

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: P913293

Luminaire Tested: DFN2DIP-4P4F0-070D050US927-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P913293
REPORT IS A COMBINATION OF REPORTS P900632 AND P897523
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P4F0-070D050US927-RLLONL
Description: 4 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

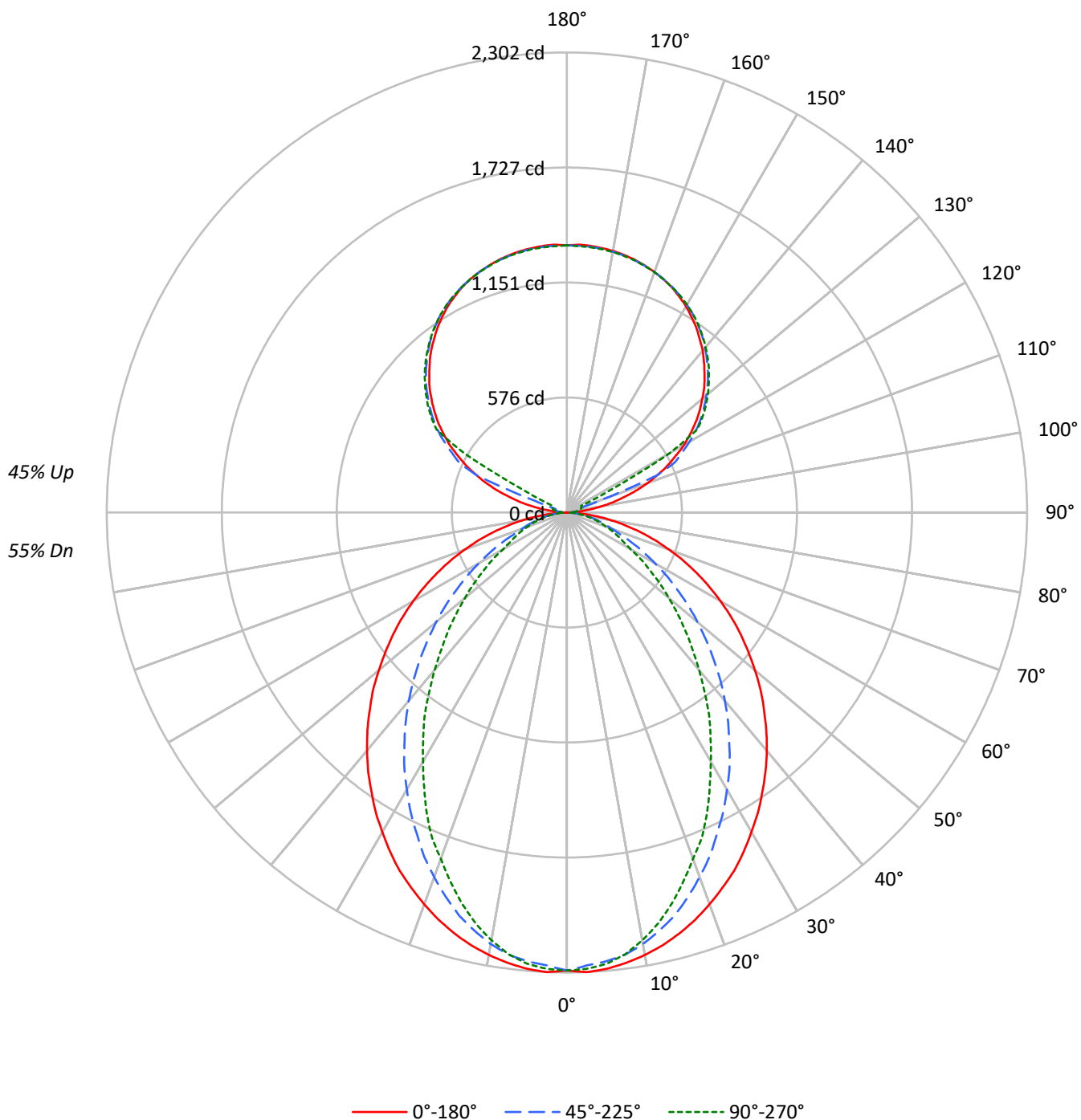
Lumens per Lamp: N/A
Luminaire Lumens: 8634.8 lumens
Efficiency: N/A
Efficacy: 75.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 4.07' x L: 4.07' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 114.5
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9789
Total Harmonic Distortion (THDi): 0.074
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	108	108	108	108	100	100	100	100	86	86	86	73	73	73	60	60	60
1	99	95	91	88	92	89	85	82	76	74	72	65	63	62	54	53	52
2	91	84	78	73	84	78	73	69	67	63	60	57	55	52	48	46	45
3	83	74	67	61	77	69	63	58	60	55	51	51	48	45	43	41	39
4	76	66	58	52	71	62	55	50	54	48	44	46	42	39	39	36	34
5	70	59	51	45	65	55	48	43	48	43	38	42	37	34	35	32	30
6	65	53	45	40	60	50	43	38	44	38	34	38	33	30	32	29	26
7	60	48	40	35	56	45	38	33	40	34	30	35	30	27	30	26	24
8	56	44	36	31	52	41	34	30	36	31	27	32	27	24	27	24	21
9	52	40	33	28	49	38	31	27	34	28	24	29	25	22	25	22	19
10	49	37	30	25	46	35	28	24	31	26	22	27	23	20	24	20	18

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1487	1487	1487
5°	1489	1464	1473
10°	1475	1435	1426
15°	1454	1388	1352
20°	1428	1323	1262
25°	1400	1251	1174
30°	1364	1176	1063
35°	1327	1095	966
40°	1291	1012	854
45°	1248	920	752
50°	1204	826	653
55°	1158	726	558
60°	1105	622	459
65°	1044	516	414
70°	969	416	376
75°	876	368	343
80°	741	311	299
85°	518	210	229

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1248 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	214.8	2.5
10°-20°	589.7	6.8
20°-30°	827.9	9.6
30°-40°	902.4	10.5
40°-50°	829.4	9.6
50°-60°	651.4	7.5
60°-70°	424.0	4.9
70°-80°	218.2	2.5
80°-90°	58.1	0.7
90°-100°	44.1	0.5
100°-110°	164.3	1.9
110°-120°	435.8	5.0
120°-130°	722.8	8.4
130°-140°	767.8	8.9
140°-150°	713.6	8.3
150°-160°	573.7	6.6
160°-170°	369.7	4.3
170°-180°	127.2	1.5
0°-30°	1632.3	18.9
0°-40°	2534.7	29.4
0°-60°	4015.5	46.5
0°-90°	4715.8	54.6
90°-120°	644.2	7.5
90°-150°	2848.4	33.0
90°-180°	3919.0	45.4
0°-180°	8634.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2292	2292	2292	2292	2292	
5°	2292	2282	2254	2273	2267	217
15°	2180	2157	2086	2047	2026	614
25°	1979	1912	1775	1690	1659	910
35°	1705	1599	1417	1286	1240	1067
45°	1394	1255	1037	890	840	1076
55°	1060	898	674	550	510	947
65°	716	548	361	290	284	709
75°	382	236	166	151	149	404
85°	89	46	39	39	39	102
90°	1	12	19	24	26	8
95°	63	31	38	43	42	74
105°	294	323	59	70	74	314
115°	556	573	597	149	79	548
125°	786	799	817	824	827	701
135°	973	989	997	1007	1005	752
145°	1129	1128	1144	1151	1146	706
155°	1243	1234	1246	1252	1244	573
165°	1310	1304	1307	1314	1307	370
175°	1340	1333	1335	1342	1332	127
180°	1337	1337	1337	1337	1337	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2291.9	2291.9	2291.9	2291.9	2291.9
2.5°	2302.2	2291.9	2269.0	2289.9	2285.7
5°	2291.9	2281.5	2254.5	2273.2	2267.0
7.5°	2273.2	2260.8	2231.8	2239.9	2229.6
10°	2248.3	2233.8	2192.4	2186.0	2173.7
12.5°	2217.2	2198.5	2142.5	2130.1	2107.2
15°	2179.8	2157.0	2086.5	2047.2	2026.5
17.5°	2136.3	2103.1	2015.9	1970.3	1937.1
20°	2086.5	2044.9	1941.3	1889.6	1843.8
22.5°	2032.7	1984.9	1864.5	1794.1	1763.1
25°	1978.7	1912.2	1775.4	1690.4	1659.2
27.5°	1914.5	1843.8	1692.4	1595.0	1547.2
30°	1846.0	1767.0	1601.1	1495.5	1439.4
32.5°	1779.6	1684.1	1514.2	1389.6	1337.7
35°	1704.9	1599.1	1416.7	1286.0	1240.2
37.5°	1632.4	1518.1	1325.4	1182.1	1130.4
40°	1555.5	1431.2	1229.9	1082.7	1028.7
42.5°	1476.8	1344.1	1134.6	981.0	929.3
45°	1393.8	1254.7	1037.1	889.7	839.9
47.5°	1315.0	1167.8	943.8	796.4	750.8
50°	1227.9	1080.7	852.5	709.2	665.9
52.5°	1142.7	987.1	765.3	628.4	589.1
55°	1059.8	898.0	674.0	549.7	510.3
57.5°	974.9	808.9	593.3	477.1	443.9
60°	887.7	721.8	508.1	402.5	369.2
62.5°	802.7	636.8	435.5	336.0	319.5
65°	715.6	547.5	360.9	290.5	284.1
67.5°	632.6	464.5	290.5	255.0	248.9
70°	545.5	383.7	240.5	219.8	211.4
72.5°	462.6	309.0	201.1	184.7	180.5
75°	381.6	236.3	165.9	151.4	149.4
77.5°	300.8	167.9	130.7	122.3	118.2
80°	226.0	120.3	99.5	91.3	91.3
82.5°	157.6	81.0	68.4	64.2	64.2
85°	89.1	45.6	39.4	39.4	39.4
87.5°	33.2	16.5	16.5	14.5	14.5
90°	1.0	11.6	19.3	24.2	26.1
92.5°	24.2	20.4	23.2	25.2	26.1
95°	62.8	30.9	37.7	42.6	41.6
97.5°	113.1	33.9	49.3	52.3	53.2
100°	171.3	38.7	55.1	62.8	64.8
102.5°	235.0	233.1	57.1	67.7	70.7
105°	294.1	323.1	59.0	69.6	73.5
107.5°	362.7	386.8	61.0	71.5	75.5
110°	428.6	448.8	169.3	72.6	76.4

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	490.4	507.8	491.4	74.5	77.4
115°	556.2	572.6	596.8	149.0	79.4
117.5°	613.2	632.6	649.1	510.6	257.3
120°	677.1	691.6	709.0	720.6	590.0
122.5°	731.2	746.7	766.1	771.9	772.9
125°	786.3	799.0	817.4	824.1	827.0
127.5°	836.6	850.2	864.8	874.4	875.4
130°	884.1	899.6	910.1	920.8	920.0
132.5°	932.5	945.1	955.6	964.4	963.5
135°	973.1	988.6	997.2	1007.0	1005.0
137.5°	1015.6	1027.2	1037.0	1046.6	1043.8
140°	1057.2	1065.0	1075.5	1084.3	1079.5
142.5°	1092.1	1098.9	1111.4	1119.1	1114.3
145°	1128.9	1127.8	1144.2	1151.0	1146.2
147.5°	1160.7	1157.8	1174.3	1179.1	1175.3
150°	1191.7	1184.9	1200.4	1206.2	1201.3
152.5°	1217.7	1210.1	1224.6	1230.4	1223.6
155°	1242.9	1234.3	1245.9	1251.6	1244.0
157.5°	1263.2	1255.5	1264.2	1271.1	1263.2
160°	1280.7	1274.9	1280.7	1286.4	1279.7
162.5°	1296.1	1290.4	1295.1	1301.9	1293.2
165°	1309.6	1303.9	1306.8	1313.5	1306.8
167.5°	1320.3	1314.5	1317.5	1324.2	1315.5
170°	1329.0	1323.2	1325.2	1331.9	1323.2
172.5°	1334.8	1329.0	1331.0	1337.8	1329.0
175°	1339.7	1332.8	1334.8	1341.6	1331.9
177.5°	1341.6	1334.8	1335.9	1342.6	1333.9
180°	1336.7	1336.7	1336.7	1336.7	1336.7

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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	8.96	9.83	9.89	10.77	11.98	4.93	5.80	5.85	6.73	7.94
	3H	10.65	11.43	11.59	12.37	13.61	6.12	6.90	7.05	7.84	9.07
	4H	11.27	12.00	12.22	12.95	14.19	6.57	7.31	7.52	8.26	9.50
	6H	11.69	12.37	12.65	13.33	14.58	6.90	7.57	7.86	8.53	9.78
	8H	11.82	12.47	12.79	13.44	14.69	6.99	7.63	7.96	8.61	9.86
	12H	11.89	12.50	12.86	13.47	14.74	7.03	7.65	8.01	8.61	9.89
4H	2H	8.99	9.72	9.94	10.67	11.91	5.53	6.26	6.49	7.21	8.45
	3H	10.83	11.44	11.79	12.42	13.67	6.89	7.50	7.85	8.48	9.73
	4H	11.53	12.08	12.50	13.06	14.34	7.44	7.99	8.41	8.97	10.25
	6H	12.05	12.53	13.03	13.52	14.80	7.86	8.34	8.85	9.34	10.61
	8H	12.23	12.67	13.22	13.67	14.96	7.99	8.44	8.98	9.43	10.72
	12H	12.33	12.73	13.33	13.74	15.03	8.06	8.46	9.06	9.47	10.76
8H	4H	11.50	11.94	12.48	12.93	14.23	7.72	8.17	8.71	9.16	10.45
	6H	12.07	12.44	13.08	13.47	14.76	8.24	8.61	9.26	9.65	10.94
	8H	12.29	12.62	13.31	13.64	14.94	8.44	8.76	9.46	9.78	11.09
	12H	12.44	12.72	13.46	13.74	15.09	8.56	8.85	9.58	9.86	11.21
12H	4H	11.45	11.85	12.46	12.86	14.16	7.73	8.13	8.74	9.14	10.44
	6H	12.05	12.37	13.07	13.39	14.70	8.30	8.62	9.32	9.64	10.95
	8H	12.27	12.56	13.30	13.57	14.93	8.51	8.80	9.53	9.81	11.16

END OF REPORT