

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: P924948

Luminaire Tested: DFN2DIP-PN3F0-090D050US950-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P924948
REPORT IS A COMBINATION OF REPORTS P899551 AND P896399
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN3F0-090D050US950-FLLFLL
Description: 3 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

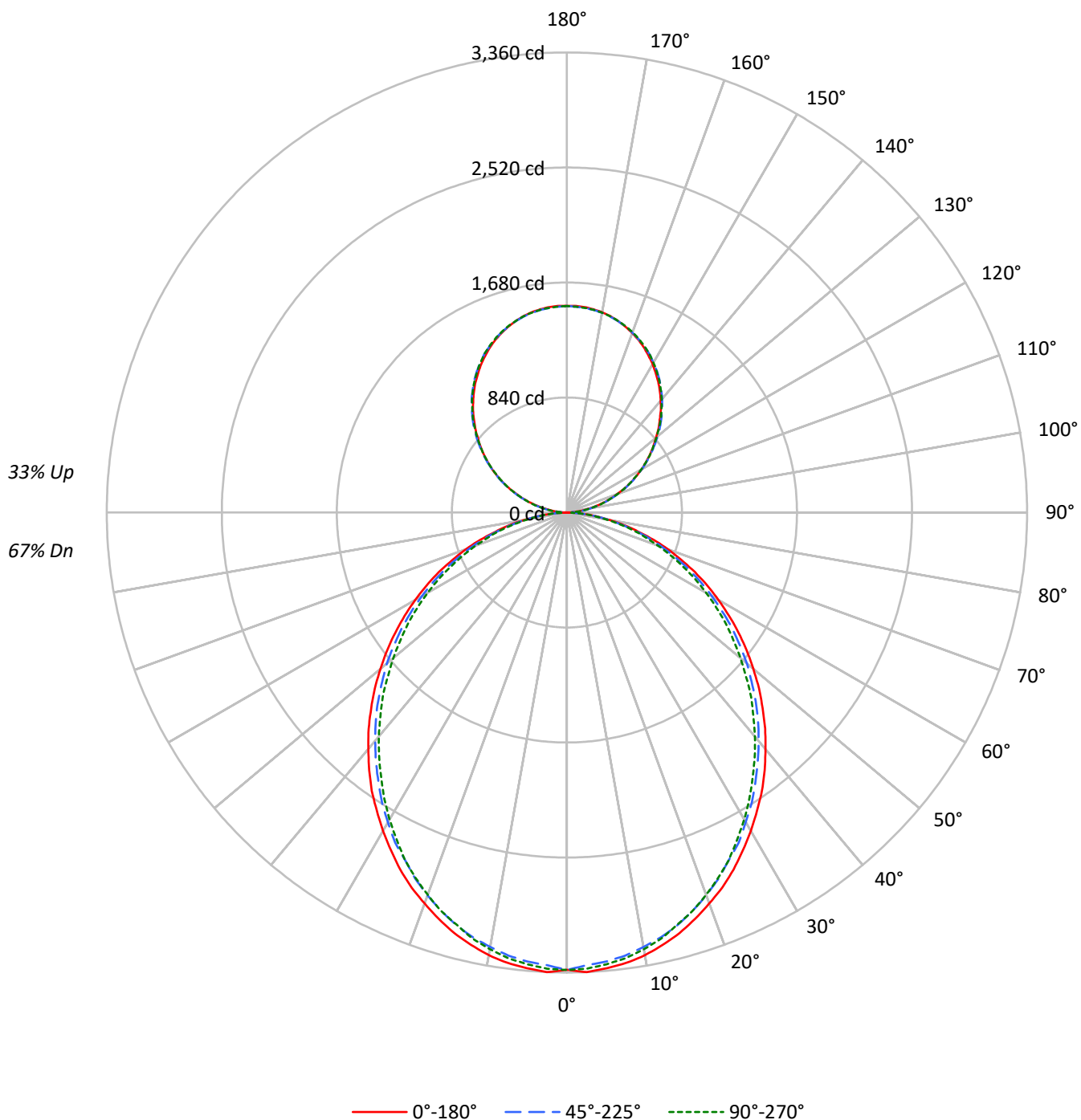
Lumens per Lamp: N/A
Luminaire Lumens: 12721.6 lumens
Efficiency: N/A
Efficacy: 97.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.96' x L: 3.11' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 130.7
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9954
Total Harmonic Distortion (THDi): 0.076
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	72	72	72
1	102	97	93	90	96	92	88	85	81	79	76	72	70	68	63	62	61
2	93	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	73	63	55	50	56	50	45	50	45	41	44	41	37
5	71	59	51	45	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	32	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°	3905	3905	3905
5°	3909	3848	3875
10°	3875	3794	3821
15°	3816	3728	3737
20°	3737	3639	3652
25°	3658	3533	3553
30°	3559	3433	3428
35°	3466	3316	3296
40°	3351	3198	3170
45°	3237	3080	3041
50°	3111	2955	2892
55°	2980	2812	2755
60°	2831	2641	2597
65°	2669	2464	2411
70°	2462	2248	2211
75°	2176	1989	2023
80°	1830	1658	1669
85°	1291	1098	1088

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3237 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	314.4	2.5
10°-20°	884.7	7.0
20°-30°	1300.2	10.2
30°-40°	1510.1	11.9
40°-50°	1508.2	11.9
50°-60°	1315.1	10.3
60°-70°	972.2	7.6
70°-80°	550.0	4.3
80°-90°	149.5	1.2
90°-100°	93.4	0.7
100°-110°	296.6	2.3
110°-120°	507.6	4.0
120°-130°	667.5	5.2
130°-140°	749.3	5.9
140°-150°	734.8	5.8
150°-160°	616.4	4.8
160°-170°	408.8	3.2
170°-180°	142.9	1.1
0°-30°	2499.3	19.6
0°-40°	4009.4	31.5
0°-60°	6832.8	53.7
0°-90°	8504.5	66.9
90°-120°	897.5	7.1
90°-150°	3049.2	24.0
90°-180°	4217.0	33.1
0°-180°	12721.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3341	3341	3341	3341	3341	
5°	3341	3328	3293	3318	3312	317
15°	3180	3161	3119	3132	3116	896
25°	2878	2853	2798	2804	2798	1324
35°	2483	2451	2400	2380	2364	1551
45°	2021	1998	1950	1915	1902	1560
55°	1529	1510	1471	1433	1417	1367
65°	1031	1012	980	951	935	1020
75°	540	533	517	498	504	576
85°	132	128	126	116	112	147
90°	1	16	45	42	43	12
95°	66	79	81	81	79	74
105°	274	277	280	282	282	289
115°	509	517	514	513	509	504
125°	741	752	749	744	743	662
135°	958	972	975	974	970	741
145°	1163	1172	1180	1181	1176	727
155°	1330	1334	1338	1344	1340	612
165°	1447	1446	1446	1455	1449	408
175°	1506	1502	1500	1509	1501	143
180°	1509	1509	1509	1509	1509	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3340.8	3340.8	3340.8	3340.8	3340.8
2.5°	3360.3	3344.2	3308.9	3340.8	3334.7
5°	3340.8	3328.2	3292.8	3318.4	3312.2
7.5°	3318.4	3299.3	3263.8	3289.8	3283.3
10°	3283.3	3260.8	3222.2	3247.8	3238.3
12.5°	3234.8	3215.7	3177.3	3193.2	3186.8
15°	3180.3	3161.3	3119.3	3132.3	3116.2
17.5°	3112.8	3093.7	3051.8	3067.9	3051.8
20°	3038.9	3019.8	2974.8	2984.3	2971.7
22.5°	2965.2	2936.3	2894.3	2894.3	2887.9
25°	2878.3	2852.7	2798.3	2804.4	2798.3
27.5°	2781.9	2759.3	2717.9	2708.3	2692.3
30°	2685.8	2659.8	2611.8	2602.2	2589.3
32.5°	2582.9	2563.8	2512.3	2492.9	2479.9
35°	2483.4	2451.3	2399.8	2380.4	2364.4
37.5°	2370.9	2341.9	2290.4	2267.9	2251.9
40°	2255.3	2229.4	2177.9	2149.3	2136.4
42.5°	2142.8	2116.9	2065.8	2033.5	2014.4
45°	2020.8	1998.3	1949.9	1914.8	1901.9
47.5°	1901.9	1879.4	1827.9	1792.5	1773.4
50°	1776.4	1760.4	1715.4	1670.5	1654.4
52.5°	1654.4	1631.9	1590.3	1554.9	1532.4
55°	1529.4	1509.9	1471.4	1432.9	1416.9
57.5°	1403.9	1387.9	1346.0	1307.5	1294.5
60°	1278.5	1265.9	1220.8	1185.4	1175.9
62.5°	1156.4	1133.9	1101.9	1069.9	1056.9
65°	1031.4	1011.9	979.9	950.9	934.9
67.5°	902.9	886.6	857.8	835.4	822.4
70°	783.9	770.9	742.0	719.5	706.9
72.5°	661.9	648.9	632.9	610.5	600.9
75°	539.6	533.4	517.1	498.0	504.5
77.5°	430.4	417.6	411.1	401.5	392.0
80°	321.4	318.0	311.5	301.9	295.5
82.5°	218.5	218.5	215.4	202.4	202.4
85°	131.6	128.5	125.5	115.5	112.5
87.5°	57.9	51.4	45.0	35.5	32.1
90°	1.3	16.4	44.6	41.9	43.2
92.5°	28.2	38.2	39.6	40.9	40.9
95°	66.4	79.2	81.4	81.4	79.2
97.5°	110.5	122.3	127.4	127.4	127.4
100°	161.4	171.9	175.5	175.5	174.2
102.5°	215.1	222.9	227.8	229.2	227.8
105°	273.8	277.4	280.2	282.4	282.4
107.5°	332.0	337.4	337.4	338.4	332.0
110°	388.4	395.7	395.7	395.7	392.0

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	449.3	457.1	455.7	452.1	449.3
115°	509.3	516.7	514.4	513.1	509.3
117.5°	569.0	579.0	572.6	569.0	565.3
120°	629.0	639.0	629.0	629.0	624.9
122.5°	683.5	696.3	689.9	686.3	683.5
125°	740.9	752.2	748.6	744.5	743.2
127.5°	796.8	810.9	805.9	800.4	796.8
130°	849.2	865.5	863.2	860.5	855.5
132.5°	907.8	920.5	921.5	915.1	911.5
135°	958.3	972.3	975.1	973.7	970.1
137.5°	1014.7	1026.0	1028.3	1027.4	1021.9
140°	1064.2	1075.6	1081.9	1081.9	1077.0
142.5°	1115.1	1126.6	1130.2	1131.5	1126.6
145°	1163.4	1172.5	1179.7	1181.1	1176.1
147.5°	1206.6	1218.0	1223.4	1225.7	1220.6
150°	1251.2	1258.9	1263.9	1268.0	1263.9
152.5°	1290.8	1298.5	1304.8	1309.8	1304.8
155°	1330.3	1333.9	1338.0	1344.4	1340.3
157.5°	1364.4	1367.1	1369.4	1378.5	1372.1
160°	1394.8	1397.6	1398.9	1406.7	1401.2
162.5°	1423.1	1423.1	1424.4	1433.1	1426.7
165°	1447.2	1445.8	1445.8	1454.9	1448.6
167.5°	1469.0	1464.9	1464.9	1474.0	1467.6
170°	1485.4	1481.8	1480.4	1489.5	1481.8
172.5°	1496.7	1493.1	1491.8	1500.8	1493.1
175°	1505.9	1502.2	1499.5	1508.6	1500.8
177.5°	1510.8	1507.2	1504.5	1512.2	1504.5
180°	1508.6	1508.6	1508.6	1508.6	1508.6

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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	13.39	14.43	14.19	15.25	16.26	12.95	13.99	13.75	14.81	15.82
	3H	15.06	15.99	15.87	16.82	17.86	14.58	15.51	15.39	16.34	17.37
	4H	15.65	16.53	16.48	17.37	18.42	15.17	16.04	15.99	16.88	17.93
	6H	16.05	16.87	16.89	17.71	18.77	15.56	16.38	16.40	17.22	18.28
	8H	16.16	16.93	17.01	17.80	18.86	15.67	16.44	16.52	17.31	18.37
	12H	16.21	16.95	17.07	17.81	18.90	15.72	16.45	16.57	17.31	18.40
4H	2H	13.87	14.75	14.70	15.59	16.63	13.52	14.40	14.35	15.24	16.28
	3H	15.74	16.48	16.59	17.35	18.41	15.34	16.08	16.19	16.95	18.01
	4H	16.46	17.13	17.32	18.00	19.09	16.04	16.71	16.90	17.58	18.67
	6H	16.98	17.56	17.85	18.45	19.55	16.56	17.14	17.43	18.03	19.12
	8H	17.13	17.67	18.01	18.56	19.67	16.70	17.24	17.58	18.13	19.24
	12H	17.21	17.70	18.11	18.60	19.72	16.77	17.26	17.67	18.17	19.28
8H	4H	16.67	17.21	17.54	18.10	19.20	16.30	16.84	17.17	17.73	18.83
	6H	17.30	17.75	18.20	18.68	19.78	16.92	17.37	17.83	18.30	19.41
	8H	17.52	17.91	18.43	18.84	19.96	17.13	17.53	18.05	18.45	19.58
	12H	17.65	18.00	18.57	18.92	20.09	17.25	17.60	18.17	18.52	19.69
12H	4H	16.66	17.15	17.56	18.05	19.17	16.30	16.79	17.19	17.69	18.81
	6H	17.33	17.73	18.24	18.65	19.77	16.96	17.36	17.88	18.28	19.41
	8H	17.57	17.92	18.49	18.84	20.01	17.20	17.55	18.12	18.47	19.64