

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: P924684

Luminaire Tested: DFN2DIP-PN2F0-020D050US950-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P924684
REPORT IS A COMBINATION OF REPORTS P899491 AND P896349
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN2F0-020D050US950-FLLFLL
Description: 2 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

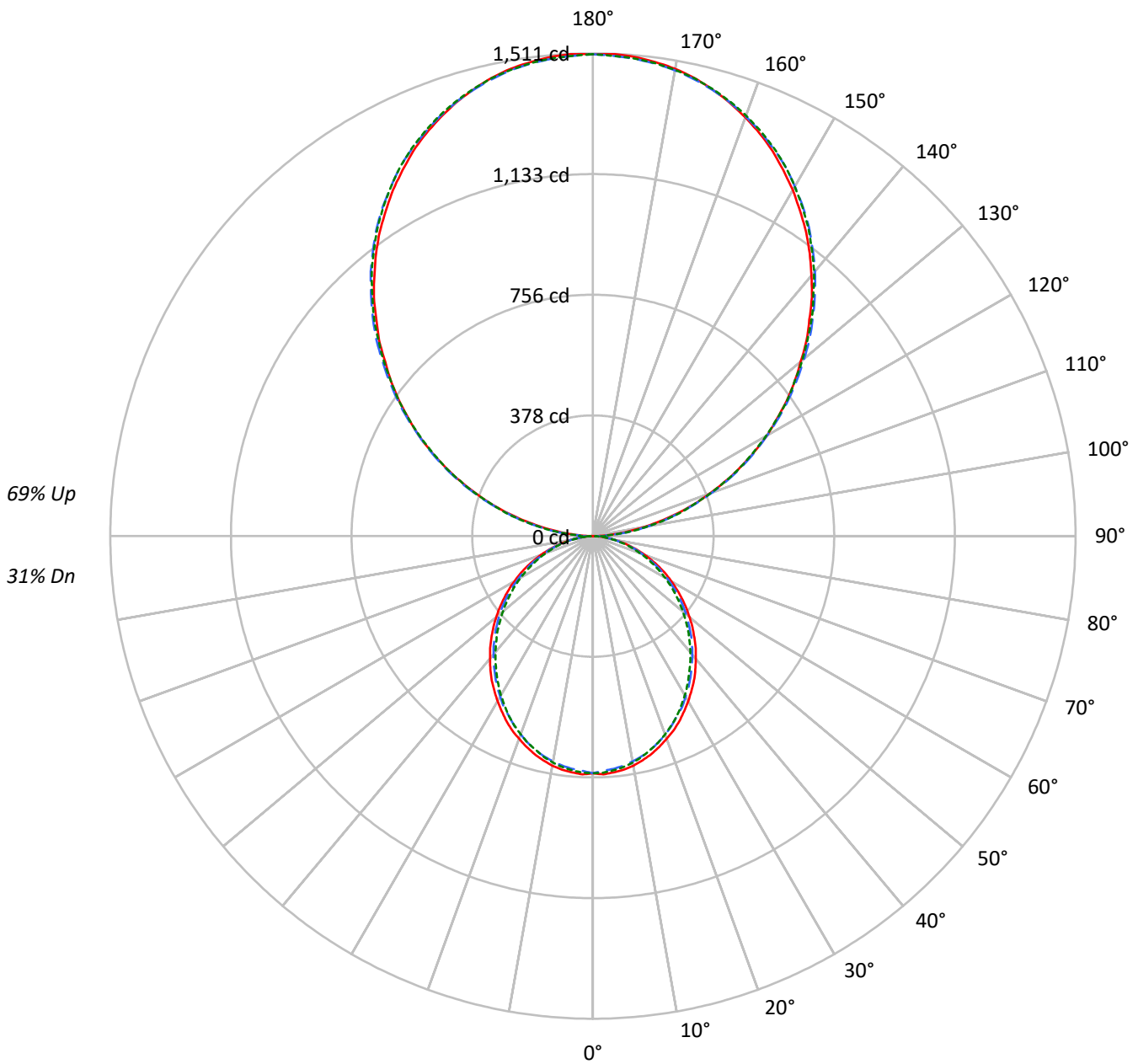
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6110.4 lumens
Efficiency: N/A
Efficacy: 106.3 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: Semi-Indirect

Input Watts (W): 57.5
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.099
Total Harmonic Distortion (THDi): 0.979
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



— 0°-180° - - 45°-225° - · - · 90°-270°



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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				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	103	103	103	103	92	92	92	92	73	73	73	55	55	55	39	39	39	39	39	39	31
1	94	89	86	82	84	80	77	74	64	61	60	48	47	46	34	33	33	34	33	33	26
2	85	78	72	67	76	70	65	61	56	52	49	42	40	38	30	29	27	30	29	27	22
3	78	68	61	56	69	62	56	51	49	45	41	37	35	32	27	25	23	27	25	23	18
4	71	60	53	47	63	55	48	43	44	39	35	33	30	28	24	22	20	24	22	20	16
5	65	54	46	40	58	49	42	37	39	34	30	30	26	24	21	19	17	21	19	17	14
6	60	48	40	35	54	44	37	32	35	30	26	27	23	21	19	17	15	19	17	15	12
7	55	43	36	30	49	39	33	28	32	27	23	24	21	18	18	15	14	18	15	14	11
8	51	39	32	27	46	36	29	24	29	24	20	22	19	16	16	14	12	16	14	12	10
9	47	36	28	24	43	32	26	22	26	21	18	20	17	15	15	13	11	15	13	11	9
10	44	33	26	21	40	30	24	19	24	19	16	19	15	13	14	12	10	14	12	10	8

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1608	1608	1608
5°	1608	1582	1594
10°	1592	1557	1570
15°	1566	1528	1534
20°	1532	1489	1497
25°	1498	1443	1455
30°	1456	1400	1402
35°	1416	1350	1346
40°	1367	1299	1292
45°	1318	1248	1238
50°	1264	1194	1175
55°	1208	1132	1115
60°	1144	1059	1048
65°	1074	982	969
70°	985	889	883
75°	863	777	801
80°	715	636	649
85°	484	402	407

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 90°
 Luminance: 2034 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	69.9	1.1
10°-20°	196.6	3.2
20°-30°	288.9	4.7
30°-40°	335.6	5.5
40°-50°	335.2	5.5
50°-60°	292.2	4.8
60°-70°	216.0	3.5
70°-80°	122.2	2.0
80°-90°	36.6	0.6
90°-100°	93.4	1.5
100°-110°	296.6	4.9
110°-120°	507.6	8.3
120°-130°	667.5	10.9
130°-140°	749.3	12.3
140°-150°	734.8	12.0
150°-160°	616.4	10.1
160°-170°	408.8	6.7
170°-180°	142.9	2.3
0°-30°	555.4	9.1
0°-40°	891.0	14.6
0°-60°	1518.4	24.8
0°-90°	1893.2	31.0
90°-120°	897.5	14.7
90°-150°	3049.2	49.9
90°-180°	4217.0	69.0
0°-180°	6110.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	742	742	742	742	742	
5°	742	740	732	737	736	70
15°	707	702	693	696	692	199
25°	640	634	622	623	622	294
35°	552	545	533	529	525	345
45°	449	444	433	426	423	347
55°	340	336	327	318	315	304
65°	229	225	218	211	208	227
75°	120	119	115	111	112	128
85°	29	28	28	26	25	33
90°	1	16	45	42	43	6
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°	742.4	742.4	742.4	742.4	742.4
2.5°	746.7	743.2	735.2	742.4	741.1
5°	742.4	739.6	731.7	737.4	736.0
7.5°	737.4	733.1	725.3	731.1	729.6
10°	729.6	724.7	716.1	721.7	719.6
12.5°	718.8	714.6	706.1	709.6	708.2
15°	706.7	702.5	693.2	696.0	692.5
17.5°	691.7	687.5	678.2	681.7	678.2
20°	675.3	671.0	661.0	663.2	660.4
22.5°	658.9	652.5	643.2	643.2	641.8
25°	639.7	633.9	621.8	623.2	621.8
27.5°	618.2	613.2	604.0	601.9	598.3
30°	596.8	591.1	580.4	578.3	575.4
32.5°	573.9	569.7	558.3	554.0	551.1
35°	551.9	544.7	533.3	529.0	525.4
37.5°	526.9	520.4	509.0	504.0	500.4
40°	501.1	495.4	484.0	477.7	474.7
42.5°	476.1	470.4	459.1	451.9	447.6
45°	449.0	444.1	433.3	425.5	422.6
47.5°	422.6	417.7	406.2	398.3	394.1
50°	394.8	391.2	381.2	371.2	367.7
52.5°	367.7	362.6	353.4	345.5	340.6
55°	339.8	335.5	326.9	318.4	314.8
57.5°	312.0	308.4	299.1	290.6	287.6
60°	284.1	281.3	271.3	263.4	261.3
62.5°	257.0	252.0	244.9	237.7	234.9
65°	229.2	224.9	217.8	211.3	207.8
67.5°	200.6	197.0	190.6	185.6	182.8
70°	174.2	171.3	164.9	159.9	157.1
72.5°	147.1	144.2	140.6	135.7	133.6
75°	119.9	118.6	114.9	110.7	112.1
77.5°	95.7	92.8	91.3	89.2	87.1
80°	71.5	70.7	69.3	67.1	65.6
82.5°	48.6	48.6	47.9	45.0	45.0
85°	29.2	28.5	27.9	25.7	25.0
87.5°	12.9	11.4	10.0	7.9	7.2
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	6.72	7.43	7.83	8.53	10.05	6.28	7.00	7.39	8.10	9.62
	3H	8.35	8.99	9.46	10.10	11.63	7.87	8.51	8.98	9.62	11.15
	4H	8.92	9.52	10.04	10.63	12.18	8.44	9.04	9.56	10.15	11.69
	6H	9.29	9.85	10.43	10.96	12.52	8.81	9.37	9.94	10.48	12.03
	8H	9.39	9.92	10.52	11.05	12.59	8.90	9.43	10.03	10.56	12.11
	12H	9.42	9.93	10.56	11.05	12.62	8.93	9.43	10.07	10.56	12.12
4H	2H	7.15	7.76	8.29	8.87	10.41	6.80	7.41	7.94	8.52	10.06
	3H	8.98	9.49	10.12	10.62	12.18	8.58	9.09	9.72	10.23	11.78
	4H	9.67	10.14	10.81	11.27	12.84	9.26	9.73	10.40	10.85	12.43
	6H	10.16	10.56	11.31	11.71	13.27	9.74	10.14	10.89	11.29	12.85
	8H	10.30	10.67	11.44	11.81	13.39	9.87	10.25	11.02	11.39	12.97
	12H	10.35	10.69	11.52	11.84	13.43	9.92	10.26	11.08	11.41	13.00
8H	4H	9.85	10.22	10.99	11.36	12.94	9.48	9.85	10.63	10.99	12.57
	6H	10.45	10.76	11.62	11.94	13.52	10.08	10.38	11.24	11.57	13.14
	8H	10.65	10.92	11.83	12.08	13.68	10.27	10.54	11.45	11.70	13.30
	12H	10.77	11.00	11.94	12.16	13.79	10.37	10.60	11.54	11.76	13.40
12H	4H	9.82	10.16	10.99	11.31	12.90	9.46	9.80	10.63	10.95	12.54
	6H	10.47	10.74	11.64	11.90	13.50	10.11	10.38	11.28	11.54	13.14
	8H	10.69	10.93	11.87	12.09	13.72	10.32	10.56	11.50	11.72	13.35