

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: P914877

Luminaire Tested: DFN2DIP-SQ4F0-060D140US927-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P914877
REPORT IS A COMBINATION OF REPORTS P901705 AND P898471
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ4F0-060D140US927-FLLONL
Description: 4 foot, Square Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

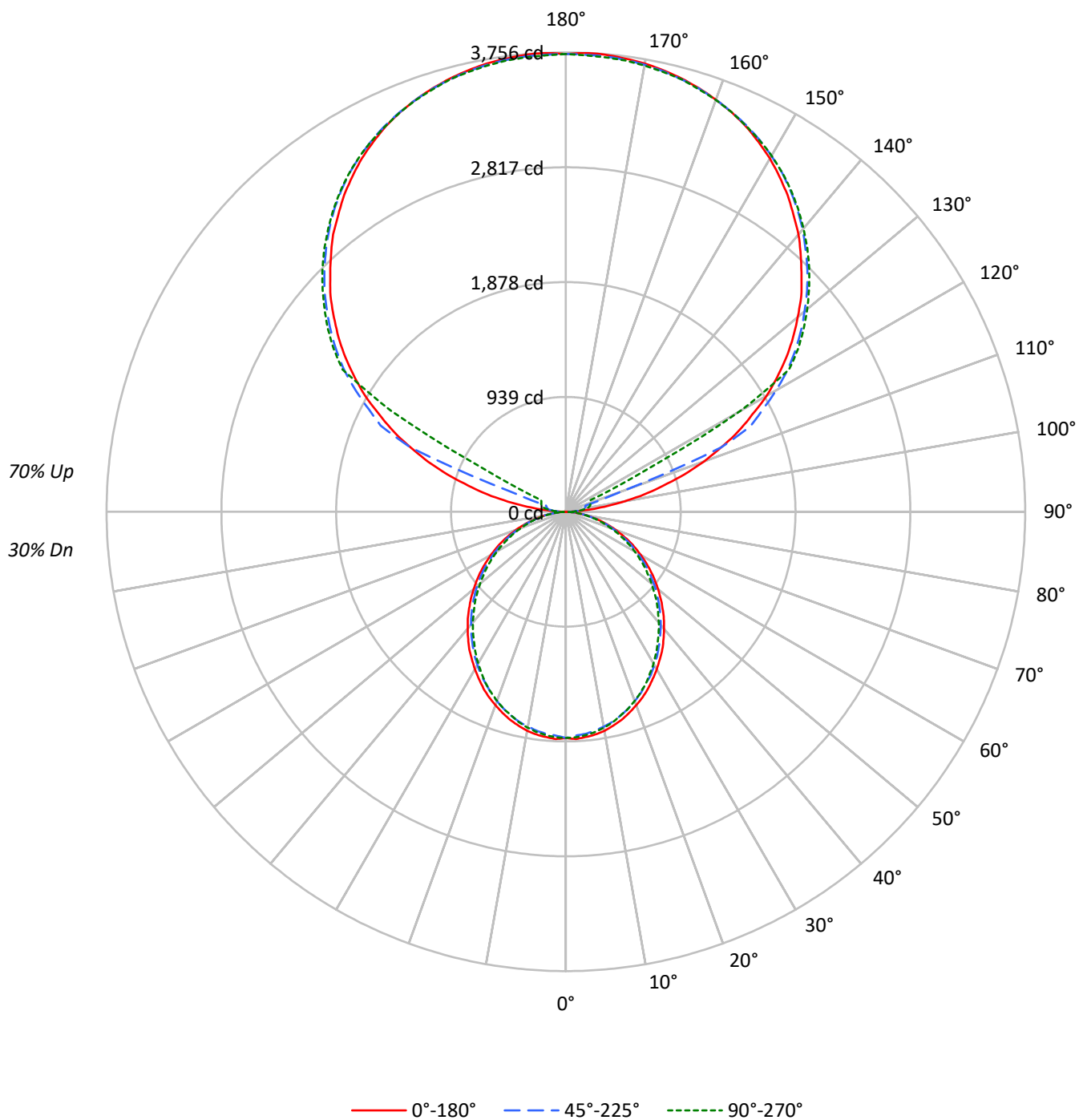
Lumens per Lamp: N/A
Luminaire Lumens: 15685.1 lumens
Efficiency: N/A
Efficacy: 100.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.92' x L: 3.92' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 155.8
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.946
Total Harmonic Distortion (THDi): 0.132
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	38	38	38
1	93	89	85	82	84	80	77	74	63	61	59	48	46	45	33	33	32
2	85	78	72	67	76	70	65	61	55	52	49	42	40	38	29	28	27
3	77	68	61	56	69	62	56	51	49	45	41	37	34	32	26	24	23
4	71	60	53	47	63	54	48	43	43	39	35	33	30	27	23	21	20
5	65	54	46	40	58	48	42	37	39	34	30	29	26	23	21	19	17
6	60	48	40	35	53	43	37	32	35	30	26	27	23	20	19	17	15
7	55	43	35	30	49	39	32	28	31	26	23	24	21	18	17	15	13
8	51	39	32	26	46	35	29	24	28	24	20	22	19	16	16	14	12
9	47	36	28	23	42	32	26	22	26	21	18	20	17	14	15	12	11
10	44	32	26	21	40	30	23	19	24	19	16	19	15	13	14	11	10

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1298	1298	1298
5°	1300	1280	1289
10°	1289	1263	1272
15°	1270	1242	1245
20°	1245	1214	1217
25°	1219	1179	1185
30°	1187	1148	1145
35°	1157	1110	1101
40°	1120	1072	1061
45°	1082	1034	1019
50°	1042	994	970
55°	999	948	926
60°	951	893	875
65°	899	836	815
70°	832	767	750
75°	739	684	691
80°	628	579	577
85°	454	396	388

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 2006 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	174.1	1.1
10°-20°	489.8	3.1
20°-30°	719.8	4.6
30°-40°	836.0	5.3
40°-50°	834.9	5.3
50°-60°	728.0	4.6
60°-70°	538.2	3.4
70°-80°	304.5	1.9
80°-90°	86.9	0.6
90°-100°	123.4	0.8
100°-110°	460.1	2.9
110°-120°	1220.2	7.8
120°-130°	2023.8	12.9
130°-140°	2149.8	13.7
140°-150°	1998.0	12.7
150°-160°	1606.3	10.2
160°-170°	1035.1	6.6
170°-180°	356.3	2.3
0°-30°	1383.6	8.8
0°-40°	2219.6	14.2
0°-60°	3782.5	24.1
0°-90°	4712.1	30.0
90°-120°	1803.7	11.5
90°-150°	7975.4	50.8
90°-180°	10973.0	70.0
0°-180°	15685.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1849	1849	1849	1849	1849	
5°	1849	1842	1823	1837	1834	176
15°	1760	1750	1727	1734	1725	496
25°	1593	1579	1549	1552	1549	733
35°	1375	1357	1328	1318	1309	858
45°	1119	1106	1079	1060	1053	863
55°	847	836	814	793	784	757
65°	571	560	542	526	518	564
75°	299	295	286	276	279	319
85°	73	71	69	64	62	81
90°	2	32	54	68	73	14
95°	176	86	106	119	116	208
105°	823	905	165	195	206	880
115°	1557	1603	1671	417	222	1533
125°	2202	2237	2289	2308	2316	1964
135°	2725	2768	2792	2820	2814	2105
145°	3161	3158	3204	3223	3209	1977
155°	3480	3456	3488	3505	3483	1604
165°	3667	3651	3659	3678	3659	1036
175°	3751	3732	3737	3756	3729	357
180°	3743	3743	3743	3743	3743	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1849.4	1849.4	1849.4	1849.4	1849.4
2.5°	1860.2	1851.3	1831.7	1849.4	1846.0
5°	1849.4	1842.5	1822.8	1837.0	1833.6
7.5°	1837.0	1826.5	1806.8	1821.1	1817.6
10°	1817.6	1805.1	1783.8	1797.9	1792.6
12.5°	1790.8	1780.2	1758.9	1767.8	1764.2
15°	1760.5	1750.0	1726.8	1734.0	1725.1
17.5°	1723.2	1712.7	1689.5	1698.3	1689.5
20°	1682.3	1671.7	1646.8	1652.1	1645.1
22.5°	1641.6	1625.5	1602.3	1602.3	1598.7
25°	1593.4	1579.3	1549.0	1552.4	1549.0
27.5°	1540.0	1527.6	1504.5	1499.3	1490.4
30°	1486.8	1472.4	1445.9	1440.6	1433.4
32.5°	1429.8	1419.3	1390.8	1380.0	1372.8
35°	1374.8	1357.0	1328.5	1317.7	1308.8
37.5°	1312.5	1296.4	1268.0	1255.4	1246.6
40°	1248.5	1234.1	1205.7	1189.9	1182.6
42.5°	1186.2	1171.9	1143.6	1125.7	1115.1
45°	1118.7	1106.2	1079.4	1060.0	1052.8
47.5°	1052.8	1040.4	1011.9	992.3	981.7
50°	983.4	974.5	949.7	924.7	915.8
52.5°	915.8	903.4	880.4	860.8	848.3
55°	846.6	835.8	814.5	793.2	784.3
57.5°	777.2	768.3	745.1	723.8	716.6
60°	707.7	700.8	675.9	656.2	650.9
62.5°	640.2	627.7	610.0	592.2	585.1
65°	570.9	560.2	542.5	526.4	517.5
67.5°	499.8	490.8	474.9	462.5	455.3
70°	434.0	426.8	410.7	398.3	391.3
72.5°	366.4	359.3	350.4	337.9	332.6
75°	298.7	295.3	286.2	275.7	279.2
77.5°	238.3	231.2	227.5	222.3	217.0
80°	177.9	176.0	172.5	167.2	163.6
82.5°	121.0	121.0	119.2	112.1	112.1
85°	72.8	71.1	69.4	63.9	62.3
87.5°	32.1	28.5	24.9	19.6	17.7
90°	2.5	32.5	54.0	67.9	73.0
92.5°	67.9	57.0	65.0	70.4	73.0
95°	175.9	86.5	105.5	119.3	116.5
97.5°	316.8	94.9	138.0	146.3	148.9
100°	479.5	108.4	154.4	175.9	181.4
102.5°	658.0	652.8	159.9	189.4	197.8
105°	823.3	904.7	165.3	194.9	205.8
107.5°	1015.7	1083.1	170.8	200.3	211.3
110°	1199.9	1256.6	474.0	203.3	213.9

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1373.2	1421.8	1375.9	208.4	216.7
115°	1557.3	1603.2	1671.1	417.2	222.2
117.5°	1717.1	1771.1	1817.4	1429.9	720.4
120°	1895.9	1936.4	1985.3	2017.8	1652.1
122.5°	2047.4	2090.8	2145.1	2161.2	2164.2
125°	2201.8	2237.1	2288.6	2307.5	2315.6
127.5°	2342.6	2380.6	2421.4	2448.4	2451.0
130°	2475.4	2518.9	2548.4	2578.4	2575.8
132.5°	2610.9	2646.2	2675.8	2700.2	2697.7
135°	2724.7	2768.1	2792.2	2819.5	2814.1
137.5°	2843.7	2876.2	2903.5	2930.5	2922.5
140°	2960.1	2982.0	3011.6	3036.0	3022.5
142.5°	3057.9	3076.8	3111.9	3133.5	3119.9
145°	3160.8	3157.9	3203.9	3222.9	3209.4
147.5°	3249.9	3241.8	3287.9	3301.3	3290.7
150°	3336.7	3317.7	3361.1	3377.2	3363.8
152.5°	3409.7	3388.2	3428.7	3445.1	3426.1
155°	3480.1	3456.0	3488.5	3504.6	3483.1
157.5°	3537.1	3515.5	3540.0	3559.0	3537.1
160°	3586.0	3569.6	3586.0	3602.0	3583.1
162.5°	3629.1	3613.0	3626.5	3645.5	3621.1
165°	3667.0	3650.9	3659.0	3677.9	3659.0
167.5°	3697.0	3680.6	3688.9	3707.9	3683.4
170°	3721.4	3705.0	3710.4	3729.4	3705.0
172.5°	3737.4	3721.4	3726.8	3745.8	3721.4
175°	3751.0	3732.0	3737.4	3756.4	3729.4
177.5°	3756.4	3737.4	3740.4	3759.3	3734.9
180°	3742.9	3742.9	3742.9	3742.9	3742.9

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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	5.98	6.69	7.09	7.79	9.33	5.54	6.24	6.65	7.35	8.88
	3H	7.64	8.27	8.75	9.38	10.93	7.14	7.78	8.26	8.89	10.44
	4H	8.22	8.82	9.35	9.93	11.49	7.72	8.32	8.85	9.44	10.99
	6H	8.61	9.17	9.75	10.28	11.85	8.11	8.67	9.25	9.78	11.35
	8H	8.72	9.24	9.86	10.38	11.93	8.21	8.74	9.35	9.87	11.43
	12H	8.76	9.26	9.91	10.39	11.97	8.25	8.75	9.40	9.88	11.46
4H	2H	6.42	7.03	7.56	8.14	9.69	6.07	6.67	7.21	7.79	9.34
	3H	8.28	8.78	9.42	9.92	11.49	7.87	8.37	9.02	9.52	11.08
	4H	8.99	9.45	10.14	10.58	12.17	8.57	9.03	9.71	10.16	11.74
	6H	9.50	9.90	10.65	11.05	12.63	9.07	9.47	10.22	10.62	12.19
	8H	9.65	10.02	10.80	11.17	12.76	9.21	9.58	10.36	10.73	12.32
	12H	9.72	10.05	10.89	11.21	12.81	9.27	9.60	10.44	10.76	12.36
8H	4H	9.18	9.55	10.33	10.69	12.28	8.80	9.17	9.95	10.31	11.91
	6H	9.81	10.11	10.98	11.30	12.89	9.42	9.73	10.59	10.91	12.50
	8H	10.03	10.29	11.21	11.46	13.07	9.64	9.90	10.81	11.07	12.68
	12H	10.16	10.39	11.34	11.55	13.19	9.74	9.98	10.93	11.14	12.78
12H	4H	9.15	9.49	10.32	10.65	12.24	8.79	9.12	9.95	10.28	11.87
	6H	9.84	10.10	11.01	11.27	12.88	9.46	9.73	10.64	10.90	12.50
	8H	10.07	10.31	11.25	11.47	13.11	9.69	9.93	10.87	11.09	12.73

END OF REPORT