

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: P906365

Luminaire Tested: DFN2DIP-SQ3F0-040D100US835-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P906365
REPORT IS A COMBINATION OF REPORTS P901489 AND P898289
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-040D100US835-FLLONL
Description: 3 foot, Square Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

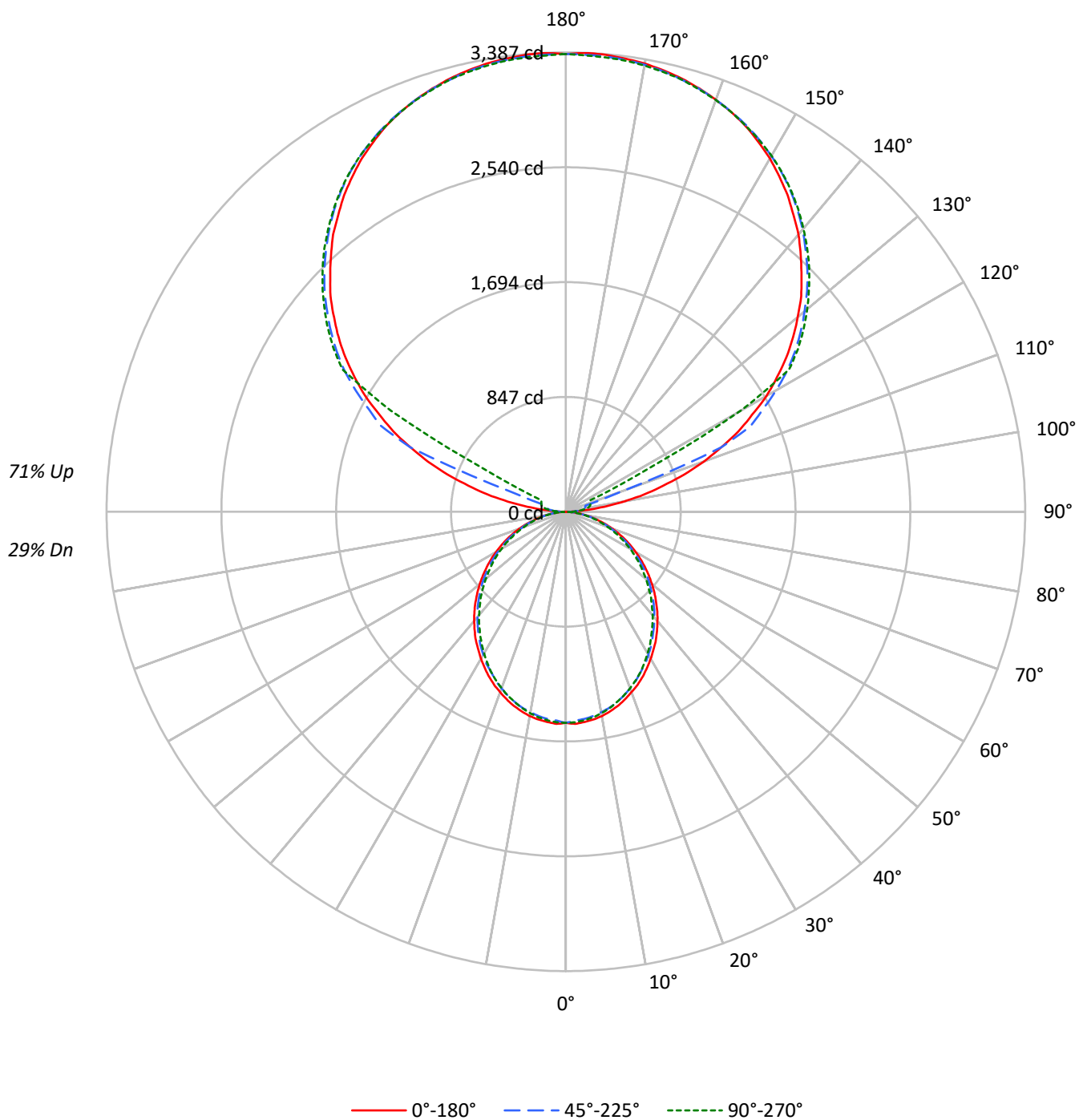
Lumens per Lamp: N/A
Luminaire Lumens: 13860.0 lumens
Efficiency: N/A
Efficacy: 126.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 109.8
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9933
Total Harmonic Distortion (THDi): 0.066
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	102	102	102	102	91	91	91	91	71	71	71	53	53	53	36	36	36	29		
1	93	89	85	82	83	80	77	74	62	60	58	47	45	44	32	31	31	24		
2	85	77	72	67	76	70	65	60	55	51	48	41	39	37	28	27	26	20		
3	77	68	61	55	69	61	55	50	48	44	41	36	33	31	25	23	22	17		
4	71	60	53	47	63	54	48	43	43	38	34	32	29	27	22	21	19	15		
5	65	53	46	40	58	48	41	36	38	33	30	29	26	23	20	18	16	13		
6	59	48	40	34	53	43	36	31	34	29	26	26	23	20	18	16	14	11		
7	55	43	35	30	49	39	32	27	31	26	23	24	20	18	17	14	13	10		
8	51	39	31	26	45	35	29	24	28	23	20	22	18	16	15	13	11	9		
9	47	35	28	23	42	32	26	21	26	21	18	20	16	14	14	12	10	8		
10	44	32	25	21	39	29	23	19	24	19	16	18	15	13	13	11	9	7		

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1783	1783	1783
5°	1785	1757	1770
10°	1769	1733	1745
15°	1742	1703	1707
20°	1706	1662	1668
25°	1670	1613	1623
30°	1625	1568	1566
35°	1582	1515	1506
40°	1530	1461	1449
45°	1477	1407	1390
50°	1420	1350	1322
55°	1360	1285	1260
60°	1292	1207	1188
65°	1218	1126	1104
70°	1123	1028	1012
75°	992	910	927
80°	834	759	767
85°	587	503	502

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 2311 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	146.5	1.1
10°-20°	412.2	3.0
20°-30°	605.7	4.4
30°-40°	703.5	5.1
40°-50°	702.6	5.1
50°-60°	612.7	4.4
60°-70°	452.9	3.3
70°-80°	256.2	1.8
80°-90°	73.6	0.5
90°-100°	111.3	0.8
100°-110°	414.9	3.0
110°-120°	1100.3	7.9
120°-130°	1824.9	13.2
130°-140°	1938.4	14.0
140°-150°	1801.5	13.0
150°-160°	1448.4	10.5
160°-170°	933.3	6.7
170°-180°	321.2	2.3
0°-30°	1164.4	8.4
0°-40°	1867.9	13.5
0°-60°	3183.2	23.0
0°-90°	3965.9	28.6
90°-120°	1626.4	11.7
90°-150°	7191.2	51.9
90°-180°	9894.0	71.4
0°-180°	13860.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1556	1556	1556	1556	1556	
5°	1556	1550	1534	1546	1543	148
15°	1482	1473	1453	1459	1452	417
25°	1341	1329	1304	1306	1304	617
35°	1157	1142	1118	1109	1102	722
45°	941	931	908	892	886	727
55°	712	703	686	668	660	637
65°	480	471	456	443	436	475
75°	251	248	241	232	235	268
85°	61	60	58	54	52	68
90°	2	29	49	61	66	13
95°	159	78	95	108	105	188
105°	742	816	149	176	186	793
115°	1404	1446	1507	376	200	1382
125°	1985	2017	2064	2081	2088	1771
135°	2457	2496	2518	2542	2537	1898
145°	2850	2847	2889	2906	2894	1782
155°	3138	3116	3146	3160	3141	1446
165°	3306	3292	3299	3316	3299	934
175°	3382	3365	3370	3387	3363	322
180°	3375	3375	3375	3375	3375	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1556.4	1556.4	1556.4	1556.4	1556.4
2.5°	1565.5	1558.0	1541.5	1556.4	1553.6
5°	1556.4	1550.5	1534.0	1545.9	1543.1
7.5°	1545.9	1537.0	1520.5	1532.6	1529.6
10°	1529.6	1519.1	1501.2	1513.1	1508.6
12.5°	1507.0	1498.1	1480.2	1487.7	1484.6
15°	1481.6	1472.7	1453.2	1459.2	1451.8
17.5°	1450.2	1441.3	1421.8	1429.2	1421.8
20°	1415.7	1406.8	1385.9	1390.3	1384.5
22.5°	1381.4	1367.9	1348.4	1348.4	1345.4
25°	1340.9	1329.0	1303.6	1306.5	1303.6
27.5°	1296.0	1285.5	1266.2	1261.7	1254.3
30°	1251.2	1239.2	1216.8	1212.3	1206.3
32.5°	1203.3	1194.4	1170.4	1161.4	1155.3
35°	1156.9	1142.0	1118.0	1109.0	1101.5
37.5°	1104.5	1091.0	1067.0	1056.6	1049.1
40°	1050.7	1038.6	1014.6	1001.3	995.3
42.5°	998.3	986.2	962.4	947.3	938.4
45°	941.4	931.0	908.4	892.1	886.0
47.5°	886.0	875.5	851.6	835.1	826.2
50°	827.6	820.1	799.2	778.2	770.7
52.5°	770.7	760.3	740.9	724.4	713.9
55°	712.5	703.4	685.5	667.5	660.1
57.5°	654.0	646.6	627.0	609.1	603.1
60°	595.6	589.7	568.8	552.3	547.8
62.5°	538.8	528.3	513.4	498.4	492.4
65°	480.5	471.4	456.5	443.0	435.6
67.5°	420.6	413.0	399.7	389.2	383.2
70°	365.2	359.2	345.7	335.2	329.3
72.5°	308.4	302.3	294.9	284.4	279.9
75°	251.4	248.5	240.9	232.0	235.0
77.5°	200.5	194.5	191.5	187.0	182.6
80°	149.7	148.1	145.1	140.7	137.7
82.5°	101.8	101.8	100.4	94.3	94.3
85°	61.3	59.9	58.4	53.8	52.4
87.5°	27.0	24.0	21.0	16.5	14.9
90°	2.3	29.3	48.7	61.2	65.8
92.5°	61.2	51.3	58.6	63.5	65.8
95°	158.6	78.0	95.1	107.6	105.0
97.5°	285.6	85.5	124.4	131.9	134.3
100°	432.4	97.7	139.2	158.6	163.6
102.5°	593.3	588.7	144.1	170.8	178.3
105°	742.4	815.7	149.1	175.7	185.6
107.5°	915.8	976.7	154.0	180.7	190.5
110°	1081.9	1133.0	427.4	183.3	192.8

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1238.2	1282.0	1240.6	187.9	195.5
115°	1404.1	1445.6	1506.8	376.1	200.4
117.5°	1548.2	1597.0	1638.7	1289.3	649.6
120°	1709.5	1746.0	1790.1	1819.4	1489.7
122.5°	1846.1	1885.2	1934.2	1948.7	1951.3
125°	1985.3	2017.2	2063.6	2080.7	2087.9
127.5°	2112.3	2146.5	2183.3	2207.7	2210.0
130°	2232.0	2271.2	2297.9	2324.8	2322.5
132.5°	2354.1	2386.0	2412.7	2434.7	2432.4
135°	2456.8	2495.9	2517.7	2542.3	2537.4
137.5°	2564.1	2593.4	2618.0	2642.4	2635.1
140°	2669.0	2688.8	2715.4	2737.5	2725.3
142.5°	2757.2	2774.3	2805.9	2825.3	2813.2
145°	2850.0	2847.4	2888.9	2906.0	2893.8
147.5°	2930.3	2923.1	2964.5	2976.7	2967.2
150°	3008.6	2991.5	3030.7	3045.2	3033.0
152.5°	3074.4	3055.0	3091.6	3106.3	3089.2
155°	3138.0	3116.2	3145.5	3160.0	3140.6
157.5°	3189.3	3169.9	3191.9	3209.0	3189.3
160°	3233.4	3218.6	3233.4	3247.9	3230.8
162.5°	3272.2	3257.7	3269.9	3287.0	3265.0
165°	3306.4	3291.9	3299.2	3316.3	3299.2
167.5°	3333.4	3318.6	3326.2	3343.3	3321.2
170°	3355.4	3340.7	3345.6	3362.7	3340.7
172.5°	3369.9	3355.4	3360.4	3377.5	3355.4
175°	3382.1	3365.0	3369.9	3387.1	3362.7
177.5°	3387.1	3369.9	3372.6	3389.7	3367.6
180°	3374.9	3374.9	3374.9	3374.9	3374.9

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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	6.84	7.54	7.96	8.65	10.20	6.40	7.09	7.52	8.21	9.76
	3H	8.48	9.11	9.61	10.23	11.80	7.99	8.62	9.12	9.74	11.30
	4H	9.06	9.65	10.20	10.78	12.35	8.57	9.16	9.71	10.28	11.85
	6H	9.45	9.99	10.60	11.12	12.70	8.95	9.49	10.10	10.62	12.20
	8H	9.55	10.07	10.70	11.21	12.78	9.05	9.56	10.20	10.71	12.28
	12H	9.59	10.08	10.74	11.22	12.81	9.08	9.57	10.23	10.71	12.30
4H	2H	7.28	7.87	8.43	9.00	10.56	6.92	7.52	8.07	8.64	10.21
	3H	9.12	9.62	10.28	10.77	12.35	8.72	9.21	9.87	10.36	11.94
	4H	9.83	10.28	10.98	11.42	13.02	9.40	9.86	10.56	11.00	12.60
	6H	10.33	10.72	11.49	11.88	13.47	9.90	10.29	11.06	11.45	13.04
	8H	10.47	10.84	11.63	11.99	13.60	10.03	10.40	11.19	11.55	13.16
	12H	10.53	10.86	11.71	12.03	13.64	10.09	10.42	11.26	11.58	13.19
8H	4H	10.01	10.37	11.17	11.52	13.13	9.63	9.99	10.79	11.15	12.75
	6H	10.62	10.92	11.80	12.12	13.72	10.24	10.54	11.42	11.74	13.34
	8H	10.84	11.10	12.03	12.28	13.90	10.45	10.71	11.63	11.88	13.51
	12H	10.96	11.19	12.15	12.36	14.02	10.55	10.78	11.74	11.95	13.61
12H	4H	9.98	10.31	11.16	11.48	13.09	9.61	9.94	10.79	11.11	12.72
	6H	10.65	10.91	11.84	12.09	13.71	10.28	10.54	11.46	11.71	13.34
	8H	10.88	11.11	12.07	12.28	13.94	10.50	10.73	11.69	11.90	13.56