

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: P909162

Luminaire Tested: DFN2DIP-SQ3F0-060D090US840-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P909162
REPORT IS A COMBINATION OF REPORTS P899956 AND P896733
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-060D090US840-RLLFLL
Description: 3 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

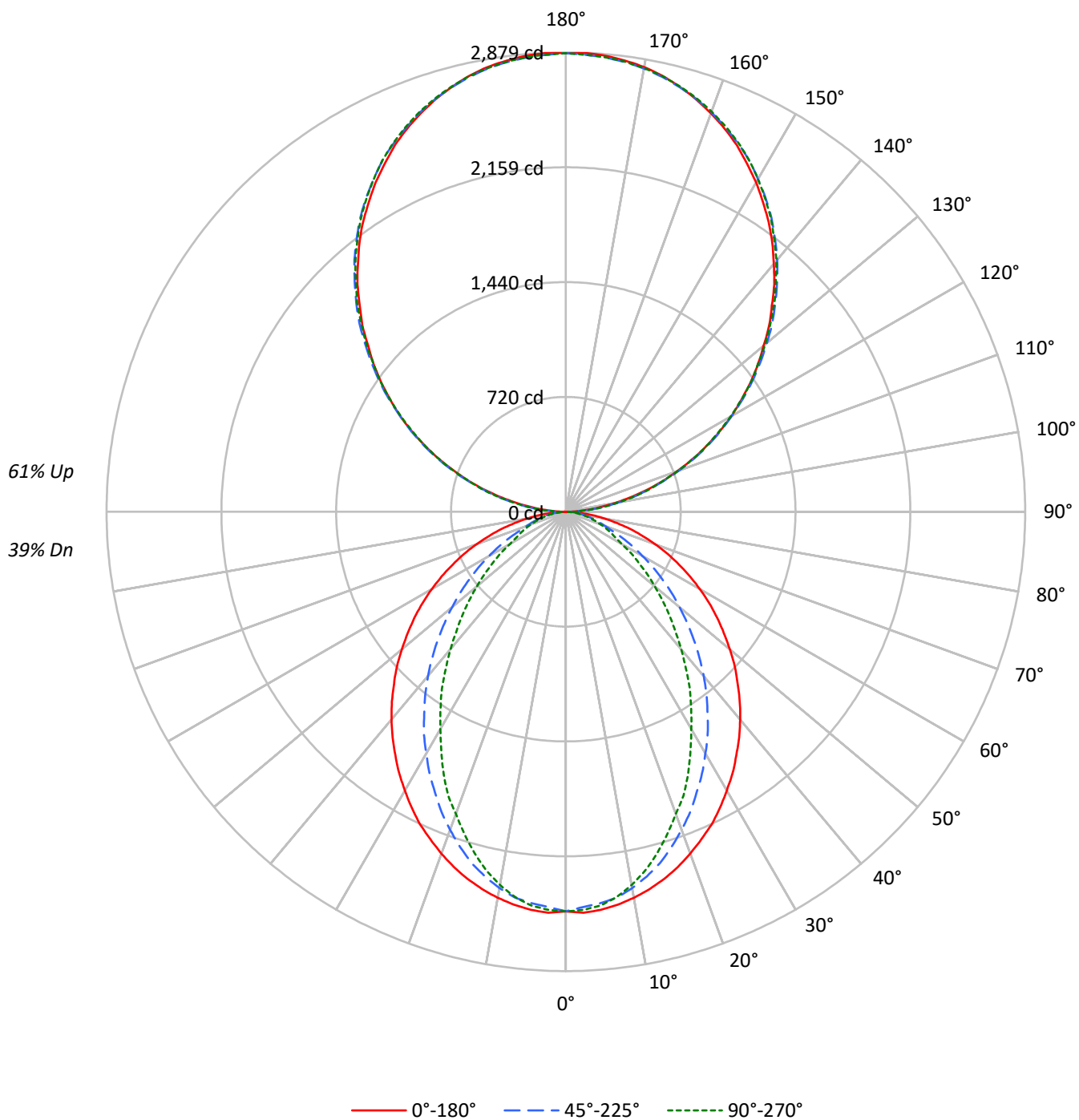
Lumens per Lamp: N/A
Luminaire Lumens: 13193.9 lumens
Efficiency: N/A
Efficacy: 108.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 121.9
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9971
Total Harmonic Distortion (THDi): 0.049
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	51	41	40	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	66	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	24	22
6	62	51	43	37	56	46	40	35	39	33	30	31	28	25	25	22	20
7	57	46	38	33	52	42	35	30	35	30	26	29	25	22	22	20	18
8	53	41	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°	2869	2869	2869
5°	2872	2822	2841
10°	2842	2765	2748
15°	2801	2671	2604
20°	2747	2544	2428
25°	2692	2401	2258
30°	2619	2255	2042
35°	2548	2098	1853
40°	2475	1935	1637
45°	2390	1755	1440
50°	2302	1574	1248
55°	2210	1380	1064
60°	2104	1178	875
65°	1981	973	787
70°	1832	781	711
75°	1646	685	644
80°	1375	568	556
85°	933	370	412

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 2890 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	234.7	1.8
10°-20°	644.3	4.9
20°-30°	904.6	6.9
30°-40°	986.1	7.5
40°-50°	906.3	6.9
50°-60°	711.7	5.4
60°-70°	463.3	3.5
70°-80°	238.5	1.8
80°-90°	69.1	0.5
90°-100°	177.9	1.3
100°-110°	565.2	4.3
110°-120°	967.2	7.3
120°-130°	1272.0	9.6
130°-140°	1427.7	10.8
140°-150°	1400.0	10.6
150°-160°	1174.4	8.9
160°-170°	778.9	5.9
170°-180°	272.2	2.1
0°-30°	1783.6	13.5
0°-40°	2769.6	21.0
0°-60°	4387.7	33.3
0°-90°	5158.5	39.1
90°-120°	1710.2	13.0
90°-150°	5809.9	44.0
90°-180°	8035.0	60.9
0°-180°	13193.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2504	2504	2504	2504	2504	
5°	2504	2493	2463	2484	2477	237
15°	2382	2357	2280	2237	2214	671
25°	2162	2090	1940	1847	1813	994
35°	1863	1747	1548	1405	1355	1166
45°	1523	1371	1133	972	918	1176
55°	1158	981	736	601	558	1035
65°	782	598	394	317	310	775
75°	417	258	181	165	163	441
85°	97	50	43	43	43	112
90°	3	31	85	80	82	13
95°	126	151	155	155	151	141
105°	522	529	534	538	538	551
115°	971	984	980	978	971	960
125°	1412	1433	1426	1419	1416	1261
135°	1826	1853	1858	1855	1848	1411
145°	2217	2234	2248	2250	2241	1385
155°	2535	2542	2550	2562	2554	1167
165°	2757	2755	2755	2772	2760	778
175°	2869	2862	2857	2874	2860	273
180°	2874	2874	2874	2874	2874	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2504.3	2504.3	2504.3	2504.3	2504.3
2.5°	2515.6	2504.3	2479.2	2502.0	2497.5
5°	2504.3	2493.0	2463.4	2483.9	2477.1
7.5°	2483.9	2470.3	2438.6	2447.5	2436.2
10°	2456.6	2440.7	2395.6	2388.6	2375.1
12.5°	2422.8	2402.3	2341.0	2327.5	2302.5
15°	2381.9	2356.8	2279.9	2236.9	2214.2
17.5°	2334.3	2297.9	2202.7	2152.9	2116.7
20°	2279.9	2234.4	2121.2	2064.7	2014.7
22.5°	2221.0	2168.8	2037.3	1960.4	1926.4
25°	2162.1	2089.5	1940.0	1847.1	1813.0
27.5°	2091.9	2014.7	1849.3	1742.7	1690.6
30°	2017.1	1930.8	1749.5	1634.1	1572.8
32.5°	1944.5	1840.2	1654.6	1518.4	1461.7
35°	1863.0	1747.4	1548.0	1405.1	1355.1
37.5°	1783.6	1658.8	1448.2	1291.7	1235.2
40°	1699.7	1563.9	1343.8	1183.0	1124.1
42.5°	1613.7	1468.6	1239.7	1071.9	1015.4
45°	1523.0	1371.0	1133.3	972.1	917.8
47.5°	1436.9	1276.1	1031.3	870.2	820.4
50°	1341.7	1180.8	931.5	775.0	727.6
52.5°	1248.6	1078.6	836.3	686.7	643.7
55°	1158.0	981.3	736.5	600.7	557.5
57.5°	1065.2	883.8	648.2	521.3	484.9
60°	970.0	788.7	555.2	439.8	403.4
62.5°	877.2	695.9	475.8	367.2	349.1
65°	781.9	598.2	394.4	317.4	310.4
67.5°	691.3	507.6	317.4	278.7	272.0
70°	596.0	419.3	262.8	240.2	231.1
72.5°	505.4	337.6	219.7	201.8	197.1
75°	417.0	258.2	181.3	165.4	163.3
77.5°	328.7	183.5	142.8	133.7	129.2
80°	246.9	131.5	108.7	99.8	99.8
82.5°	172.2	88.5	74.7	70.2	70.2
85°	97.4	49.8	43.0	43.0	43.0
87.5°	36.4	18.1	18.1	15.9	15.9
90°	2.6	31.2	84.9	79.7	82.3
92.5°	53.7	72.8	75.4	78.0	78.0
95°	126.5	150.8	155.1	155.1	150.8
97.5°	210.6	233.1	242.7	242.7	242.7
100°	307.6	327.6	334.5	334.5	331.9
102.5°	409.9	424.6	434.1	436.8	434.1
105°	521.7	528.6	533.8	538.2	538.2
107.5°	632.6	643.0	643.0	644.7	632.6
110°	740.0	754.0	754.0	754.0	747.0

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	856.2	870.9	868.3	861.4	856.2
115°	970.6	984.4	980.1	977.5	970.6
117.5°	1084.1	1103.2	1091.1	1084.1	1077.1
120°	1198.5	1217.5	1198.5	1198.5	1190.6
122.5°	1302.4	1326.8	1314.6	1307.7	1302.4
125°	1411.7	1433.3	1426.4	1418.6	1416.0
127.5°	1518.2	1545.1	1535.6	1525.2	1518.2
130°	1617.9	1649.1	1644.8	1639.5	1630.0
132.5°	1729.7	1753.9	1755.7	1743.5	1736.7
135°	1825.8	1852.7	1858.0	1855.3	1848.5
137.5°	1933.3	1955.0	1959.3	1957.6	1947.2
140°	2027.8	2049.4	2061.5	2061.5	2052.0
142.5°	2124.9	2146.5	2153.4	2156.1	2146.5
145°	2216.8	2234.0	2247.9	2250.5	2241.0
147.5°	2299.1	2320.7	2331.1	2335.4	2325.9
150°	2384.0	2398.7	2408.2	2416.0	2408.2
152.5°	2459.3	2474.1	2486.2	2495.8	2486.2
155°	2534.8	2541.6	2549.5	2561.6	2553.8
157.5°	2599.7	2604.9	2609.3	2626.6	2614.4
160°	2657.8	2663.0	2665.6	2680.3	2669.9
162.5°	2711.5	2711.5	2714.1	2730.6	2718.5
165°	2757.4	2754.8	2754.8	2772.2	2760.1
167.5°	2799.0	2791.3	2791.3	2808.5	2796.4
170°	2830.2	2823.3	2820.8	2838.0	2823.3
172.5°	2851.9	2845.0	2842.4	2859.7	2845.0
175°	2869.2	2862.3	2857.1	2874.5	2859.7
177.5°	2878.7	2871.9	2866.6	2881.3	2866.6
180°	2874.5	2874.5	2874.5	2874.5	2874.5

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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	9.66	10.41	10.71	11.46	12.88	5.62	6.37	6.67	7.42	8.84
	3H	11.33	12.00	12.39	13.06	14.50	6.80	7.47	7.86	8.53	9.97
	4H	11.93	12.56	13.00	13.63	15.07	7.24	7.88	8.31	8.94	10.38
	6H	12.34	12.93	13.43	13.99	15.45	7.55	8.14	8.63	9.20	10.66
	8H	12.47	13.02	13.55	14.10	15.56	7.64	8.19	8.72	9.27	10.73
	12H	12.52	13.05	13.61	14.13	15.60	7.68	8.20	8.77	9.28	10.75
4H	2H	9.67	10.30	10.75	11.36	12.81	6.21	6.84	7.29	7.90	9.35
	3H	11.48	12.01	12.57	13.10	14.56	7.54	8.07	8.63	9.16	10.62
	4H	12.17	12.65	13.26	13.73	15.21	8.08	8.56	9.17	9.64	11.13
	6H	12.68	13.09	13.78	14.19	15.67	8.49	8.90	9.59	10.01	11.48
	8H	12.85	13.23	13.95	14.33	15.82	8.61	9.00	9.71	10.09	11.58
	12H	12.94	13.29	14.05	14.39	15.89	8.67	9.02	9.79	10.13	11.62
8H	4H	12.13	12.52	13.23	13.61	15.10	8.35	8.74	9.45	9.83	11.32
	6H	12.69	13.01	13.81	14.14	15.63	8.86	9.18	9.98	10.32	11.80
	8H	12.90	13.18	14.03	14.30	15.81	9.04	9.32	10.17	10.44	11.95
	12H	13.03	13.28	14.16	14.39	15.94	9.15	9.40	10.29	10.52	12.06
12H	4H	12.08	12.43	13.19	13.54	15.03	8.35	8.70	9.47	9.81	11.31
	6H	12.66	12.94	13.79	14.06	15.57	8.91	9.19	10.03	10.31	11.81
	8H	12.88	13.12	14.01	14.24	15.78	9.11	9.35	10.24	10.47	12.01

END OF REPORT