

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: P925463

Luminaire Tested: DFN2DIP-SQ3F0-040D100US950-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P925463
REPORT IS A COMBINATION OF REPORTS P901490 AND P898289
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-040D100US950-RLLONL
Description: 3 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

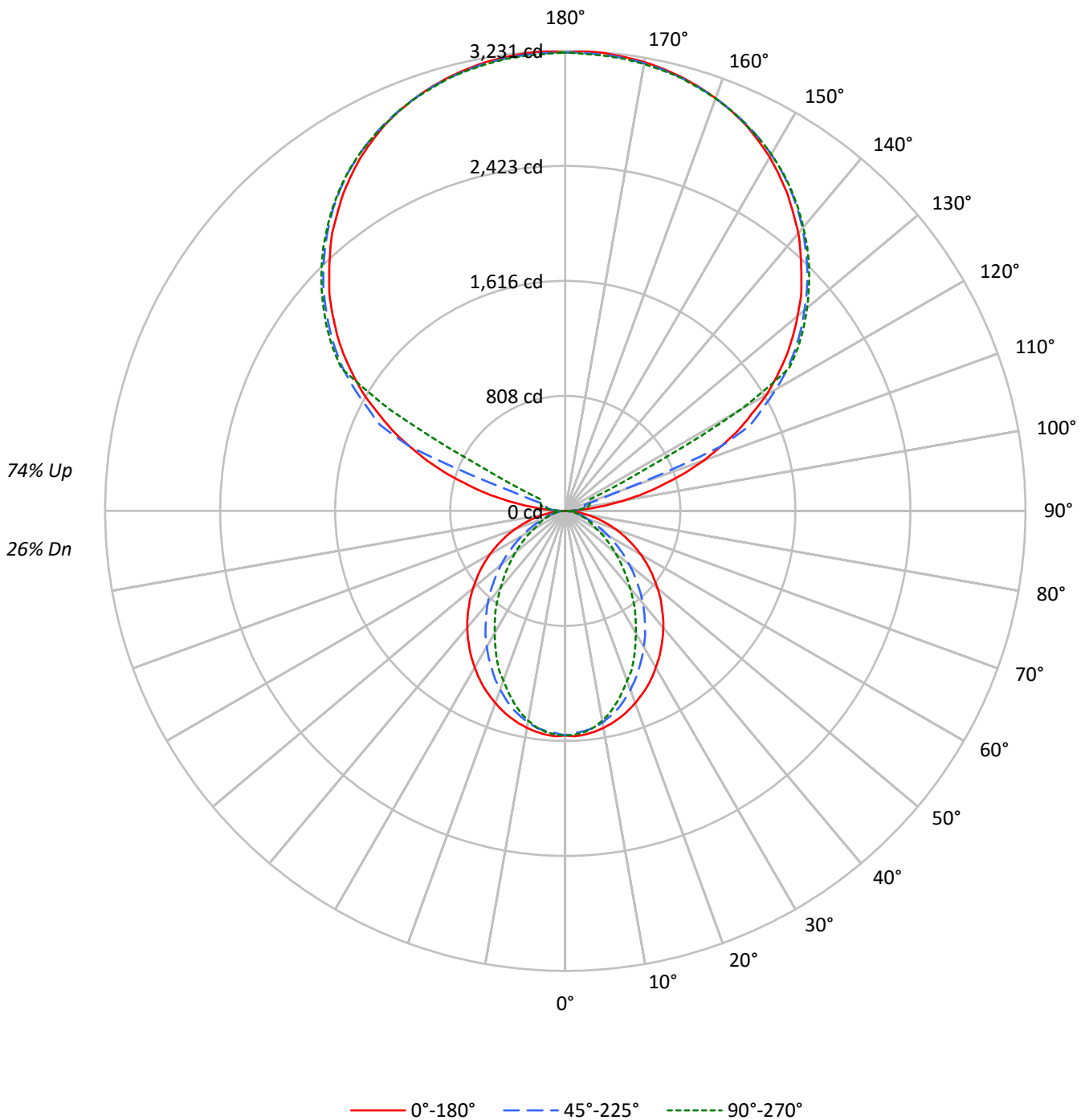
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 12688.2 lumens
Efficiency: N/A
Efficacy: 115.6 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): 109.8
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				20	
RC	80				70				50				30				10				0	
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0	
RCR																						
0	101	101	101	101	90	90	90	90	70	70	70	51	51	51	34	34	34	26				26
1	93	88	85	82	82	79	76	73	61	59	58	45	44	43	30	29	29	22				22
2	84	77	72	67	75	69	65	60	54	51	48	40	38	36	27	26	25	19				19
3	77	68	61	56	69	61	55	51	48	44	41	35	33	31	24	23	21	16				16
4	71	60	53	47	63	54	48	43	43	38	35	32	29	26	22	20	19	14				14
5	65	54	46	41	58	48	42	37	38	33	30	28	25	23	19	18	16	12				12
6	60	48	41	35	53	43	37	32	34	30	26	26	23	20	18	16	14	11				11
7	55	43	36	31	49	39	33	28	31	26	23	23	20	18	16	14	13	10				10
8	51	39	32	27	45	36	29	25	28	24	20	21	18	16	15	13	12	9				9
9	47	36	29	24	42	32	26	22	26	21	18	20	16	14	14	12	10	8				8
10	44	33	26	21	39	30	24	20	24	19	16	18	15	13	13	11	10	7				7

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1807	1807	1807
5°	1809	1777	1789
10°	1790	1741	1730
15°	1764	1682	1640
20°	1730	1602	1529
25°	1696	1512	1422
30°	1650	1420	1286
35°	1605	1321	1167
40°	1559	1219	1031
45°	1505	1105	907
50°	1450	991	786
55°	1392	869	670
60°	1325	742	551
65°	1248	613	495
70°	1154	492	447
75°	1036	431	406
80°	866	358	350
85°	587	233	259

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 90°
 Luminance: 2205 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	147.8	1.2
10°-20°	405.8	3.2
20°-30°	569.7	4.5
30°-40°	621.0	4.9
40°-50°	570.8	4.5
50°-60°	448.2	3.5
60°-70°	291.8	2.3
70°-80°	150.2	1.2
80°-90°	44.0	0.3
90°-100°	106.2	0.8
100°-110°	395.8	3.1
110°-120°	1049.6	8.3
120°-130°	1740.9	13.7
130°-140°	1849.2	14.6
140°-150°	1718.7	13.5
150°-160°	1381.8	10.9
160°-170°	890.4	7.0
170°-180°	306.5	2.4
0°-30°	1123.3	8.9
0°-40°	1744.3	13.7
0°-60°	2763.3	21.8
0°-90°	3249.3	25.6
90°-120°	1551.6	12.2
90°-150°	6860.4	54.1
90°-180°	9439.0	74.4
0°-180°	12688.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1577	1577	1577	1577	1577	
5°	1577	1570	1551	1564	1560	150
15°	1500	1484	1436	1409	1395	423
25°	1362	1316	1222	1163	1142	626
35°	1173	1100	975	885	853	734
45°	959	864	714	612	578	741
55°	729	618	464	378	351	652
65°	492	377	248	200	196	488
75°	262	163	114	104	103	278
85°	61	31	27	27	27	70
90°	2	28	46	58	63	12
95°	151	74	91	103	100	179
105°	708	778	142	168	177	757
115°	1340	1379	1438	359	191	1319
125°	1894	1924	1969	1985	1992	1689
135°	2344	2381	2402	2425	2421	1810
145°	2719	2716	2756	2772	2761	1700
155°	2994	2973	3001	3015	2996	1380
165°	3154	3140	3147	3164	3147	891
175°	3226	3210	3215	3231	3208	307
180°	3220	3220	3220	3220	3220	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1577.2	1577.2	1577.2	1577.2	1577.2
2.5°	1584.3	1577.2	1561.4	1575.8	1572.9
5°	1577.2	1570.0	1551.4	1564.3	1560.1
7.5°	1564.3	1555.8	1535.8	1541.4	1534.3
10°	1547.2	1537.2	1508.7	1504.3	1495.9
12.5°	1525.8	1512.9	1474.3	1465.8	1450.1
15°	1500.1	1484.3	1435.9	1408.8	1394.6
17.5°	1470.1	1447.2	1387.2	1355.9	1333.0
20°	1435.9	1407.2	1335.9	1300.3	1268.8
22.5°	1398.8	1365.9	1283.0	1234.6	1213.3
25°	1361.6	1315.9	1221.7	1163.3	1141.7
27.5°	1317.5	1268.8	1164.6	1097.6	1064.7
30°	1270.3	1216.0	1101.8	1029.1	990.5
32.5°	1224.6	1158.9	1042.0	956.3	920.5
35°	1173.3	1100.4	974.9	884.9	853.4
37.5°	1123.3	1044.7	912.0	813.5	777.9
40°	1070.5	984.9	846.4	745.1	708.0
42.5°	1016.2	924.9	780.8	675.1	639.5
45°	959.2	863.5	713.7	612.3	578.0
47.5°	905.0	803.6	649.5	548.1	516.7
50°	845.0	743.6	586.6	488.1	458.2
52.5°	786.4	679.3	526.7	432.4	405.4
55°	729.3	618.0	463.8	378.3	351.2
57.5°	670.9	556.7	408.2	328.3	305.5
60°	610.8	496.7	349.6	276.9	254.1
62.5°	552.5	438.3	299.7	231.2	219.9
65°	492.5	376.7	248.3	199.9	195.5
67.5°	435.4	319.7	199.9	175.5	171.2
70°	375.4	264.1	165.5	151.3	145.5
72.5°	318.3	212.6	138.4	127.1	124.2
75°	262.5	162.7	114.2	104.2	102.8
77.5°	207.0	115.5	90.0	84.2	81.3
80°	155.5	82.8	68.4	62.9	62.9
82.5°	108.5	55.7	47.1	44.2	44.2
85°	61.3	31.4	27.1	27.1	27.1
87.5°	22.9	11.4	11.4	10.0	10.0
90°	2.2	28.0	46.5	58.4	62.8
92.5°	58.4	48.9	55.9	60.6	62.8
95°	151.3	74.4	90.7	102.7	100.2
97.5°	272.5	81.6	118.7	125.8	128.1
100°	412.5	93.2	132.8	151.3	156.1
102.5°	566.0	561.6	137.5	162.9	170.1
105°	708.2	778.2	142.2	167.6	177.1
107.5°	873.7	931.8	146.9	172.4	181.7
110°	1032.1	1080.9	407.7	174.9	183.9



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1181.2	1223.0	1183.5	179.3	186.5
115°	1339.5	1379.1	1437.5	358.8	191.2
117.5°	1477.0	1523.5	1563.3	1230.0	619.7
120°	1630.9	1665.7	1707.8	1735.7	1421.2
122.5°	1761.2	1798.5	1845.2	1859.1	1861.5
125°	1894.0	1924.4	1968.7	1985.0	1991.9
127.5°	2015.1	2047.8	2082.9	2106.1	2108.3
130°	2129.3	2166.7	2192.2	2217.9	2215.7
132.5°	2245.8	2276.2	2301.7	2322.7	2320.5
135°	2343.8	2381.1	2401.9	2425.4	2420.7
137.5°	2446.2	2474.1	2497.6	2520.8	2513.9
140°	2546.2	2565.1	2590.5	2611.6	2599.9
142.5°	2630.4	2646.7	2676.8	2695.3	2683.8
145°	2718.9	2716.4	2756.0	2772.3	2760.7
147.5°	2795.5	2788.6	2828.1	2839.8	2830.7
150°	2870.2	2853.9	2891.3	2905.1	2893.5
152.5°	2933.0	2914.5	2949.4	2963.4	2947.1
155°	2993.7	2972.9	3000.8	3014.6	2996.1
157.5°	3042.6	3024.1	3045.1	3061.4	3042.6
160°	3084.7	3070.5	3084.7	3098.5	3082.2
162.5°	3121.7	3107.8	3119.5	3135.8	3114.8
165°	3154.3	3140.5	3147.4	3163.8	3147.4
167.5°	3180.1	3165.9	3173.2	3189.5	3168.4
170°	3201.1	3187.0	3191.7	3208.0	3187.0
172.5°	3214.9	3201.1	3205.8	3222.1	3201.1
175°	3226.5	3210.2	3214.9	3231.3	3208.0
177.5°	3231.3	3214.9	3217.5	3233.8	3212.7
180°	3219.7	3219.7	3219.7	3219.7	3219.7



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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	6.29	6.96	7.44	8.09	9.67	2.25	2.92	3.40	4.05	5.63
	3H	7.95	8.55	9.11	9.69	11.29	3.42	4.02	4.58	5.16	6.76
	4H	8.55	9.12	9.71	10.26	11.86	3.86	4.43	5.02	5.57	7.17
	6H	8.96	9.48	10.13	10.62	12.24	4.17	4.69	5.34	5.83	7.44
	8H	9.08	9.57	10.25	10.73	12.34	4.25	4.74	5.42	5.90	7.51
	12H	9.14	9.60	10.31	10.75	12.38	4.29	4.75	5.46	5.90	7.53
4H	2H	6.29	6.85	7.46	7.99	9.60	2.83	3.39	4.00	4.53	6.13
	3H	8.10	8.57	9.27	9.73	11.35	4.15	4.62	5.33	5.79	7.40
	4H	8.78	9.21	9.96	10.37	12.00	4.69	5.12	5.87	6.28	7.91
	6H	9.28	9.65	10.46	10.83	12.45	5.09	5.46	6.27	6.64	8.26
	8H	9.45	9.80	10.63	10.96	12.60	5.22	5.56	6.40	6.73	8.37
	12H	9.54	9.85	10.73	11.03	12.67	5.27	5.58	6.46	6.76	8.41
8H	4H	8.73	9.08	9.91	10.25	11.89	4.96	5.30	6.13	6.47	8.11
	6H	9.29	9.57	10.49	10.78	12.42	5.46	5.74	6.66	6.95	8.59
	8H	9.50	9.75	10.71	10.94	12.59	5.64	5.89	6.85	7.08	8.74
	12H	9.63	9.85	10.84	11.03	12.72	5.75	5.97	6.96	7.15	8.84
12H	4H	8.68	8.99	9.87	10.17	11.82	4.95	5.26	6.15	6.44	8.09
	6H	9.26	9.51	10.47	10.70	12.36	5.51	5.75	6.71	6.94	8.60
	8H	9.47	9.69	10.68	10.88	12.56	5.70	5.92	6.91	7.11	8.80