

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: P904495

Luminaire Tested: DFN2DIP-TR3F0-080D040US830-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P904495
REPORT IS A COMBINATION OF REPORTS P901815 AND P898751
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR3F0-080D040US830-FLLONL
Description: 3 foot, Triangle Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

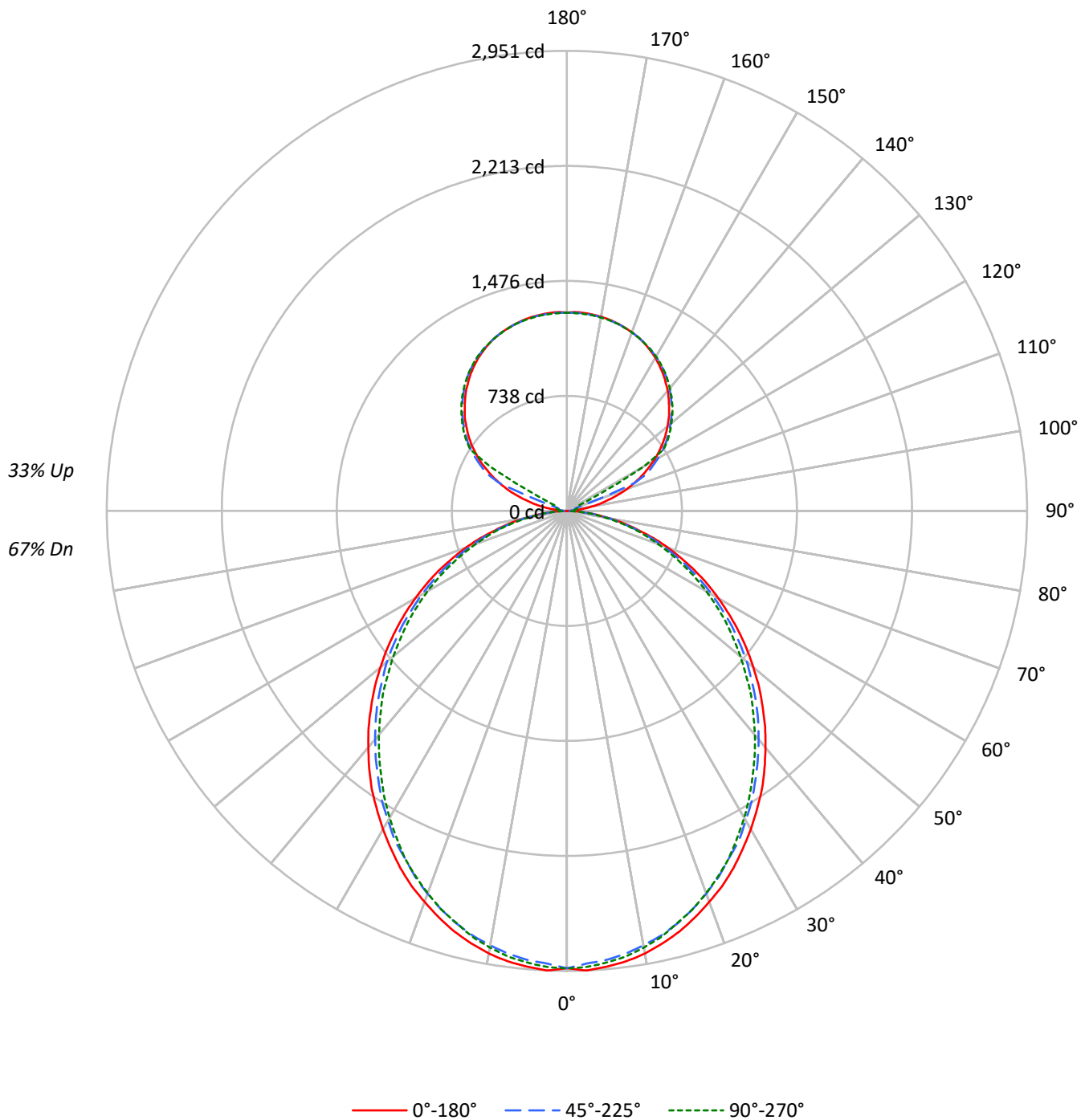
Lumens per Lamp: N/A
Luminaire Lumens: 11197.4 lumens
Efficiency: N/A
Efficacy: 101.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.74' x L: 3.16' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 110.4
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9968
Total Harmonic Distortion (THDi): 0.064
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	97	93	90	95	92	88	85	81	79	76	72	70	68	63	62	60
2	92	85	79	73	87	80	75	70	71	67	63	63	60	57	56	53	51
3	84	75	67	61	79	71	64	58	63	58	53	56	52	48	49	46	43
4	77	66	58	52	72	63	55	50	56	50	45	50	45	41	44	40	37
5	71	59	51	44	67	56	48	43	50	44	39	45	40	36	40	36	33
6	66	53	45	39	62	50	43	37	45	39	34	41	35	32	36	32	29
7	61	48	40	34	57	46	38	33	41	35	30	37	32	28	33	29	26
8	56	44	36	30	53	42	34	29	38	31	27	34	29	25	30	26	23
9	53	40	32	27	50	38	31	26	35	29	24	31	26	23	28	24	21
10	49	37	29	24	46	35	28	24	32	26	22	29	24	20	26	22	19

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3656	3656	3656
5°	3660	3602	3627
10°	3628	3550	3575
15°	3573	3489	3496
20°	3499	3405	3415
25°	3425	3305	3322
30°	3333	3211	3204
35°	3246	3101	3080
40°	3139	2990	2961
45°	3031	2879	2840
50°	2914	2762	2699
55°	2791	2626	2569
60°	2653	2466	2420
65°	2501	2299	2245
70°	2307	2097	2055
75°	2040	1853	1877
80°	1717	1542	1542
85°	1214	1016	996

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3031 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	276.1	2.5
10°-20°	777.0	6.9
20°-30°	1141.8	10.2
30°-40°	1326.2	11.8
40°-50°	1324.5	11.8
50°-60°	1155.0	10.3
60°-70°	853.8	7.6
70°-80°	483.0	4.3
80°-90°	129.7	1.2
90°-100°	41.9	0.4
100°-110°	156.4	1.4
110°-120°	414.8	3.7
120°-130°	688.0	6.1
130°-140°	730.8	6.5
140°-150°	679.2	6.1
150°-160°	546.1	4.9
160°-170°	351.9	3.1
170°-180°	121.1	1.1
0°-30°	2195.0	19.6
0°-40°	3521.1	31.4
0°-60°	6000.6	53.6
0°-90°	7467.2	66.7
90°-120°	613.2	5.5
90°-150°	2711.2	24.2
90°-180°	3730.0	33.3
0°-180°	11197.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2934	2934	2934	2934	2934	
5°	2934	2923	2892	2914	2909	279
15°	2793	2776	2739	2751	2737	787
25°	2528	2505	2458	2463	2458	1163
35°	2181	2153	2108	2090	2076	1362
45°	1775	1755	1712	1682	1670	1370
55°	1343	1326	1292	1258	1244	1201
65°	906	889	860	835	821	896
75°	474	468	454	437	443	506
85°	116	113	110	102	99	129
90°	1	11	18	23	25	10
95°	60	29	36	40	40	71
105°	280	308	56	66	70	299
115°	529	545	568	142	76	521
125°	748	760	778	784	787	668
135°	926	941	949	958	957	715
145°	1074	1074	1089	1096	1091	672
155°	1183	1175	1186	1191	1184	545
165°	1247	1241	1244	1250	1244	352
175°	1275	1269	1270	1277	1268	121
180°	1272	1272	1272	1272	1272	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2933.9	2933.9	2933.9	2933.9	2933.9
2.5°	2951.0	2937.0	2905.9	2933.9	2928.6
5°	2933.9	2922.9	2891.8	2914.2	2908.9
7.5°	2914.2	2897.5	2866.4	2889.1	2883.4
10°	2883.4	2863.6	2829.8	2852.2	2843.9
12.5°	2840.9	2824.1	2790.3	2804.3	2798.7
15°	2793.0	2776.3	2739.4	2750.8	2736.8
17.5°	2733.7	2717.0	2680.1	2694.3	2680.1
20°	2668.8	2652.0	2612.5	2620.9	2609.8
22.5°	2604.2	2578.7	2541.8	2541.8	2536.2
25°	2527.8	2505.4	2457.5	2462.9	2457.5
27.5°	2443.1	2423.4	2386.8	2378.4	2364.4
30°	2358.7	2335.9	2293.8	2285.4	2274.0
32.5°	2268.3	2251.5	2206.3	2189.2	2177.9
35°	2180.9	2152.8	2107.5	2090.5	2076.4
37.5°	2082.1	2056.6	2011.5	1991.7	1977.6
40°	1980.7	1957.8	1912.7	1887.5	1876.1
42.5°	1881.9	1859.1	1814.2	1785.7	1769.1
45°	1774.7	1754.9	1712.4	1681.6	1670.3
47.5°	1670.3	1650.5	1605.2	1574.1	1557.4
50°	1560.1	1546.1	1506.5	1467.0	1452.9
52.5°	1452.9	1433.1	1396.7	1365.6	1345.8
55°	1343.0	1326.0	1292.2	1258.4	1244.3
57.5°	1232.9	1218.9	1182.0	1148.2	1136.8
60°	1122.8	1111.7	1072.1	1041.0	1032.6
62.5°	1015.6	995.9	967.7	939.6	928.2
65°	905.8	888.7	860.5	835.1	821.0
67.5°	792.9	778.5	753.4	733.7	722.3
70°	688.4	677.0	651.7	631.9	620.8
72.5°	581.3	570.0	555.8	536.1	527.7
75°	473.8	468.4	454.1	437.3	443.0
77.5°	378.1	366.6	361.0	352.6	344.2
80°	282.3	279.3	273.6	265.2	259.5
82.5°	191.9	191.9	189.2	177.8	177.8
85°	115.6	112.8	110.2	101.5	98.8
87.5°	50.9	45.2	39.5	31.1	28.2
90°	0.8	11.0	18.4	23.1	24.8
92.5°	23.1	19.3	22.1	23.9	24.8
95°	59.8	29.4	35.8	40.5	39.6
97.5°	107.7	32.2	46.9	49.8	50.6
100°	163.0	36.9	52.5	59.8	61.6
102.5°	223.7	222.0	54.3	64.4	67.2
105°	279.8	307.6	56.2	66.3	69.9
107.5°	345.3	368.3	58.1	68.1	71.8
110°	407.9	427.2	161.2	69.1	72.7



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	466.8	483.3	467.7	70.9	73.7
115°	529.3	545.0	568.1	141.8	75.6
117.5°	583.7	602.1	617.8	486.1	244.9
120°	644.5	658.3	674.9	686.0	561.7
122.5°	696.0	710.8	729.2	734.7	735.7
125°	748.5	760.5	778.0	784.5	787.2
127.5°	796.4	809.3	823.1	832.4	833.2
130°	841.5	856.3	866.3	876.5	875.6
132.5°	887.5	899.6	909.6	917.9	917.1
135°	926.2	941.0	949.2	958.5	956.7
137.5°	966.7	977.7	987.0	996.2	993.4
140°	1006.3	1013.7	1023.8	1032.1	1027.5
142.5°	1039.5	1045.9	1057.9	1065.2	1060.6
145°	1074.5	1073.6	1089.1	1095.6	1091.0
147.5°	1104.8	1102.0	1117.7	1122.3	1118.7
150°	1134.3	1127.8	1142.6	1148.1	1143.5
152.5°	1159.1	1151.8	1165.5	1171.1	1164.7
155°	1183.1	1174.9	1185.9	1191.4	1184.0
157.5°	1202.4	1195.0	1203.4	1209.8	1202.4
160°	1219.0	1213.4	1219.0	1224.5	1218.0
162.5°	1233.7	1228.2	1232.8	1239.3	1231.0
165°	1246.6	1241.1	1243.9	1250.3	1243.9
167.5°	1256.8	1251.1	1254.1	1260.5	1252.2
170°	1265.1	1259.5	1261.3	1267.8	1259.5
172.5°	1270.5	1265.1	1267.0	1273.4	1265.1
175°	1275.1	1268.7	1270.5	1277.0	1267.8
177.5°	1277.0	1270.5	1271.5	1278.0	1269.7
180°	1272.4	1272.4	1272.4	1272.4	1272.4

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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	13.14	14.17	13.94	14.99	16.00	12.71	13.74	13.51	14.57	15.58
	3H	14.80	15.73	15.61	16.56	17.60	14.33	15.26	15.15	16.09	17.13
	4H	15.39	16.27	16.22	17.11	18.16	14.92	15.80	15.75	16.64	17.69
	6H	15.79	16.60	16.63	17.45	18.51	15.32	16.13	16.16	16.98	18.04
	8H	15.90	16.67	16.75	17.53	18.60	15.43	16.20	16.28	17.07	18.13
	12H	15.95	16.68	16.81	17.54	18.63	15.47	16.21	16.33	17.07	18.16
4H	2H	13.62	14.49	14.45	15.33	16.38	13.27	14.15	14.11	14.99	16.04
	3H	15.49	16.22	16.33	17.09	18.16	15.10	15.83	15.94	16.70	17.77
	4H	16.20	16.87	17.06	17.74	18.83	15.80	16.47	16.66	17.34	18.43
	6H	16.72	17.29	17.59	18.19	19.28	16.31	16.89	17.19	17.78	18.88
	8H	16.87	17.41	17.74	18.29	19.40	16.46	17.00	17.34	17.89	19.00
	12H	16.94	17.43	17.84	18.34	19.45	16.53	17.01	17.42	17.92	19.04
8H	4H	16.41	16.95	17.28	17.84	18.95	16.05	16.59	16.93	17.48	18.59
	6H	17.03	17.48	17.94	18.41	19.52	16.68	17.12	17.58	18.05	19.16
	8H	17.25	17.65	18.17	18.57	19.70	16.89	17.28	17.80	18.21	19.33
	12H	17.38	17.73	18.30	18.65	19.83	17.01	17.35	17.92	18.27	19.45
12H	4H	16.40	16.89	17.30	17.79	18.91	16.05	16.54	16.95	17.45	18.56
	6H	17.06	17.46	17.98	18.38	19.51	16.72	17.11	17.63	18.04	19.16
	8H	17.31	17.66	18.23	18.57	19.75	16.95	17.30	17.87	18.22	19.40