

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: P913803

Luminaire Tested: DFN2DIP-PN2F0-040D020US927-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P913803
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-PN2F0-040D020US927-RLLONL
Description: 2 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

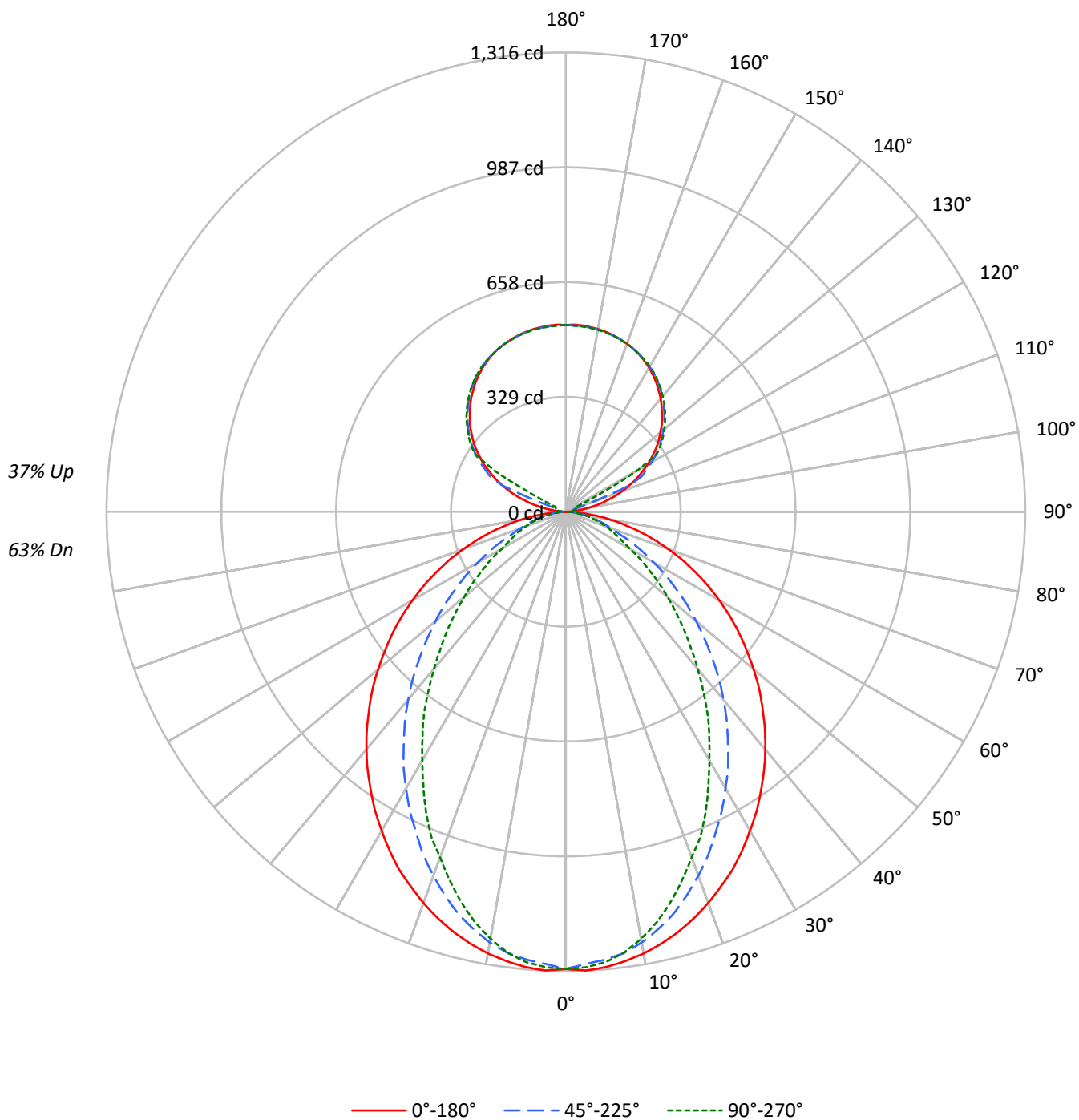
Lumens per Lamp: N/A
Luminaire Lumens: 4261.9 lumens
Efficiency: N/A
Efficacy: 77.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.17' x L: 2.29' x H: 0.1')
CIE Type: Semi-Direct

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: P913803

CATALOG NUMBER: DFN2DIP-PN2F0-040D020US927-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
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10
RCR																	
0	110	110	110	110	103	103	103	103	91	91	91	79	79	79	68	68	68
1	101	97	93	90	95	91	88	85	80	78	76	71	69	67	61	60	59
2	93	86	80	75	87	81	75	71	71	67	64	63	60	57	55	52	51
3	85	76	69	63	80	72	65	60	63	58	54	56	52	49	49	46	44
4	78	68	60	54	73	64	57	52	57	51	47	50	46	43	44	41	38
5	72	61	53	47	67	57	50	45	51	45	41	46	41	37	40	37	34
6	67	55	47	41	62	52	45	39	46	41	36	41	37	33	37	33	30
7	62	50	42	36	58	47	40	35	42	36	32	38	33	30	34	30	27
8	58	45	38	32	54	43	36	31	39	33	29	35	30	27	31	27	24
9	54	42	34	29	51	40	33	28	36	30	26	32	27	24	29	25	22
10	50	38	31	26	47	37	30	25	33	28	24	30	25	22	27	23	20

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2836	2836	2836
5°	2836	2785	2805
10°	2804	2725	2710
15°	2761	2629	2565
20°	2705	2499	2388
25°	2648	2355	2218
30°	2573	2207	2004
35°	2500	2049	1815
40°	2424	1887	1600
45°	2337	1707	1406
50°	2247	1526	1215
55°	2152	1334	1033
60°	2042	1133	847
65°	1916	930	757
70°	1762	741	679
75°	1568	641	610
80°	1290	521	516
85°	843	324	366

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2337 cd/sqm

TEST NUMBER: P913803

CATALOG NUMBER: DFN2DIP-PN2F0-040D020US927-RLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	122.7	2.9
10°-20°	336.9	7.9
20°-30°	473.1	11.1
30°-40°	515.7	12.1
40°-50°	473.9	11.1
50°-60°	372.2	8.7
60°-70°	242.3	5.7
70°-80°	124.7	2.9
80°-90°	32.8	0.8
90°-100°	17.6	0.4
100°-110°	65.7	1.5
110°-120°	174.3	4.1
120°-130°	289.1	6.8
130°-140°	307.1	7.2
140°-150°	285.4	6.7
150°-160°	229.5	5.4
160°-170°	147.9	3.5
170°-180°	50.9	1.2
0°-30°	932.7	21.9
0°-40°	1448.4	34.0
0°-60°	2294.6	53.8
0°-90°	2694.3	63.2
90°-120°	257.7	6.0
90°-150°	1139.3	26.7
90°-180°	1568.0	36.8
0°-180°	4261.9	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°	0	5	8	10	10	4
95°	25	12	15	17	17	30
105°	118	129	24	28	29	126
115°	222	229	239	60	32	219
125°	315	320	327	330	331	281
135°	389	396	399	403	402	301
145°	452	451	458	460	458	282
155°	497	494	498	501	498	229
165°	524	522	523	526	523	148
175°	536	533	534	537	533	51
180°	535	535	535	535	535	

TEST NUMBER: P913803

CATALOG NUMBER: DFN2DIP-PN2F0-040D020US927-RLLONL

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°	0.4	4.7	7.7	9.7	10.5
92.5°	9.7	8.2	9.3	10.1	10.5
95°	25.1	12.4	15.1	17.0	16.6
97.5°	45.2	13.5	19.7	20.9	21.3
100°	68.5	15.4	22.0	25.1	25.9
102.5°	94.0	93.2	22.8	27.1	28.3
105°	117.6	129.2	23.6	27.8	29.4
107.5°	145.1	154.7	24.4	28.6	30.2
110°	171.4	179.5	67.7	29.1	30.6



TEST NUMBER: P913803

CATALOG NUMBER: DFN2DIP-PN2F0-040D020US927-RLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	196.1	203.1	196.5	29.8	31.0
115°	222.4	229.0	238.8	59.6	31.8
117.5°	245.3	253.0	259.6	204.3	102.9
120°	270.8	276.6	283.6	288.3	236.0
122.5°	292.5	298.7	306.4	308.7	309.2
125°	314.6	319.6	326.9	329.6	330.8
127.5°	334.7	340.1	345.9	349.7	350.1
130°	353.6	359.8	364.1	368.4	368.0
132.5°	373.0	378.0	382.2	385.7	385.4
135°	389.3	395.5	398.9	402.8	402.0
137.5°	406.2	410.9	414.8	418.7	417.5
140°	422.9	426.0	430.2	433.7	431.8
142.5°	436.8	439.6	444.6	447.7	445.7
145°	451.5	451.1	457.7	460.4	458.5
147.5°	464.3	463.1	469.7	471.6	470.1
150°	476.7	474.0	480.1	482.4	480.5
152.5°	487.1	484.0	489.8	492.2	489.4
155°	497.2	493.7	498.4	500.7	497.6
157.5°	505.3	502.2	505.7	508.4	505.3
160°	512.3	509.9	512.3	514.6	511.9
162.5°	518.4	516.1	518.1	520.8	517.3
165°	523.9	521.6	522.7	525.5	522.7
167.5°	528.1	525.8	527.0	529.7	526.2
170°	531.6	529.3	530.0	532.7	529.3
172.5°	533.9	531.6	532.4	535.1	531.6
175°	535.8	533.1	533.9	536.6	532.7
177.5°	536.6	533.9	534.3	537.0	533.5
180°	534.7	534.7	534.7	534.7	534.7

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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	11.80	12.76	12.65	13.61	14.69	7.77	8.72	8.62	9.58	10.65
	3H	13.47	14.32	14.33	15.19	16.29	8.95	9.80	9.81	10.67	11.77
	4H	14.07	14.87	14.94	15.75	16.86	9.40	10.20	10.27	11.08	12.19
	6H	14.48	15.22	15.37	16.10	17.23	9.71	10.45	10.59	11.33	12.45
	8H	14.60	15.31	15.50	16.21	17.33	9.80	10.50	10.69	11.40	12.52
	12H	14.66	15.33	15.56	16.22	17.37	9.84	10.50	10.73	11.40	12.55
4H	2H	11.83	12.64	12.71	13.51	14.62	8.37	9.17	9.25	10.05	11.16
	3H	13.65	14.32	14.54	15.22	16.35	9.71	10.38	10.60	11.29	12.41
	4H	14.33	14.94	15.23	15.84	16.99	10.25	10.86	11.15	11.76	12.91
	6H	14.83	15.36	15.75	16.28	17.44	10.66	11.18	11.57	12.11	13.26
	8H	15.00	15.49	15.92	16.41	17.58	10.78	11.27	11.70	12.19	13.36
	12H	15.09	15.53	16.02	16.47	17.64	10.84	11.28	11.78	12.22	13.39
8H	4H	14.30	14.79	15.22	15.71	16.88	10.53	11.02	11.44	11.94	13.10
	6H	14.85	15.25	15.79	16.22	17.38	11.03	11.43	11.97	12.39	13.56
	8H	15.06	15.41	16.01	16.37	17.55	11.21	11.56	12.16	12.52	13.70
	12H	15.19	15.50	16.14	16.45	17.68	11.32	11.63	12.27	12.58	13.81
12H	4H	14.26	14.70	15.20	15.64	16.81	10.54	10.97	11.47	11.91	13.09
	6H	14.83	15.18	15.78	16.14	17.32	11.07	11.43	12.02	12.38	13.57
	8H	15.04	15.35	15.99	16.30	17.53	11.27	11.59	12.23	12.53	13.77