

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: P919259

Luminaire Tested: DFN2DIP-PN2F0-040D020US935-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P919259
REPORT IS A COMBINATION OF REPORTS P900986 AND P897905
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN2F0-040D020US935-RLONL
Description: 2 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

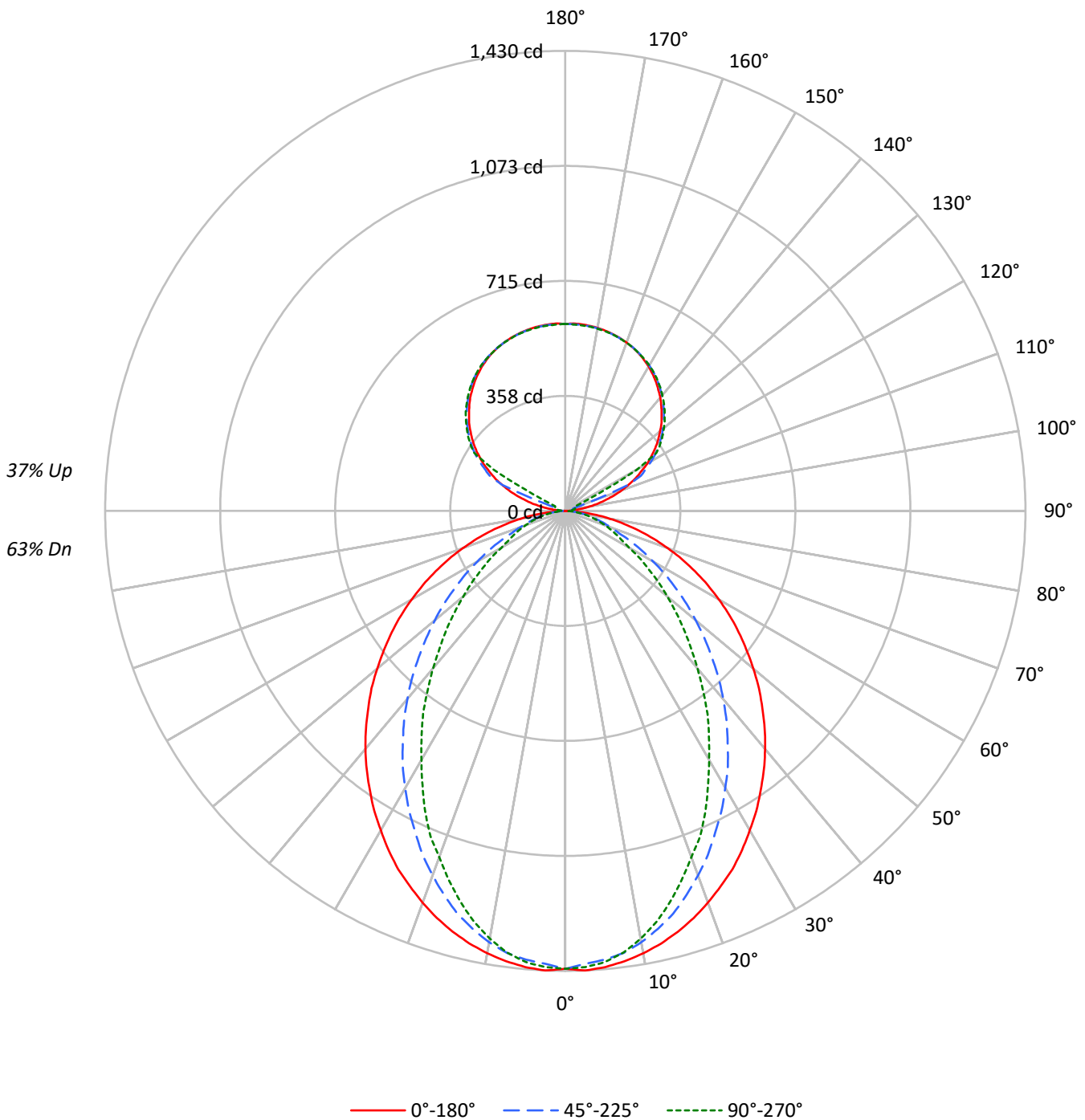
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4632.1 lumens
Efficiency: N/A
Efficacy: 83.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.17' x L: 2.29' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 55.2
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9613
Total Harmonic Distortion (THDi): 0.083
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P919259
CATALOG NUMBER: DFN2DIP-PN2F0-040D020US935-RLLONL

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	110	110	110	110	103	103	103	103	91	91	91	79	79	79	68	68	68	68	68	68	63
1	101	97	93	90	95	91	88	85	80	78	76	71	69	67	61	60	59	59	59	59	54
2	93	86	80	75	87	81	75	71	71	67	64	63	60	57	55	53	51	51	51	51	47
3	85	76	69	63	80	72	65	60	63	58	54	56	52	49	49	46	44	44	44	44	40
4	78	68	60	54	73	64	57	52	57	51	47	50	46	43	44	41	38	38	38	38	35
5	72	61	53	47	67	57	50	45	51	45	41	46	41	37	40	37	34	34	34	34	31
6	67	55	47	41	62	52	45	39	46	41	36	41	37	33	37	33	30	30	30	30	27
7	62	50	42	36	58	47	40	35	42	36	32	38	33	30	34	30	27	27	27	27	25
8	58	45	38	32	54	43	36	31	39	33	29	35	30	27	31	27	24	24	24	24	22
9	54	42	34	29	51	40	33	28	36	30	26	32	27	24	29	25	22	22	22	22	20
10	50	38	31	26	47	37	30	25	33	28	24	30	25	22	27	23	20	20	20	20	18

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3083	3083	3083
5°	3083	3027	3049
10°	3048	2961	2945
15°	3000	2857	2788
20°	2940	2716	2596
25°	2878	2559	2411
30°	2797	2399	2178
35°	2717	2228	1973
40°	2635	2051	1739
45°	2540	1855	1528
50°	2442	1658	1321
55°	2339	1449	1123
60°	2220	1232	920
65°	2082	1011	823
70°	1915	806	738
75°	1704	698	663
80°	1402	566	561
85°	918	353	399

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 2540 cd/sqm



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CATALOG NUMBER: DFN2DIP-PN2F0-040D020US935-RLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	133.4	2.9
10°-20°	366.2	7.9
20°-30°	514.2	11.1
30°-40°	560.5	12.1
40°-50°	515.1	11.1
50°-60°	404.5	8.7
60°-70°	263.3	5.7
70°-80°	135.6	2.9
80°-90°	35.6	0.8
90°-100°	19.2	0.4
100°-110°	71.4	1.5
110°-120°	189.5	4.1
120°-130°	314.2	6.8
130°-140°	333.8	7.2
140°-150°	310.2	6.7
150°-160°	249.4	5.4
160°-170°	160.7	3.5
170°-180°	55.3	1.2
0°-30°	1013.8	21.9
0°-40°	1574.2	34.0
0°-60°	2493.9	53.8
0°-90°	2928.4	63.2
90°-120°	280.0	6.0
90°-150°	1238.3	26.7
90°-180°	1704.0	36.8
0°-180°	4632.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1423	1423	1423	1423	1423	
5°	1423	1417	1400	1412	1408	135
15°	1354	1340	1296	1271	1259	382
25°	1229	1188	1103	1050	1030	565
35°	1059	993	880	799	770	663
45°	866	779	644	553	522	668
55°	658	558	419	341	317	588
65°	444	340	224	180	176	441
75°	237	147	103	94	93	251
85°	55	28	24	24	24	64
90°	0	5	8	10	11	4
95°	27	13	16	18	18	32
105°	128	140	26	30	32	137
115°	242	249	260	65	34	238
125°	342	347	355	358	360	305
135°	423	430	434	438	437	327
145°	491	490	498	500	498	307
155°	540	537	542	544	541	249
165°	569	567	568	571	568	161
175°	582	580	580	583	579	55
180°	581	581	581	581	581	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1423.4	1423.4	1423.4	1423.4	1423.4
2.5°	1429.9	1423.4	1409.2	1422.2	1419.5
5°	1423.4	1416.9	1400.2	1411.8	1408.0
7.5°	1411.8	1404.1	1386.1	1391.1	1384.7
10°	1396.4	1387.3	1361.6	1357.6	1350.0
12.5°	1377.1	1365.5	1330.6	1322.9	1308.7
15°	1353.8	1339.6	1295.9	1271.4	1258.6
17.5°	1326.8	1306.1	1252.0	1223.7	1203.1
20°	1295.9	1270.1	1205.7	1173.5	1145.1
22.5°	1262.4	1232.8	1158.0	1114.2	1095.0
25°	1228.9	1187.7	1102.6	1049.9	1030.4
27.5°	1189.0	1145.1	1051.1	990.6	960.9
30°	1146.5	1097.4	994.4	928.8	894.0
32.5°	1105.3	1045.9	940.4	863.1	830.8
35°	1058.9	993.2	879.9	798.7	770.2
37.5°	1013.8	942.9	823.1	734.2	702.1
40°	966.1	888.9	763.9	672.4	638.9
42.5°	917.1	834.7	704.6	609.2	577.1
45°	865.6	779.3	644.1	552.6	521.7
47.5°	816.7	725.3	586.2	494.6	466.3
50°	762.6	671.1	529.4	440.5	413.5
52.5°	709.7	613.1	475.4	390.3	365.8
55°	658.2	557.8	418.6	341.4	316.9
57.5°	605.5	502.4	368.4	296.3	275.7
60°	551.3	448.2	315.6	249.9	229.4
62.5°	498.6	395.5	270.4	208.7	198.5
65°	444.4	340.0	224.1	180.4	176.4
67.5°	393.0	288.5	180.4	158.4	154.5
70°	338.8	238.3	149.4	136.6	131.3
72.5°	287.3	191.9	124.9	114.7	112.1
75°	236.9	146.8	103.1	94.0	92.8
77.5°	186.8	104.3	81.2	76.0	73.4
80°	140.3	74.7	61.7	56.7	56.7
82.5°	97.9	50.3	42.5	39.9	39.9
85°	55.4	28.3	24.5	24.5	24.5
87.5°	20.7	10.2	10.2	9.0	9.0
90°	0.4	5.1	8.4	10.5	11.4
92.5°	10.5	8.9	10.1	10.9	11.4
95°	27.3	13.4	16.4	18.5	18.1
97.5°	49.2	14.7	21.4	22.7	23.2
100°	74.5	16.8	23.9	27.3	28.2
102.5°	102.2	101.3	24.8	29.4	30.7
105°	127.9	140.4	25.7	30.2	31.9
107.5°	157.7	168.2	26.5	31.1	32.8
110°	186.3	195.1	73.6	31.6	33.2



TEST NUMBER: P919259

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	213.2	220.8	213.6	32.4	33.7
115°	241.8	248.9	259.5	64.7	34.5
117.5°	266.6	275.0	282.1	222.1	111.8
120°	294.4	300.7	308.2	313.3	256.5
122.5°	317.9	324.6	333.0	335.5	336.0
125°	341.9	347.3	355.3	358.3	359.6
127.5°	363.8	369.6	376.0	380.1	380.6
130°	384.3	391.1	395.7	400.4	399.9
132.5°	405.4	410.9	415.4	419.2	418.9
135°	423.1	429.8	433.5	437.8	437.0
137.5°	441.5	446.6	450.8	455.0	453.7
140°	459.6	463.0	467.6	471.4	469.3
142.5°	474.8	477.8	483.2	486.5	484.4
145°	490.8	490.3	497.5	500.4	498.3
147.5°	504.6	503.3	510.5	512.6	510.9
150°	518.1	515.1	521.9	524.3	522.3
152.5°	529.4	526.1	532.4	534.9	531.9
155°	540.4	536.6	541.7	544.2	540.8
157.5°	549.2	545.9	549.7	552.6	549.2
160°	556.8	554.2	556.8	559.3	556.4
162.5°	563.4	560.9	563.1	566.0	562.2
165°	569.4	566.9	568.1	571.1	568.1
167.5°	574.0	571.4	572.7	575.7	571.9
170°	577.8	575.2	576.1	579.0	575.2
172.5°	580.3	577.8	578.7	581.6	577.8
175°	582.4	579.5	580.3	583.2	579.0
177.5°	583.2	580.3	580.7	583.7	579.9
180°	581.2	581.2	581.2	581.2	581.2



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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	12.09	13.05	12.94	13.90	14.98	8.06	9.01	8.90	9.87	10.94
	3H	13.76	14.61	14.62	15.48	16.58	9.24	10.09	10.10	10.96	12.06
	4H	14.36	15.16	15.23	16.04	17.15	9.69	10.49	10.56	11.36	12.48
	6H	14.77	15.51	15.66	16.39	17.52	10.00	10.74	10.88	11.62	12.74
	8H	14.89	15.60	15.78	16.50	17.62	10.09	10.79	10.98	11.69	12.81
	12H	14.95	15.62	15.85	16.51	17.66	10.13	10.79	11.02	11.69	12.84
4H	2H	12.12	12.93	13.00	13.80	14.91	8.66	9.46	9.54	10.34	11.45
	3H	13.94	14.61	14.83	15.51	16.64	10.00	10.67	10.89	11.58	12.70
	4H	14.62	15.23	15.52	16.13	17.28	10.54	11.15	11.44	12.05	13.20
	6H	15.12	15.65	16.04	16.57	17.73	10.95	11.47	11.86	12.40	13.55
	8H	15.29	15.78	16.20	16.70	17.86	11.07	11.56	11.99	12.48	13.65
	12H	15.38	15.82	16.31	16.76	17.93	11.13	11.57	12.07	12.51	13.68
8H	4H	14.59	15.08	15.51	16.00	17.17	10.82	11.31	11.73	12.23	13.39
	6H	15.14	15.54	16.08	16.51	17.67	11.32	11.72	12.26	12.68	13.85
	8H	15.34	15.70	16.30	16.66	17.84	11.50	11.85	12.45	12.81	13.99
	12H	15.47	15.79	16.43	16.74	17.97	11.61	11.92	12.56	12.87	14.10
12H	4H	14.55	14.99	15.48	15.93	17.10	10.82	11.26	11.76	12.20	13.38
	6H	15.12	15.47	16.07	16.43	17.61	11.36	11.72	12.31	12.67	13.86
	8H	15.33	15.64	16.28	16.59	17.82	11.56	11.88	12.52	12.82	14.06