

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: P925602

Luminaire Tested: DFN2DIP-SQ3F0-080D090US950-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P925602
REPORT IS A COMBINATION OF REPORTS P899960 AND P896733
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-080D090US950-RLLFLL
Description: 3 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

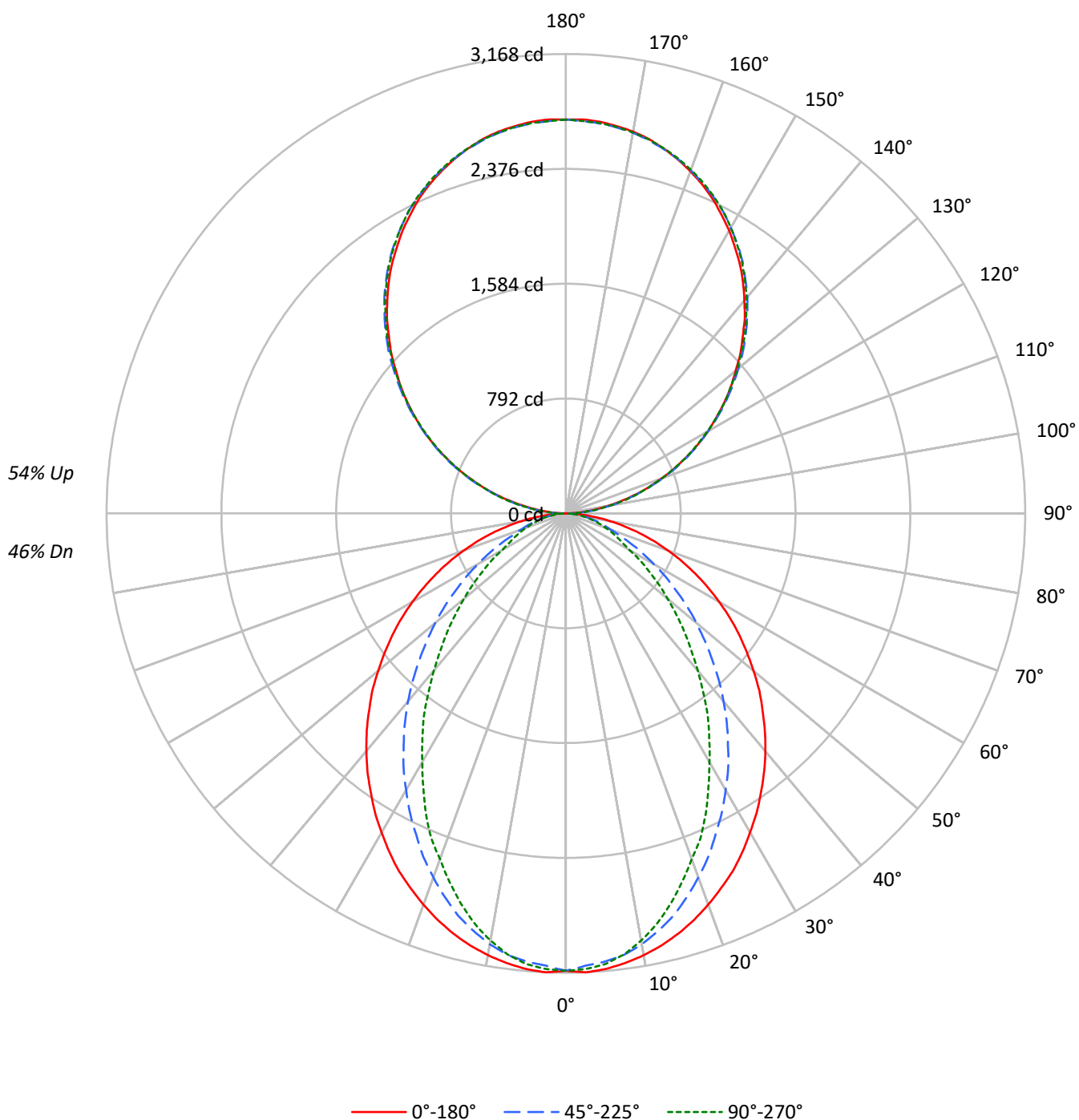
Lumens per Lamp: N/A
Luminaire Lumens: 14085.8 lumens
Efficiency: N/A
Efficacy: 97.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 144.7
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9952
Total Harmonic Distortion (THDi): 0.069
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P925602

CATALOG NUMBER: DFN2DIP-SQ3F0-080D090US950-RLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P925602

CATALOG NUMBER: DFN2DIP-SQ3F0-080D090US950-RLLFLL

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	106	106	106	106	97	97	97	97	81	81	81	66	66	66	53	53	53
1	97	93	90	86	89	86	83	80	72	70	68	59	57	56	47	46	45
2	89	82	76	71	82	75	70	66	63	60	57	52	50	47	42	40	39
3	81	72	65	60	75	67	61	56	56	52	48	47	43	41	38	35	33
4	75	64	57	51	68	59	53	48	50	45	41	42	38	35	34	31	29
5	69	58	50	44	63	53	46	41	45	40	36	38	34	31	31	28	26
6	63	52	44	38	58	48	41	36	41	36	32	34	30	27	28	25	23
7	59	47	39	34	54	44	37	32	37	32	28	31	27	24	26	23	21
8	55	43	35	30	50	40	33	28	34	29	25	29	25	22	24	21	19
9	51	39	32	27	47	36	30	25	31	26	22	26	22	20	22	19	17
10	48	36	29	24	44	33	27	23	29	24	20	25	21	18	20	17	15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3614	3614	3614
5°	3618	3554	3578
10°	3580	3482	3461
15°	3528	3365	3280
20°	3460	3204	3058
25°	3391	3024	2844
30°	3299	2840	2573
35°	3209	2642	2334
40°	3117	2437	2061
45°	3010	2211	1814
50°	2900	1982	1572
55°	2784	1739	1340
60°	2650	1484	1102
65°	2496	1225	991
70°	2308	984	895
75°	2073	863	812
80°	1732	716	699
85°	1175	467	519

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 3010 cd/sqm

TEST NUMBER: P925602

CATALOG NUMBER: DFN2DIP-SQ3F0-080D090US950-RLFL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	295.6	2.1
10°-20°	811.5	5.8
20°-30°	1139.4	8.1
30°-40°	1242.0	8.8
40°-50°	1141.5	8.1
50°-60°	896.5	6.4
60°-70°	583.5	4.1
70°-80°	300.4	2.1
80°-90°	84.4	0.6
90°-100°	168.0	1.2
100°-110°	533.9	3.8
110°-120°	913.7	6.5
120°-130°	1201.6	8.5
130°-140°	1348.7	9.6
140°-150°	1322.6	9.4
150°-160°	1109.5	7.9
160°-170°	735.8	5.2
170°-180°	257.2	1.8
0°-30°	2246.6	15.9
0°-40°	3488.6	24.8
0°-60°	5526.6	39.2
0°-90°	6494.9	46.1
90°-120°	1615.6	11.5
90°-150°	5488.5	39.0
90°-180°	7591.0	53.9
0°-180°	14085.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3154	3154	3154	3154	3154	
5°	3154	3140	3103	3128	3120	299
15°	3000	2969	2872	2818	2789	845
25°	2723	2632	2444	2327	2284	1252
35°	2347	2201	1950	1770	1707	1469
45°	1918	1727	1427	1224	1156	1481
55°	1459	1236	928	756	702	1303
65°	985	754	497	400	391	976
75°	525	325	228	208	206	555
85°	123	63	54	54	54	141
90°	2	30	80	75	78	14
95°	120	142	146	146	142	133
105°	493	499	504	508	508	520
115°	917	930	926	924	917	907
125°	1334	1354	1348	1340	1338	1192
135°	1725	1750	1755	1753	1746	1333
145°	2094	2110	2124	2126	2117	1308
155°	2394	2401	2408	2420	2413	1102
165°	2605	2602	2602	2619	2607	735
175°	2710	2704	2699	2716	2702	258
180°	2716	2716	2716	2716	2716	

TEST NUMBER: P925602

CATALOG NUMBER: DFN2DIP-SQ3F0-080D090US950-RLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3154.3	3154.3	3154.3	3154.3	3154.3
2.5°	3168.5	3154.3	3122.8	3151.5	3145.8
5°	3154.3	3140.1	3102.8	3128.5	3120.1
7.5°	3128.5	3111.6	3071.6	3082.9	3068.5
10°	3094.3	3074.4	3017.4	3008.6	2991.6
12.5°	3051.7	3025.9	2948.6	2931.6	2900.2
15°	3000.1	2968.7	2871.7	2817.5	2789.0
17.5°	2940.1	2894.4	2774.5	2711.8	2666.0
20°	2871.7	2814.5	2671.9	2600.7	2537.6
22.5°	2797.5	2731.8	2566.2	2469.2	2426.5
25°	2723.3	2631.9	2443.5	2326.6	2283.6
27.5°	2634.9	2537.6	2329.3	2195.2	2129.4
30°	2540.7	2431.9	2203.6	2058.3	1981.0
32.5°	2449.2	2317.8	2084.0	1912.6	1841.1
35°	2346.6	2200.9	1949.8	1770.0	1706.9
37.5°	2246.6	2089.5	1824.1	1627.0	1555.8
40°	2141.0	1969.8	1692.7	1490.1	1415.8
42.5°	2032.5	1849.9	1561.5	1350.2	1278.9
45°	1918.3	1726.9	1427.4	1224.5	1156.1
47.5°	1809.9	1607.3	1299.0	1096.1	1033.4
50°	1689.9	1487.4	1173.3	976.1	916.4
52.5°	1572.8	1358.6	1053.3	865.0	810.8
55°	1458.6	1236.0	927.7	756.5	702.3
57.5°	1341.7	1113.3	816.5	656.6	610.8
60°	1221.7	993.4	699.3	553.9	508.2
62.5°	1104.8	876.4	599.4	462.5	439.8
65°	984.9	753.5	496.7	399.8	390.9
67.5°	870.7	639.4	399.8	351.0	342.6
70°	750.8	528.2	331.0	302.5	291.1
72.5°	636.6	425.2	276.9	254.1	248.3
75°	525.2	325.3	228.4	208.4	205.7
77.5°	414.0	231.1	179.9	168.4	162.7
80°	311.0	165.7	136.9	125.6	125.6
82.5°	216.8	111.4	94.2	88.4	88.4
85°	122.7	62.7	54.2	54.2	54.2
87.5°	45.7	22.7	22.7	20.0	20.0
90°	2.5	29.5	80.2	75.3	77.8
92.5°	50.8	68.8	71.3	73.6	73.6
95°	119.5	142.4	146.5	146.5	142.4
97.5°	198.9	220.2	229.2	229.2	229.2
100°	290.6	309.5	316.0	316.0	313.6
102.5°	387.2	401.2	410.1	412.6	410.1
105°	492.8	499.3	504.3	508.4	508.4
107.5°	597.6	607.4	607.4	609.0	597.6
110°	699.1	712.3	712.3	712.3	705.7

TEST NUMBER: P925602

CATALOG NUMBER: DFN2DIP-SQ3F0-080D090US950-RLFL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	808.8	822.7	820.2	813.8	808.8
115°	916.9	930.0	925.9	923.5	916.9
117.5°	1024.1	1042.1	1030.7	1024.1	1017.5
120°	1132.2	1150.1	1132.2	1132.2	1124.8
122.5°	1230.4	1253.4	1241.9	1235.3	1230.4
125°	1333.6	1354.0	1347.5	1340.1	1337.7
127.5°	1434.2	1459.6	1450.7	1440.8	1434.2
130°	1528.4	1557.9	1553.8	1548.8	1539.9
132.5°	1634.0	1656.9	1658.5	1647.1	1640.6
135°	1724.8	1750.2	1755.2	1752.7	1746.2
137.5°	1826.3	1846.8	1851.0	1849.3	1839.5
140°	1915.6	1936.0	1947.5	1947.5	1938.5
142.5°	2007.3	2027.7	2034.3	2036.8	2027.7
145°	2094.1	2110.4	2123.5	2126.0	2117.0
147.5°	2171.9	2192.3	2202.1	2206.2	2197.3
150°	2252.1	2266.0	2275.0	2282.3	2275.0
152.5°	2323.3	2337.2	2348.7	2357.7	2348.7
155°	2394.5	2401.0	2408.5	2419.9	2412.6
157.5°	2455.9	2460.8	2464.9	2481.3	2469.8
160°	2510.7	2515.7	2518.2	2532.0	2522.2
162.5°	2561.5	2561.5	2564.0	2579.5	2568.1
165°	2604.9	2602.4	2602.4	2618.8	2607.4
167.5°	2644.2	2636.9	2636.9	2653.2	2641.7
170°	2673.7	2667.1	2664.7	2681.0	2667.1
172.5°	2694.1	2687.6	2685.1	2701.5	2687.6
175°	2710.5	2703.9	2699.1	2715.5	2701.5
177.5°	2719.5	2713.0	2708.0	2722.0	2708.0
180°	2715.5	2715.5	2715.5	2715.5	2715.5

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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	11.20	12.00	12.20	13.00	14.33	7.16	7.96	8.16	8.96	10.29
	3H	12.87	13.59	13.88	14.60	15.95	8.34	9.06	9.35	10.07	11.42
	4H	13.48	14.15	14.50	15.17	16.52	8.79	9.46	9.81	10.48	11.83
	6H	13.89	14.51	14.92	15.53	16.90	9.10	9.72	10.13	10.74	12.11
	8H	14.02	14.61	15.05	15.64	17.01	9.19	9.78	10.22	10.81	12.18
	12H	14.07	14.64	15.11	15.67	17.06	9.22	9.79	10.26	10.82	12.21
4H	2H	11.21	11.89	12.24	12.90	14.26	7.75	8.43	8.78	9.44	10.80
	3H	13.03	13.60	14.07	14.64	16.01	9.09	9.65	10.12	10.70	12.07
	4H	13.72	14.24	14.76	15.27	16.66	9.63	10.15	10.67	11.18	12.58
	6H	14.23	14.67	15.28	15.73	17.12	10.04	10.48	11.09	11.54	12.93
	8H	14.40	14.81	15.45	15.87	17.27	10.17	10.58	11.22	11.63	13.03
	12H	14.49	14.87	15.56	15.93	17.34	10.23	10.60	11.30	11.66	13.07
8H	4H	13.69	14.10	14.74	15.15	16.55	9.91	10.32	10.96	11.37	12.77
	6H	14.25	14.59	15.32	15.68	17.08	10.42	10.76	11.49	11.85	13.25
	8H	14.46	14.76	15.54	15.83	17.25	10.60	10.90	11.68	11.98	13.40
	12H	14.59	14.85	15.68	15.93	17.39	10.71	10.98	11.80	12.05	13.51
12H	4H	13.64	14.01	14.70	15.07	16.48	9.91	10.28	10.98	11.35	12.76
	6H	14.22	14.52	15.30	15.60	17.02	10.46	10.76	11.55	11.84	13.26
	8H	14.44	14.70	15.52	15.77	17.23	10.67	10.93	11.75	12.00	13.46