

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: P924996

Luminaire Tested: DFN2DIP-PN4F0-040D110US950-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P924996
REPORT IS A COMBINATION OF REPORTS P899735 AND P896497
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-040D110US950-FLLFLL
Description: 4 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

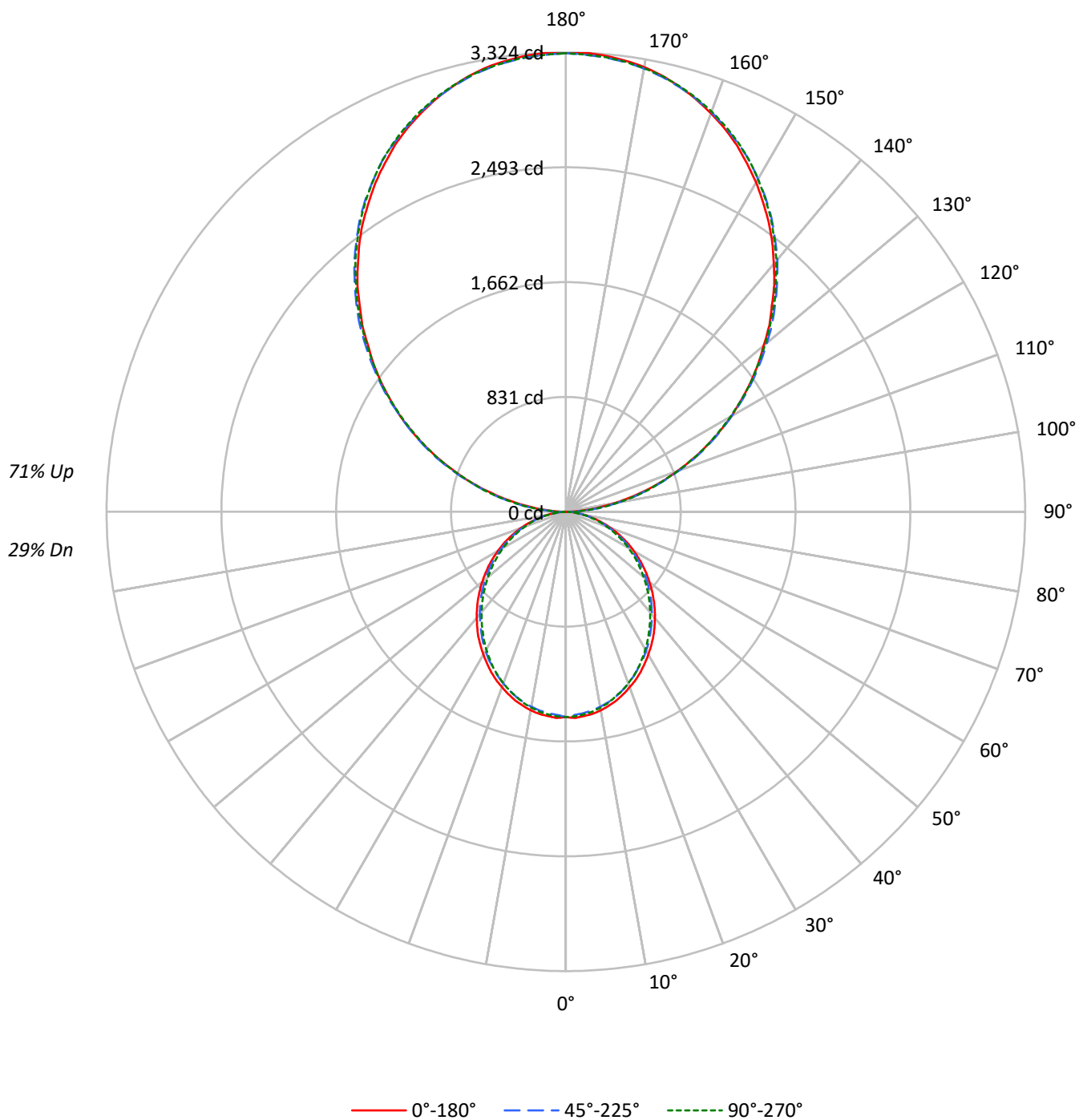
Lumens per Lamp: N/A
Luminaire Lumens: 13065.0 lumens
Efficiency: N/A
Efficacy: 104.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.74' x L: 3.94' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 125
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	102	102	102	102	92	92	92	92	72	72	72	54	54	54	37	37	37
1	93	89	85	82	83	80	77	74	63	61	59	47	46	44	32	32	31
2	85	78	72	67	76	70	65	60	55	51	48	41	39	37	29	27	26
3	77	68	61	55	69	61	55	50	48	44	41	36	34	31	25	24	22
4	71	60	53	47	63	54	48	43	43	38	35	32	29	27	23	21	19
5	65	53	46	40	58	48	41	36	38	33	30	29	26	23	20	18	17
6	59	48	40	34	53	43	36	31	34	29	26	26	23	20	18	16	15
7	55	43	35	30	49	39	32	27	31	26	23	24	20	18	17	15	13
8	51	39	31	26	45	35	29	24	28	23	20	22	18	16	15	13	12
9	47	35	28	23	42	32	26	21	26	21	18	20	16	14	14	12	10
10	44	32	25	21	39	29	23	19	24	19	16	18	15	13	13	11	9

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1084	1084	1084
5°	1086	1069	1076
10°	1077	1055	1062
15°	1061	1037	1039
20°	1040	1013	1016
25°	1018	985	989
30°	992	958	955
35°	966	927	919
40°	935	895	885
45°	904	863	850
50°	870	829	809
55°	835	791	772
60°	795	745	729
65°	751	697	679
70°	695	639	625
75°	618	570	575
80°	525	481	480
85°	380	328	321

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 2597 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	139.8	1.1
10°-20°	393.2	3.0
20°-30°	577.9	4.4
30°-40°	671.2	5.1
40°-50°	670.3	5.1
50°-60°	584.5	4.5
60°-70°	432.1	3.3
70°-80°	244.5	1.9
80°-90°	73.9	0.6
90°-100°	205.4	1.6
100°-110°	652.5	5.0
110°-120°	1116.7	8.5
120°-130°	1468.6	11.2
130°-140°	1648.4	12.6
140°-150°	1616.5	12.4
150°-160°	1356.0	10.4
160°-170°	899.3	6.9
170°-180°	314.3	2.4
0°-30°	1110.8	8.5
0°-40°	1782.0	13.6
0°-60°	3036.8	23.2
0°-90°	3787.3	29.0
90°-120°	1974.6	15.1
90°-150°	6708.2	51.3
90°-180°	9278.0	71.0
0°-180°	13065.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1485	1485	1485	1485	1485	
5°	1485	1479	1463	1475	1472	141
15°	1413	1405	1386	1392	1385	398
25°	1279	1268	1244	1246	1244	589
35°	1104	1090	1067	1058	1051	689
45°	898	888	867	851	845	693
55°	680	671	654	637	630	608
65°	458	450	436	423	416	453
75°	240	237	230	221	224	256
85°	58	57	56	51	50	65
90°	3	36	98	92	95	13
95°	146	174	179	179	174	163
105°	602	610	616	621	621	636
115°	1121	1137	1132	1129	1121	1108
125°	1630	1655	1647	1638	1635	1457
135°	2108	2139	2145	2142	2134	1630
145°	2559	2579	2596	2598	2587	1599
155°	2927	2935	2944	2958	2949	1347
165°	3184	3181	3181	3201	3187	898
175°	3313	3305	3299	3319	3302	315
180°	3319	3319	3319	3319	3319	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1484.8	1484.8	1484.8	1484.8	1484.8
2.5°	1493.5	1486.3	1470.6	1484.8	1482.1
5°	1484.8	1479.2	1463.4	1474.8	1472.1
7.5°	1474.8	1466.3	1450.6	1462.1	1459.2
10°	1459.2	1449.2	1432.1	1443.5	1439.2
12.5°	1437.7	1429.2	1412.1	1419.3	1416.3
15°	1413.4	1405.0	1386.4	1392.1	1385.0
17.5°	1383.5	1375.0	1356.4	1363.5	1356.4
20°	1350.6	1342.1	1322.1	1326.3	1320.8
22.5°	1317.9	1305.0	1286.4	1286.4	1283.5
25°	1279.2	1267.9	1243.6	1246.4	1243.6
27.5°	1236.4	1226.4	1208.0	1203.7	1196.6
30°	1193.6	1182.2	1160.8	1156.5	1150.8
32.5°	1147.9	1139.5	1116.6	1108.0	1102.2
35°	1103.7	1089.5	1066.6	1058.0	1050.8
37.5°	1053.7	1040.8	1017.9	1008.0	1000.8
40°	1002.4	990.8	967.9	955.2	949.5
42.5°	952.4	940.8	918.1	903.7	895.2
45°	898.1	888.2	866.6	851.1	845.2
47.5°	845.2	835.2	812.4	796.7	788.2
50°	789.5	782.4	762.4	742.4	735.2
52.5°	735.2	725.3	706.8	691.1	681.1
55°	679.7	671.0	654.0	636.8	629.7
57.5°	623.9	616.9	598.2	581.1	575.4
60°	568.2	562.6	542.6	526.9	522.6
62.5°	514.0	504.0	489.8	475.5	469.7
65°	458.4	449.7	435.5	422.6	415.6
67.5°	401.3	394.0	381.3	371.3	365.6
70°	348.4	342.7	329.8	319.8	314.2
72.5°	294.2	288.4	281.3	271.3	267.0
75°	239.8	237.1	229.8	221.3	224.2
77.5°	191.3	185.6	182.7	178.4	174.2
80°	142.8	141.3	138.4	134.2	131.4
82.5°	97.1	97.1	95.8	90.0	90.0
85°	58.5	57.1	55.7	51.3	50.0
87.5°	25.8	22.9	20.0	15.7	14.2
90°	3.0	36.1	98.1	92.1	95.0
92.5°	62.0	84.0	87.0	90.1	90.1
95°	146.1	174.1	179.1	179.1	174.1
97.5°	243.2	269.1	280.2	280.2	280.2
100°	355.2	378.2	386.2	386.2	383.2
102.5°	473.3	490.3	501.3	504.3	501.3
105°	602.4	610.4	616.4	621.3	621.3
107.5°	730.4	742.4	742.4	744.4	730.4
110°	854.5	870.5	870.5	870.5	862.5

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	988.5	1005.5	1002.6	994.5	988.5
115°	1120.7	1136.6	1131.6	1128.7	1120.7
117.5°	1251.7	1273.7	1259.7	1251.7	1243.7
120°	1383.8	1405.8	1383.8	1383.8	1374.8
122.5°	1503.9	1531.8	1517.8	1509.8	1503.9
125°	1629.9	1654.9	1646.9	1637.9	1634.9
127.5°	1753.0	1784.0	1773.0	1761.0	1753.0
130°	1868.0	1904.1	1899.0	1893.0	1882.1
132.5°	1997.1	2025.2	2027.2	2013.1	2005.1
135°	2108.1	2139.2	2145.2	2142.2	2134.2
137.5°	2232.3	2257.3	2262.2	2260.2	2248.3
140°	2341.3	2366.3	2380.3	2380.3	2369.4
142.5°	2453.4	2478.4	2486.4	2489.4	2478.4
145°	2559.4	2579.4	2595.5	2598.4	2587.4
147.5°	2654.5	2679.5	2691.5	2696.5	2685.5
150°	2752.6	2769.6	2780.5	2789.6	2780.5
152.5°	2839.6	2856.6	2870.6	2881.7	2870.6
155°	2926.7	2934.6	2943.7	2957.7	2948.6
157.5°	3001.7	3007.7	3012.6	3032.7	3018.6
160°	3068.7	3074.7	3077.7	3094.8	3082.8
162.5°	3130.7	3130.7	3133.8	3152.8	3138.8
165°	3183.8	3180.7	3180.7	3200.8	3186.7
167.5°	3231.8	3222.8	3222.8	3242.8	3228.8
170°	3267.8	3259.8	3256.9	3276.8	3259.8
172.5°	3292.8	3284.8	3281.9	3301.9	3284.8
175°	3312.9	3304.8	3298.8	3318.9	3301.9
177.5°	3323.8	3315.8	3309.8	3326.9	3309.8
180°	3318.9	3318.9	3318.9	3318.9	3318.9

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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	5.20	5.90	6.32	7.01	8.56	4.76	5.46	5.88	6.57	8.12
	3H	6.85	7.48	7.98	8.60	10.16	6.37	6.99	7.50	8.12	9.67
	4H	7.43	8.03	8.57	9.15	10.72	6.95	7.54	8.08	8.66	10.23
	6H	7.83	8.38	8.97	9.50	11.08	7.34	7.88	8.48	9.01	10.58
	8H	7.93	8.45	9.08	9.59	11.16	7.44	7.96	8.58	9.10	10.67
	12H	7.97	8.47	9.12	9.60	11.19	7.47	7.97	8.63	9.10	10.69
4H	2H	5.64	6.24	6.79	7.36	8.92	5.29	5.89	6.44	7.01	8.57
	3H	7.50	7.99	8.65	9.14	10.72	7.09	7.59	8.24	8.74	10.32
	4H	8.21	8.66	9.36	9.80	11.40	7.79	8.25	8.94	9.38	10.98
	6H	8.72	9.11	9.87	10.27	11.85	8.29	8.68	9.45	9.84	11.43
	8H	8.86	9.23	10.02	10.38	11.98	8.43	8.80	9.59	9.95	11.55
	12H	8.93	9.26	10.10	10.42	12.03	8.49	8.82	9.66	9.98	11.59
8H	4H	8.39	8.76	9.55	9.91	11.51	8.02	8.38	9.18	9.54	11.14
	6H	9.02	9.32	10.20	10.51	12.11	8.64	8.94	9.82	10.14	11.74
	8H	9.24	9.50	10.42	10.67	12.29	8.85	9.12	10.04	10.29	11.91
	12H	9.37	9.60	10.55	10.77	12.42	8.96	9.19	10.15	10.36	12.02
12H	4H	8.37	8.70	9.54	9.86	11.47	8.01	8.34	9.18	9.50	11.11
	6H	9.05	9.31	10.23	10.48	12.10	8.68	8.95	9.87	10.12	11.74
	8H	9.28	9.51	10.47	10.68	12.34	8.91	9.14	10.10	10.31	11.96

END OF REPORT