

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: P908348

Luminaire Tested: DFN2DIP-PN2F0-040D030US840-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P908348
REPORT IS A COMBINATION OF REPORTS P899475 AND P896349
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN2F0-040D030US840-FLLFLL
Description: 2 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

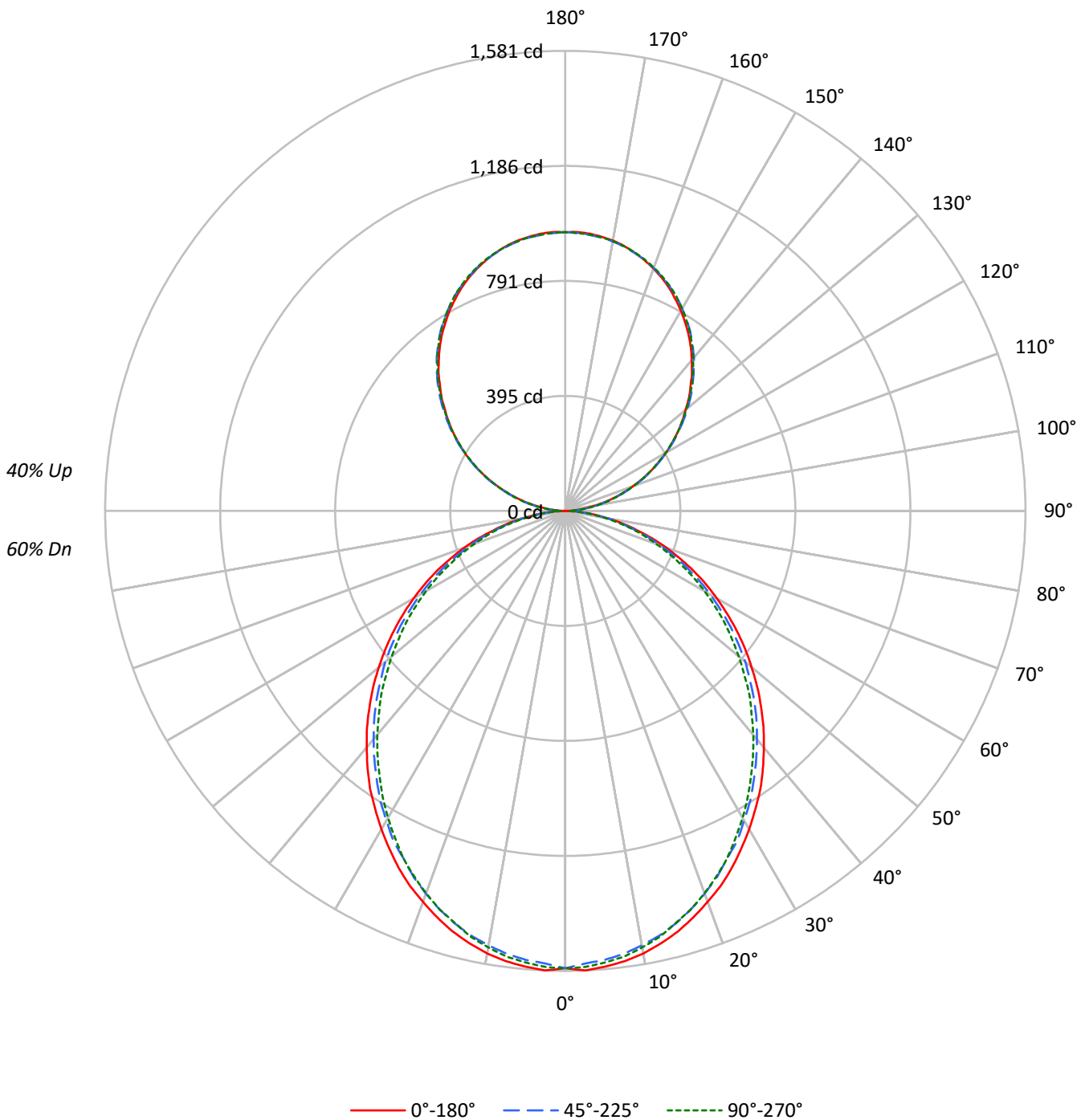
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6680.3 lumens
Efficiency: N/A
Efficacy: 115.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.17' x L: 2.29' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 58.1
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9613
Total Harmonic Distortion (THDi): 0.083
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P908348
CATALOG NUMBER: DFN2DIP-PN2F0-040D030US840-FLLFLL

Luminous Intensity Polar Plot





TEST NUMBER: P908348

CATALOG NUMBER: DFN2DIP-PN2F0-040D030US840-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	110	110	110	110	102	102	102	102	89	89	89	77	77	77	65	65	65	60			
1	100	96	92	88	93	89	86	83	78	75	73	67	66	64	58	56	55	50			
2	91	84	77	72	85	78	73	68	68	64	61	59	56	53	51	48	46	42			
3	83	73	66	60	77	69	62	57	60	55	51	52	48	45	45	42	40	36			
4	76	65	57	51	71	61	54	48	54	48	43	47	42	39	40	37	34	31			
5	70	58	50	44	65	55	47	42	48	42	38	42	37	34	36	33	30	27			
6	64	52	44	38	60	49	42	36	43	37	33	38	33	29	33	29	26	23			
7	60	47	39	33	56	44	37	32	39	33	29	35	30	26	30	26	23	21			
8	55	43	35	30	52	40	33	28	36	30	26	32	27	23	28	24	21	19			
9	52	39	32	26	48	37	30	25	33	27	23	29	24	21	26	22	19	17			
10	48	36	29	24	45	34	27	23	30	25	21	27	22	19	24	20	17	15			

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3404	3404	3404
5°	3404	3349	3374
10°	3371	3297	3324
15°	3316	3236	3247
20°	3244	3153	3170
25°	3171	3056	3080
30°	3082	2965	2968
35°	2997	2858	2849
40°	2894	2750	2736
45°	2790	2642	2620
50°	2677	2528	2486
55°	2557	2397	2362
60°	2422	2242	2220
65°	2273	2080	2052
70°	2085	1882	1869
75°	1826	1646	1695
80°	1511	1344	1376
85°	1025	850	862

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 2790 cd/sqm



TEST NUMBER: P908348

CATALOG NUMBER: DFN2DIP-PN2F0-040D030US840-FLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	147.9	2.2
10°-20°	416.2	6.2
20°-30°	611.7	9.2
30°-40°	710.5	10.6
40°-50°	709.6	10.6
50°-60°	618.7	9.3
60°-70°	457.4	6.8
70°-80°	258.8	3.9
80°-90°	71.0	1.1
90°-100°	59.3	0.9
100°-110°	188.4	2.8
110°-120°	322.4	4.8
120°-130°	424.0	6.3
130°-140°	475.9	7.1
140°-150°	466.7	7.0
150°-160°	391.5	5.9
160°-170°	259.6	3.9
170°-180°	90.7	1.4
0°-30°	1175.9	17.6
0°-40°	1886.3	28.2
0°-60°	3214.6	48.1
0°-90°	4001.8	59.9
90°-120°	570.1	8.5
90°-150°	1936.6	29.0
90°-180°	2678.0	40.1
0°-180°	6680.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1572	1572	1572	1572	1572	
5°	1572	1566	1549	1561	1558	149
15°	1496	1487	1468	1474	1466	421
25°	1354	1342	1316	1319	1316	623
35°	1168	1153	1129	1120	1112	730
45°	951	940	917	901	895	734
55°	720	710	692	674	667	643
65°	485	476	461	447	440	480
75°	254	251	243	234	237	271
85°	62	60	59	54	53	69
90°	1	10	28	27	28	6
95°	42	50	52	52	50	47
105°	174	176	178	179	179	184
115°	324	328	327	326	324	320
125°	471	478	475	473	472	420
135°	609	618	619	618	616	470
145°	739	745	749	750	747	462
155°	845	847	850	854	851	389
165°	919	918	918	924	920	259
175°	956	954	952	958	953	91
180°	958	958	958	958	958	



TEST NUMBER: P908348

CATALOG NUMBER: DFN2DIP-PN2F0-040D030US840-FLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1571.8	1571.8	1571.8	1571.8	1571.8
2.5°	1580.9	1573.4	1556.7	1571.8	1568.9
5°	1571.8	1565.8	1549.1	1561.2	1558.3
7.5°	1561.2	1552.2	1535.5	1547.7	1544.7
10°	1544.7	1534.1	1516.0	1528.0	1523.5
12.5°	1521.9	1512.9	1494.8	1502.4	1499.2
15°	1496.2	1487.2	1467.5	1473.6	1466.1
17.5°	1464.5	1455.5	1435.8	1443.3	1435.8
20°	1429.7	1420.7	1399.6	1404.0	1398.2
22.5°	1395.0	1381.4	1361.7	1361.7	1358.7
25°	1354.1	1342.1	1316.5	1319.4	1316.5
27.5°	1308.8	1298.2	1278.7	1274.1	1266.7
30°	1263.5	1251.4	1228.8	1224.3	1218.2
32.5°	1215.2	1206.2	1181.9	1172.9	1166.7
35°	1168.3	1153.3	1129.0	1119.9	1112.4
37.5°	1115.4	1101.8	1077.5	1067.0	1059.4
40°	1061.1	1048.8	1024.6	1011.2	1005.1
42.5°	1008.1	995.9	971.9	956.6	947.7
45°	950.7	940.2	917.4	900.9	894.7
47.5°	894.7	884.1	860.0	843.3	834.4
50°	835.8	828.2	807.1	785.9	778.3
52.5°	778.3	767.8	748.2	731.5	720.9
55°	719.5	710.3	692.3	674.1	666.6
57.5°	660.5	653.0	633.2	615.1	609.0
60°	601.5	595.5	574.4	557.7	553.2
62.5°	544.1	533.5	518.5	503.3	497.3
65°	485.2	476.1	461.0	447.4	439.9
67.5°	424.7	417.1	403.6	393.0	387.0
70°	368.8	362.7	349.1	338.5	332.5
72.5°	311.4	305.3	297.8	287.2	282.7
75°	253.9	251.0	243.3	234.3	237.3
77.5°	202.5	196.4	193.4	188.8	184.4
80°	151.2	149.6	146.5	142.1	139.1
82.5°	102.8	102.8	101.4	95.2	95.2
85°	61.9	60.5	59.0	54.3	52.9
87.5°	27.3	24.2	21.2	16.7	15.0
90°	0.9	10.4	28.3	26.6	27.5
92.5°	17.9	24.2	25.1	26.0	26.0
95°	42.2	50.3	51.7	51.7	50.3
97.5°	70.2	77.7	80.9	80.9	80.9
100°	102.5	109.2	111.5	111.5	110.7
102.5°	136.6	141.6	144.7	145.6	144.7
105°	173.9	176.2	177.9	179.4	179.4
107.5°	210.9	214.3	214.3	214.9	210.9
110°	246.7	251.4	251.4	251.4	249.0



TEST NUMBER: P908348

CATALOG NUMBER: DFN2DIP-PN2F0-040D030US840-FLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	285.4	290.3	289.4	287.1	285.4
115°	323.6	328.1	326.7	325.9	323.6
117.5°	361.3	367.7	363.7	361.3	359.0
120°	399.5	405.9	399.5	399.5	396.9
122.5°	434.1	442.2	438.2	435.9	434.1
125°	470.6	477.8	475.4	472.8	472.0
127.5°	506.0	515.0	511.9	508.4	506.0
130°	539.3	549.7	548.3	546.5	543.3
132.5°	576.5	584.6	585.2	581.2	578.9
135°	608.6	617.5	619.4	618.4	616.1
137.5°	644.4	651.7	653.1	652.6	649.0
140°	675.9	683.2	687.2	687.2	684.0
142.5°	708.3	715.5	717.8	718.7	715.5
145°	738.9	744.7	749.3	750.1	747.0
147.5°	766.4	773.6	777.0	778.5	775.3
150°	794.7	799.6	802.7	805.4	802.7
152.5°	819.8	824.7	828.7	831.9	828.7
155°	845.0	847.2	849.8	853.8	851.3
157.5°	866.6	868.3	869.8	875.6	871.5
160°	886.0	887.7	888.6	893.4	890.0
162.5°	903.8	903.8	904.7	910.2	906.2
165°	919.2	918.3	918.3	924.0	920.0
167.5°	933.0	930.4	930.4	936.1	932.1
170°	943.4	941.1	940.3	946.0	941.1
172.5°	950.6	948.4	947.5	953.2	948.4
175°	956.4	954.1	952.4	958.2	953.2
177.5°	959.6	957.3	955.5	960.5	955.5
180°	958.2	958.2	958.2	958.2	958.2



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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	12.28	13.24	13.14	14.12	15.25	11.84	12.80	12.71	13.69	14.81
	3H	13.92	14.78	14.80	15.68	16.83	13.44	14.30	14.32	15.20	16.35
	4H	14.50	15.32	15.40	16.22	17.38	14.02	14.83	14.92	15.74	16.90
	6H	14.89	15.64	15.80	16.55	17.72	14.41	15.16	15.31	16.07	17.24
	8H	14.99	15.71	15.91	16.63	17.80	14.51	15.22	15.42	16.15	17.32
	12H	15.04	15.72	15.96	16.64	17.83	14.54	15.22	15.46	16.14	17.34
4H	2H	12.74	13.55	13.64	14.46	15.62	12.39	13.20	13.29	14.11	15.27
	3H	14.59	15.27	15.50	16.20	17.38	14.19	14.87	15.10	15.80	16.98
	4H	15.29	15.91	16.22	16.84	18.04	14.88	15.50	15.80	16.43	17.63
	6H	15.79	16.33	16.73	17.28	18.48	15.37	15.91	16.31	16.86	18.06
	8H	15.94	16.44	16.87	17.38	18.60	15.51	16.01	16.45	16.96	18.17
	12H	16.00	16.46	16.96	17.42	18.64	15.57	16.02	16.53	16.99	18.21
8H	4H	15.49	15.99	16.43	16.93	18.15	15.12	15.62	16.06	16.57	17.78
	6H	16.10	16.51	17.06	17.50	18.71	15.72	16.14	16.69	17.13	18.34
	8H	16.31	16.67	17.28	17.65	18.88	15.92	16.29	16.90	17.27	18.50
	12H	16.43	16.75	17.41	17.72	19.00	16.03	16.35	17.01	17.33	18.60
12H	4H	15.47	15.93	16.43	16.89	18.11	15.11	15.56	16.07	16.53	17.75
	6H	16.12	16.49	17.10	17.47	18.70	15.76	16.13	16.73	17.11	18.34
	8H	16.35	16.68	17.33	17.65	18.93	15.98	16.31	16.96	17.28	18.56