

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: P924092

Luminaire Tested: DFN2DIP-4P3F0-060D050US950-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P924092
REPORT IS A COMBINATION OF REPORTS P899068 AND P895917
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P3F0-060D050US950-RLLFLL
Description: 3 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

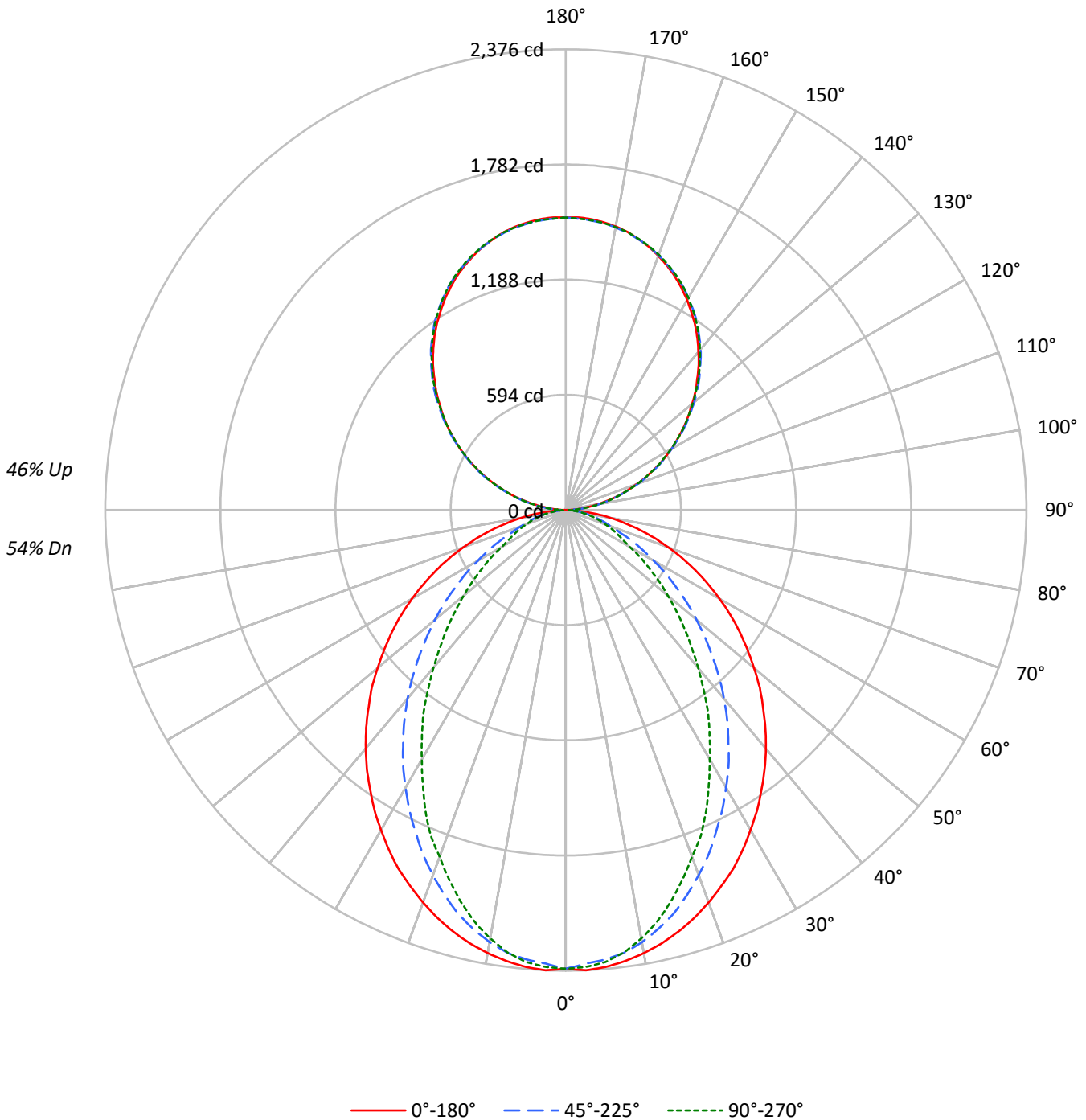
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 9086.9 lumens
Efficiency: N/A
Efficacy: 90.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.07' x L: 3.07' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 100.2
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9963
Total Harmonic Distortion (THDi): 0.065
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			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	108	108	108	108	100	100	100	100	85	85	85	72	72	72	59	59	59	54	54	54	54
1	99	95	91	88	92	88	85	82	76	73	71	64	62	61	53	52	51	46	46	46	46
2	91	84	78	73	84	78	73	68	67	63	60	57	54	52	48	46	44	39	39	39	39
3	83	74	67	61	77	69	63	58	59	55	51	51	47	44	43	40	38	34	34	34	34
4	76	66	58	52	71	61	55	49	53	48	44	46	42	38	38	36	33	30	30	30	30
5	70	59	51	45	65	55	48	43	48	42	38	41	37	34	35	32	29	26	26	26	26
6	65	53	45	39	60	50	43	37	43	38	34	37	33	30	32	29	26	23	23	23	23
7	60	48	40	35	56	45	38	33	39	34	30	34	30	27	29	26	23	21	21	21	21
8	56	44	36	31	52	41	34	30	36	31	27	31	27	24	27	24	21	19	19	19	19
9	52	40	33	28	48	38	31	27	33	28	24	29	25	22	25	22	19	17	17	17	17
10	49	37	30	25	45	35	28	24	31	25	22	27	23	20	23	20	18	16	16	16	16

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2696	2696	2696
5°	2699	2651	2669
10°	2670	2598	2582
15°	2632	2510	2446
20°	2581	2390	2281
25°	2530	2256	2121
30°	2461	2118	1919
35°	2394	1971	1741
40°	2325	1818	1538
45°	2246	1650	1353
50°	2163	1479	1173
55°	2077	1297	1000
60°	1977	1107	822
65°	1862	914	739
70°	1722	734	668
75°	1547	643	606
80°	1293	534	522
85°	877	348	387

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 2246 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	221.7	2.4
10°-20°	608.7	6.7
20°-30°	854.5	9.4
30°-40°	931.5	10.3
40°-50°	856.2	9.4
50°-60°	672.4	7.4
60°-70°	437.7	4.8
70°-80°	225.3	2.5
80°-90°	61.8	0.7
90°-100°	93.4	1.0
100°-110°	296.6	3.3
110°-120°	507.6	5.6
120°-130°	667.5	7.3
130°-140°	749.3	8.2
140°-150°	734.8	8.1
150°-160°	616.4	6.8
160°-170°	408.8	4.5
170°-180°	142.9	1.6
0°-30°	1684.9	18.5
0°-40°	2616.4	28.8
0°-60°	4144.9	45.6
0°-90°	4869.7	53.6
90°-120°	897.5	9.9
90°-150°	3049.2	33.6
90°-180°	4217.0	46.4
0°-180°	9086.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2366	2366	2366	2366	2366	
5°	2366	2355	2327	2346	2340	224
15°	2250	2226	2154	2113	2092	634
25°	2042	1974	1833	1745	1713	939
35°	1760	1651	1462	1327	1280	1102
45°	1439	1295	1071	918	867	1111
55°	1094	927	696	567	527	978
65°	739	565	372	300	293	732
75°	394	244	171	156	154	417
85°	92	47	41	41	41	106
90°	1	16	45	42	43	9
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°	2365.7	2365.7	2365.7	2365.7	2365.7
2.5°	2376.4	2365.7	2342.1	2363.6	2359.3
5°	2365.7	2355.0	2327.1	2346.5	2340.1
7.5°	2346.5	2333.7	2303.7	2312.1	2301.4
10°	2320.7	2305.7	2263.1	2256.5	2243.7
12.5°	2288.7	2269.4	2211.5	2198.8	2175.1
15°	2250.1	2226.4	2153.8	2113.1	2091.7
17.5°	2205.2	2170.8	2080.9	2033.8	1999.6
20°	2153.8	2110.8	2003.9	1950.5	1903.2
22.5°	2098.1	2048.8	1924.6	1851.9	1819.9
25°	2042.5	1973.9	1832.6	1745.0	1712.7
27.5°	1976.2	1903.2	1747.0	1646.3	1597.1
30°	1905.5	1824.0	1652.7	1543.7	1485.8
32.5°	1836.9	1738.4	1563.0	1434.4	1380.8
35°	1759.9	1650.7	1462.4	1327.4	1280.2
37.5°	1685.0	1567.0	1368.1	1220.3	1166.8
40°	1605.7	1477.4	1269.5	1117.5	1061.9
42.5°	1524.4	1387.4	1171.1	1012.6	959.2
45°	1438.7	1295.2	1070.6	918.3	867.0
47.5°	1357.4	1205.5	974.2	822.1	775.0
50°	1267.5	1115.5	880.0	732.1	687.4
52.5°	1179.5	1019.0	790.0	648.7	608.1
55°	1094.0	927.0	695.8	567.4	526.7
57.5°	1006.3	834.9	612.4	492.5	458.1
60°	916.3	745.1	524.5	415.5	381.1
62.5°	828.6	657.4	449.5	346.9	329.8
65°	738.7	565.1	372.5	299.8	293.3
67.5°	653.0	479.5	299.8	263.3	256.9
70°	563.1	396.1	248.2	227.0	218.3
72.5°	477.5	318.9	207.6	190.6	186.2
75°	393.9	243.9	171.2	156.3	154.3
77.5°	310.5	173.3	134.9	126.3	122.0
80°	233.3	124.2	102.7	94.3	94.3
82.5°	162.7	83.6	70.6	66.3	66.3
85°	92.0	47.0	40.6	40.6	40.6
87.5°	34.3	17.1	17.1	15.0	15.0
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	10.89	11.75	11.82	12.69	13.91	6.85	7.71	7.78	8.65	9.88
	3H	12.56	13.33	13.51	14.29	15.53	8.03	8.80	8.98	9.76	11.00
	4H	13.17	13.90	14.13	14.86	16.11	8.48	9.21	9.44	10.17	11.42
	6H	13.59	14.26	14.56	15.22	16.49	8.80	9.47	9.77	10.43	11.70
	8H	13.71	14.35	14.69	15.33	16.60	8.89	9.52	9.86	10.50	11.77
	12H	13.78	14.38	14.76	15.36	16.64	8.93	9.53	9.91	10.51	11.80
4H	2H	10.91	11.63	11.87	12.59	13.85	7.45	8.17	8.41	9.13	10.39
	3H	12.73	13.34	13.71	14.33	15.60	8.79	9.40	9.76	10.38	11.65
	4H	13.42	13.97	14.41	14.96	16.25	9.33	9.89	10.32	10.87	12.16
	6H	13.94	14.41	14.93	15.42	16.71	9.75	10.22	10.74	11.23	12.52
	8H	14.11	14.55	15.11	15.55	16.86	9.87	10.32	10.87	11.32	12.62
	12H	14.20	14.60	15.22	15.62	16.93	9.94	10.34	10.95	11.35	12.66
8H	4H	13.39	13.83	14.39	14.83	16.14	9.61	10.06	10.61	11.06	12.36
	6H	13.95	14.32	14.97	15.36	16.66	10.13	10.49	11.15	11.53	12.84
	8H	14.17	14.49	15.20	15.52	16.84	10.31	10.63	11.34	11.66	12.98
	12H	14.30	14.59	15.34	15.61	16.98	10.43	10.71	11.46	11.73	13.10
12H	4H	13.35	13.74	14.36	14.76	16.07	9.62	10.02	10.63	11.03	12.34
	6H	13.93	14.25	14.96	15.28	16.60	10.17	10.50	11.20	11.52	12.85
	8H	14.15	14.43	15.18	15.45	16.82	10.38	10.66	11.41	11.69	13.05