	2103.1	2015.9	1970.3	1937.1
20°	2086.5	2044.9	1941.3	1889.6	1843.8
22.5°	2032.7	1984.9	1864.5	1794.1	1763.1
25°	1978.7	1912.2	1775.4	1690.4	1659.2
27.5°	1914.5	1843.8	1692.4	1595.0	1547.2
30°	1846.0	1767.0	1601.1	1495.5	1439.4
32.5°	1779.6	1684.1	1514.2	1389.6	1337.7
35°	1704.9	1599.1	1416.7	1286.0	1240.2
37.5°	1632.4	1518.1	1325.4	1182.1	1130.4
40°	1555.5	1431.2	1229.9	1082.7	1028.7
42.5°	1476.8	1344.1	1134.6	981.0	929.3
45°	1393.8	1254.7	1037.1	889.7	839.9
47.5°	1315.0	1167.8	943.8	796.4	750.8
50°	1227.9	1080.7	852.5	709.2	665.9
52.5°	1142.7	987.1	765.3	628.4	589.1
55°	1059.8	898.0	674.0	549.7	510.3
57.5°	974.9	808.9	593.3	477.1	443.9
60°	887.7	721.8	508.1	402.5	369.2
62.5°	802.7	636.8	435.5	336.0	319.5
65°	715.6	547.5	360.9	290.5	284.1
67.5°	632.6	464.5	290.5	255.0	248.9
70°	545.5	383.7	240.5	219.8	211.4
72.5°	462.6	309.0	201.1	184.7	180.5
75°	381.6	236.3	165.9	151.4	149.4
77.5°	300.8	167.9	130.7	122.3	118.2
80°	226.0	120.3	99.5	91.3	91.3
82.5°	157.6	81.0	68.4	64.2	64.2
85°	89.1	45.6	39.4	39.4	39.4
87.5°	33.2	16.5	16.5	14.5	14.5
90°	2.1	25.5	42.5	53.3	57.4
92.5°	53.3	44.8	51.0	55.4	57.4
95°	138.2	68.0	82.9	93.7	91.5
97.5°	248.9	74.5	108.4	114.9	117.0
100°	376.8	85.2	121.3	138.2	142.5
102.5°	517.0	512.9	125.6	148.9	155.4
105°	646.9	710.8	129.9	153.1	161.8
107.5°	798.0	851.0	134.2	157.4	166.0
110°	942.8	987.3	372.5	159.7	168.0

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1079.0	1117.1	1081.0	163.7	170.3
115°	1223.5	1259.6	1313.0	327.7	174.6
117.5°	1349.2	1391.6	1428.0	1123.5	566.0
120°	1489.6	1521.5	1559.9	1585.4	1298.1
122.5°	1608.7	1642.7	1685.4	1698.1	1700.4
125°	1730.0	1757.8	1798.2	1813.1	1819.4
127.5°	1840.6	1870.4	1902.5	1923.7	1925.8
130°	1945.0	1979.1	2002.3	2025.8	2023.9
132.5°	2051.4	2079.2	2102.4	2121.6	2119.6
135°	2140.9	2174.9	2193.9	2215.4	2211.1
137.5°	2234.3	2259.9	2281.3	2302.6	2296.2
140°	2325.8	2343.0	2366.2	2385.4	2374.8
142.5°	2402.6	2417.5	2445.1	2462.0	2451.4
145°	2483.5	2481.2	2517.3	2532.3	2521.7
147.5°	2553.5	2547.2	2583.3	2593.9	2585.6
150°	2621.7	2606.8	2640.9	2653.6	2643.0
152.5°	2679.1	2662.1	2694.0	2706.9	2692.0
155°	2734.5	2715.4	2740.9	2753.6	2736.7
157.5°	2779.1	2762.2	2781.4	2796.3	2779.1
160°	2817.6	2804.6	2817.6	2830.1	2815.3
162.5°	2851.4	2838.8	2849.4	2864.3	2845.1
165°	2881.2	2868.6	2874.9	2889.8	2874.9
167.5°	2904.7	2891.9	2898.4	2913.3	2894.2
170°	2923.9	2911.0	2915.3	2930.3	2911.0
172.5°	2936.5	2923.9	2928.2	2943.1	2923.9
175°	2947.2	2932.3	2936.5	2951.5	2930.3
177.5°	2951.5	2936.5	2938.8	2953.7	2934.6
180°	2940.9	2940.9	2940.9	2940.9	2940.9

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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	8.93	9.65	10.00	10.72	12.19	4.89	5.61	5.97	6.69	8.15
	3H	10.59	11.24	11.68	12.32	13.81	6.06	6.71	7.15	7.79	9.28
	4H	11.19	11.80	12.29	12.89	14.38	6.50	7.11	7.60	8.20	9.69
	6H	11.60	12.17	12.71	13.26	14.76	6.81	7.37	7.92	8.46	9.97
	8H	11.72	12.26	12.84	13.36	14.86	6.89	7.43	8.01	8.54	10.03
	12H	11.78	12.29	12.90	13.39	14.91	6.93	7.44	8.05	8.54	10.06
4H	2H	8.93	9.54	10.03	10.63	12.12	5.47	6.08	6.57	7.16	8.66
	3H	10.74	11.25	11.85	12.36	13.87	6.80	7.31	7.91	8.42	9.93
	4H	11.43	11.89	12.54	13.00	14.52	7.34	7.81	8.45	8.91	10.43
	6H	11.93	12.33	13.05	13.46	14.98	7.74	8.14	8.87	9.27	10.79
	8H	12.10	12.48	13.22	13.59	15.13	7.87	8.24	8.99	9.36	10.89
	12H	12.19	12.53	13.33	13.66	15.20	7.92	8.26	9.06	9.39	10.93
8H	4H	11.38	11.76	12.51	12.88	14.41	7.61	7.98	8.73	9.10	10.63
	6H	11.94	12.25	13.09	13.41	14.94	8.11	8.42	9.26	9.58	11.11
	8H	12.15	12.42	13.30	13.56	15.11	8.30	8.57	9.45	9.71	11.26
	12H	12.29	12.52	13.44	13.66	15.24	8.41	8.64	9.56	9.78	11.37
12H	4H	11.33	11.67	12.47	12.80	14.34	7.61	7.94	8.75	9.07	10.61
	6H	11.92	12.19	13.07	13.33	14.88	8.16	8.43	9.31	9.57	11.12
	8H	12.13	12.37	13.28	13.50	15.09	8.36	8.60	9.51	9.73	11.32