

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: P903678

Luminaire Tested: DFN2DIP-SQ3F0-050D110US830-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P903678
REPORT IS A COMBINATION OF REPORTS P899990 AND P896733
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-050D110US830-RLLFLL
Description: 3 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

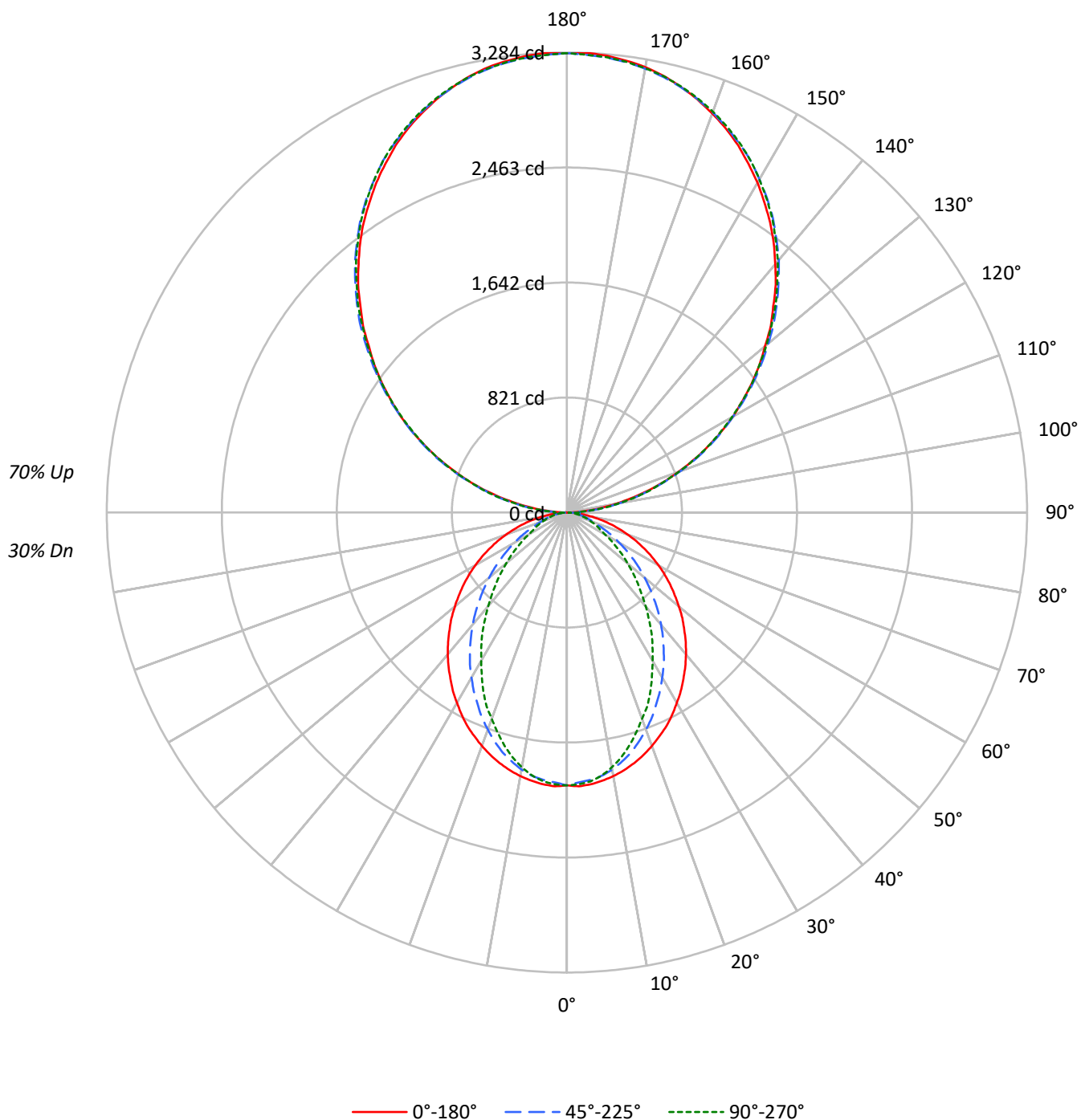
Lumens per Lamp: N/A
Luminaire Lumens: 13181.5 lumens
Efficiency: N/A
Efficacy: 102.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 128.1
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9789
Total Harmonic Distortion (THDi): 0.074
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	102	102	102	102	92	92	92	92	72	72	72	55	55	55	38	38	38
1	94	90	86	83	84	81	78	75	64	62	60	48	47	46	34	33	33
2	86	79	73	68	77	71	66	62	56	53	50	43	41	39	30	29	28
3	78	69	62	57	70	62	57	52	50	46	42	38	35	33	27	26	24
4	72	61	54	48	64	55	49	44	44	40	36	34	31	29	24	23	21
5	66	55	47	41	59	50	43	38	40	35	31	31	27	25	22	20	18
6	60	49	41	36	54	44	38	33	36	31	27	28	24	22	20	18	16
7	56	44	37	31	50	40	34	29	32	28	24	25	22	19	18	16	15
8	52	40	33	28	47	36	30	26	30	25	21	23	20	17	17	15	13
9	48	37	29	25	43	33	27	23	27	22	19	21	18	16	16	14	12
10	45	33	27	22	40	31	24	20	25	20	17	20	16	14	15	12	11

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2232	2232	2232
5°	2234	2195	2210
10°	2210	2150	2137
15°	2179	2078	2025
20°	2137	1978	1888
25°	2094	1867	1756
30°	2037	1754	1588
35°	1982	1631	1441
40°	1925	1505	1273
45°	1859	1365	1120
50°	1791	1224	971
55°	1719	1074	828
60°	1636	916	681
65°	1541	757	612
70°	1425	608	552
75°	1280	533	501
80°	1070	442	432
85°	726	288	321

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 3298 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	182.5	1.4
10°-20°	501.1	3.8
20°-30°	703.6	5.3
30°-40°	766.9	5.8
40°-50°	704.9	5.3
50°-60°	553.6	4.2
60°-70°	360.3	2.7
70°-80°	185.5	1.4
80°-90°	56.7	0.4
90°-100°	202.9	1.5
100°-110°	644.7	4.9
110°-120°	1103.3	8.4
120°-130°	1451.0	11.0
130°-140°	1628.6	12.4
140°-150°	1597.1	12.1
150°-160°	1339.7	10.2
160°-170°	888.5	6.7
170°-180°	310.5	2.4
0°-30°	1387.2	10.5
0°-40°	2154.2	16.3
0°-60°	3412.7	25.9
0°-90°	4015.1	30.5
90°-120°	1950.9	14.8
90°-150°	6627.6	50.3
90°-180°	9166.0	69.5
0°-180°	13181.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1948	1948	1948	1948	1948	
5°	1948	1939	1916	1932	1927	185
15°	1853	1833	1773	1740	1722	522
25°	1682	1625	1509	1437	1410	773
35°	1449	1359	1204	1093	1054	907
45°	1185	1066	881	756	714	915
55°	901	763	573	467	434	805
65°	608	465	307	247	242	603
75°	324	201	141	129	127	343
85°	76	39	34	34	34	87
90°	3	36	97	91	94	13
95°	144	172	177	177	172	161
105°	595	603	609	614	614	628
115°	1107	1123	1118	1115	1107	1095
125°	1610	1635	1627	1618	1615	1439
135°	2083	2114	2119	2116	2109	1610
145°	2529	2548	2564	2567	2556	1580
155°	2892	2899	2908	2922	2913	1331
165°	3146	3142	3142	3162	3148	887
175°	3273	3265	3259	3279	3262	311
180°	3279	3279	3279	3279	3279	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1947.8	1947.8	1947.8	1947.8	1947.8
2.5°	1956.5	1947.8	1928.3	1946.1	1942.5
5°	1947.8	1939.0	1916.0	1931.8	1926.7
7.5°	1931.8	1921.4	1896.7	1903.7	1894.8
10°	1910.7	1898.4	1863.2	1857.8	1847.3
12.5°	1884.3	1868.5	1820.8	1810.3	1790.8
15°	1852.6	1833.2	1773.3	1739.8	1722.2
17.5°	1815.5	1787.3	1713.3	1674.5	1646.2
20°	1773.3	1738.0	1649.8	1605.9	1567.0
22.5°	1727.5	1686.9	1584.6	1524.8	1498.4
25°	1681.6	1625.1	1508.8	1436.6	1410.0
27.5°	1627.0	1567.0	1438.3	1355.5	1314.9
30°	1568.9	1501.8	1360.7	1270.9	1223.2
32.5°	1512.4	1431.3	1286.9	1181.0	1136.9
35°	1449.0	1359.1	1204.0	1092.9	1054.0
37.5°	1387.2	1290.2	1126.4	1004.7	960.7
40°	1322.0	1216.4	1045.2	920.1	874.3
42.5°	1255.1	1142.3	964.2	833.7	789.8
45°	1184.6	1066.4	881.4	756.1	713.8
47.5°	1117.6	992.5	802.1	676.8	638.1
50°	1043.6	918.4	724.5	602.8	565.9
52.5°	971.2	839.0	650.4	534.1	500.7
55°	900.7	763.2	572.8	467.1	433.7
57.5°	828.5	687.5	504.2	405.5	377.2
60°	754.4	613.4	431.8	342.0	313.8
62.5°	682.2	541.2	370.1	285.6	271.5
65°	608.1	465.3	306.7	246.9	241.5
67.5°	537.6	394.8	246.9	216.8	211.5
70°	463.6	326.1	204.4	186.8	179.7
72.5°	393.1	262.6	171.0	156.9	153.4
75°	324.3	200.9	141.0	128.7	127.0
77.5°	255.6	142.7	111.1	104.0	100.4
80°	192.1	102.3	84.5	77.6	77.6
82.5°	133.9	68.8	58.2	54.6	54.6
85°	75.8	38.7	33.5	33.5	33.5
87.5°	28.3	14.0	14.0	12.3	12.3
90°	2.9	35.6	96.9	91.0	93.9
92.5°	61.3	83.0	86.0	89.0	89.0
95°	144.3	172.0	176.9	176.9	172.0
97.5°	240.3	265.9	276.8	276.8	276.8
100°	350.9	373.6	381.5	381.5	378.6
102.5°	467.6	484.4	495.3	498.2	495.3
105°	595.1	603.0	609.0	613.9	613.9
107.5°	721.6	733.5	733.5	735.5	721.6
110°	844.2	860.1	860.1	860.1	852.2

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	976.7	993.4	990.5	982.6	976.7
115°	1107.2	1122.9	1118.0	1115.1	1107.2
117.5°	1236.7	1258.4	1244.5	1236.7	1228.8
120°	1367.2	1388.9	1367.2	1367.2	1358.3
122.5°	1485.8	1513.4	1499.6	1491.7	1485.8
125°	1610.3	1635.0	1627.1	1618.3	1615.2
127.5°	1731.9	1762.6	1751.7	1739.8	1731.9
130°	1845.6	1881.2	1876.2	1870.3	1859.4
132.5°	1973.1	2000.8	2002.8	1989.0	1981.0
135°	2082.8	2113.5	2119.4	2116.5	2108.6
137.5°	2205.5	2230.1	2235.1	2233.1	2221.3
140°	2313.2	2337.9	2351.7	2351.7	2340.9
142.5°	2423.9	2448.6	2456.5	2459.5	2448.6
145°	2528.7	2548.4	2564.3	2567.2	2556.4
147.5°	2622.6	2647.3	2659.2	2664.1	2653.3
150°	2719.5	2736.3	2747.1	2756.1	2747.1
152.5°	2805.5	2822.3	2836.1	2847.0	2836.1
155°	2891.5	2899.4	2908.3	2922.2	2913.2
157.5°	2965.6	2971.6	2976.5	2996.2	2982.4
160°	3031.9	3037.8	3040.7	3057.6	3045.7
162.5°	3093.1	3093.1	3096.2	3114.9	3101.1
165°	3145.5	3142.5	3142.5	3162.3	3148.5
167.5°	3193.0	3184.1	3184.1	3203.9	3190.0
170°	3228.6	3220.7	3217.7	3237.4	3220.7
172.5°	3253.3	3245.4	3242.4	3262.2	3245.4
175°	3273.1	3265.2	3259.2	3279.0	3262.2
177.5°	3283.9	3276.0	3270.1	3286.9	3270.1
180°	3279.0	3279.0	3279.0	3279.0	3279.0

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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	7.73	8.42	8.84	9.53	11.06	3.69	4.38	4.80	5.49	7.02
	3H	9.39	10.01	10.51	11.12	12.67	4.86	5.48	5.98	6.60	8.14
	4H	9.99	10.58	11.12	11.69	13.24	5.30	5.89	6.43	7.00	8.55
	6H	10.40	10.94	11.54	12.06	13.62	5.61	6.15	6.75	7.27	8.83
	8H	10.52	11.04	11.67	12.17	13.72	5.69	6.21	6.84	7.34	8.89
	12H	10.58	11.07	11.72	12.19	13.77	5.73	6.22	6.88	7.34	8.92
4H	2H	7.73	8.32	8.87	9.43	10.98	4.27	4.85	5.41	5.97	7.52
	3H	9.54	10.03	10.68	11.17	12.73	5.60	6.09	6.74	7.23	8.79
	4H	10.22	10.67	11.37	11.80	13.38	6.13	6.58	7.28	7.71	9.29
	6H	10.73	11.11	11.88	12.26	13.84	6.54	6.92	7.69	8.08	9.65
	8H	10.90	11.26	12.05	12.40	13.99	6.66	7.02	7.81	8.16	9.75
	12H	10.98	11.31	12.15	12.46	14.06	6.72	7.04	7.88	8.20	9.79
8H	4H	10.18	10.54	11.33	11.68	13.27	6.40	6.76	7.55	7.90	9.49
	6H	10.73	11.03	11.91	12.22	13.80	6.91	7.20	8.08	8.39	9.97
	8H	10.95	11.21	12.13	12.37	13.98	7.09	7.35	8.27	8.51	10.12
	12H	11.08	11.30	12.26	12.47	14.10	7.20	7.43	8.38	8.59	10.23
12H	4H	10.12	10.45	11.29	11.61	13.20	6.40	6.72	7.57	7.88	9.47
	6H	10.71	10.97	11.89	12.13	13.74	6.95	7.21	8.13	8.38	9.98
	8H	10.92	11.15	12.10	12.31	13.95	7.15	7.38	8.33	8.54	10.18