

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: P909371

Luminaire Tested: DFN2DIP-SQ3F0-120D070US840-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P909371
REPORT IS A COMBINATION OF REPORTS P901452 AND P898289
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-120D070US840-RLLONL
Description: 3 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

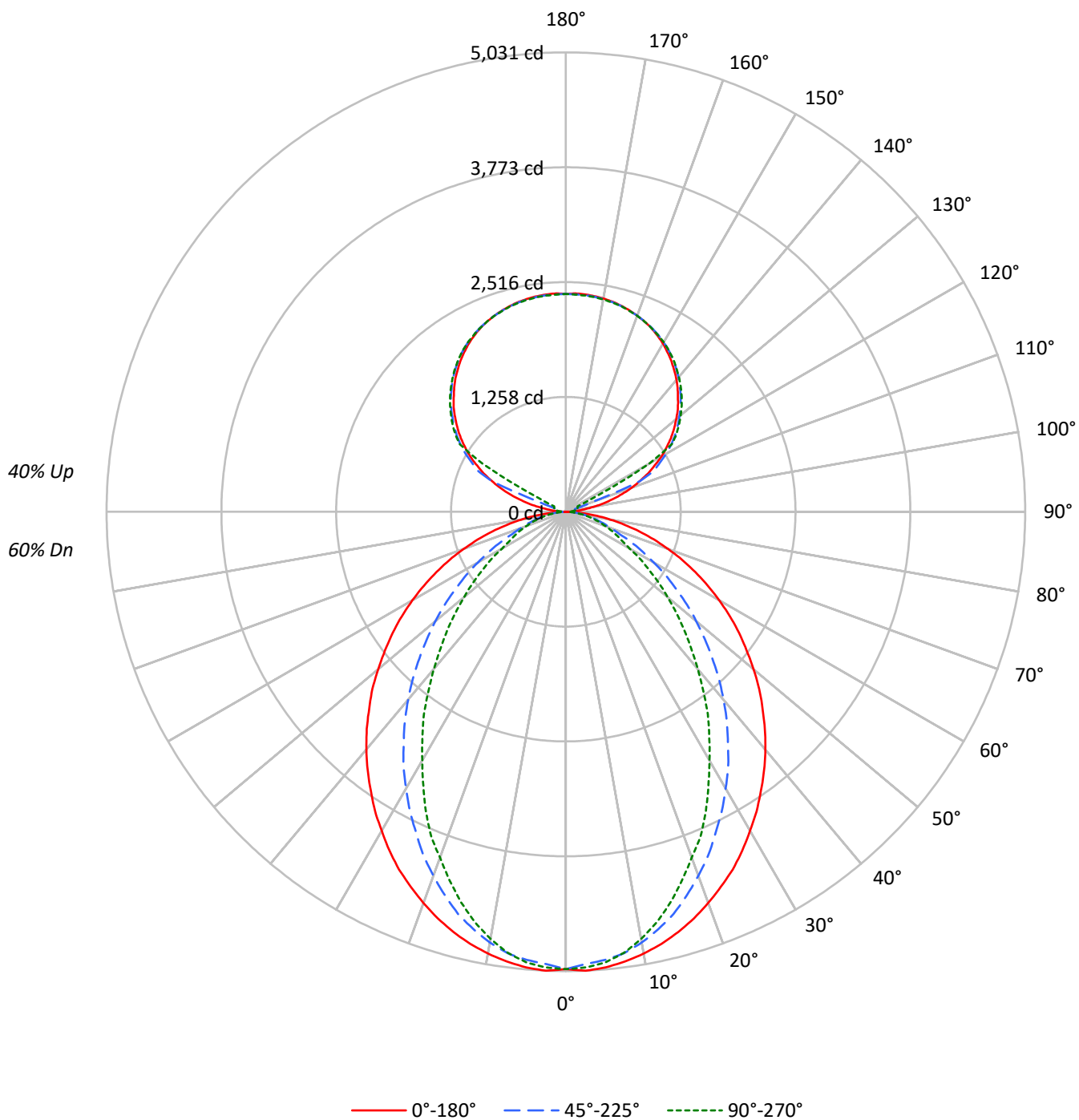
Lumens per Lamp: N/A
Luminaire Lumens: 17299.0 lumens
Efficiency: N/A
Efficacy: 97.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 178.3
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9957
Total Harmonic Distortion (THDi): 0.049
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	109	109	109	109	102	102	102	102	89	89	89	76	76	76	65	65	65
1	101	96	93	89	94	90	87	84	79	76	74	68	66	65	58	57	56
2	92	85	79	74	86	80	74	70	70	66	62	60	58	55	52	50	48
3	84	75	68	62	79	71	64	59	62	57	53	54	50	47	47	44	42
4	77	67	59	53	72	63	56	51	55	50	46	48	44	41	42	39	36
5	71	60	52	46	67	56	49	44	50	44	40	44	39	36	38	35	32
6	66	54	46	40	62	51	44	39	45	39	35	40	35	32	35	31	28
7	61	49	41	36	57	46	39	34	41	35	31	36	32	28	32	28	26
8	57	45	37	32	53	42	35	31	38	32	28	34	29	26	30	26	23
9	53	41	34	29	50	39	32	27	35	29	25	31	26	23	27	24	21
10	50	38	31	26	47	36	29	25	32	27	23	29	24	21	25	22	19

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	5739	5739	5739
5°	5744	5644	5682
10°	5684	5529	5495
15°	5602	5343	5208
20°	5495	5087	4856
25°	5385	4802	4515
30°	5239	4509	4085
35°	5095	4195	3706
40°	4949	3870	3273
45°	4780	3511	2880
50°	4604	3148	2497
55°	4421	2761	2129
60°	4208	2356	1750
65°	3963	1946	1573
70°	3665	1563	1421
75°	3291	1369	1289
80°	2750	1136	1111
85°	1865	740	824

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 4780 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	469.4	2.7
10°-20°	1288.6	7.4
20°-30°	1809.2	10.5
30°-40°	1972.1	11.4
40°-50°	1812.6	10.5
50°-60°	1423.5	8.2
60°-70°	926.6	5.4
70°-80°	476.9	2.8
80°-90°	125.9	0.7
90°-100°	78.7	0.5
100°-110°	293.3	1.7
110°-120°	777.8	4.5
120°-130°	1290.0	7.5
130°-140°	1370.3	7.9
140°-150°	1273.5	7.4
150°-160°	1023.9	5.9
160°-170°	659.7	3.8
170°-180°	227.1	1.3
0°-30°	3567.2	20.6
0°-40°	5539.3	32.0
0°-60°	8775.3	50.7
0°-90°	10304.8	59.6
90°-120°	1149.7	6.6
90°-150°	5083.5	29.4
90°-180°	6994.0	40.4
0°-180°	17299.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	5008	5008	5008	5008	5008	
5°	5008	4986	4927	4968	4954	475
15°	4764	4714	4560	4474	4429	1342
25°	4324	4179	3880	3694	3626	1989
35°	3726	3495	3096	2810	2710	2332
45°	3046	2742	2266	1944	1836	2352
55°	2316	1963	1473	1201	1115	2070
65°	1564	1196	789	635	621	1550
75°	834	516	363	331	326	882
85°	195	100	86	86	86	224
90°	2	21	34	43	47	16
95°	112	55	67	76	74	133
105°	525	577	105	124	131	561
115°	993	1022	1065	266	142	977
125°	1403	1426	1459	1471	1476	1252
135°	1737	1764	1780	1797	1794	1342
145°	2015	2013	2042	2054	2046	1260
155°	2218	2203	2224	2234	2220	1022
165°	2337	2327	2332	2344	2332	660
175°	2391	2379	2382	2394	2377	228
180°	2386	2386	2386	2386	2386	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	5008.5	5008.5	5008.5	5008.5	5008.5
2.5°	5031.2	5008.5	4958.5	5004.2	4995.0
5°	5008.5	4985.9	4926.7	4967.6	4954.2
7.5°	4967.6	4940.7	4877.2	4895.0	4872.4
10°	4913.3	4881.6	4791.1	4777.2	4750.3
12.5°	4845.4	4804.6	4681.9	4655.1	4605.1
15°	4763.7	4713.7	4559.8	4473.7	4428.6
17.5°	4668.5	4595.9	4405.4	4306.0	4233.4
20°	4559.8	4469.0	4242.4	4129.4	4029.4
22.5°	4442.0	4337.7	4074.6	3920.7	3852.9
25°	4324.2	4178.9	3879.8	3694.2	3625.9
27.5°	4183.8	4029.4	3698.5	3485.6	3381.1
30°	4034.2	3861.6	3499.0	3268.1	3145.5
32.5°	3889.0	3680.3	3309.0	3036.9	2923.4
35°	3726.0	3494.6	3095.9	2810.4	2710.3
37.5°	3567.2	3317.7	2896.4	2583.3	2470.3
40°	3399.4	3127.8	2687.8	2366.0	2248.2
42.5°	3227.2	2937.3	2479.5	2143.8	2030.8
45°	3046.0	2742.1	2266.4	1944.3	1835.5
47.5°	2873.8	2552.1	2062.5	1740.4	1640.8
50°	2683.4	2361.7	1863.0	1549.9	1455.2
52.5°	2497.3	2157.3	1672.5	1373.4	1287.4
55°	2316.0	1962.6	1473.0	1201.2	1115.2
57.5°	2130.3	1767.8	1296.5	1042.6	970.0
60°	1940.0	1577.3	1110.3	879.6	807.0
62.5°	1754.3	1391.7	951.7	734.4	698.2
65°	1563.9	1196.5	788.7	634.8	620.9
67.5°	1382.6	1015.1	634.8	557.3	543.9
70°	1192.1	838.7	525.6	480.4	462.1
72.5°	1010.9	675.2	439.5	403.4	394.4
75°	833.8	516.4	362.6	330.8	326.5
77.5°	657.4	366.9	285.7	267.4	258.2
80°	493.9	263.1	217.3	199.5	199.5
82.5°	344.4	176.9	149.6	140.4	140.4
85°	194.8	99.6	86.0	86.0	86.0
87.5°	72.6	36.1	36.1	31.7	31.7
90°	1.6	20.7	34.4	43.2	46.6
92.5°	43.2	36.3	41.4	44.9	46.6
95°	112.1	55.1	67.3	76.0	74.2
97.5°	201.9	60.5	88.0	93.3	94.9
100°	305.7	69.1	98.4	112.1	115.6
102.5°	419.4	416.2	101.9	120.8	126.0
105°	524.8	576.6	105.3	124.2	131.2
107.5°	647.3	690.4	108.9	127.7	134.7
110°	764.9	800.9	302.2	129.6	136.3



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	875.4	906.3	877.0	132.8	138.1
115°	992.6	1021.9	1065.1	265.9	141.7
117.5°	1094.5	1128.9	1158.4	911.4	459.2
120°	1208.4	1234.3	1265.5	1286.2	1053.1
122.5°	1304.9	1332.6	1367.4	1377.6	1379.4
125°	1403.4	1425.9	1458.8	1470.9	1475.9
127.5°	1493.2	1517.3	1543.4	1560.6	1562.3
130°	1577.8	1605.5	1624.4	1643.5	1641.8
132.5°	1664.2	1686.7	1705.6	1721.1	1719.5
135°	1736.7	1764.3	1779.8	1797.2	1793.7
137.5°	1812.5	1833.3	1850.7	1867.9	1862.8
140°	1886.7	1900.7	1919.6	1935.1	1926.5
142.5°	1949.0	1961.2	1983.5	1997.2	1988.6
145°	2014.7	2012.9	2042.2	2054.3	2045.7
147.5°	2071.4	2066.4	2095.7	2104.3	2097.5
150°	2126.8	2114.8	2142.4	2152.6	2144.0
152.5°	2173.3	2159.6	2185.5	2195.9	2183.8
155°	2218.3	2202.8	2223.5	2233.8	2220.1
157.5°	2254.5	2240.8	2256.3	2268.5	2254.5
160°	2285.7	2275.2	2285.7	2295.9	2283.8
162.5°	2313.2	2302.9	2311.5	2323.6	2308.0
165°	2337.3	2327.1	2332.2	2344.3	2332.2
167.5°	2356.4	2345.9	2351.3	2363.4	2347.8
170°	2372.0	2361.6	2365.0	2377.1	2361.6
172.5°	2382.3	2372.0	2375.5	2387.5	2372.0
175°	2390.9	2378.7	2382.3	2394.3	2377.1
177.5°	2394.3	2382.3	2384.1	2396.2	2380.6
180°	2385.7	2385.7	2385.7	2385.7	2385.7

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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	14.03	14.95	14.91	15.84	16.97	9.99	10.91	10.87	11.80	12.93
	3H	15.71	16.53	16.60	17.43	18.59	11.18	12.00	12.07	12.90	14.06
	4H	16.32	17.09	17.23	18.00	19.17	11.63	12.40	12.54	13.31	14.48
	6H	16.74	17.46	17.66	18.37	19.55	11.95	12.66	12.87	13.58	14.76
	8H	16.87	17.55	17.80	18.48	19.66	12.04	12.72	12.97	13.65	14.83
	12H	16.93	17.58	17.86	18.50	19.71	12.08	12.73	13.01	13.65	14.86
4H	2H	14.06	14.83	14.97	15.74	16.91	10.60	11.37	11.51	12.28	13.44
	3H	15.89	16.53	16.81	17.47	18.65	11.95	12.59	12.87	13.53	14.71
	4H	16.58	17.17	17.51	18.10	19.31	12.49	13.08	13.43	14.01	15.22
	6H	17.10	17.60	18.04	18.56	19.77	12.91	13.41	13.86	14.37	15.58
	8H	17.27	17.74	18.22	18.69	19.92	13.04	13.51	13.98	14.46	15.68
	12H	17.37	17.79	18.33	18.76	19.99	13.10	13.52	14.07	14.49	15.72
8H	4H	16.56	17.03	17.50	17.98	19.20	12.78	13.25	13.72	14.20	15.42
	6H	17.12	17.51	18.09	18.50	19.72	13.29	13.68	14.26	14.67	15.89
	8H	17.33	17.68	18.32	18.66	19.90	13.48	13.82	14.46	14.80	16.04
	12H	17.47	17.77	18.46	18.75	20.04	13.59	13.89	14.58	14.87	16.16
12H	4H	16.51	16.93	17.48	17.90	19.13	12.78	13.21	13.75	14.18	15.40
	6H	17.09	17.44	18.08	18.42	19.66	13.34	13.68	14.32	14.66	15.90
	8H	17.32	17.62	18.30	18.59	19.88	13.55	13.85	14.53	14.82	16.11

END OF REPORT