

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: P909296

Luminaire Tested: DFN2DIP-SQ3F0-100D070US840-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P909296
REPORT IS A COMBINATION OF REPORTS P899927 AND P896733
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-100D070US840-FLLFLL
Description: 3 foot, Square Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

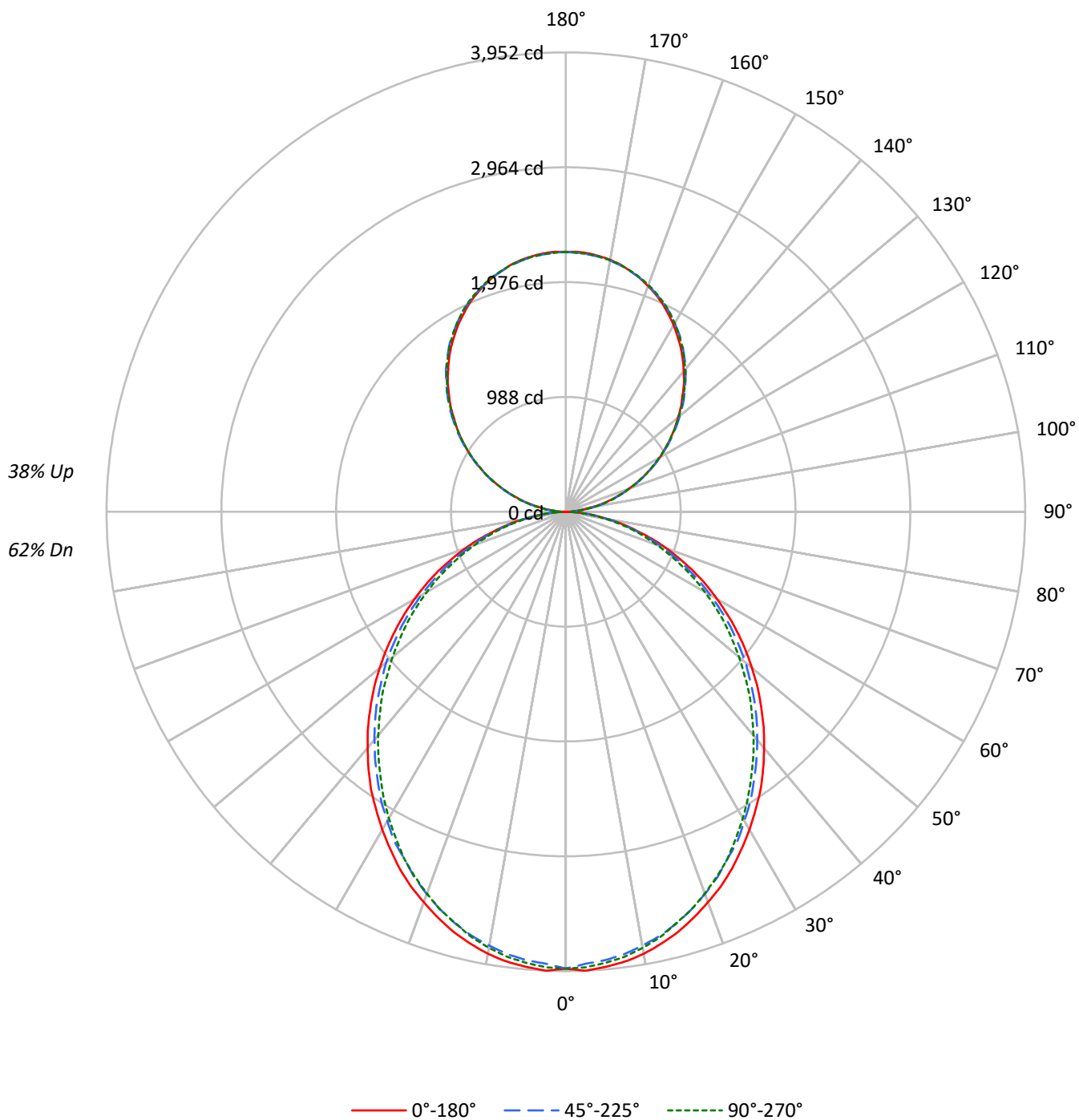
Lumens per Lamp: N/A
Luminaire Lumens: 16253.8 lumens
Efficiency: N/A
Efficacy: 107.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 151
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9781
Total Harmonic Distortion (THDi): 0.075
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	110	110	110	110	103	103	103	103	90	90	90	78	78	78	67	67	67
1	100	96	92	88	94	90	87	83	79	76	74	68	67	65	59	58	56
2	91	84	78	72	85	79	73	68	69	65	61	60	57	54	52	50	48
3	83	74	66	60	78	69	63	57	61	56	51	53	49	46	46	43	40
4	76	65	57	51	71	61	54	49	54	48	44	47	43	39	41	38	35
5	70	58	50	44	65	55	47	42	49	43	38	43	38	34	37	33	30
6	65	52	44	38	60	49	42	36	44	38	33	39	34	30	34	30	27
7	60	47	39	34	56	45	37	32	40	34	29	35	30	27	31	27	24
8	56	43	35	30	52	41	34	29	36	30	26	32	27	24	28	24	21
9	52	39	32	27	49	37	30	26	33	28	23	30	25	21	26	22	19
10	49	36	29	24	45	34	28	23	31	25	21	27	23	19	24	20	18

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4502	4502	4502
5°	4507	4437	4468
10°	4467	4374	4406
15°	4399	4299	4310
20°	4307	4196	4212
25°	4216	4073	4099
30°	4102	3959	3955
35°	3994	3825	3803
40°	3862	3689	3658
45°	3730	3552	3510
50°	3585	3409	3339
55°	3433	3243	3181
60°	3262	3047	3000
65°	3074	2844	2786
70°	2835	2595	2556
75°	2504	2297	2341
80°	2105	1916	1935
85°	1481	1270	1267

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3730 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	369.8	2.3
10°-20°	1040.6	6.4
20°-30°	1529.3	9.4
30°-40°	1776.1	10.9
40°-50°	1773.9	10.9
50°-60°	1546.8	9.5
60°-70°	1143.4	7.0
70°-80°	646.9	4.0
80°-90°	177.1	1.1
90°-100°	138.3	0.9
100°-110°	439.6	2.7
110°-120°	752.2	4.6
120°-130°	989.3	6.1
130°-140°	1110.5	6.8
140°-150°	1088.9	6.7
150°-160°	913.5	5.6
160°-170°	605.8	3.7
170°-180°	211.7	1.3
0°-30°	2939.7	18.1
0°-40°	4715.8	29.0
0°-60°	8036.5	49.4
0°-90°	10004.0	61.5
90°-120°	1330.1	8.2
90°-150°	4518.8	27.8
90°-180°	6250.0	38.5
0°-180°	16253.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3930	3930	3930	3930	3930	
5°	3930	3915	3873	3903	3896	373
15°	3741	3718	3669	3684	3665	1054
25°	3386	3355	3291	3298	3291	1558
35°	2921	2883	2823	2800	2781	1824
45°	2377	2350	2293	2252	2237	1834
55°	1799	1776	1731	1685	1666	1608
65°	1213	1190	1153	1118	1100	1199
75°	635	627	608	586	593	677
85°	155	151	148	136	132	173
90°	2	24	66	62	64	16
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°	3929.5	3929.5	3929.5	3929.5	3929.5
2.5°	3952.3	3933.4	3891.7	3929.5	3922.2
5°	3929.5	3914.6	3872.9	3903.0	3895.8
7.5°	3903.0	3880.5	3838.8	3869.3	3861.7
10°	3861.7	3835.3	3789.9	3820.0	3808.8
12.5°	3804.8	3782.4	3737.0	3755.9	3748.2
15°	3740.6	3718.2	3668.8	3684.1	3665.3
17.5°	3661.3	3638.8	3589.5	3608.4	3589.5
20°	3574.2	3551.8	3498.9	3510.1	3495.2
22.5°	3487.7	3453.6	3404.3	3404.3	3396.7
25°	3385.5	3355.4	3291.3	3298.4	3291.3
27.5°	3272.0	3245.5	3196.6	3185.4	3166.5
30°	3159.0	3128.5	3071.9	3060.7	3045.5
32.5°	3037.9	3015.5	2954.9	2932.0	2916.8
35°	2920.8	2883.2	2822.6	2799.8	2780.9
37.5°	2788.5	2754.4	2693.9	2667.5	2648.6
40°	2652.6	2622.1	2561.6	2528.0	2512.7
42.5°	2520.3	2489.8	2429.7	2391.7	2369.2
45°	2376.8	2350.4	2293.4	2252.1	2237.0
47.5°	2237.0	2210.5	2149.9	2108.2	2085.8
50°	2089.4	2070.5	2017.6	1964.7	1945.9
52.5°	1945.9	1919.5	1870.5	1828.9	1802.4
55°	1798.8	1775.9	1730.6	1685.3	1666.5
57.5°	1651.2	1632.3	1583.1	1537.8	1522.6
60°	1503.7	1488.8	1435.9	1394.2	1383.0
62.5°	1360.2	1333.7	1296.1	1258.4	1243.1
65°	1213.1	1190.2	1152.6	1118.4	1099.6
67.5°	1062.0	1042.7	1009.1	982.6	967.4
70°	922.0	906.8	872.7	846.3	831.4
72.5°	778.5	763.3	744.5	718.0	706.7
75°	634.6	627.4	608.1	585.7	593.3
77.5°	506.3	491.1	483.4	472.2	461.0
80°	378.0	374.1	366.4	355.2	347.6
82.5°	257.0	257.0	253.4	238.1	238.1
85°	154.7	151.2	147.5	135.9	132.3
87.5°	68.2	60.5	52.9	41.7	37.7
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	13.47	14.44	14.32	15.32	16.41	13.02	14.00	13.87	14.87	15.97
	3H	15.13	16.01	15.99	16.89	18.01	14.64	15.52	15.50	16.40	17.52
	4H	15.72	16.55	16.60	17.44	18.57	15.23	16.05	16.11	16.94	18.08
	6H	16.12	16.89	17.01	17.78	18.93	15.62	16.39	16.51	17.28	18.43
	8H	16.23	16.96	17.13	17.87	19.02	15.73	16.45	16.63	17.37	18.51
	12H	16.28	16.97	17.19	17.88	19.05	15.77	16.46	16.68	17.37	18.54
4H	2H	13.94	14.77	14.82	15.65	16.79	13.58	14.41	14.47	15.30	16.43
	3H	15.81	16.50	16.70	17.42	18.57	15.40	16.09	16.30	17.01	18.16
	4H	16.52	17.15	17.43	18.07	19.24	16.10	16.73	17.01	17.65	18.82
	6H	17.04	17.59	17.96	18.53	19.70	16.61	17.15	17.53	18.09	19.27
	8H	17.19	17.70	18.11	18.63	19.82	16.75	17.26	17.68	18.20	19.39
	12H	17.27	17.73	18.21	18.68	19.87	16.82	17.28	17.76	18.23	19.42
8H	4H	16.72	17.23	17.65	18.17	19.36	16.35	16.86	17.27	17.79	18.98
	6H	17.35	17.78	18.31	18.75	19.94	16.97	17.39	17.92	18.37	19.56
	8H	17.57	17.95	18.53	18.91	20.12	17.18	17.55	18.14	18.52	19.73
	12H	17.71	18.04	18.67	19.00	20.25	17.30	17.62	18.26	18.58	19.84
12H	4H	16.72	17.17	17.66	18.13	19.32	16.35	16.81	17.29	17.76	18.95
	6H	17.38	17.76	18.34	18.72	19.93	17.01	17.39	17.97	18.35	19.56
	8H	17.63	17.96	18.59	18.92	20.17	17.25	17.58	18.21	18.54	19.79