

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: P917231

Luminaire Tested: DFN2DIP-SQ2F0-080D030US930-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P917231
REPORT IS A COMBINATION OF REPORTS P901302 AND P898215
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ2F0-080D030US930-RLLONL
Description: 2 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

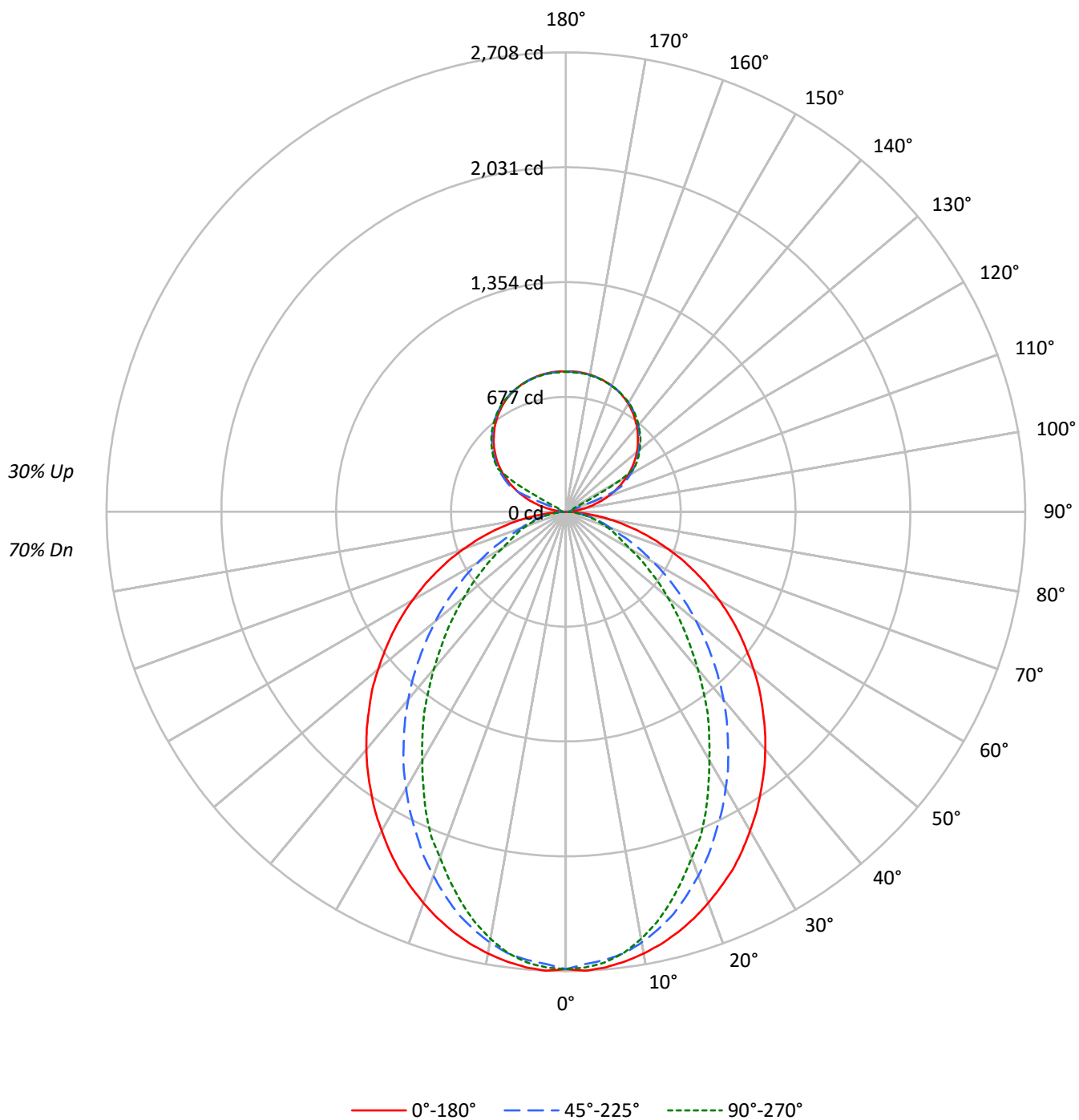
Lumens per Lamp: N/A
Luminaire Lumens: 7965.5 lumens
Efficiency: N/A
Efficacy: 78.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.21' x L: 2.21' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 101.7
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	50	30	10
RCR																				
0	112	112	112	112	106	106	106	106	94	94	94	84	84	84	74	74	74	74	74	74
1	103	99	95	92	97	93	90	87	84	81	79	75	73	71	67	65	64	64	64	60
2	94	87	81	76	89	83	77	73	74	70	67	67	63	61	59	57	55	55	55	51
3	86	77	70	64	82	73	67	62	66	61	57	59	55	52	53	50	48	48	48	44
4	79	69	61	55	75	65	58	53	59	54	49	53	49	45	48	45	42	42	42	39
5	73	62	54	48	69	59	52	46	53	47	43	48	44	40	44	40	37	37	37	34
6	68	56	48	42	64	53	46	41	49	42	38	44	39	35	40	36	33	33	33	30
7	63	51	43	37	60	49	41	36	44	38	34	40	35	32	37	32	29	29	29	27
8	59	46	39	33	56	44	37	32	41	35	30	37	32	28	34	30	27	27	27	24
9	55	43	35	30	52	41	34	29	37	32	27	34	29	26	31	27	24	24	24	22
10	51	39	32	27	49	38	31	26	35	29	25	32	27	24	29	25	22	22	22	20

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	5928	5928	5928
5°	5927	5821	5862
10°	5858	5694	5663
15°	5767	5493	5361
20°	5650	5222	4993
25°	5530	4920	4637
30°	5373	4612	4189
35°	5218	4281	3796
40°	5060	3941	3346
45°	4878	3565	2940
50°	4688	3187	2542
55°	4489	2785	2161
60°	4258	2366	1771
65°	3992	1942	1585
70°	3669	1547	1422
75°	3263	1339	1278
80°	2679	1087	1083
85°	1743	675	770

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 4878 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	252.6	3.2
10°-20°	693.6	8.7
20°-30°	973.7	12.2
30°-40°	1061.4	13.3
40°-50°	975.6	12.2
50°-60°	766.2	9.6
60°-70°	498.7	6.3
70°-80°	256.7	3.2
80°-90°	67.0	0.8
90°-100°	27.2	0.3
100°-110°	101.5	1.3
110°-120°	269.1	3.4
120°-130°	446.3	5.6
130°-140°	474.1	6.0
140°-150°	440.6	5.5
150°-160°	354.3	4.4
160°-170°	228.3	2.9
170°-180°	78.6	1.0
0°-30°	1919.9	24.1
0°-40°	2981.4	37.4
0°-60°	4723.1	59.3
0°-90°	5545.5	69.6
90°-120°	397.8	5.0
90°-150°	1758.9	22.1
90°-180°	2420.0	30.4
0°-180°	7965.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2696	2696	2696	2696	2696	
5°	2696	2684	2652	2674	2666	256
15°	2564	2537	2454	2408	2384	722
25°	2327	2249	2088	1988	1952	1070
35°	2005	1881	1666	1513	1459	1255
45°	1639	1476	1220	1046	988	1266
55°	1246	1056	793	646	600	1114
65°	842	644	424	342	334	834
75°	449	278	195	178	176	475
85°	105	54	46	46	46	120
90°	1	7	12	15	16	8
95°	39	19	23	26	26	46
105°	182	200	36	43	45	194
115°	343	354	368	92	49	338
125°	486	493	505	509	511	433
135°	601	610	616	622	621	464
145°	697	696	707	711	708	436
155°	768	762	769	773	768	354
165°	809	805	807	811	807	228
175°	827	823	824	828	822	79
180°	826	826	826	826	826	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2695.7	2695.7	2695.7	2695.7	2695.7
2.5°	2707.9	2695.7	2668.8	2693.3	2688.4
5°	2695.7	2683.6	2651.7	2673.7	2666.4
7.5°	2673.7	2659.2	2625.0	2634.6	2622.4
10°	2644.4	2627.4	2578.7	2571.2	2556.7
12.5°	2608.0	2586.0	2519.9	2505.4	2478.5
15°	2563.9	2537.0	2454.2	2407.9	2383.5
17.5°	2512.7	2473.6	2371.1	2317.6	2278.4
20°	2454.2	2405.3	2283.4	2222.6	2168.7
22.5°	2390.8	2334.6	2193.1	2110.2	2073.7
25°	2327.4	2249.2	2088.2	1988.3	1951.6
27.5°	2251.8	2168.7	1990.6	1876.0	1819.8
30°	2171.3	2078.4	1883.3	1759.0	1693.0
32.5°	2093.1	1980.8	1781.0	1634.5	1573.4
35°	2005.4	1880.9	1666.3	1512.6	1458.7
37.5°	1919.9	1785.7	1558.9	1390.4	1329.6
40°	1829.7	1683.4	1446.6	1273.4	1210.0
42.5°	1737.0	1580.9	1334.5	1153.9	1093.0
45°	1639.4	1475.9	1219.8	1046.4	988.0
47.5°	1546.8	1373.6	1110.1	936.7	883.1
50°	1444.2	1271.1	1002.7	834.2	783.2
52.5°	1344.1	1161.1	900.2	739.2	692.9
55°	1246.5	1056.3	792.8	646.5	600.2
57.5°	1146.6	951.5	697.8	561.2	522.0
60°	1044.1	849.0	597.6	473.4	434.3
62.5°	944.2	749.0	512.3	395.3	375.9
65°	841.7	643.9	424.4	341.7	334.1
67.5°	744.1	546.4	341.7	299.9	292.8
70°	641.6	451.4	282.9	258.5	248.7
72.5°	544.0	363.4	236.6	217.2	212.2
75°	448.8	278.0	195.2	178.1	175.8
77.5°	353.8	197.5	153.8	143.9	139.0
80°	265.8	141.6	117.0	107.4	107.4
82.5°	185.3	95.2	80.5	75.6	75.6
85°	104.8	53.6	46.3	46.3	46.3
87.5°	39.1	19.4	19.4	17.1	17.1
90°	0.6	7.2	11.9	15.0	16.1
92.5°	15.0	12.6	14.3	15.6	16.1
95°	38.8	19.1	23.2	26.3	25.7
97.5°	69.9	21.0	30.4	32.3	32.9
100°	105.7	23.9	34.1	38.8	40.0
102.5°	145.1	144.0	35.2	41.7	43.6
105°	181.6	199.5	36.4	43.0	45.4
107.5°	224.0	238.9	37.7	44.2	46.6
110°	264.6	277.1	104.5	44.8	47.2

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	302.9	313.6	303.5	46.0	47.8
115°	343.4	353.6	368.5	92.0	49.0
117.5°	378.7	390.6	400.8	315.4	158.9
120°	418.1	427.1	437.8	445.0	364.4
122.5°	451.5	461.1	473.1	476.6	477.3
125°	485.6	493.3	504.8	508.9	510.7
127.5°	516.7	525.0	534.0	540.0	540.5
130°	545.9	555.5	562.1	568.6	568.1
132.5°	575.8	583.6	590.1	595.5	594.9
135°	600.9	610.5	615.8	621.8	620.6
137.5°	627.1	634.3	640.3	646.3	644.5
140°	652.8	657.6	664.1	669.5	666.6
142.5°	674.4	678.6	686.3	691.0	688.1
145°	697.1	696.4	706.6	710.8	707.8
147.5°	716.7	714.9	725.1	728.1	725.7
150°	735.9	731.7	741.3	744.8	741.8
152.5°	751.9	747.2	756.2	759.8	755.6
155°	767.5	762.2	769.3	772.9	768.2
157.5°	780.1	775.3	780.7	784.9	780.1
160°	790.8	787.3	790.8	794.4	790.2
162.5°	800.4	796.8	799.8	804.0	798.6
165°	808.7	805.2	807.0	811.1	807.0
167.5°	815.3	811.7	813.5	817.7	812.4
170°	820.7	817.1	818.3	822.5	817.1
172.5°	824.3	820.7	821.9	826.1	820.7
175°	827.2	823.0	824.3	828.4	822.5
177.5°	828.4	824.3	824.9	829.1	823.7
180°	825.5	825.5	825.5	825.5	825.5

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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	14.88	15.90	15.65	16.69	17.65	10.84	11.86	11.61	12.65	13.62
	3H	16.55	17.46	17.34	18.27	19.26	12.02	12.94	12.81	13.74	14.73
	4H	17.15	18.02	17.96	18.83	19.83	12.47	13.33	13.28	14.14	15.15
	6H	17.57	18.36	18.39	19.18	20.20	12.78	13.58	13.60	14.40	15.41
	8H	17.69	18.45	18.52	19.28	20.30	12.87	13.63	13.70	14.46	15.48
	12H	17.75	18.47	18.59	19.30	20.35	12.91	13.63	13.75	14.46	15.51
4H	2H	14.91	15.78	15.73	16.59	17.59	11.45	12.31	12.26	13.12	14.12
	3H	16.74	17.45	17.56	18.30	19.32	12.79	13.51	13.62	14.35	15.37
	4H	17.42	18.07	18.26	18.92	19.96	13.33	13.98	14.17	14.83	15.87
	6H	17.93	18.49	18.78	19.36	20.41	13.74	14.30	14.59	15.17	16.22
	8H	18.10	18.62	18.95	19.48	20.55	13.86	14.39	14.72	15.25	16.32
	12H	18.19	18.66	19.06	19.54	20.61	13.93	14.40	14.80	15.28	16.35
8H	4H	17.40	17.92	18.26	18.79	19.85	13.62	14.14	14.47	15.00	16.07
	6H	17.95	18.38	18.83	19.29	20.35	14.12	14.55	15.00	15.45	16.52
	8H	18.16	18.54	19.05	19.44	20.52	14.29	14.68	15.19	15.58	16.66
	12H	18.29	18.63	19.18	19.52	20.65	14.41	14.74	15.30	15.63	16.77
12H	4H	17.36	17.83	18.23	18.71	19.78	13.63	14.10	14.50	14.98	16.05
	6H	17.93	18.31	18.82	19.21	20.29	14.16	14.54	15.05	15.44	16.53
	8H	18.14	18.48	19.04	19.37	20.51	14.36	14.70	15.26	15.59	16.73