

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: P911276

Luminaire Tested: DFN2DIP-PN3F0-080D040US850-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P911276
REPORT IS A COMBINATION OF REPORTS P899535 AND P896399
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN3F0-080D040US850-FLLFLL
Description: 3 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

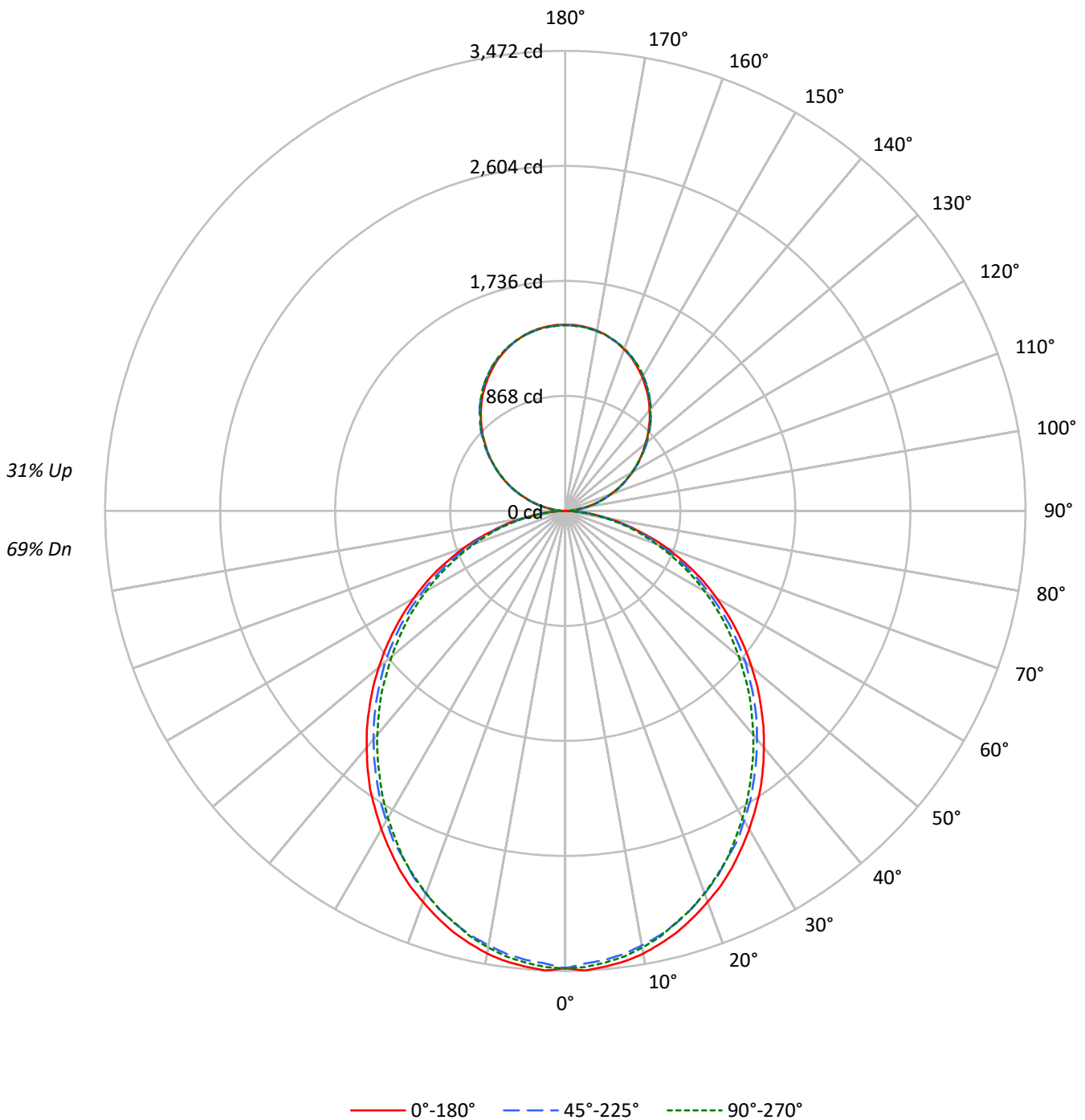
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 12709.1 lumens
Efficiency: N/A
Efficacy: 115.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.96' x L: 3.11' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 109.9
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9967
Total Harmonic Distortion (THDi): 0.063
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P911276
CATALOG NUMBER: DFN2DIP-PN3F0-080D040US850-FLLFL

Luminous Intensity Polar Plot





TEST NUMBER: P911276

CATALOG NUMBER: DFN2DIP-PN3F0-080D040US850-FLLFLL

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20				
RC	80				70				50				30				10			0	
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																					
0	112	112	112	112	106	106	106	106	94	94	94	83	83	83	74	74	74	69			69
1	102	98	94	90	96	92	89	86	83	80	77	74	71	70	65	64	62	58			58
2	93	85	79	74	88	81	75	70	72	68	64	65	61	58	57	55	52	49			49
3	85	75	67	61	80	71	64	59	64	58	54	57	53	49	51	48	45	41			41
4	78	67	58	52	73	63	56	50	57	51	46	51	46	42	46	42	39	35			35
5	71	59	51	45	67	56	49	43	51	45	40	46	41	37	41	37	34	31			31
6	66	53	45	39	62	51	43	38	46	40	35	41	36	32	37	33	30	27			27
7	61	48	40	34	58	46	39	33	42	36	31	38	33	29	34	30	26	24			24
8	57	44	36	31	54	42	35	30	38	32	28	35	29	26	31	27	24	22			22
9	53	40	33	27	50	39	31	26	35	29	25	32	27	23	29	25	21	19			19
10	50	37	30	25	47	36	29	24	32	27	22	30	25	21	27	23	20	18			18

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4035	4035	4035
5°	4039	3976	4004
10°	4004	3920	3948
15°	3943	3853	3862
20°	3861	3760	3774
25°	3780	3650	3672
30°	3678	3548	3542
35°	3581	3427	3406
40°	3463	3305	3276
45°	3345	3182	3143
50°	3215	3054	2989
55°	3079	2905	2846
60°	2926	2729	2684
65°	2758	2546	2491
70°	2544	2323	2284
75°	2248	2056	2090
80°	1891	1714	1725
85°	1334	1134	1124

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 3345 cd/sqm



TEST NUMBER: P911276

CATALOG NUMBER: DFN2DIP-PN3F0-080D040US850-FLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	324.9	2.6
10°-20°	914.2	7.2
20°-30°	1343.5	10.6
30°-40°	1560.4	12.3
40°-50°	1558.4	12.3
50°-60°	1358.9	10.7
60°-70°	1004.5	7.9
70°-80°	568.4	4.5
80°-90°	154.0	1.2
90°-100°	86.8	0.7
100°-110°	275.8	2.2
110°-120°	472.0	3.7
120°-130°	620.8	4.9
130°-140°	696.8	5.5
140°-150°	683.3	5.4
150°-160°	573.2	4.5
160°-170°	380.1	3.0
170°-180°	132.9	1.0
0°-30°	2582.6	20.3
0°-40°	4143.0	32.6
0°-60°	7060.4	55.6
0°-90°	8787.3	69.1
90°-120°	834.7	6.6
90°-150°	2835.6	22.3
90°-180°	3922.0	30.9
0°-180°	12709.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3452	3452	3452	3452	3452	
5°	3452	3439	3402	3429	3423	328
15°	3286	3267	3223	3237	3220	926
25°	2974	2948	2892	2898	2892	1369
35°	2566	2533	2480	2460	2443	1602
45°	2088	2065	2015	1979	1965	1612
55°	1580	1560	1520	1481	1464	1413
65°	1066	1046	1012	983	966	1054
75°	558	551	534	515	521	595
85°	136	133	130	119	116	152
90°	1	15	42	39	40	12
95°	62	74	76	76	74	69
105°	255	258	260	263	263	269
115°	474	480	478	477	474	469
125°	689	700	696	692	691	616
135°	891	904	907	906	902	689
145°	1082	1090	1097	1098	1094	676
155°	1237	1240	1244	1250	1246	569
165°	1346	1345	1345	1353	1347	380
175°	1400	1397	1394	1403	1396	133
180°	1403	1403	1403	1403	1403	



TEST NUMBER: P911276

CATALOG NUMBER: DFN2DIP-PN3F0-080D040US850-FLLFL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3452.1	3452.1	3452.1	3452.1	3452.1
2.5°	3472.2	3455.6	3419.0	3452.1	3445.8
5°	3452.1	3439.1	3402.5	3428.9	3422.6
7.5°	3428.9	3409.2	3372.6	3399.3	3392.7
10°	3392.7	3369.4	3329.6	3355.9	3346.2
12.5°	3342.6	3322.9	3283.1	3299.6	3293.0
15°	3286.3	3266.6	3223.2	3236.6	3220.1
17.5°	3216.5	3196.8	3153.4	3170.1	3153.4
20°	3140.1	3120.4	3073.9	3083.8	3070.7
22.5°	3064.1	3034.1	2990.8	2990.8	2984.1
25°	2974.2	2947.8	2891.5	2897.8	2891.5
27.5°	2874.5	2851.3	2808.3	2798.5	2781.9
30°	2775.3	2748.4	2698.9	2689.0	2675.6
32.5°	2668.9	2649.2	2595.9	2575.9	2562.6
35°	2566.0	2533.0	2479.7	2459.7	2443.1
37.5°	2449.8	2419.8	2366.7	2343.4	2326.9
40°	2330.5	2303.6	2250.5	2220.9	2207.5
42.5°	2214.2	2187.4	2134.6	2101.1	2081.5
45°	2088.1	2064.8	2014.8	1978.6	1965.3
47.5°	1965.3	1942.0	1888.7	1852.1	1832.4
50°	1835.6	1819.1	1772.5	1726.0	1709.5
52.5°	1709.5	1686.2	1643.3	1606.7	1583.4
55°	1580.2	1560.1	1520.4	1480.6	1464.0
57.5°	1450.7	1434.2	1390.8	1351.0	1337.6
60°	1321.0	1308.1	1261.5	1224.9	1215.0
62.5°	1194.9	1171.8	1138.6	1105.6	1092.1
65°	1065.7	1045.7	1012.5	982.6	966.0
67.5°	932.9	916.0	886.4	863.2	849.8
70°	810.0	796.6	766.8	743.5	730.4
72.5°	683.9	670.6	654.0	630.8	620.9
75°	557.5	551.2	534.3	514.6	521.2
77.5°	444.8	431.4	424.7	414.9	405.0
80°	332.1	328.6	321.9	312.1	305.3
82.5°	225.8	225.8	222.6	209.2	209.2
85°	136.0	132.7	129.6	119.4	116.2
87.5°	59.9	53.2	46.5	36.6	33.2
90°	1.2	15.2	41.5	38.9	40.1
92.5°	26.2	35.5	36.8	38.0	38.0
95°	61.8	73.6	75.7	75.7	73.6
97.5°	102.8	113.8	118.4	118.4	118.4
100°	150.2	159.9	163.2	163.2	162.0
102.5°	200.1	207.3	211.9	213.1	211.9
105°	254.6	258.0	260.5	262.6	262.6
107.5°	308.7	313.8	313.8	314.6	308.7
110°	361.2	368.0	368.0	368.0	364.6



TEST NUMBER: P911276

CATALOG NUMBER: DFN2DIP-PN3F0-080D040US850-FLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	417.9	425.1	423.7	420.4	417.9
115°	473.7	480.5	478.3	477.1	473.7
117.5°	529.1	538.4	532.5	529.1	525.8
120°	585.0	594.2	585.0	585.0	581.1
122.5°	635.7	647.5	641.7	638.2	635.7
125°	689.0	699.6	696.2	692.3	691.1
127.5°	741.0	754.1	749.5	744.4	741.0
130°	789.6	804.9	802.8	800.3	795.6
132.5°	844.2	856.0	856.9	850.9	847.6
135°	891.2	904.3	906.8	905.5	902.2
137.5°	943.6	954.2	956.3	955.4	950.4
140°	989.7	1000.3	1006.2	1006.2	1001.5
142.5°	1037.1	1047.7	1051.0	1052.3	1047.7
145°	1081.9	1090.4	1097.1	1098.5	1093.8
147.5°	1122.1	1132.6	1137.7	1139.8	1135.2
150°	1163.6	1170.8	1175.4	1179.2	1175.4
152.5°	1200.4	1207.5	1213.5	1218.1	1213.5
155°	1237.1	1240.5	1244.3	1250.3	1246.4
157.5°	1268.9	1271.4	1273.5	1282.0	1276.0
160°	1297.2	1299.7	1301.0	1308.2	1303.1
162.5°	1323.4	1323.4	1324.7	1332.7	1326.8
165°	1345.9	1344.6	1344.6	1353.0	1347.1
167.5°	1366.2	1362.3	1362.3	1370.8	1364.8
170°	1381.4	1377.9	1376.7	1385.1	1377.9
172.5°	1391.9	1388.6	1387.2	1395.8	1388.6
175°	1400.4	1397.0	1394.5	1402.9	1395.8
177.5°	1405.1	1401.7	1399.1	1406.3	1399.1
180°	1402.9	1402.9	1402.9	1402.9	1402.9



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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	13.68	14.75	14.46	15.54	16.51	13.24	14.31	14.02	15.10	16.07
	3H	15.35	16.31	16.14	17.11	18.11	14.87	15.83	15.66	16.63	17.63
	4H	15.94	16.85	16.75	17.66	18.67	15.46	16.36	16.26	17.18	18.19
	6H	16.35	17.18	17.17	18.01	19.03	15.86	16.69	16.68	17.52	18.54
	8H	16.46	17.25	17.28	18.09	19.12	15.97	16.76	16.79	17.60	18.63
	12H	16.51	17.27	17.34	18.10	19.15	16.01	16.77	16.85	17.61	18.66
4H	2H	14.16	15.07	14.97	15.88	16.89	13.81	14.72	14.62	15.53	16.54
	3H	16.04	16.80	16.86	17.64	18.67	15.64	16.39	16.46	17.24	18.27
	4H	16.76	17.45	17.59	18.29	19.35	16.34	17.03	17.18	17.88	18.93
	6H	17.28	17.87	18.13	18.74	19.80	16.86	17.45	17.71	18.32	19.38
	8H	17.43	17.99	18.29	18.85	19.92	17.00	17.56	17.86	18.43	19.50
	12H	17.51	18.01	18.39	18.90	19.97	17.07	17.57	17.95	18.46	19.54
8H	4H	16.97	17.52	17.82	18.39	19.46	16.60	17.15	17.45	18.02	19.09
	6H	17.60	18.06	18.48	18.97	20.04	17.22	17.69	18.11	18.59	19.66
	8H	17.82	18.23	18.71	19.13	20.22	17.44	17.84	18.33	18.75	19.83
	12H	17.96	18.32	18.85	19.21	20.35	17.56	17.92	18.45	18.81	19.95
12H	4H	16.96	17.46	17.84	18.35	19.43	16.60	17.10	17.47	17.99	19.06
	6H	17.63	18.04	18.52	18.94	20.03	17.27	17.68	18.16	18.58	19.66
	8H	17.88	18.24	18.77	19.13	20.27	17.51	17.87	18.40	18.76	19.90