

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: P924010

Luminaire Tested: DFN2DIP-4P3F0-020D050US950-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P924010
REPORT IS A COMBINATION OF REPORTS P899059 AND P895917
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P3F0-020D050US950-FLLFLL
Description: 3 foot, 90deg - 4way Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

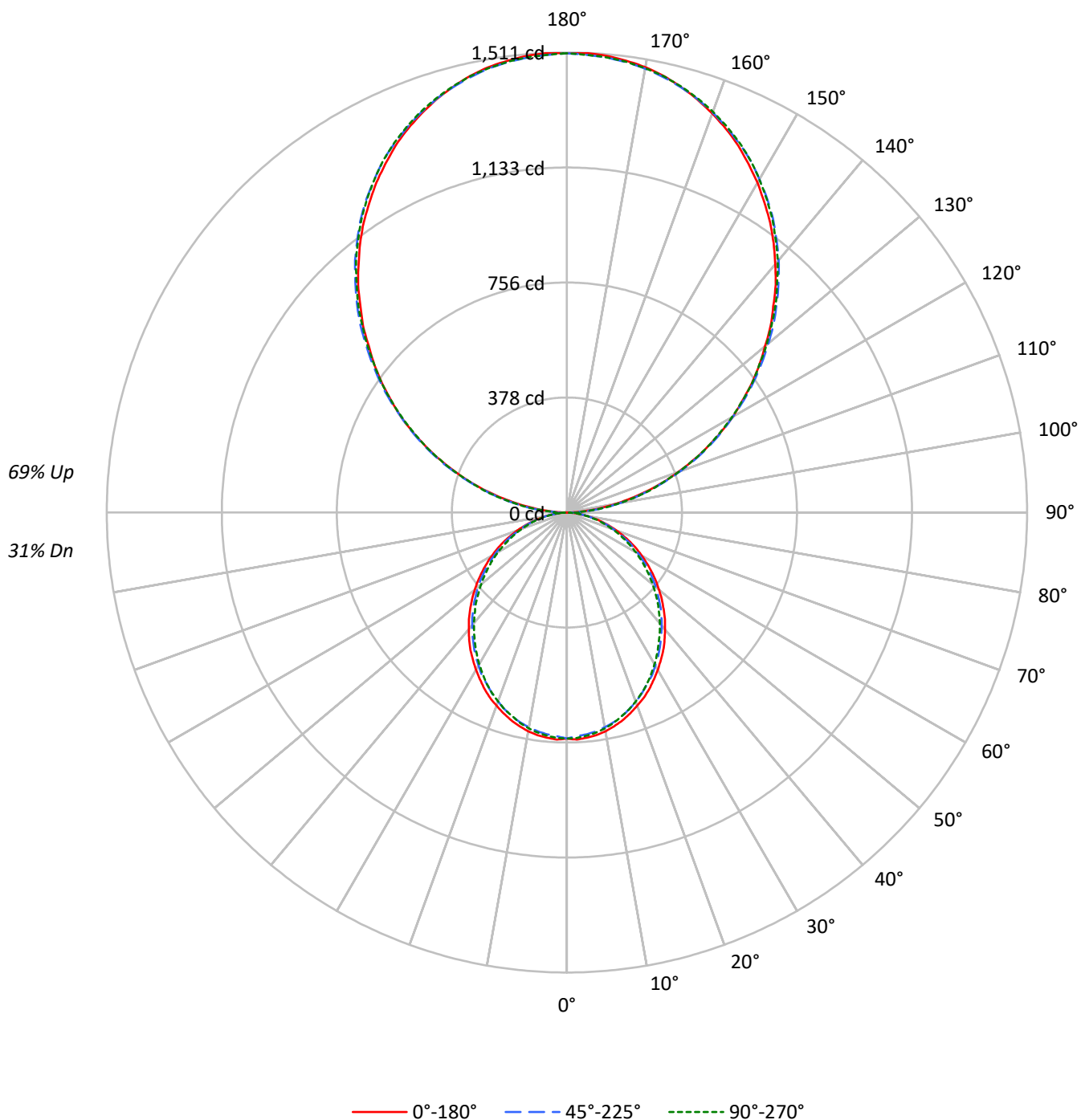
Lumens per Lamp: N/A
Luminaire Lumens: 6110.4 lumens
Efficiency: N/A
Efficacy: 113.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.07' x L: 3.07' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 53.8
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9951
Total Harmonic Distortion (THDi): 0.07
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	103	103	103	103	92	92	92	92	73	73	73	55	55	55	39	39	39
1	94	89	86	82	84	80	77	74	64	61	60	48	47	46	34	33	33
2	85	78	72	67	76	70	65	61	56	52	49	42	40	38	30	29	27
3	78	68	61	56	69	62	56	51	49	45	41	37	35	32	27	25	23
4	71	60	53	47	63	55	48	43	44	39	35	33	30	28	24	22	20
5	65	54	46	40	58	49	42	37	39	34	30	30	26	24	21	19	17
6	60	48	40	35	54	44	37	32	35	30	26	27	23	21	19	17	15
7	55	43	36	30	49	39	33	28	32	27	23	24	21	18	18	15	14
8	51	39	32	27	46	36	29	24	29	24	20	22	19	16	16	14	12
9	47	36	28	24	43	32	26	22	26	21	18	20	17	15	15	13	11
10	44	33	26	21	40	30	24	19	24	19	16	19	15	13	14	12	10

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	846	846	846
5°	847	834	840
10°	839	822	828
15°	827	808	810
20°	809	788	792
25°	792	765	770
30°	771	744	743
35°	751	719	715
40°	726	693	687
45°	701	668	660
50°	674	641	628
55°	645	609	598
60°	613	573	564
65°	578	535	524
70°	533	488	480
75°	471	432	440
80°	396	361	363
85°	278	239	238

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1513 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	4.57	5.29	5.68	6.39	7.91	4.13	4.84	5.23	5.94	7.46
	3H	6.22	6.86	7.33	7.97	9.50	5.73	6.37	6.84	7.48	9.01
	4H	6.80	7.40	7.92	8.51	10.05	6.30	6.91	7.43	8.02	9.56
	6H	7.18	7.74	8.32	8.86	10.41	6.68	7.24	7.82	8.36	9.91
	8H	7.28	7.81	8.42	8.94	10.49	6.78	7.31	7.92	8.44	9.99
	12H	7.32	7.83	8.46	8.95	10.52	6.82	7.32	7.95	8.44	10.01
4H	2H	5.01	5.62	6.14	6.73	8.27	4.66	5.26	5.79	6.37	7.92
	3H	6.86	7.36	8.00	8.50	10.06	6.45	6.96	7.59	8.09	9.65
	4H	7.56	8.03	8.70	9.15	10.73	7.14	7.61	8.28	8.73	10.30
	6H	8.07	8.47	9.21	9.61	11.18	7.63	8.03	8.78	9.18	10.75
	8H	8.21	8.58	9.36	9.72	11.30	7.77	8.14	8.92	9.29	10.87
	12H	8.27	8.61	9.44	9.76	11.35	7.82	8.16	8.99	9.31	10.90
8H	4H	7.74	8.12	8.89	9.26	10.84	7.37	7.74	8.51	8.88	10.46
	6H	8.36	8.67	9.53	9.85	11.43	7.98	8.29	9.15	9.47	11.05
	8H	8.58	8.85	9.75	10.01	11.61	8.19	8.45	9.36	9.62	11.21
	12H	8.70	8.94	9.88	10.10	11.73	8.29	8.53	9.47	9.68	11.32
12H	4H	7.72	8.06	8.88	9.21	10.80	7.35	7.69	8.52	8.84	10.43
	6H	8.39	8.66	9.56	9.82	11.42	8.02	8.29	9.19	9.45	11.05
	8H	8.62	8.86	9.80	10.02	11.65	8.24	8.48	9.42	9.63	11.27

END OF REPORT