

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: P919225

Luminaire Tested: DFN2DIP-PN2F0-020D040US935-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P919225
REPORT IS A COMBINATION OF REPORTS P901001 AND P897905
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN2F0-020D040US935-FLLONL
Description: 2 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

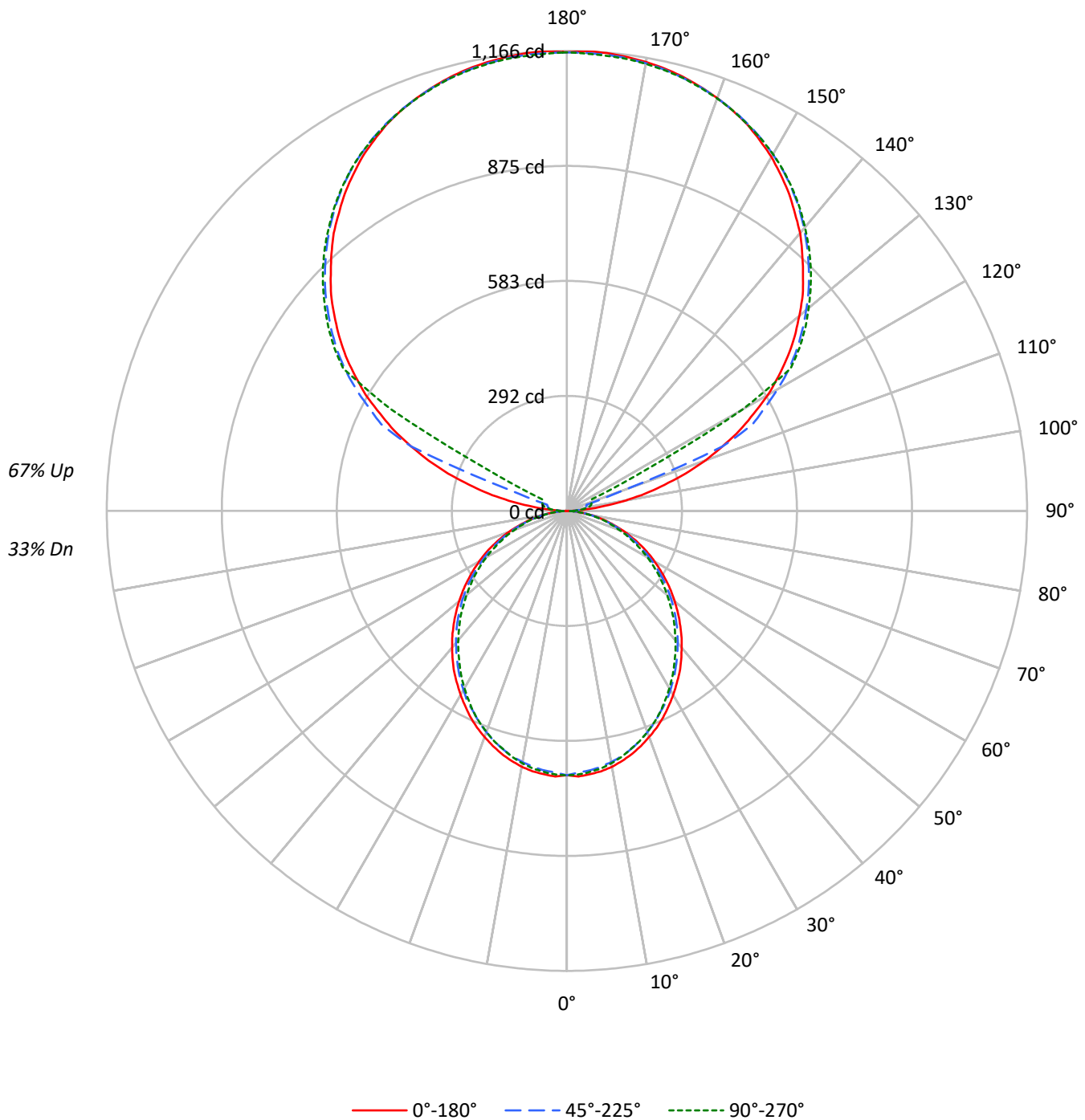
Lumens per Lamp: N/A
Luminaire Lumens: 5114.3 lumens
Efficiency: N/A
Efficacy: 108.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.17' x L: 2.29' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 47.3
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.099
Total Harmonic Distortion (THDi): 0.979
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	103	103	103	103	93	93	93	93	74	74	74	57	57	57	41	41	41
1	94	90	86	83	85	81	78	75	65	63	61	50	48	47	36	35	34
2	86	78	72	67	77	71	66	62	57	53	50	44	41	39	32	30	29
3	78	69	62	56	70	62	56	51	50	46	42	39	36	33	28	26	25
4	71	61	53	47	64	55	49	43	44	40	36	34	31	28	25	23	21
5	65	54	46	40	59	49	42	37	40	35	31	31	27	25	23	20	18
6	60	48	41	35	54	44	37	32	36	31	27	28	24	21	20	18	16
7	56	44	36	30	50	40	33	28	32	27	23	25	22	19	19	16	14
8	51	39	32	27	46	36	29	25	29	24	21	23	19	17	17	15	13
9	48	36	29	24	43	33	26	22	27	22	19	21	18	15	16	13	12
10	45	33	26	21	40	30	24	20	25	20	17	19	16	14	15	12	11

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1451	1451	1451
5°	1451	1428	1438
10°	1437	1406	1417
15°	1414	1379	1384
20°	1383	1344	1351
25°	1352	1303	1313
30°	1314	1264	1265
35°	1278	1218	1215
40°	1234	1173	1166
45°	1189	1126	1117
50°	1141	1078	1060
55°	1090	1022	1007
60°	1032	956	946
65°	969	887	875
70°	889	802	797
75°	778	702	723
80°	645	573	586
85°	436	362	368

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1189 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	63.1	1.2
10°-20°	177.4	3.5
20°-30°	260.8	5.1
30°-40°	302.9	5.9
40°-50°	302.5	5.9
50°-60°	263.8	5.2
60°-70°	195.0	3.8
70°-80°	110.3	2.2
80°-90°	31.1	0.6
90°-100°	38.3	0.7
100°-110°	142.9	2.8
110°-120°	378.9	7.4
120°-130°	628.5	12.3
130°-140°	667.6	13.1
140°-150°	620.4	12.1
150°-160°	498.8	9.8
160°-170°	321.4	6.3
170°-180°	110.6	2.2
0°-30°	501.3	9.8
0°-40°	804.1	15.7
0°-60°	1370.4	26.8
0°-90°	1706.8	33.4
90°-120°	560.1	11.0
90°-150°	2476.6	48.4
90°-180°	3407.0	66.6
0°-180°	5114.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	670	670	670	670	670	
5°	670	668	660	666	664	64
15°	638	634	626	628	625	180
25°	577	572	561	562	561	266
35°	498	492	481	477	474	311
45°	405	401	391	384	381	313
55°	307	303	295	287	284	274
65°	207	203	197	191	188	205
75°	108	107	104	100	101	116
85°	26	26	25	23	23	29
90°	1	10	17	21	23	5
95°	55	27	33	37	36	65
105°	256	281	51	60	64	273
115°	484	498	519	130	69	476
125°	684	695	711	717	719	610
135°	846	860	867	876	874	654
145°	982	981	995	1001	997	614
155°	1081	1073	1083	1088	1082	498
165°	1139	1134	1136	1142	1136	322
175°	1165	1159	1161	1166	1158	111
180°	1162	1162	1162	1162	1162	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	670.0	670.0	670.0	670.0	670.0
2.5°	673.9	670.7	663.6	670.0	668.8
5°	670.0	667.5	660.4	665.6	664.3
7.5°	665.6	661.7	654.6	659.8	658.5
10°	658.5	654.0	646.3	651.3	649.5
12.5°	648.8	645.0	637.2	640.4	639.1
15°	637.8	634.0	625.6	628.2	625.0
17.5°	624.3	620.5	612.1	615.3	612.1
20°	609.5	605.6	596.6	598.6	596.0
22.5°	594.7	588.9	580.5	580.5	579.2
25°	577.3	572.1	561.2	562.4	561.2
27.5°	557.9	553.4	545.1	543.2	539.9
30°	538.6	533.5	523.8	521.9	519.3
32.5°	518.0	514.2	503.9	500.0	497.4
35°	498.1	491.6	481.3	477.4	474.2
37.5°	475.5	469.7	459.3	454.9	451.6
40°	452.3	447.1	436.8	431.1	428.4
42.5°	429.7	424.6	414.3	407.9	404.0
45°	405.3	400.8	391.1	384.0	381.4
47.5°	381.4	376.9	366.6	359.5	355.7
50°	356.3	353.1	344.1	335.0	331.8
52.5°	331.8	327.3	318.9	311.9	307.4
55°	306.7	302.8	295.1	287.4	284.1
57.5°	281.5	278.4	269.9	262.3	259.6
60°	256.4	253.9	244.9	237.7	235.8
62.5°	232.0	227.4	221.0	214.6	212.0
65°	206.8	202.9	196.6	190.7	187.5
67.5°	181.1	177.8	172.0	167.6	165.0
70°	157.2	154.6	148.8	144.3	141.8
72.5°	132.8	130.2	126.9	122.4	120.5
75°	108.2	107.0	103.7	99.9	101.2
77.5°	86.4	83.8	82.4	80.5	78.6
80°	64.5	63.8	62.5	60.5	59.2
82.5°	43.8	43.8	43.2	40.6	40.6
85°	26.3	25.7	25.1	23.2	22.6
87.5°	11.6	10.3	9.0	7.1	6.5
90°	0.8	10.1	16.8	21.1	22.6
92.5°	21.1	17.7	20.1	21.9	22.6
95°	54.6	26.9	32.7	37.0	36.2
97.5°	98.4	29.4	42.9	45.5	46.2
100°	148.9	33.7	48.0	54.6	56.3
102.5°	204.3	202.8	49.6	58.8	61.4
105°	255.6	280.9	51.3	60.5	63.9
107.5°	315.4	336.4	53.0	62.3	65.6
110°	372.6	390.2	147.2	63.1	66.4

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	426.5	441.5	427.2	64.7	67.3
115°	483.5	497.8	518.9	129.5	69.1
117.5°	533.2	550.0	564.4	444.0	223.7
120°	588.8	601.3	616.5	626.6	513.1
122.5°	635.8	649.3	666.2	671.1	672.0
125°	683.7	694.7	710.7	716.6	719.1
127.5°	727.5	739.3	751.9	760.3	761.1
130°	768.7	782.2	791.3	800.6	799.9
132.5°	810.7	821.7	830.9	838.5	837.8
135°	846.1	859.6	867.1	875.5	873.9
137.5°	883.0	893.1	901.6	910.0	907.5
140°	919.2	926.0	935.2	942.8	938.6
142.5°	949.6	955.4	966.4	973.0	968.9
145°	981.5	980.7	994.9	1000.8	996.6
147.5°	1009.2	1006.7	1021.0	1025.2	1021.9
150°	1036.1	1030.3	1043.8	1048.8	1044.6
152.5°	1058.9	1052.1	1064.7	1069.8	1063.9
155°	1080.7	1073.2	1083.3	1088.3	1081.6
157.5°	1098.4	1091.7	1099.3	1105.2	1098.4
160°	1113.5	1108.4	1113.5	1118.5	1112.7
162.5°	1127.0	1122.0	1126.2	1132.0	1124.5
165°	1138.8	1133.8	1136.3	1142.1	1136.3
167.5°	1148.1	1142.9	1145.6	1151.4	1143.8
170°	1155.6	1150.6	1152.2	1158.1	1150.6
172.5°	1160.6	1155.6	1157.4	1163.2	1155.6
175°	1164.8	1158.9	1160.6	1166.5	1158.1
177.5°	1166.5	1160.6	1161.5	1167.4	1159.9
180°	1162.3	1162.3	1162.3	1162.3	1162.3

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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	6.68	7.41	7.76	8.49	9.98	6.24	6.97	7.33	8.06	9.55
	3H	8.31	8.96	9.40	10.06	11.56	7.83	8.48	8.92	9.58	11.08
	4H	8.87	9.49	9.98	10.59	12.11	8.39	9.01	9.50	10.11	11.62
	6H	9.25	9.82	10.37	10.92	12.45	8.77	9.34	9.88	10.44	11.96
	8H	9.35	9.89	10.47	11.00	12.52	8.86	9.40	9.98	10.52	12.04
	12H	9.38	9.90	10.51	11.01	12.55	8.89	9.40	10.01	10.51	12.06
4H	2H	7.11	7.73	8.23	8.83	10.34	6.76	7.38	7.88	8.48	9.99
	3H	8.94	9.46	10.06	10.58	12.11	8.54	9.06	9.66	10.18	11.71
	4H	9.63	10.11	10.76	11.22	12.77	9.22	9.70	10.35	10.81	12.36
	6H	10.12	10.53	11.25	11.67	13.20	9.70	10.11	10.83	11.25	12.78
	8H	10.26	10.64	11.39	11.77	13.32	9.84	10.22	10.97	11.34	12.90
	12H	10.32	10.66	11.46	11.80	13.36	9.88	10.23	11.03	11.37	12.93
8H	4H	9.81	10.19	10.94	11.32	12.87	9.44	9.82	10.57	10.95	12.50
	6H	10.41	10.73	11.56	11.89	13.45	10.04	10.35	11.19	11.52	13.07
	8H	10.62	10.89	11.77	12.04	13.61	10.24	10.51	11.39	11.66	13.23
	12H	10.73	10.97	11.89	12.12	13.72	10.33	10.57	11.49	11.72	13.33
12H	4H	9.79	10.13	10.93	11.27	12.83	9.43	9.77	10.57	10.91	12.47
	6H	10.44	10.71	11.59	11.86	13.43	10.07	10.35	11.23	11.50	13.07
	8H	10.65	10.90	11.82	12.04	13.65	10.28	10.53	11.45	11.67	13.28