

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: P909135

Luminaire Tested: DFN2DIP-SQ3F0-050D110US840-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P909135
REPORT IS A COMBINATION OF REPORTS P901510 AND P898289
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-050D110US840-RLLONL
Description: 3 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

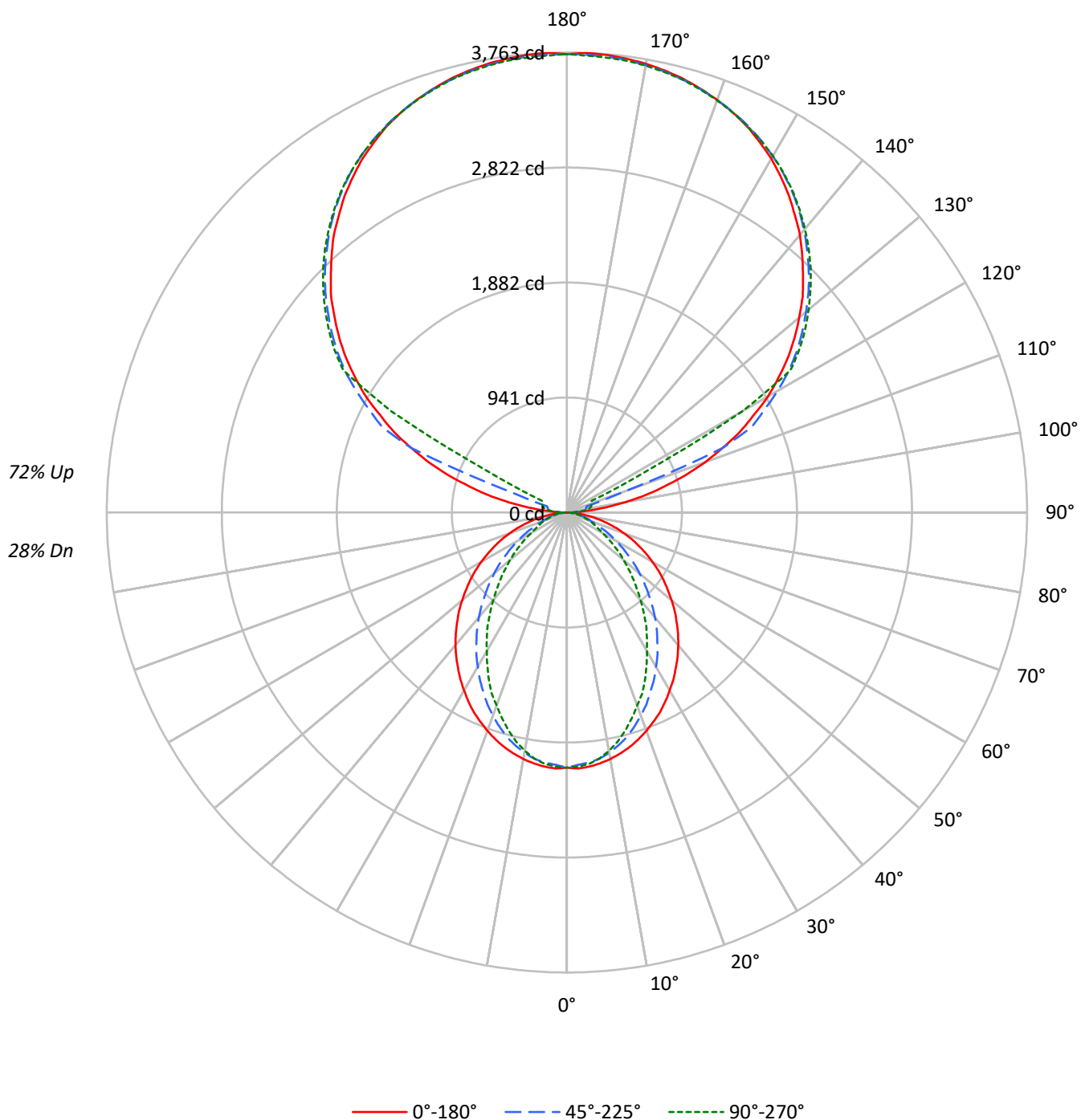
Lumens per Lamp: N/A
Luminaire Lumens: 15289.3 lumens
Efficiency: N/A
Efficacy: 119.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: Semi-Indirect

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	91	91	91	91	71	71	71	53	53	53	36	36	36
1	93	89	85	82	83	80	77	74	63	61	59	47	46	44	32	32	31
2	85	78	72	67	76	70	65	61	55	52	49	41	39	37	29	27	26
3	78	69	62	56	69	62	56	51	49	45	41	37	34	32	26	24	23
4	71	61	53	48	63	55	49	44	43	39	35	33	30	28	23	21	20
5	65	54	47	41	58	49	42	37	39	34	31	30	26	24	21	19	17
6	60	49	41	35	54	44	37	33	35	30	27	27	24	21	19	17	15
7	55	44	36	31	50	40	33	28	32	27	24	24	21	19	17	15	14
8	51	40	32	27	46	36	30	25	29	24	21	22	19	17	16	14	12
9	48	36	29	24	43	33	27	22	26	22	19	20	17	15	15	13	11
10	45	33	26	22	40	30	24	20	24	20	17	19	16	13	14	12	10

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2391	2391	2391
5°	2393	2352	2368
10°	2368	2304	2290
15°	2334	2226	2170
20°	2290	2120	2023
25°	2244	2001	1881
30°	2183	1879	1702
35°	2123	1748	1544
40°	2062	1612	1364
45°	1992	1463	1200
50°	1918	1312	1040
55°	1842	1150	887
60°	1753	982	729
65°	1651	811	656
70°	1527	651	592
75°	1371	571	537
80°	1146	474	463
85°	778	309	344

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 2567 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	195.6	1.3
10°-20°	536.9	3.5
20°-30°	753.8	4.9
30°-40°	821.7	5.4
40°-50°	755.2	4.9
50°-60°	593.1	3.9
60°-70°	386.1	2.5
70°-80°	198.7	1.3
80°-90°	57.3	0.4
90°-100°	123.6	0.8
100°-110°	460.8	3.0
110°-120°	1222.2	8.0
120°-130°	2027.1	13.3
130°-140°	2153.3	14.1
140°-150°	2001.2	13.1
150°-160°	1608.9	10.5
160°-170°	1036.7	6.8
170°-180°	356.8	2.3
0°-30°	1486.3	9.7
0°-40°	2308.0	15.1
0°-60°	3656.4	23.9
0°-90°	4298.5	28.1
90°-120°	1806.7	11.8
90°-150°	7988.3	52.2
90°-180°	10991.0	71.9
0°-180°	15289.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2087	2087	2087	2087	2087	
5°	2087	2078	2053	2070	2064	198
15°	1985	1964	1900	1864	1845	559
25°	1802	1741	1617	1539	1511	829
35°	1552	1456	1290	1171	1129	972
45°	1269	1143	944	810	765	980
55°	965	818	614	500	465	862
65°	652	499	329	264	259	646
75°	348	215	151	138	136	368
85°	81	42	36	36	36	93
90°	3	32	54	68	73	14
95°	176	87	106	120	117	209
105°	825	906	166	195	206	881
115°	1560	1606	1674	418	223	1536
125°	2205	2241	2292	2311	2319	1967
135°	2729	2773	2797	2824	2819	2108
145°	3166	3163	3209	3228	3215	1980
155°	3486	3462	3494	3510	3489	1606
165°	3673	3657	3665	3684	3665	1038
175°	3757	3738	3744	3763	3736	358
180°	3749	3749	3749	3749	3749	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2086.9	2086.9	2086.9	2086.9	2086.9
2.5°	2096.3	2086.9	2066.1	2085.1	2081.2
5°	2086.9	2077.5	2052.9	2069.8	2064.3
7.5°	2069.8	2058.6	2032.2	2039.6	2030.1
10°	2047.2	2034.0	1996.3	1990.5	1979.2
12.5°	2018.9	2002.0	1950.9	1939.6	1918.7
15°	1984.9	1964.1	1900.0	1864.1	1845.2
17.5°	1945.2	1915.0	1835.6	1794.1	1763.8
20°	1900.0	1862.1	1767.7	1720.6	1678.9
22.5°	1850.9	1807.4	1697.8	1633.7	1605.4
25°	1801.7	1741.2	1616.6	1539.2	1510.8
27.5°	1743.2	1678.9	1541.1	1452.3	1408.9
30°	1680.9	1609.0	1457.9	1361.7	1310.6
32.5°	1620.4	1533.5	1378.8	1265.4	1218.1
35°	1552.5	1456.1	1290.0	1170.9	1129.3
37.5°	1486.3	1382.4	1206.9	1076.4	1029.4
40°	1416.4	1303.2	1119.8	985.8	936.8
42.5°	1344.7	1223.9	1033.1	893.2	846.2
45°	1269.2	1142.6	944.3	810.1	764.8
47.5°	1197.4	1063.4	859.4	725.2	683.7
50°	1118.1	984.0	776.3	645.8	606.3
52.5°	1040.6	898.9	696.9	572.3	536.4
55°	965.0	817.7	613.7	500.5	464.6
57.5°	887.7	736.6	540.2	434.4	404.1
60°	808.3	657.2	462.6	366.5	336.2
62.5°	730.9	579.9	396.6	306.0	290.9
65°	651.6	498.6	328.6	264.5	258.7
67.5°	576.0	423.0	264.5	232.3	226.6
70°	496.8	349.4	219.0	200.2	192.6
72.5°	421.2	281.3	183.2	168.1	164.3
75°	347.5	215.2	151.1	137.8	136.0
77.5°	273.9	152.9	119.1	111.4	107.6
80°	205.8	109.6	90.6	83.1	83.1
82.5°	143.5	73.7	62.3	58.5	58.5
85°	81.2	41.5	35.9	35.9	35.9
87.5°	30.3	15.0	15.0	13.2	13.2
90°	2.6	32.5	54.1	68.0	73.1
92.5°	68.0	57.1	65.0	70.6	73.1
95°	176.2	86.6	105.6	119.5	116.6
97.5°	317.3	95.0	138.1	146.5	149.2
100°	480.3	108.6	154.6	176.2	181.7
102.5°	659.0	653.9	160.1	189.8	198.1
105°	824.7	906.2	165.6	195.2	206.2
107.5°	1017.3	1084.9	171.1	200.7	211.7
110°	1201.8	1258.6	474.8	203.6	214.2



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1375.5	1424.1	1378.1	208.7	217.1
115°	1559.7	1605.8	1673.9	417.8	222.6
117.5°	1719.9	1774.0	1820.4	1432.2	721.5
120°	1899.0	1939.5	1988.5	2021.0	1654.8
122.5°	2050.7	2094.2	2148.6	2164.7	2167.7
125°	2205.3	2240.8	2292.3	2311.3	2319.4
127.5°	2346.4	2384.4	2425.3	2452.4	2455.0
130°	2479.4	2522.9	2552.5	2582.5	2580.0
132.5°	2615.0	2650.5	2680.2	2704.6	2702.1
135°	2729.2	2772.6	2796.7	2824.2	2818.6
137.5°	2848.3	2880.8	2908.2	2935.3	2927.2
140°	2965.0	2986.8	3016.5	3040.9	3027.4
142.5°	3062.8	3081.8	3116.9	3138.6	3125.0
145°	3165.9	3163.0	3209.0	3228.1	3214.6
147.5°	3255.2	3247.1	3293.2	3306.7	3296.1
150°	3342.2	3323.2	3366.6	3382.7	3369.2
152.5°	3415.3	3393.7	3434.2	3450.7	3431.7
155°	3485.9	3461.6	3494.1	3510.3	3488.7
157.5°	3542.8	3521.2	3545.7	3564.7	3542.8
160°	3591.8	3575.3	3591.8	3607.8	3588.9
162.5°	3634.9	3618.9	3632.4	3651.4	3626.9
165°	3673.0	3656.8	3664.9	3683.9	3664.9
167.5°	3702.9	3686.5	3694.9	3713.9	3689.4
170°	3727.4	3711.0	3716.4	3735.5	3711.0
172.5°	3743.5	3727.4	3732.9	3751.9	3727.4
175°	3757.0	3738.0	3743.5	3762.6	3735.5
177.5°	3762.6	3743.5	3746.4	3765.4	3740.9
180°	3749.0	3749.0	3749.0	3749.0	3749.0

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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	7.64	8.32	8.77	9.44	11.00	3.60	4.28	4.73	5.40	6.96
	3H	9.31	9.91	10.44	11.04	12.61	4.78	5.38	5.91	6.51	8.08
	4H	9.90	10.48	11.05	11.61	13.18	5.21	5.79	6.36	6.92	8.49
	6H	10.31	10.84	11.47	11.97	13.56	5.52	6.05	6.68	7.18	8.77
	8H	10.43	10.94	11.59	12.08	13.66	5.60	6.11	6.76	7.25	8.83
	12H	10.49	10.97	11.65	12.11	13.71	5.64	6.12	6.80	7.26	8.86
4H	2H	7.64	8.22	8.80	9.34	10.92	4.18	4.75	5.33	5.88	7.46
	3H	9.45	9.93	10.61	11.08	12.67	5.51	5.99	6.67	7.14	8.73
	4H	10.13	10.58	11.30	11.72	13.32	6.04	6.49	7.21	7.63	9.23
	6H	10.64	11.01	11.80	12.18	13.78	6.45	6.82	7.61	7.99	9.59
	8H	10.81	11.16	11.97	12.31	13.93	6.57	6.92	7.74	8.08	9.69
	12H	10.89	11.21	12.07	12.38	14.00	6.62	6.94	7.81	8.11	9.73
8H	4H	10.09	10.44	11.25	11.60	13.21	6.31	6.66	7.48	7.82	9.43
	6H	10.64	10.93	11.83	12.13	13.74	6.81	7.10	8.00	8.30	9.91
	8H	10.86	11.11	12.05	12.29	13.92	7.00	7.25	8.19	8.43	10.06
	12H	10.99	11.21	12.18	12.38	14.05	7.11	7.33	8.30	8.50	10.17
12H	4H	10.03	10.35	11.22	11.52	13.14	6.31	6.63	7.49	7.79	9.41
	6H	10.62	10.87	11.81	12.05	13.68	6.86	7.11	8.05	8.29	9.92
	8H	10.83	11.05	12.02	12.22	13.89	7.06	7.28	8.25	8.46	10.12

END OF REPORT