

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: P913081

Luminaire Tested: DFN2DIP-4P2F0-040D030US927-RLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P913081
REPORT IS A COMBINATION OF REPORTS P900542 AND P897455
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P2F0-040D030US927-RLLONL
Description: 2 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

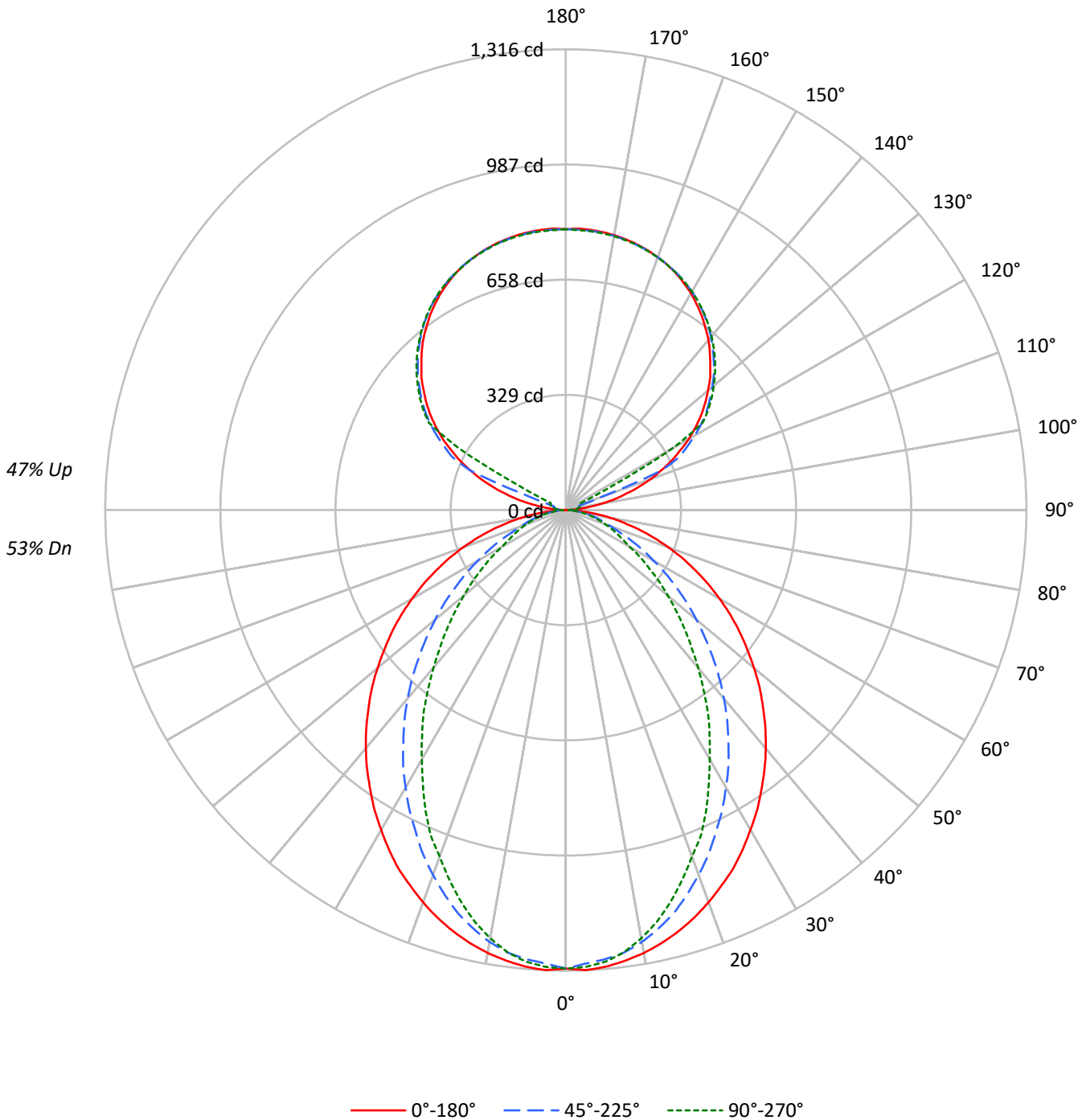
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5046.2 lumens
Efficiency: N/A
Efficacy: 79.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.07' x L: 2.07' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 63.8
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.983
Total Harmonic Distortion (THDi): 0.073
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	59	59	59	53
1	99	95	91	88	92	88	85	82	76	73	71	64	62	61	53	52	51	53	52	51	46
2	91	83	78	73	84	78	73	68	67	63	60	57	54	52	47	45	44	47	45	44	39
3	83	74	67	61	77	69	63	58	59	55	51	51	47	44	42	40	38	42	40	38	34
4	76	66	58	52	70	61	55	49	53	48	44	45	42	38	38	35	33	38	35	33	30
5	70	59	51	45	65	55	48	43	48	42	38	41	37	34	35	32	29	35	32	29	26
6	65	53	45	39	60	50	43	37	43	38	34	37	33	30	32	28	26	32	28	26	23
7	60	48	40	35	56	45	38	33	39	34	30	34	30	26	29	26	23	29	26	23	21
8	56	44	36	31	52	41	34	29	36	31	27	31	27	24	27	24	21	27	24	21	19
9	52	40	33	28	48	38	31	26	33	28	24	29	25	22	25	22	19	25	22	19	17
10	49	37	30	25	45	35	28	24	31	25	22	27	23	20	23	20	17	23	20	17	16

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3279	3279	3279
5°	3278	3219	3243
10°	3239	3148	3132
15°	3188	3035	2964
20°	3122	2884	2759
25°	3055	2717	2562
30°	2967	2545	2314
35°	2881	2362	2096
40°	2793	2173	1847
45°	2691	1965	1622
50°	2585	1755	1402
55°	2473	1532	1191
60°	2344	1300	975
65°	2196	1066	871
70°	2015	847	781
75°	1787	731	700
80°	1462	591	591
85°	943	363	417

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 2691 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	122.7	2.4
10°-20°	336.9	6.7
20°-30°	473.1	9.4
30°-40°	515.7	10.2
40°-50°	473.9	9.4
50°-60°	372.2	7.4
60°-70°	242.3	4.8
70°-80°	124.7	2.5
80°-90°	33.3	0.7
90°-100°	26.5	0.5
100°-110°	98.6	2.0
110°-120°	261.5	5.2
120°-130°	433.7	8.6
130°-140°	460.7	9.1
140°-150°	428.1	8.5
150°-160°	344.2	6.8
160°-170°	221.8	4.4
170°-180°	76.3	1.5
0°-30°	932.7	18.5
0°-40°	1448.4	28.7
0°-60°	2294.6	45.5
0°-90°	2694.8	53.4
90°-120°	386.5	7.7
90°-150°	1709.0	33.9
90°-180°	2351.0	46.6
0°-180°	5046.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1310	1310	1310	1310	1310	
5°	1310	1304	1288	1299	1296	124
15°	1246	1233	1192	1170	1158	351
25°	1131	1093	1014	966	948	520
35°	974	914	810	735	709	610
45°	796	717	593	508	480	615
55°	606	513	385	314	292	541
65°	409	313	206	166	162	405
75°	218	135	95	86	85	231
85°	51	26	22	22	22	58
90°	1	7	12	15	16	5
95°	38	18	23	26	25	45
105°	176	194	35	42	44	188
115°	334	344	358	89	48	329
125°	472	479	490	494	496	421
135°	584	593	598	604	603	451
145°	677	677	687	691	688	424
155°	746	741	748	751	746	344
165°	786	782	784	788	784	222
175°	804	800	801	805	799	76
180°	802	802	802	802	802	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1309.6	1309.6	1309.6	1309.6	1309.6
2.5°	1315.6	1309.6	1296.6	1308.5	1306.1
5°	1309.6	1303.7	1288.2	1298.9	1295.5
7.5°	1298.9	1291.9	1275.3	1279.9	1274.1
10°	1284.8	1276.4	1252.8	1249.1	1242.1
12.5°	1267.0	1256.3	1224.2	1217.2	1204.1
15°	1245.6	1232.6	1192.3	1169.8	1158.0
17.5°	1220.8	1201.7	1151.9	1125.9	1106.9
20°	1192.3	1168.5	1109.3	1079.7	1053.6
22.5°	1161.5	1134.2	1065.4	1025.2	1007.5
25°	1130.7	1092.7	1014.5	966.0	948.1
27.5°	1094.0	1053.6	967.1	911.4	884.1
30°	1054.9	1009.7	914.9	854.5	822.5
32.5°	1016.9	962.3	865.2	794.1	764.4
35°	974.3	913.8	809.5	734.8	708.7
37.5°	932.8	867.5	757.3	675.5	645.9
40°	888.9	817.8	702.8	618.7	587.9
42.5°	843.8	768.0	648.3	560.5	531.0
45°	796.5	717.0	592.6	508.4	480.0
47.5°	751.5	667.3	539.3	455.1	429.0
50°	701.6	617.5	487.1	405.3	380.5
52.5°	653.0	564.1	437.4	359.1	336.6
55°	605.6	513.2	385.2	314.1	291.6
57.5°	557.1	462.2	339.0	272.6	253.7
60°	507.2	412.4	290.3	230.0	211.0
62.5°	458.8	363.9	248.8	192.0	182.6
65°	408.9	312.8	206.2	166.0	162.3
67.5°	361.6	265.5	166.0	145.8	142.2
70°	311.7	219.3	137.4	125.6	120.8
72.5°	264.4	176.6	114.9	105.5	103.1
75°	218.0	135.1	94.8	86.5	85.4
77.5°	171.9	95.9	74.7	69.9	67.5
80°	129.1	68.8	56.8	52.2	52.2
82.5°	90.1	46.3	39.1	36.7	36.7
85°	50.9	26.1	22.5	22.5	22.5
87.5°	19.0	9.4	9.4	8.3	8.3
90°	0.6	7.0	11.6	14.6	15.6
92.5°	14.6	12.2	13.9	15.1	15.6
95°	37.7	18.5	22.6	25.6	25.0
97.5°	67.9	20.4	29.5	31.4	31.9
100°	102.7	23.2	33.1	37.7	38.9
102.5°	141.0	139.9	34.2	40.6	42.4
105°	176.4	193.8	35.4	41.7	44.1
107.5°	217.6	232.1	36.6	42.9	45.3
110°	257.1	269.3	101.6	43.6	45.9



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	294.3	304.7	294.8	44.7	46.4
115°	333.7	343.6	358.1	89.4	47.6
117.5°	368.0	379.5	389.4	306.4	154.4
120°	406.2	414.9	425.4	432.4	354.0
122.5°	438.7	448.1	459.7	463.1	463.7
125°	471.8	479.3	490.4	494.5	496.2
127.5°	502.0	510.1	518.9	524.7	525.2
130°	530.4	539.8	546.1	552.5	552.0
132.5°	559.4	567.0	573.4	578.6	578.1
135°	583.8	593.2	598.3	604.2	603.0
137.5°	609.3	616.3	622.2	628.0	626.2
140°	634.3	639.0	645.3	650.5	647.7
142.5°	655.3	659.3	666.9	671.5	668.6
145°	677.3	676.7	686.6	690.6	687.7
147.5°	696.4	694.7	704.6	707.4	705.1
150°	715.0	711.0	720.3	723.7	720.8
152.5°	730.6	726.0	734.7	738.2	734.2
155°	745.8	740.6	747.5	751.0	746.4
157.5°	758.0	753.4	758.6	762.6	758.0
160°	768.4	764.9	768.4	771.9	767.8
162.5°	777.7	774.2	777.1	781.2	775.9
165°	785.8	782.4	784.1	788.1	784.1
167.5°	792.2	788.7	790.4	794.6	789.3
170°	797.4	793.9	795.1	799.2	793.9
172.5°	800.9	797.4	798.6	802.6	797.4
175°	803.7	799.7	800.9	804.9	799.2
177.5°	804.9	800.9	801.5	805.6	800.3
180°	802.1	802.1	802.1	802.1	802.1



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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	11.45	12.31	12.39	13.26	14.48	7.41	8.27	8.35	9.22	10.44
	3H	13.11	13.88	14.05	14.83	16.08	8.58	9.35	9.53	10.31	11.55
	4H	13.70	14.43	14.66	15.39	16.65	9.02	9.74	9.98	10.71	11.96
	6H	14.11	14.78	15.08	15.74	17.01	9.32	9.99	10.29	10.96	12.23
	8H	14.22	14.86	15.20	15.84	17.11	9.40	10.04	10.38	11.02	12.29
	12H	14.28	14.88	15.26	15.86	17.15	9.44	10.04	10.42	11.02	12.31
4H	2H	11.47	12.19	12.43	13.15	14.41	8.00	8.72	8.96	9.68	10.94
	3H	13.27	13.88	14.25	14.87	16.14	9.33	9.93	10.30	10.92	12.19
	4H	13.95	14.50	14.93	15.48	16.78	9.86	10.41	10.84	11.39	12.69
	6H	14.44	14.92	15.44	15.92	17.22	10.26	10.73	11.25	11.74	13.03
	8H	14.61	15.05	15.60	16.05	17.36	10.37	10.82	11.37	11.82	13.12
	12H	14.69	15.09	15.71	16.11	17.42	10.43	10.83	11.44	11.84	13.16
8H	4H	13.91	14.36	14.91	15.36	16.66	10.13	10.57	11.12	11.57	12.88
	6H	14.46	14.82	15.48	15.86	17.17	10.62	10.98	11.64	12.03	13.33
	8H	14.66	14.98	15.69	16.01	17.33	10.79	11.11	11.82	12.14	13.47
	12H	14.78	15.06	15.81	16.09	17.46	10.90	11.18	11.93	12.20	13.57
12H	4H	13.87	14.26	14.88	15.28	16.59	10.13	10.53	11.15	11.54	12.86
	6H	14.43	14.75	15.46	15.78	17.10	10.66	10.98	11.69	12.01	13.34
	8H	14.63	14.92	15.67	15.94	17.31	10.85	11.14	11.89	12.16	13.53