

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: P909216

Luminaire Tested: DFN2DIP-SQ3F0-080D050US840-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P909216
REPORT IS A COMBINATION OF REPORTS P899887 AND P896733
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-080D050US840-FLLFLL
Description: 3 foot, Square Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

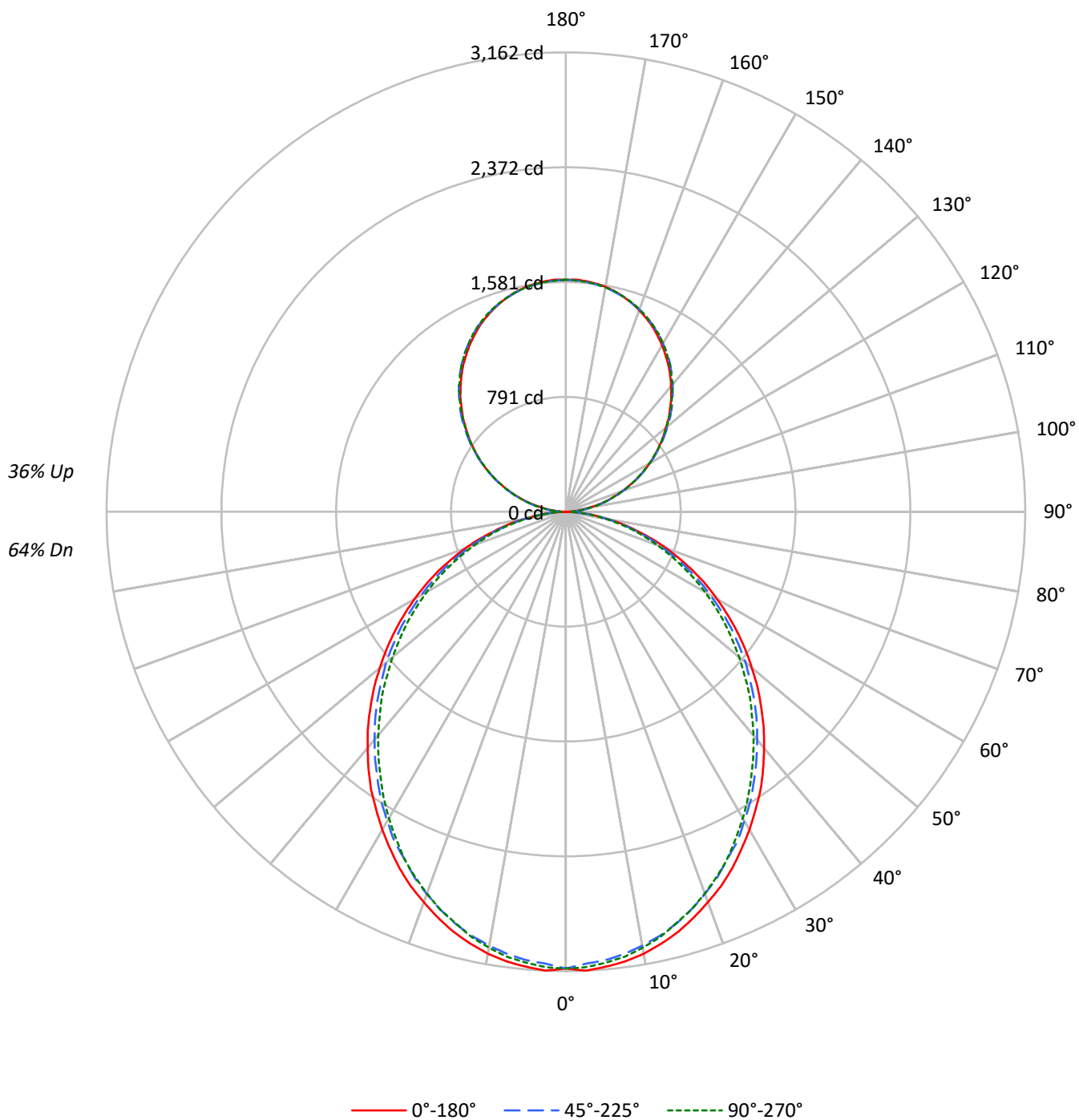
Lumens per Lamp: N/A
Luminaire Lumens: 12466.8 lumens
Efficiency: N/A
Efficacy: 110.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 113.1
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

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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	111	111	111	111	104	104	104	104	91	91	91	80	80	80	69	69	69
1	101	97	93	89	95	91	87	84	80	77	75	70	68	66	61	60	58
2	92	84	78	73	86	79	74	69	70	66	62	62	58	56	54	51	49
3	84	74	67	61	79	70	63	58	62	57	52	55	50	47	48	45	42
4	77	66	58	51	72	62	55	49	55	49	45	49	44	40	43	39	36
5	71	59	50	44	66	55	48	42	49	43	39	44	39	35	38	35	32
6	65	53	44	38	61	50	42	37	45	38	34	40	35	31	35	31	28
7	60	48	40	34	56	45	38	32	40	34	30	36	31	27	32	28	25
8	56	43	35	30	53	41	34	29	37	31	27	33	28	24	29	25	22
9	52	40	32	27	49	38	31	26	34	28	24	30	26	22	27	23	20
10	49	37	29	24	46	35	28	23	31	26	22	28	23	20	25	21	18

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3602	3602	3602
5°	3605	3549	3574
10°	3574	3499	3525
15°	3519	3439	3448
20°	3446	3357	3369
25°	3373	3259	3279
30°	3282	3167	3164
35°	3195	3060	3042
40°	3090	2951	2926
45°	2984	2842	2808
50°	2868	2727	2671
55°	2747	2595	2544
60°	2609	2438	2400
65°	2459	2275	2229
70°	2268	2076	2045
75°	2004	1838	1873
80°	1684	1533	1548
85°	1185	1017	1013

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2984 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	295.9	2.4
10°-20°	832.5	6.7
20°-30°	1223.4	9.8
30°-40°	1420.9	11.4
40°-50°	1419.1	11.4
50°-60°	1237.5	9.9
60°-70°	914.7	7.3
70°-80°	517.6	4.2
80°-90°	141.2	1.1
90°-100°	98.8	0.8
100°-110°	314.0	2.5
110°-120°	537.3	4.3
120°-130°	706.6	5.7
130°-140°	793.2	6.4
140°-150°	777.8	6.2
150°-160°	652.5	5.2
160°-170°	432.7	3.5
170°-180°	151.2	1.2
0°-30°	2351.8	18.9
0°-40°	3772.7	30.3
0°-60°	6429.3	51.6
0°-90°	8002.7	64.2
90°-120°	950.1	7.6
90°-150°	3227.7	25.9
90°-180°	4464.0	35.8
0°-180°	12466.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3144	3144	3144	3144	3144	
5°	3144	3132	3098	3122	3117	298
15°	2992	2975	2935	2947	2932	843
25°	2708	2684	2633	2639	2633	1246
35°	2337	2306	2258	2240	2225	1459
45°	1902	1880	1835	1802	1790	1467
55°	1439	1421	1384	1348	1333	1287
65°	970	952	922	895	880	959
75°	508	502	487	469	475	542
85°	124	121	118	109	106	138
90°	1	17	47	44	46	12
95°	70	84	86	86	84	78
105°	290	294	297	299	299	306
115°	539	547	544	543	539	533
125°	784	796	792	788	787	701
135°	1014	1029	1032	1031	1027	784
145°	1232	1241	1249	1250	1245	769
155°	1408	1412	1416	1423	1419	648
165°	1532	1530	1530	1540	1533	432
175°	1594	1590	1587	1597	1589	151
180°	1597	1597	1597	1597	1597	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3143.5	3143.5	3143.5	3143.5	3143.5
2.5°	3161.8	3146.7	3113.4	3143.5	3137.8
5°	3143.5	3131.7	3098.4	3122.4	3116.6
7.5°	3122.4	3104.4	3071.1	3095.4	3089.4
10°	3089.4	3068.2	3031.9	3056.0	3047.1
12.5°	3043.8	3025.9	2989.6	3004.7	2998.6
15°	2992.5	2974.6	2935.1	2947.3	2932.2
17.5°	2929.0	2911.0	2871.6	2886.7	2871.6
20°	2859.4	2841.5	2799.1	2808.1	2796.2
22.5°	2790.2	2762.9	2723.4	2723.4	2717.3
25°	2708.4	2684.3	2633.0	2638.8	2633.0
27.5°	2617.6	2596.5	2557.3	2548.3	2533.2
30°	2527.2	2502.7	2457.6	2448.6	2436.4
32.5°	2430.3	2412.4	2363.9	2345.6	2333.5
35°	2336.6	2306.5	2258.1	2239.8	2224.7
37.5°	2230.8	2203.5	2155.2	2133.9	2118.9
40°	2122.1	2097.7	2049.3	2022.4	2010.1
42.5°	2016.3	1991.9	1943.8	1913.3	1895.4
45°	1901.5	1880.3	1834.7	1801.7	1789.6
47.5°	1789.6	1768.4	1719.9	1686.6	1668.6
50°	1671.5	1656.5	1614.1	1571.8	1556.7
52.5°	1556.7	1535.5	1496.4	1463.1	1441.9
55°	1439.0	1420.7	1384.5	1348.3	1333.1
57.5°	1321.0	1306.0	1266.5	1230.2	1218.0
60°	1203.0	1191.1	1148.7	1115.4	1106.4
62.5°	1088.1	1067.0	1036.8	1006.7	994.5
65°	970.5	952.2	922.0	894.7	879.7
67.5°	849.5	834.1	807.2	786.1	773.9
70°	737.6	725.4	698.2	677.0	665.1
72.5°	622.8	610.7	595.5	574.4	565.4
75°	507.7	501.9	486.6	468.6	474.6
77.5°	405.1	392.8	386.8	377.8	368.8
80°	302.5	299.2	293.2	284.2	278.0
82.5°	205.6	205.6	202.7	190.5	190.5
85°	123.8	120.9	118.1	108.8	105.8
87.5°	54.5	48.5	42.3	33.3	30.2
90°	1.4	17.4	47.2	44.3	45.7
92.5°	29.9	40.4	41.9	43.3	43.3
95°	70.3	83.8	86.1	86.1	83.8
97.5°	116.9	129.5	134.8	134.8	134.8
100°	170.9	182.0	185.8	185.8	184.4
102.5°	227.7	235.9	241.2	242.7	241.2
105°	289.8	293.7	296.6	298.9	298.9
107.5°	351.4	357.2	357.2	358.2	351.4
110°	411.1	418.9	418.9	418.9	415.0

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	475.6	483.8	482.4	478.6	475.6
115°	539.2	546.9	544.5	543.1	539.2
117.5°	602.3	612.9	606.1	602.3	598.4
120°	665.8	676.4	665.8	665.8	661.5
122.5°	723.6	737.1	730.3	726.5	723.6
125°	784.3	796.3	792.4	788.1	786.7
127.5°	843.4	858.4	853.1	847.3	843.4
130°	898.9	916.2	913.7	910.9	905.5
132.5°	961.0	974.4	975.4	968.7	964.8
135°	1014.4	1029.3	1032.2	1030.8	1026.9
137.5°	1074.1	1086.1	1088.5	1087.5	1081.8
140°	1126.5	1138.6	1145.3	1145.3	1140.0
142.5°	1180.4	1192.6	1196.4	1197.8	1192.6
145°	1231.5	1241.1	1248.8	1250.3	1245.0
147.5°	1277.3	1289.3	1295.1	1297.5	1292.1
150°	1324.4	1332.6	1337.9	1342.2	1337.9
152.5°	1366.3	1374.5	1381.2	1386.5	1381.2
155°	1408.2	1412.0	1416.3	1423.1	1418.8
157.5°	1444.3	1447.1	1449.6	1459.3	1452.5
160°	1476.5	1479.5	1480.9	1489.0	1483.3
162.5°	1506.4	1506.4	1507.8	1517.0	1510.3
165°	1532.0	1530.5	1530.5	1540.1	1533.4
167.5°	1555.0	1550.6	1550.6	1560.3	1553.6
170°	1572.4	1568.5	1567.1	1576.7	1568.5
172.5°	1584.4	1580.5	1579.1	1588.7	1580.5
175°	1594.1	1590.1	1587.3	1596.9	1588.7
177.5°	1599.3	1595.5	1592.6	1600.7	1592.6
180°	1596.9	1596.9	1596.9	1596.9	1596.9

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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	12.91	13.91	13.73	14.76	15.81	12.46	13.47	13.29	14.31	15.37
	3H	14.57	15.47	15.41	16.33	17.41	14.08	14.98	14.92	15.84	16.92
	4H	15.16	16.02	16.02	16.88	17.97	14.67	15.52	15.52	16.39	17.48
	6H	15.57	16.35	16.43	17.22	18.33	15.07	15.85	15.93	16.72	17.83
	8H	15.67	16.42	16.55	17.31	18.42	15.17	15.92	16.05	16.81	17.92
	12H	15.73	16.44	16.61	17.32	18.45	15.22	15.93	16.10	16.81	17.94
4H	2H	13.38	14.23	14.24	15.10	16.19	13.02	13.88	13.88	14.74	15.83
	3H	15.25	15.96	16.12	16.86	17.97	14.84	15.56	15.72	16.45	17.56
	4H	15.97	16.62	16.85	17.51	18.64	15.54	16.19	16.43	17.09	18.22
	6H	16.49	17.05	17.39	17.97	19.10	16.06	16.62	16.95	17.53	18.67
	8H	16.64	17.16	17.54	18.07	19.22	16.20	16.73	17.10	17.64	18.79
	12H	16.72	17.19	17.64	18.12	19.27	16.27	16.74	17.19	17.67	18.82
8H	4H	16.17	16.70	17.07	17.61	18.76	15.80	16.32	16.70	17.23	18.38
	6H	16.80	17.24	17.73	18.19	19.34	16.42	16.85	17.35	17.81	18.96
	8H	17.02	17.41	17.96	18.35	19.52	16.63	17.01	17.57	17.96	19.13
	12H	17.16	17.50	18.10	18.43	19.65	16.75	17.09	17.69	18.02	19.24
12H	4H	16.16	16.64	17.08	17.57	18.72	15.80	16.27	16.72	17.20	18.35
	6H	16.83	17.22	17.77	18.16	19.33	16.46	16.85	17.40	17.79	18.96
	8H	17.08	17.42	18.02	18.35	19.57	16.70	17.04	17.64	17.97	19.19