

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: P919935

Luminaire Tested: DFN2DIP-SQ2F0-070D030US935-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P919935
REPORT IS A COMBINATION OF REPORTS P901300 AND P898215
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ2F0-070D030US935-RLLONL
Description: 2 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

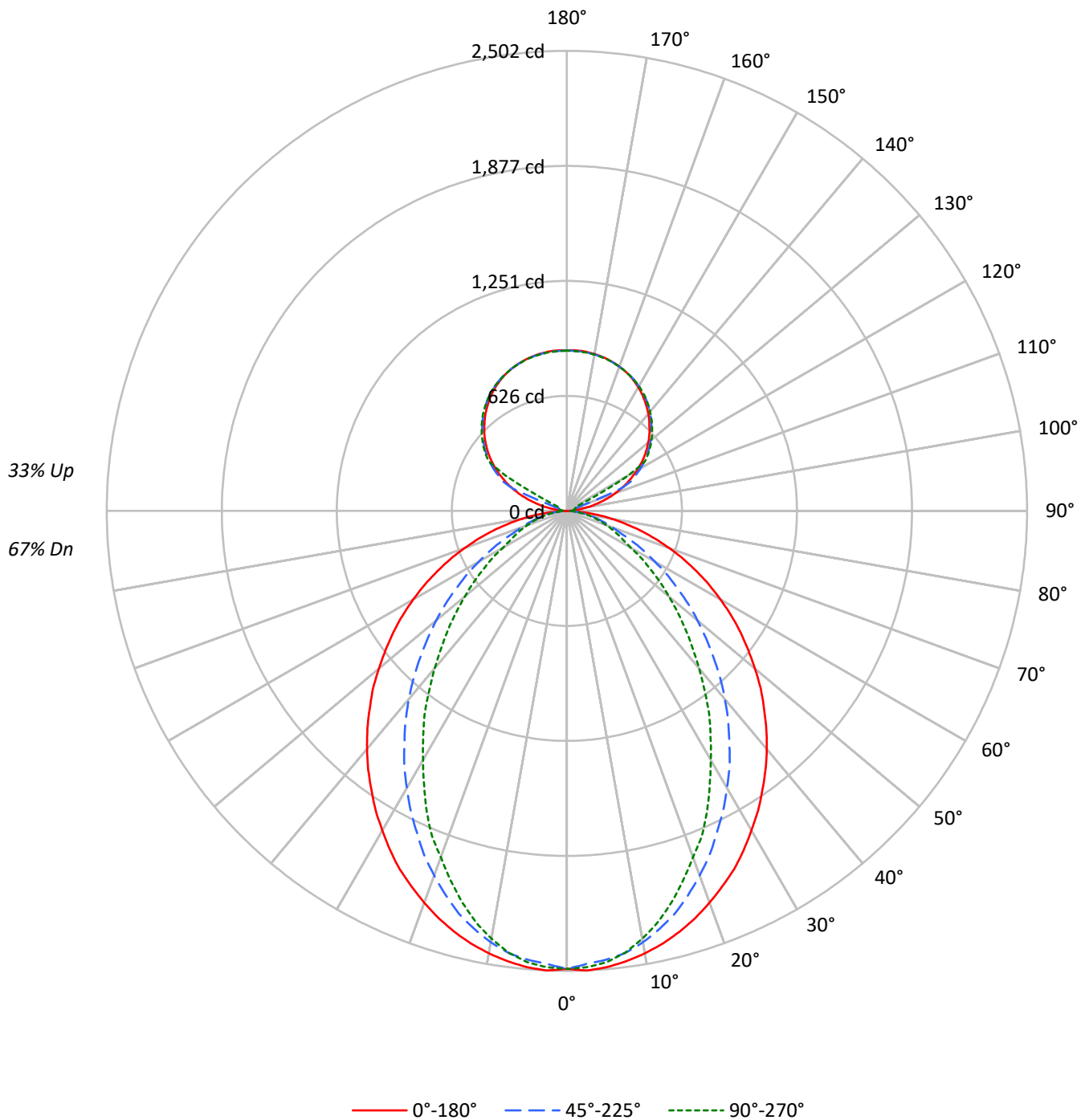
Lumens per Lamp: N/A
Luminaire Lumens: 7680.1 lumens
Efficiency: N/A
Efficacy: 84.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.21' x L: 2.21' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 90.5
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9977
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
RCR																	
0	111	111	111	111	105	105	105	105	93	93	93	82	82	82	71	71	71
1	102	98	94	91	96	93	89	86	82	80	78	73	71	69	64	63	62
2	94	86	80	75	88	82	76	72	73	69	65	65	62	59	57	55	53
3	86	77	69	64	81	72	66	61	65	60	56	58	54	51	51	48	46
4	79	68	60	54	74	65	58	52	58	53	48	52	48	44	46	43	40
5	73	61	53	47	68	58	51	45	52	47	42	47	42	39	42	38	35
6	67	55	47	41	63	53	45	40	48	42	37	43	38	34	38	35	31
7	62	50	42	37	59	48	41	36	43	37	33	39	34	31	35	31	28
8	58	46	38	33	55	44	37	32	40	34	30	36	31	28	33	29	26
9	54	42	35	30	51	40	33	29	37	31	27	33	29	25	30	26	23
10	51	39	32	27	48	37	31	26	34	28	24	31	26	23	28	24	21

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	5477	5477	5477
5°	5477	5378	5417
10°	5413	5261	5233
15°	5329	5076	4954
20°	5221	4825	4613
25°	5110	4546	4285
30°	4965	4261	3871
35°	4822	3956	3507
40°	4676	3642	3092
45°	4507	3295	2716
50°	4332	2945	2349
55°	4148	2573	1998
60°	3935	2186	1637
65°	3689	1795	1465
70°	3391	1430	1314
75°	3015	1237	1181
80°	2475	1005	1001
85°	1612	624	712

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 4507 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	233.5	3.0
10°-20°	640.9	8.3
20°-30°	899.8	11.7
30°-40°	980.8	12.8
40°-50°	901.5	11.7
50°-60°	708.0	9.2
60°-70°	460.8	6.0
70°-80°	237.2	3.1
80°-90°	62.1	0.8
90°-100°	28.7	0.4
100°-110°	107.2	1.4
110°-120°	284.2	3.7
120°-130°	471.3	6.1
130°-140°	500.7	6.5
140°-150°	465.3	6.1
150°-160°	374.1	4.9
160°-170°	241.1	3.1
170°-180°	83.0	1.1
0°-30°	1774.1	23.1
0°-40°	2754.9	35.9
0°-60°	4364.3	56.8
0°-90°	5124.4	66.7
90°-120°	420.1	5.5
90°-150°	1857.5	24.2
90°-180°	2556.0	33.3
0°-180°	7680.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2491	2491	2491	2491	2491	
5°	2491	2480	2450	2471	2464	236
15°	2369	2344	2268	2225	2202	668
25°	2151	2078	1930	1837	1803	989
35°	1853	1738	1540	1398	1348	1160
45°	1515	1364	1127	967	913	1170
55°	1152	976	732	597	555	1029
65°	778	595	392	316	309	771
75°	415	257	180	164	162	439
85°	97	50	43	43	43	111
90°	1	8	13	16	17	7
95°	41	20	24	28	27	49
105°	192	211	38	45	48	205
115°	363	373	389	97	52	357
125°	513	521	533	537	539	457
135°	635	645	650	657	655	490
145°	736	736	746	751	747	460
155°	810	805	812	816	811	373
165°	854	850	852	857	852	241
175°	874	869	870	875	869	83
180°	872	872	872	872	872	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2491.0	2491.0	2491.0	2491.0	2491.0
2.5°	2502.1	2491.0	2466.1	2488.8	2484.2
5°	2491.0	2479.7	2450.3	2470.6	2463.9
7.5°	2470.6	2457.2	2425.7	2434.5	2423.3
10°	2443.6	2427.8	2382.8	2375.9	2362.5
12.5°	2409.8	2389.5	2328.6	2315.1	2290.3
15°	2369.2	2344.3	2267.8	2225.0	2202.5
17.5°	2321.9	2285.8	2191.1	2141.5	2105.4
20°	2267.8	2222.6	2110.0	2053.7	2004.0
22.5°	2209.2	2157.3	2026.4	1949.9	1916.2
25°	2150.6	2078.4	1929.6	1837.3	1803.4
27.5°	2080.8	2004.0	1839.4	1733.5	1681.6
30°	2006.4	1920.5	1740.2	1625.4	1564.4
32.5°	1934.1	1830.4	1645.7	1510.4	1453.9
35°	1853.0	1738.0	1539.8	1397.7	1348.0
37.5°	1774.2	1650.0	1440.5	1284.8	1228.6
40°	1690.7	1555.6	1336.7	1176.7	1118.1
42.5°	1605.1	1460.9	1233.1	1066.2	1010.0
45°	1514.9	1363.7	1127.2	967.0	912.9
47.5°	1429.3	1269.3	1025.8	865.6	816.1
50°	1334.5	1174.6	926.5	770.9	723.8
52.5°	1242.0	1072.9	831.8	683.0	640.2
55°	1151.8	976.0	732.5	597.4	554.7
57.5°	1059.5	879.2	644.8	518.5	482.4
60°	964.8	784.5	552.2	437.5	401.3
62.5°	872.4	692.2	473.3	365.2	347.2
65°	777.7	595.0	392.3	315.7	308.8
67.5°	687.6	504.9	315.7	277.2	270.5
70°	592.9	417.1	261.4	238.9	229.8
72.5°	502.7	335.8	218.6	200.7	196.1
75°	414.7	256.8	180.3	164.5	162.4
77.5°	326.9	182.4	142.1	132.9	128.5
80°	245.6	130.8	108.1	99.3	99.3
82.5°	171.3	88.0	74.4	69.8	69.8
85°	96.9	49.5	42.8	42.8	42.8
87.5°	36.1	17.9	17.9	15.8	15.8
90°	0.6	7.6	12.6	15.8	17.0
92.5°	15.8	13.3	15.2	16.4	17.0
95°	41.0	20.1	24.5	27.8	27.1
97.5°	73.8	22.1	32.1	34.1	34.7
100°	111.7	25.2	36.0	41.0	42.3
102.5°	153.3	152.1	37.2	44.1	46.1
105°	191.7	210.7	38.5	45.4	48.0
107.5°	236.5	252.3	39.8	46.7	49.2
110°	279.5	292.7	110.4	47.4	49.9

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	319.9	331.1	320.5	48.6	50.5
115°	362.7	373.4	389.2	97.1	51.7
117.5°	399.9	412.5	423.3	333.0	167.8
120°	441.5	451.0	462.4	469.9	384.8
122.5°	476.8	487.0	499.6	503.3	504.0
125°	512.8	521.0	533.0	537.4	539.3
127.5°	545.6	554.4	564.0	570.2	570.8
130°	576.5	586.7	593.6	600.5	599.9
132.5°	608.0	616.3	623.2	628.9	628.3
135°	634.6	644.7	650.3	656.7	655.4
137.5°	662.3	669.9	676.2	682.5	680.6
140°	689.4	694.5	701.4	707.1	704.0
142.5°	712.2	716.6	724.8	729.8	726.7
145°	736.2	735.5	746.2	750.6	747.4
147.5°	756.9	755.0	765.8	768.9	766.4
150°	777.1	772.7	782.8	786.5	783.4
152.5°	794.1	789.1	798.6	802.4	798.0
155°	810.5	804.9	812.4	816.2	811.2
157.5°	823.8	818.8	824.5	828.9	823.8
160°	835.2	831.4	835.2	839.0	834.5
162.5°	845.2	841.5	844.6	849.0	843.3
165°	854.0	850.3	852.2	856.6	852.2
167.5°	861.0	857.2	859.1	863.6	857.9
170°	866.7	862.9	864.2	868.6	862.9
172.5°	870.5	866.7	868.0	872.4	866.7
175°	873.6	869.2	870.5	874.9	868.6
177.5°	874.9	870.5	871.2	875.5	869.9
180°	871.8	871.8	871.8	871.8	871.8

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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	14.38	15.36	15.18	16.19	17.20	10.34	11.32	11.14	12.15	13.16
	3H	16.05	16.93	16.87	17.76	18.81	11.52	12.40	12.34	13.24	14.28
	4H	16.65	17.48	17.48	18.32	19.38	11.96	12.80	12.80	13.64	14.69
	6H	17.06	17.83	17.91	18.68	19.74	12.28	13.04	13.12	13.89	14.96
	8H	17.18	17.91	18.04	18.78	19.85	12.36	13.09	13.22	13.96	15.03
	12H	17.24	17.94	18.11	18.80	19.89	12.40	13.10	13.27	13.96	15.05
4H	2H	14.41	15.24	15.25	16.08	17.14	10.94	11.77	11.78	12.61	13.67
	3H	16.23	16.92	17.08	17.80	18.86	12.28	12.98	13.14	13.85	14.92
	4H	16.91	17.54	17.78	18.41	19.51	12.82	13.45	13.69	14.32	15.42
	6H	17.42	17.96	18.30	18.85	19.95	13.23	13.77	14.11	14.67	15.77
	8H	17.58	18.09	18.47	18.98	20.09	13.35	13.86	14.23	14.75	15.86
	12H	17.68	18.13	18.58	19.04	20.16	13.41	13.87	14.32	14.78	15.90
8H	4H	16.89	17.39	17.77	18.28	19.40	13.10	13.61	13.99	14.50	15.61
	6H	17.44	17.86	18.35	18.79	19.90	13.60	14.02	14.51	14.95	16.06
	8H	17.64	18.01	18.56	18.94	20.07	13.78	14.15	14.70	15.08	16.20
	12H	17.77	18.10	18.70	19.02	20.20	13.89	14.22	14.81	15.13	16.32
12H	4H	16.85	17.30	17.75	18.21	19.33	13.11	13.57	14.01	14.48	15.59
	6H	17.41	17.78	18.33	18.71	19.84	13.65	14.02	14.57	14.94	16.07
	8H	17.62	17.95	18.55	18.87	20.05	13.85	14.17	14.77	15.09	16.27

END OF REPORT