

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: P908942

Luminaire Tested: DFN2DIP-SQ2F0-030D070US840-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P908942
REPORT IS A COMBINATION OF REPORTS P899820 AND P896659
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ2F0-030D070US840-RLLFLL
Description: 2 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

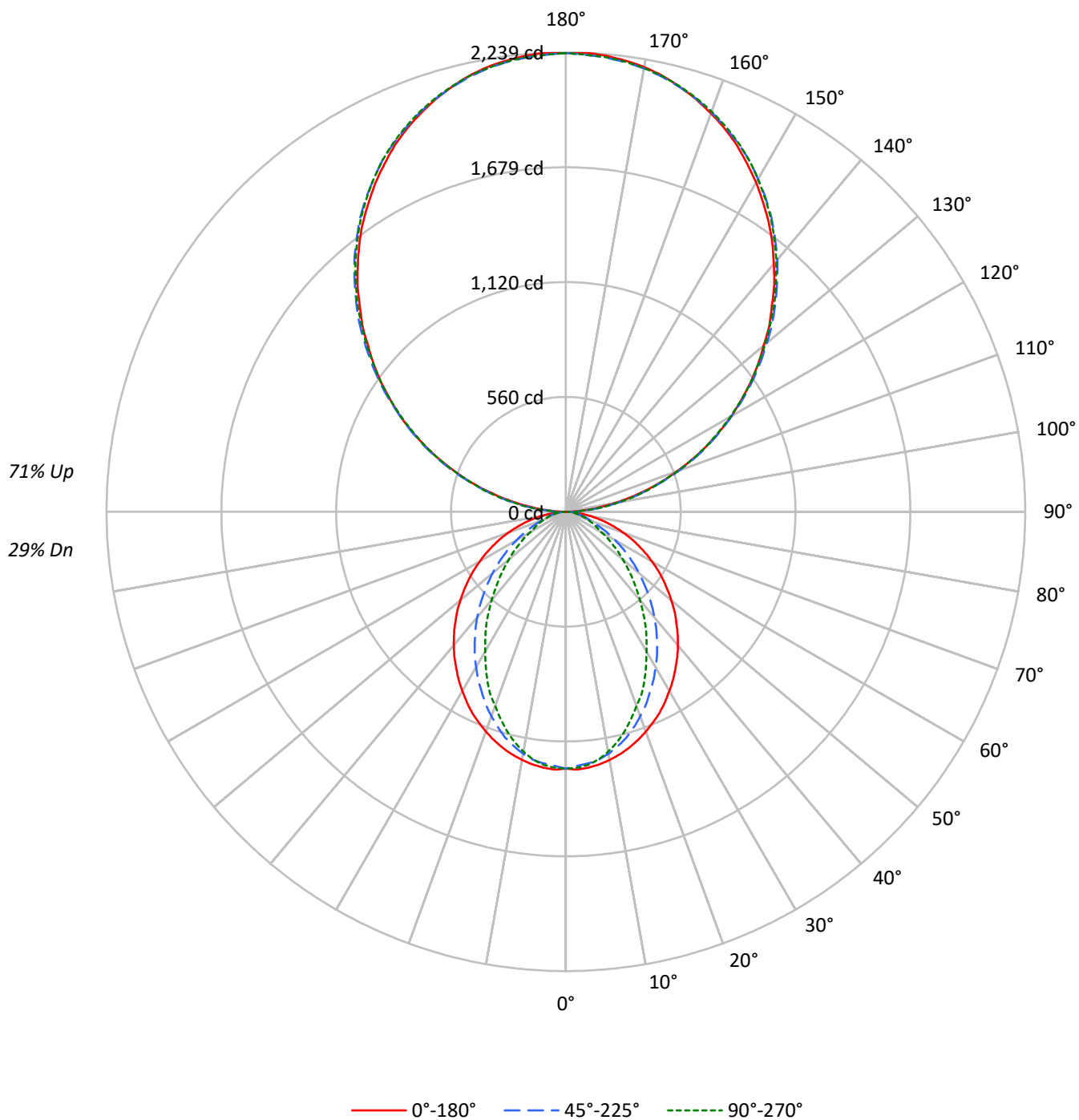
Lumens per Lamp: N/A
Luminaire Lumens: 8831.2 lumens
Efficiency: N/A
Efficacy: 114.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.21' x L: 2.21' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 77.5
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	102	102	102	102		92	92	92	92		72	72	72		54	54	54		37	37	37
1	93	89	86	82		84	80	77	74		63	61	59		48	46	45		33	32	32
2	85	78	72	68		76	70	66	61		56	52	49		42	40	38		29	28	27
3	78	69	62	57		70	62	56	52		49	45	42		37	35	32		26	25	23
4	71	61	54	48		64	55	49	44		44	39	36		33	30	28		24	22	20
5	65	54	47	41		59	49	43	38		39	35	31		30	27	24		21	19	18
6	60	49	41	36		54	44	38	33		35	31	27		27	24	21		20	17	16
7	56	44	36	31		50	40	33	29		32	27	24		25	21	19		18	16	14
8	52	40	33	27		46	36	30	25		29	24	21		23	19	17		16	14	13
9	48	36	29	24		43	33	27	23		27	22	19		21	18	15		15	13	12
10	45	33	26	22		40	30	24	20		25	20	17		19	16	14		14	12	11

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2753	2753	2753
5°	2753	2704	2723
10°	2721	2645	2631
15°	2679	2551	2490
20°	2624	2425	2319
25°	2569	2285	2154
30°	2496	2142	1946
35°	2424	1989	1763
40°	2350	1831	1555
45°	2266	1656	1365
50°	2178	1480	1181
55°	2085	1293	1004
60°	1978	1099	823
65°	1854	902	736
70°	1704	719	661
75°	1515	622	593
80°	1245	505	503
85°	810	313	358

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 3114 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	117.4	1.3
10°-20°	322.1	3.6
20°-30°	452.3	5.1
30°-40°	493.0	5.6
40°-50°	453.1	5.1
50°-60°	355.9	4.0
60°-70°	231.6	2.6
70°-80°	119.2	1.4
80°-90°	36.8	0.4
90°-100°	138.3	1.6
100°-110°	439.6	5.0
110°-120°	752.2	8.5
120°-130°	989.3	11.2
130°-140°	1110.5	12.6
140°-150°	1088.9	12.3
150°-160°	913.5	10.3
160°-170°	605.8	6.9
170°-180°	211.7	2.4
0°-30°	891.8	10.1
0°-40°	1384.8	15.7
0°-60°	2193.8	24.8
0°-90°	2581.5	29.2
90°-120°	1330.1	15.1
90°-150°	4518.8	51.2
90°-180°	6250.0	70.8
0°-180°	8831.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1252	1252	1252	1252	1252	
5°	1252	1246	1232	1242	1238	119
15°	1191	1178	1140	1118	1107	336
25°	1081	1045	970	924	906	497
35°	932	874	774	703	678	583
45°	762	686	567	486	459	588
55°	579	491	368	300	279	517
65°	391	299	197	159	155	388
75°	208	129	91	83	82	220
85°	49	25	22	22	22	56
90°	2	24	66	62	64	9
95°	98	117	121	121	117	109
105°	406	411	415	419	419	428
115°	755	766	762	760	755	747
125°	1098	1115	1109	1103	1101	981
135°	1420	1441	1445	1443	1438	1098
145°	1724	1738	1748	1750	1743	1077
155°	1972	1977	1983	1992	1986	907
165°	2145	2143	2143	2156	2147	605
175°	2232	2226	2222	2236	2224	212
180°	2236	2236	2236	2236	2236	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1252.1	1252.1	1252.1	1252.1	1252.1
2.5°	1257.8	1252.1	1239.6	1251.0	1248.8
5°	1252.1	1246.5	1231.7	1241.9	1238.5
7.5°	1241.9	1235.2	1219.3	1223.8	1218.1
10°	1228.3	1220.4	1197.8	1194.3	1187.6
12.5°	1211.3	1201.1	1170.5	1163.8	1151.2
15°	1190.9	1178.4	1139.9	1118.4	1107.1
17.5°	1167.1	1149.0	1101.4	1076.5	1058.3
20°	1139.9	1117.2	1060.6	1032.4	1007.3
22.5°	1110.5	1084.4	1018.7	980.2	963.2
25°	1081.1	1044.7	970.0	923.5	906.5
27.5°	1045.9	1007.3	924.6	871.4	845.3
30°	1008.6	965.4	874.7	817.1	786.4
32.5°	972.2	920.1	827.3	759.2	730.8
35°	931.5	873.6	774.0	702.6	677.6
37.5°	891.8	829.4	724.1	645.8	617.6
40°	849.9	781.9	672.0	591.5	562.1
42.5°	806.8	734.4	619.9	535.9	507.7
45°	761.5	685.5	566.6	486.0	458.9
47.5°	718.4	638.0	515.6	435.1	410.2
50°	670.9	590.4	465.7	387.5	363.8
52.5°	624.3	539.4	418.2	343.4	321.8
55°	579.0	490.6	368.2	300.3	278.8
57.5°	532.6	441.9	324.2	260.6	242.5
60°	484.9	394.4	277.6	219.8	201.8
62.5°	438.6	347.9	237.9	183.6	174.6
65°	390.9	299.1	197.1	158.6	155.2
67.5°	345.7	253.8	158.6	139.4	135.9
70°	298.0	209.6	131.4	120.1	115.5
72.5°	252.7	168.7	109.9	100.9	98.6
75°	208.4	129.2	90.7	82.7	81.6
77.5°	164.3	91.7	71.4	66.9	64.5
80°	123.5	65.7	54.3	49.9	49.9
82.5°	86.0	44.2	37.4	35.1	35.1
85°	48.7	24.8	21.5	21.5	21.5
87.5°	18.2	9.0	9.0	8.0	8.0
90°	2.0	24.2	66.0	62.0	64.0
92.5°	41.8	56.7	58.7	60.7	60.7
95°	98.4	117.2	120.7	120.7	117.2
97.5°	163.8	181.3	188.7	188.7	188.7
100°	239.2	254.8	260.1	260.1	258.1
102.5°	318.8	330.2	337.7	339.7	337.7
105°	405.8	411.1	415.2	418.6	418.6
107.5°	492.0	500.1	500.1	501.5	492.0
110°	575.6	586.4	586.4	586.4	581.0

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	665.9	677.4	675.4	669.9	665.9
115°	754.9	765.7	762.3	760.3	754.9
117.5°	843.1	858.0	848.6	843.1	837.8
120°	932.1	947.0	932.1	932.1	926.0
122.5°	1013.0	1031.9	1022.5	1017.0	1013.0
125°	1097.9	1114.8	1109.4	1103.4	1101.4
127.5°	1180.8	1201.7	1194.4	1186.3	1180.8
130°	1258.4	1282.6	1279.3	1275.3	1267.8
132.5°	1345.3	1364.2	1365.5	1356.1	1350.7
135°	1420.2	1441.0	1445.1	1443.0	1437.6
137.5°	1503.7	1520.6	1523.9	1522.6	1514.5
140°	1577.2	1594.1	1603.5	1603.5	1596.1
142.5°	1652.6	1669.5	1674.9	1676.9	1669.5
145°	1724.1	1737.6	1748.4	1750.4	1743.0
147.5°	1788.2	1805.0	1813.1	1816.4	1809.1
150°	1854.2	1865.6	1873.1	1879.2	1873.1
152.5°	1912.8	1924.3	1933.7	1941.2	1933.7
155°	1971.5	1976.8	1983.0	1992.4	1986.3
157.5°	2022.1	2026.1	2029.4	2043.0	2033.5
160°	2067.2	2071.2	2073.3	2084.7	2076.6
162.5°	2109.0	2109.0	2111.0	2123.7	2114.4
165°	2144.7	2142.6	2142.6	2156.2	2146.7
167.5°	2177.1	2171.0	2171.0	2184.4	2175.0
170°	2201.3	2196.0	2193.9	2207.4	2196.0
172.5°	2218.2	2212.7	2210.7	2224.2	2212.7
175°	2231.6	2226.2	2222.2	2235.6	2224.2
177.5°	2239.1	2233.6	2229.6	2241.1	2229.6
180°	2235.6	2235.6	2235.6	2235.6	2235.6

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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	8.21	8.89	9.33	10.01	11.55	4.17	4.85	5.29	5.97	7.51
	3H	9.86	10.47	10.99	11.59	13.15	5.33	5.94	6.46	7.06	8.62
	4H	10.44	11.03	11.58	12.15	13.71	5.76	6.34	6.90	7.46	9.02
	6H	10.84	11.38	11.99	12.50	14.07	6.06	6.59	7.20	7.71	9.29
	8H	10.96	11.46	12.11	12.60	14.17	6.13	6.64	7.28	7.78	9.35
	12H	11.00	11.49	12.16	12.62	14.21	6.16	6.65	7.32	7.78	9.37
4H	2H	8.20	8.79	9.35	9.91	11.47	4.73	5.32	5.88	6.44	8.00
	3H	10.00	10.48	11.15	11.63	13.20	6.05	6.53	7.20	7.68	9.26
	4H	10.67	11.11	11.82	12.25	13.84	6.58	7.02	7.73	8.16	9.75
	6H	11.16	11.54	12.32	12.70	14.28	6.97	7.35	8.13	8.51	10.09
	8H	11.32	11.67	12.48	12.82	14.42	7.08	7.44	8.24	8.59	10.19
	12H	11.39	11.72	12.57	12.88	14.49	7.13	7.45	8.31	8.62	10.22
8H	4H	10.62	10.98	11.78	12.13	13.73	6.84	7.19	7.99	8.34	9.94
	6H	11.16	11.45	12.34	12.65	14.24	7.32	7.62	8.50	8.81	10.41
	8H	11.36	11.62	12.55	12.79	14.41	7.50	7.76	8.69	8.93	10.55
	12H	11.48	11.70	12.67	12.87	14.52	7.60	7.82	8.79	8.99	10.64
12H	4H	10.56	10.89	11.74	12.05	13.66	6.83	7.15	8.01	8.31	9.92
	6H	11.13	11.39	12.32	12.56	14.18	7.37	7.62	8.55	8.79	10.41
	8H	11.33	11.56	12.52	12.72	14.38	7.56	7.78	8.74	8.95	10.60