

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: P903562

Luminaire Tested: DFN2DIP-SQ2F0-060D080US830-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P903562
REPORT IS A COMBINATION OF REPORTS P899838 AND P896659
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ2F0-060D080US830-RLLFLL
Description: 2 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

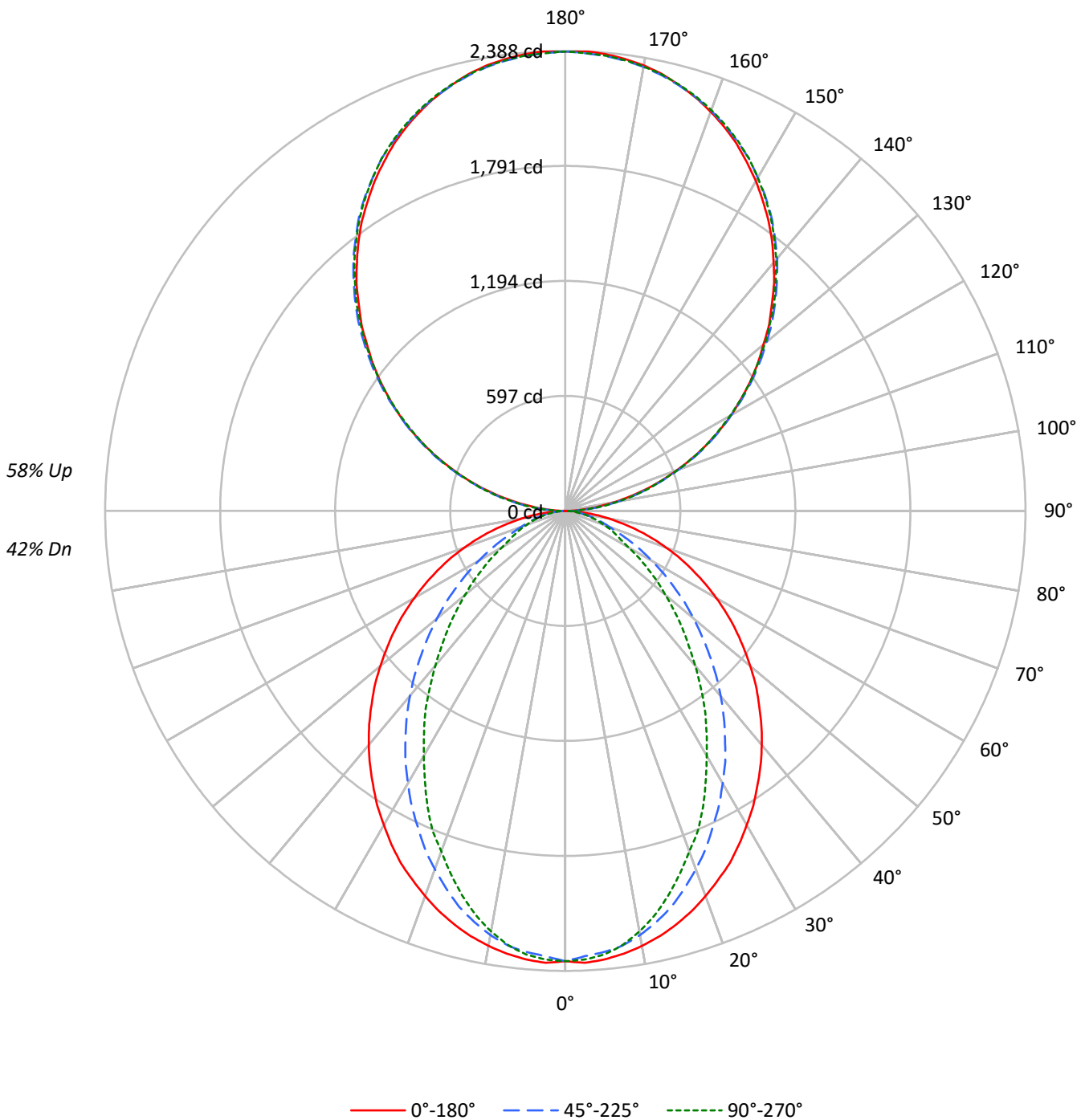
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 11480.2 lumens
Efficiency: N/A
Efficacy: 95.7 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: General Diffuse

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

TEST NUMBER: P903562
CATALOG NUMBER: DFN2DIP-SQ2F0-060D080US830-RLFL

Luminous Intensity Polar Plot





TEST NUMBER: P903562
 CATALOG NUMBER: DFN2DIP-SQ2F0-060D080US830-RLLFLL

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	105	105	105	105	96	96	96	96	79	79	79	63	63	63	49	49	49	49	49	49	42
1	96	92	89	85	88	84	81	78	70	67	65	56	55	53	44	43	42	42	42	42	36
2	88	81	75	70	80	74	69	65	61	58	55	50	47	45	39	37	36	36	36	36	31
3	81	72	65	59	73	66	60	55	55	50	47	44	41	39	35	33	31	31	31	31	27
4	74	64	56	50	67	58	52	47	49	44	40	40	36	33	31	29	27	27	27	27	23
5	68	57	49	43	62	52	45	40	44	39	35	36	32	29	28	26	24	24	24	24	20
6	63	51	43	38	57	47	40	35	40	34	30	33	29	26	26	23	21	21	21	21	18
7	58	46	38	33	53	43	36	31	36	31	27	30	26	23	24	21	19	19	19	19	16
8	54	42	34	29	49	39	32	28	33	28	24	27	23	21	22	19	17	17	17	17	15
9	50	38	31	26	46	36	29	25	30	25	22	25	21	19	20	18	16	16	16	16	13
10	47	35	28	24	43	33	26	22	28	23	19	23	19	17	19	16	14	14	14	14	12

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	5139	5139	5139
5°	5139	5047	5083
10°	5079	4937	4911
15°	5000	4763	4648
20°	4899	4527	4329
25°	4795	4266	4021
30°	4658	3998	3632
35°	4524	3712	3291
40°	4387	3417	2901
45°	4229	3092	2549
50°	4065	2764	2204
55°	3892	2415	1874
60°	3692	2052	1536
65°	3462	1684	1374
70°	3181	1341	1234
75°	2829	1161	1108
80°	2323	942	938
85°	1512	586	669

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 4229 cd/sqm



TEST NUMBER: P903562

CATALOG NUMBER: DFN2DIP-SQ2F0-060D080US830-RLFL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	219.1	1.9
10°-20°	601.3	5.2
20°-30°	844.3	7.4
30°-40°	920.3	8.0
40°-50°	845.9	7.4
50°-60°	664.3	5.8
60°-70°	432.4	3.8
70°-80°	222.6	1.9
80°-90°	63.6	0.6
90°-100°	147.6	1.3
100°-110°	468.9	4.1
110°-120°	802.4	7.0
120°-130°	1055.3	9.2
130°-140°	1184.5	10.3
140°-150°	1161.5	10.1
150°-160°	974.4	8.5
160°-170°	646.2	5.6
170°-180°	225.9	2.0
0°-30°	1664.7	14.5
0°-40°	2585.0	22.5
0°-60°	4095.1	35.7
0°-90°	4813.7	41.9
90°-120°	1418.8	12.4
90°-150°	4820.1	42.0
90°-180°	6666.0	58.1
0°-180°	11480.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2337	2337	2337	2337	2337	
5°	2337	2327	2299	2318	2312	222
15°	2223	2200	2128	2088	2067	626
25°	2018	1950	1811	1724	1692	928
35°	1739	1631	1445	1312	1265	1088
45°	1421	1280	1058	907	857	1098
55°	1081	916	687	561	520	966
65°	730	558	368	296	290	724
75°	389	241	169	154	152	412
85°	91	46	40	40	40	104
90°	2	26	70	66	68	11
95°	105	125	129	129	125	117
105°	433	439	443	446	446	457
115°	805	817	813	811	805	796
125°	1171	1189	1183	1177	1175	1047
135°	1515	1537	1541	1539	1534	1171
145°	1839	1853	1865	1867	1859	1149
155°	2103	2109	2115	2125	2119	968
165°	2288	2286	2286	2300	2290	645
175°	2380	2375	2370	2385	2372	226
180°	2385	2385	2385	2385	2385	



TEST NUMBER: P903562

CATALOG NUMBER: DFN2DIP-SQ2F0-060D080US830-RLFL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2337.3	2337.3	2337.3	2337.3	2337.3
2.5°	2347.9	2337.3	2313.9	2335.2	2331.0
5°	2337.3	2326.8	2299.1	2318.3	2312.0
7.5°	2318.3	2305.6	2276.1	2284.3	2273.8
10°	2292.8	2278.0	2235.9	2229.4	2216.8
12.5°	2261.3	2242.1	2184.9	2172.4	2149.0
15°	2223.1	2199.7	2127.9	2087.7	2066.6
17.5°	2178.7	2144.8	2055.9	2009.4	1975.6
20°	2127.9	2085.5	1979.8	1927.0	1880.4
22.5°	2072.9	2024.2	1901.5	1829.7	1798.0
25°	2018.0	1950.2	1810.6	1724.0	1692.1
27.5°	1952.5	1880.4	1726.0	1626.5	1577.9
30°	1882.6	1802.0	1632.9	1525.1	1467.9
32.5°	1814.9	1717.5	1544.3	1417.2	1364.2
35°	1738.8	1630.9	1444.8	1311.5	1264.8
37.5°	1664.7	1548.2	1351.7	1205.6	1152.8
40°	1586.4	1459.6	1254.2	1104.1	1049.1
42.5°	1506.1	1370.7	1157.1	1000.4	947.7
45°	1421.4	1279.6	1057.7	907.3	856.6
47.5°	1341.1	1191.0	962.5	812.2	765.7
50°	1252.3	1102.1	869.4	723.3	679.1
52.5°	1165.4	1006.7	780.5	640.9	600.8
55°	1080.8	915.9	687.4	560.6	520.4
57.5°	994.2	824.9	605.0	486.5	452.6
60°	905.3	736.1	518.2	410.5	376.5
62.5°	818.7	649.5	444.1	342.7	325.8
65°	729.8	558.4	368.1	296.2	289.7
67.5°	645.2	473.7	296.2	260.1	253.8
70°	556.3	391.3	245.2	224.2	215.7
72.5°	471.7	315.1	205.1	188.3	184.0
75°	389.2	241.0	169.2	154.4	152.4
77.5°	306.8	171.3	133.3	124.8	120.6
80°	230.5	122.7	101.4	93.1	93.1
82.5°	160.7	82.6	69.7	65.5	65.5
85°	90.9	46.5	40.2	40.2	40.2
87.5°	33.9	16.9	16.9	14.8	14.8
90°	2.2	25.9	70.5	66.2	68.3
92.5°	44.6	60.4	62.6	64.7	64.7
95°	105.0	125.1	128.7	128.7	125.1
97.5°	174.7	193.4	201.3	201.3	201.3
100°	255.2	271.7	277.5	277.5	275.3
102.5°	340.1	352.3	360.1	362.3	360.1
105°	432.8	438.6	442.9	446.5	446.5
107.5°	524.8	533.5	533.5	534.9	524.8
110°	614.0	625.5	625.5	625.5	619.7



TEST NUMBER: P903562

CATALOG NUMBER: DFN2DIP-SQ2F0-060D080US830-RLFL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	710.3	722.6	720.4	714.6	710.3
115°	805.2	816.7	813.1	811.0	805.2
117.5°	899.4	915.2	905.1	899.4	893.6
120°	994.3	1010.1	994.3	994.3	987.8
122.5°	1080.5	1100.7	1090.6	1084.9	1080.5
125°	1171.1	1189.1	1183.4	1176.9	1174.8
127.5°	1259.6	1281.9	1273.9	1265.4	1259.6
130°	1342.3	1368.1	1364.5	1360.3	1352.4
132.5°	1435.0	1455.1	1456.6	1446.5	1440.8
135°	1514.8	1537.1	1541.4	1539.3	1533.5
137.5°	1603.9	1621.9	1625.5	1624.1	1615.4
140°	1682.3	1700.3	1710.3	1710.3	1702.4
142.5°	1762.8	1780.8	1786.6	1788.8	1780.8
145°	1839.1	1853.4	1864.9	1867.1	1859.2
147.5°	1907.3	1925.3	1933.9	1937.6	1929.7
150°	1977.8	1990.0	1997.9	2004.4	1997.9
152.5°	2040.3	2052.6	2062.7	2070.6	2062.7
155°	2102.9	2108.7	2115.2	2125.2	2118.7
157.5°	2156.8	2161.2	2164.7	2179.1	2169.1
160°	2205.0	2209.3	2211.5	2223.6	2215.1
162.5°	2249.6	2249.6	2251.7	2265.4	2255.3
165°	2287.6	2285.5	2285.5	2299.9	2289.8
167.5°	2322.1	2315.7	2315.7	2330.1	2320.0
170°	2348.1	2342.3	2340.1	2354.6	2342.3
172.5°	2366.1	2360.3	2358.1	2372.5	2360.3
175°	2380.4	2374.6	2370.3	2384.7	2372.5
177.5°	2388.3	2382.6	2378.2	2390.5	2378.2
180°	2384.7	2384.7	2384.7	2384.7	2384.7



TEST NUMBER: P903562
 CATALOG NUMBER: DFN2DIP-SQ2F0-060D080US830-RLLFLL

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	11.91	12.68	12.94	13.72	15.10	7.87	8.64	8.90	9.68	11.06
	3H	13.57	14.25	14.61	15.30	16.70	9.04	9.73	10.08	10.77	12.17
	4H	14.16	14.81	15.21	15.85	17.27	9.48	10.13	10.53	11.17	12.58
	6H	14.56	15.16	15.62	16.21	17.63	9.78	10.38	10.84	11.42	12.85
	8H	14.68	15.25	15.75	16.31	17.73	9.86	10.43	10.92	11.49	12.91
	12H	14.73	15.27	15.80	16.33	17.77	9.89	10.43	10.96	11.49	12.93
4H	2H	11.92	12.57	12.98	13.61	15.03	8.45	9.10	9.51	10.15	11.56
	3H	13.72	14.26	14.79	15.33	16.76	9.78	10.32	10.84	11.39	12.81
	4H	14.40	14.89	15.47	15.95	17.40	10.31	10.80	11.38	11.86	13.31
	6H	14.89	15.31	15.97	16.40	17.84	10.70	11.13	11.78	12.21	13.65
	8H	15.05	15.45	16.13	16.53	17.98	10.82	11.22	11.90	12.29	13.75
	12H	15.13	15.49	16.23	16.58	18.04	10.87	11.23	11.97	12.32	13.78
8H	4H	14.35	14.75	15.43	15.83	17.29	10.57	10.97	11.65	12.04	13.50
	6H	14.90	15.22	16.00	16.34	17.80	11.06	11.39	12.16	12.51	13.96
	8H	15.10	15.39	16.21	16.49	17.96	11.24	11.52	12.35	12.63	14.10
	12H	15.22	15.47	16.33	16.57	18.08	11.34	11.59	12.45	12.69	14.20
12H	4H	14.30	14.66	15.40	15.75	17.21	10.57	10.93	11.67	12.02	13.48
	6H	14.87	15.16	15.98	16.26	17.73	11.10	11.39	12.21	12.49	13.97
	8H	15.07	15.33	16.19	16.42	17.94	11.30	11.55	12.41	12.65	14.16