

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: P910049

Luminaire Tested: DFN2DIP-TR4F0-050D070US840-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P910049
REPORT IS A COMBINATION OF REPORTS P901946 AND P898849
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR4F0-050D070US840-RLLONL
Description: 4 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

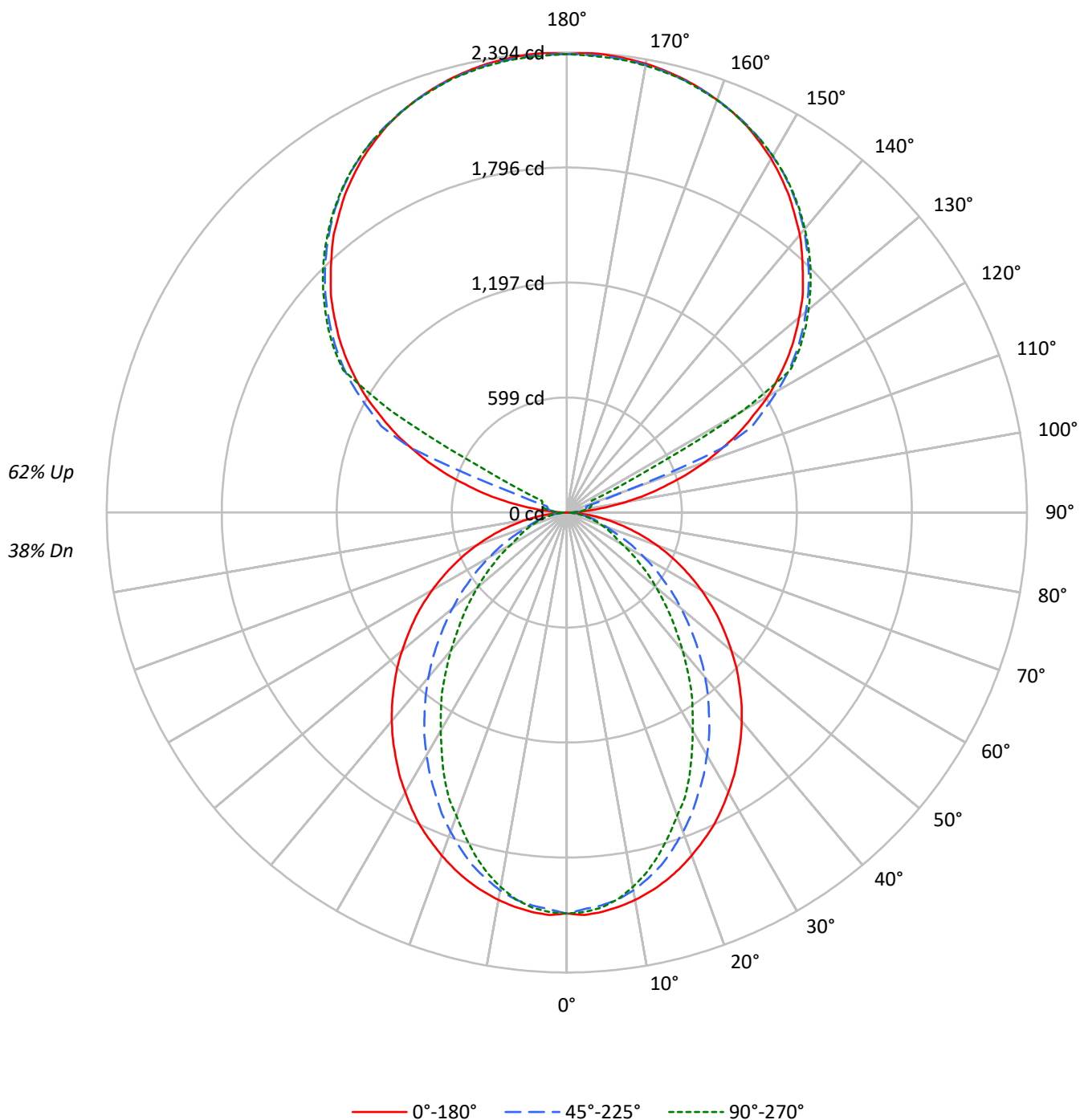
Lumens per Lamp: N/A
Luminaire Lumens: 11290.3 lumens
Efficiency: N/A
Efficacy: 120.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.43' x L: 3.96' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 94.1
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.996
Total Harmonic Distortion (THDi): 0.064
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	104	104	104	104	95	95	95	95	77	77	77	60	60	60	45	45	45
1	95	91	88	84	87	83	80	77	68	66	64	54	52	51	40	40	39
2	87	80	74	69	79	73	68	64	60	56	53	47	45	43	36	35	33
3	80	71	64	58	72	65	59	54	53	49	45	42	39	37	32	30	29
4	73	63	55	50	66	57	51	46	47	42	39	38	34	32	29	27	25
5	67	56	48	43	61	51	45	40	42	37	34	34	31	28	26	24	22
6	62	50	43	37	56	46	39	34	38	33	29	31	27	24	24	22	20
7	57	45	38	32	52	42	35	30	35	30	26	28	24	22	22	19	18
8	53	41	34	29	48	38	31	27	32	27	23	26	22	19	20	18	16
9	50	38	31	26	45	35	28	24	29	24	21	24	20	18	19	16	14
10	46	35	28	23	42	32	26	22	27	22	19	22	18	16	17	15	13

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1658	1658	1658
5°	1661	1632	1642
10°	1644	1600	1588
15°	1622	1547	1506
20°	1592	1474	1404
25°	1561	1392	1307
30°	1520	1308	1182
35°	1479	1218	1073
40°	1438	1125	948
45°	1391	1022	835
50°	1341	917	724
55°	1290	806	618
60°	1230	689	508
65°	1162	571	458
70°	1079	460	414
75°	975	406	376
80°	823	340	326
85°	574	227	245

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1391 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	195.6	1.7
10°-20°	536.9	4.8
20°-30°	753.8	6.7
30°-40°	821.7	7.3
40°-50°	755.2	6.7
50°-60°	593.1	5.3
60°-70°	386.1	3.4
70°-80°	198.7	1.8
80°-90°	54.9	0.5
90°-100°	78.7	0.7
100°-110°	293.3	2.6
110°-120°	777.8	6.9
120°-130°	1290.0	11.4
130°-140°	1370.3	12.1
140°-150°	1273.5	11.3
150°-160°	1023.9	9.1
160°-170°	659.7	5.8
170°-180°	227.1	2.0
0°-30°	1486.3	13.2
0°-40°	2308.0	20.4
0°-60°	3656.4	32.4
0°-90°	4296.1	38.1
90°-120°	1149.7	10.2
90°-150°	5083.5	45.0
90°-180°	6994.0	61.9
0°-180°	11290.3	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°	2	21	34	43	47	11
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°	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°	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	7.67	8.41	8.73	9.47	10.90	3.64	4.38	4.70	5.44	6.88
	3H	9.34	10.00	10.41	11.07	12.52	4.83	5.49	5.89	6.56	8.01
	4H	9.94	10.57	11.02	11.64	13.10	5.27	5.90	6.35	6.97	8.43
	6H	10.36	10.94	11.45	12.01	13.48	5.59	6.17	6.68	7.24	8.71
	8H	10.49	11.03	11.58	12.12	13.59	5.68	6.23	6.77	7.32	8.78
	12H	10.54	11.07	11.64	12.15	13.64	5.72	6.24	6.82	7.32	8.81
4H	2H	7.68	8.31	8.76	9.37	10.83	4.23	4.86	5.31	5.92	7.38
	3H	9.50	10.02	10.59	11.12	12.59	5.57	6.09	6.66	7.19	8.66
	4H	10.19	10.67	11.28	11.75	13.25	6.12	6.59	7.21	7.68	9.17
	6H	10.70	11.11	11.80	12.22	13.70	6.53	6.94	7.64	8.05	9.54
	8H	10.87	11.25	11.98	12.35	13.86	6.66	7.04	7.76	8.14	9.65
	12H	10.96	11.31	12.08	12.42	13.93	6.72	7.07	7.84	8.18	9.69
8H	4H	10.15	10.53	11.25	11.63	13.14	6.39	6.77	7.50	7.87	9.38
	6H	10.71	11.03	11.84	12.17	13.67	6.91	7.22	8.03	8.36	9.86
	8H	10.93	11.20	12.06	12.33	13.85	7.10	7.37	8.23	8.50	10.02
	12H	11.06	11.30	12.20	12.43	13.98	7.21	7.46	8.35	8.58	10.13
12H	4H	10.10	10.44	11.22	11.56	13.06	6.39	6.74	7.51	7.85	9.36
	6H	10.69	10.96	11.82	12.09	13.61	6.95	7.23	8.09	8.36	9.87
	8H	10.90	11.15	12.04	12.27	13.82	7.16	7.40	8.30	8.53	10.08