

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: P903732

Luminaire Tested: DFN2DIP-SQ3F0-070D070US830-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P903732
REPORT IS A COMBINATION OF REPORTS P899921 AND P896733
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-070D070US830-FLLFLL
Description: 3 foot, Square Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

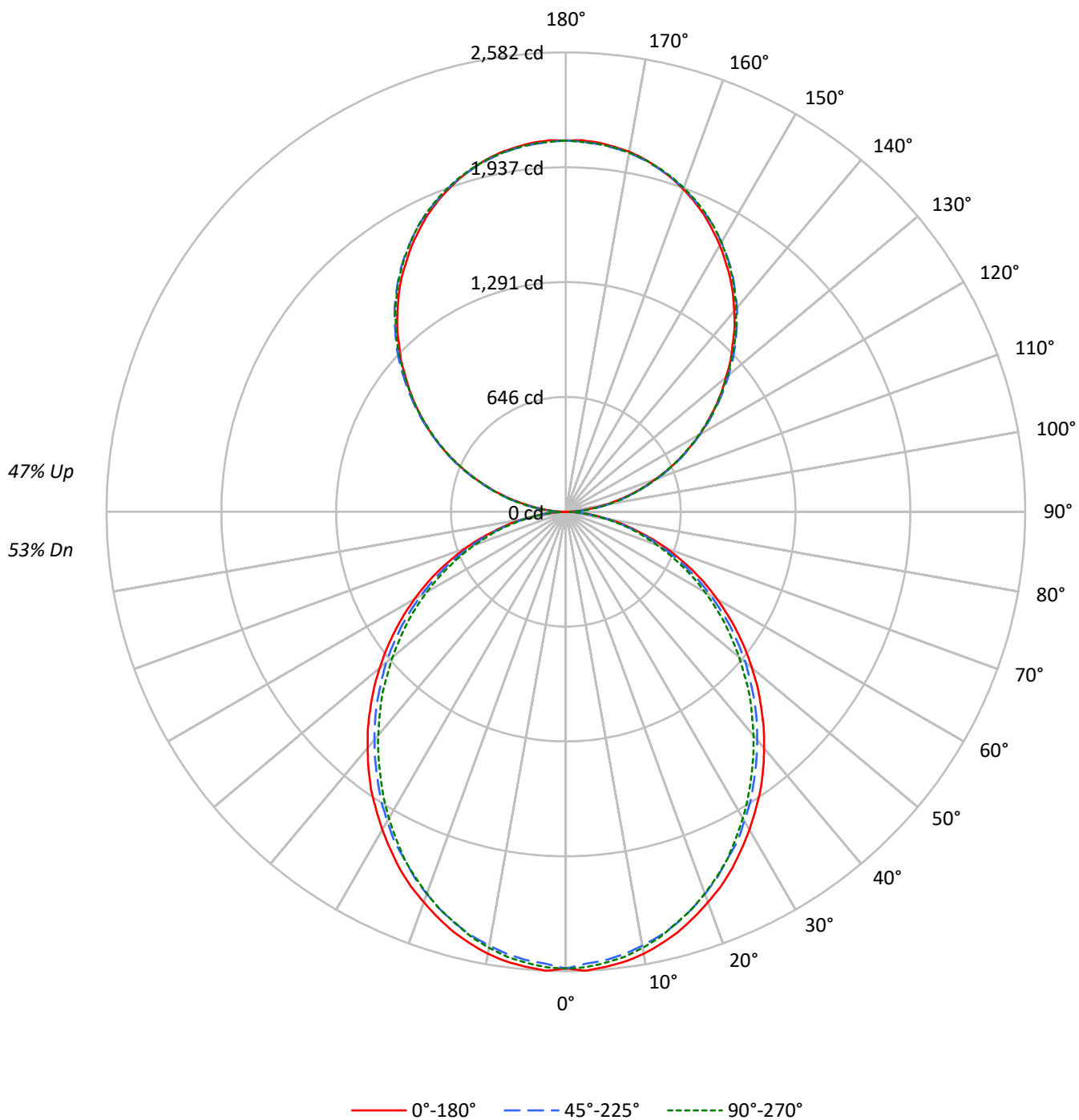
Lumens per Lamp: N/A
Luminaire Lumens: 12370.9 lumens
Efficiency: N/A
Efficacy: 104.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 118.1
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9963
Total Harmonic Distortion (THDi): 0.065
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	108	108	108	108	100	100	100	100	85	85	85	71	71	71	59	59	59
1	98	94	90	87	91	87	84	81	74	72	70	63	61	59	52	51	50
2	90	82	76	71	83	76	71	66	65	61	58	55	52	50	46	44	42
3	82	72	65	59	75	67	61	55	58	53	49	49	45	42	41	38	36
4	75	64	56	50	69	60	52	47	51	46	41	43	39	36	36	33	31
5	69	57	49	43	63	53	46	40	46	40	36	39	35	31	33	29	27
6	63	51	43	37	58	48	40	35	41	36	31	35	31	27	30	26	24
7	59	46	38	33	54	43	36	31	37	32	28	32	28	24	27	24	21
8	54	42	34	29	50	39	32	27	34	29	24	29	25	22	25	21	19
9	51	38	31	26	47	36	29	24	31	26	22	27	23	19	23	20	17
10	47	35	28	23	44	33	26	22	29	23	20	25	21	18	21	18	15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2942	2942	2942
5°	2944	2899	2919
10°	2919	2858	2879
15°	2874	2809	2816
20°	2814	2741	2752
25°	2754	2661	2678
30°	2680	2586	2584
35°	2610	2499	2485
40°	2523	2410	2390
45°	2437	2321	2293
50°	2342	2227	2181
55°	2243	2119	2078
60°	2131	1991	1960
65°	2008	1858	1820
70°	1852	1695	1670
75°	1636	1500	1530
80°	1375	1252	1265
85°	968	830	827

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2437 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	241.6	2.0
10°-20°	679.9	5.5
20°-30°	999.1	8.1
30°-40°	1160.4	9.4
40°-50°	1159.0	9.4
50°-60°	1010.6	8.2
60°-70°	747.1	6.0
70°-80°	422.7	3.4
80°-90°	117.5	0.9
90°-100°	129.1	1.0
100°-110°	410.3	3.3
110°-120°	702.1	5.7
120°-130°	923.3	7.5
130°-140°	1036.4	8.4
140°-150°	1016.3	8.2
150°-160°	852.6	6.9
160°-170°	565.4	4.6
170°-180°	197.6	1.6
0°-30°	1920.6	15.5
0°-40°	3081.0	24.9
0°-60°	5250.6	42.4
0°-90°	6537.8	52.8
90°-120°	1241.5	10.0
90°-150°	4217.6	34.1
90°-180°	5833.0	47.2
0°-180°	12370.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2567	2567	2567	2567	2567	
5°	2567	2558	2530	2550	2545	244
15°	2444	2429	2397	2407	2395	688
25°	2212	2192	2150	2155	2150	1018
35°	1908	1884	1844	1829	1817	1192
45°	1553	1536	1498	1471	1461	1198
55°	1175	1160	1131	1101	1089	1051
65°	793	778	753	731	718	784
75°	415	410	397	383	388	443
85°	101	99	96	89	86	113
90°	2	23	62	58	60	12
95°	92	109	113	113	109	102
105°	379	384	388	391	391	400
115°	705	715	712	710	705	697
125°	1025	1040	1036	1030	1028	916
135°	1326	1345	1349	1347	1342	1025
145°	1609	1622	1632	1634	1627	1005
155°	1840	1845	1851	1860	1854	847
165°	2002	2000	2000	2012	2004	565
175°	2083	2078	2074	2087	2076	198
180°	2087	2087	2087	2087	2087	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2567.2	2567.2	2567.2	2567.2	2567.2
2.5°	2582.2	2569.8	2542.6	2567.2	2562.5
5°	2567.2	2557.6	2530.3	2550.0	2545.2
7.5°	2550.0	2535.3	2508.0	2528.0	2523.0
10°	2523.0	2505.7	2476.1	2495.8	2488.4
12.5°	2485.8	2471.2	2441.6	2453.8	2448.8
15°	2443.9	2429.2	2397.0	2407.0	2394.6
17.5°	2392.0	2377.4	2345.1	2357.5	2345.1
20°	2335.1	2320.5	2285.9	2293.3	2283.6
22.5°	2278.6	2256.4	2224.1	2224.1	2219.1
25°	2211.9	2192.2	2150.3	2155.0	2150.3
27.5°	2137.7	2120.4	2088.5	2081.1	2068.8
30°	2063.9	2043.9	2007.0	1999.7	1989.7
32.5°	1984.7	1970.1	1930.5	1915.6	1905.6
35°	1908.3	1883.7	1844.1	1829.2	1816.8
37.5°	1821.8	1799.6	1760.0	1742.8	1730.4
40°	1733.1	1713.2	1673.6	1651.6	1641.6
42.5°	1646.6	1626.7	1587.4	1562.5	1547.8
45°	1552.8	1535.6	1498.4	1471.4	1461.4
47.5°	1461.4	1444.2	1404.6	1377.3	1362.7
50°	1365.1	1352.7	1318.1	1283.6	1271.3
52.5°	1271.3	1254.1	1222.1	1194.9	1177.5
55°	1175.2	1160.3	1130.7	1101.1	1088.7
57.5°	1078.8	1066.5	1034.3	1004.7	994.8
60°	982.4	972.7	938.2	911.0	903.6
62.5°	888.6	871.4	846.8	822.2	812.2
65°	792.6	777.6	753.0	730.8	718.4
67.5°	693.8	681.3	659.2	642.0	632.0
70°	602.4	592.5	570.1	552.9	543.2
72.5°	508.6	498.7	486.4	469.1	461.8
75°	414.6	409.9	397.3	382.7	387.7
77.5°	330.8	320.8	315.8	308.5	301.2
80°	246.9	244.4	239.4	232.1	227.1
82.5°	167.9	167.9	165.5	155.6	155.6
85°	101.1	98.8	96.4	88.8	86.4
87.5°	44.5	39.6	34.6	27.2	24.6
90°	1.9	22.6	61.6	57.9	59.8
92.5°	39.0	52.9	54.8	56.6	56.6
95°	91.8	109.4	112.6	112.6	109.4
97.5°	152.9	169.2	176.2	176.2	176.2
100°	223.3	237.8	242.8	242.8	240.9
102.5°	297.6	308.2	315.2	317.1	315.2
105°	378.7	383.7	387.5	390.7	390.7
107.5°	459.2	466.7	466.7	468.1	459.2
110°	537.2	547.3	547.3	547.3	542.2

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	621.5	632.3	630.4	625.3	621.5
115°	704.6	714.6	711.5	709.6	704.6
117.5°	786.9	800.8	792.0	786.9	781.9
120°	870.0	883.8	870.0	870.0	864.3
122.5°	945.5	963.1	954.3	949.2	945.5
125°	1024.7	1040.5	1035.5	1029.8	1027.9
127.5°	1102.1	1121.6	1114.7	1107.2	1102.1
130°	1174.5	1197.1	1194.0	1190.2	1183.3
132.5°	1255.7	1273.3	1274.5	1265.7	1260.7
135°	1325.5	1344.9	1348.8	1346.8	1341.8
137.5°	1403.4	1419.2	1422.3	1421.1	1413.5
140°	1472.1	1487.8	1496.6	1496.6	1489.7
142.5°	1542.5	1558.2	1563.2	1565.1	1558.2
145°	1609.2	1621.7	1631.8	1633.7	1626.8
147.5°	1669.0	1684.7	1692.2	1695.4	1688.5
150°	1730.6	1741.3	1748.2	1753.9	1748.2
152.5°	1785.3	1796.0	1804.8	1811.8	1804.8
155°	1840.0	1845.0	1850.8	1859.5	1853.9
157.5°	1887.3	1891.0	1894.1	1906.8	1897.9
160°	1929.4	1933.2	1935.0	1945.7	1938.1
162.5°	1968.4	1968.4	1970.3	1982.2	1973.4
165°	2001.7	1999.8	1999.8	2012.4	2003.6
167.5°	2031.9	2026.3	2026.3	2038.8	2030.0
170°	2054.6	2049.6	2047.7	2060.2	2049.6
172.5°	2070.3	2065.2	2063.3	2075.9	2065.2
175°	2082.8	2077.8	2074.1	2086.6	2075.9
177.5°	2089.8	2084.7	2080.9	2091.7	2080.9
180°	2086.6	2086.6	2086.6	2086.6	2086.6

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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	11.24	12.13	12.18	13.08	14.31	10.80	11.69	11.73	12.64	13.87
	3H	12.90	13.70	13.85	14.66	15.91	12.41	13.21	13.36	14.17	15.42
	4H	13.49	14.24	14.45	15.21	16.47	12.99	13.75	13.95	14.71	15.97
	6H	13.89	14.58	14.86	15.55	16.82	13.39	14.08	14.36	15.05	16.32
	8H	13.99	14.65	14.97	15.64	16.91	13.49	14.15	14.46	15.14	16.41
	12H	14.04	14.67	15.02	15.65	16.94	13.53	14.16	14.51	15.14	16.43
4H	2H	11.71	12.46	12.67	13.42	14.68	11.35	12.10	12.31	13.07	14.33
	3H	13.57	14.20	14.54	15.19	16.47	13.16	13.79	14.13	14.78	16.06
	4H	14.28	14.85	15.26	15.84	17.14	13.86	14.43	14.84	15.42	16.72
	6H	14.79	15.29	15.79	16.30	17.60	14.36	14.86	15.35	15.87	17.16
	8H	14.94	15.40	15.94	16.41	17.72	14.50	14.97	15.50	15.97	17.28
	12H	15.01	15.43	16.03	16.45	17.77	14.56	14.98	15.58	16.00	17.32
8H	4H	14.47	14.94	15.47	15.94	17.25	14.10	14.56	15.09	15.56	16.88
	6H	15.10	15.48	16.12	16.53	17.84	14.72	15.10	15.74	16.14	17.46
	8H	15.32	15.66	16.35	16.69	18.02	14.93	15.26	15.95	16.29	17.62
	12H	15.45	15.74	16.48	16.77	18.14	15.04	15.33	16.07	16.36	17.73
12H	4H	14.46	14.88	15.48	15.90	17.22	14.09	14.51	15.11	15.53	16.85
	6H	15.13	15.47	16.16	16.50	17.83	14.76	15.09	15.79	16.13	17.46
	8H	15.37	15.67	16.40	16.69	18.07	14.99	15.28	16.02	16.31	17.68