

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: P913195

Luminaire Tested: DFN2DIP-4P4F0-030D050US927-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P913195
REPORT IS A COMBINATION OF REPORTS P900623 AND P897523
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P4F0-030D050US927-FLLONL
Description: 4 foot, 90deg - 4way Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

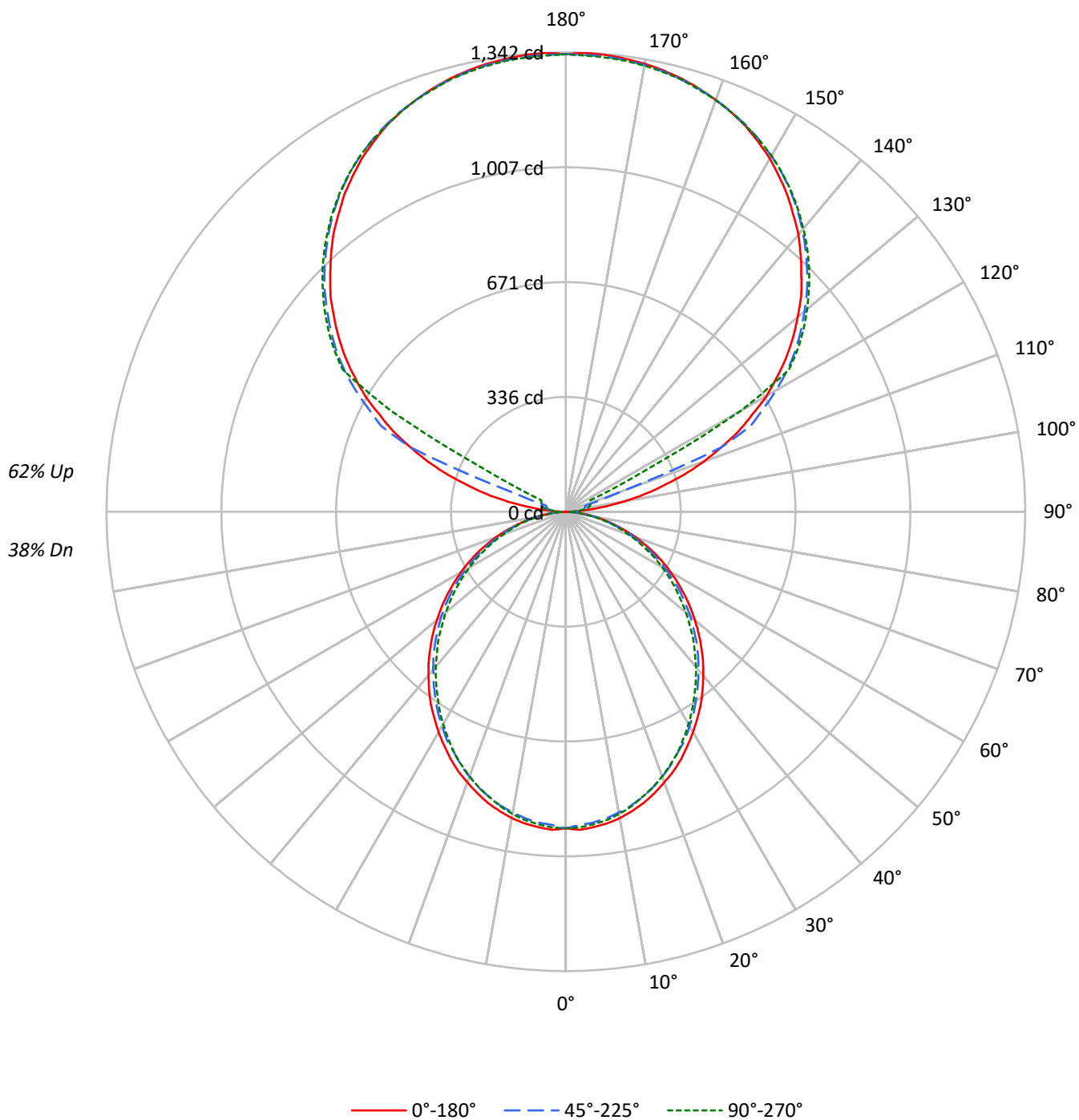
Lumens per Lamp: N/A
Luminaire Lumens: 6274.1 lumens
Efficiency: N/A
Efficacy: 92.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 4.07' x L: 4.07' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 67.9
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

TEST NUMBER: P913195

CATALOG NUMBER: DFN2DIP-4P4F0-030D050US927-FLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P913195

CATALOG NUMBER: DFN2DIP-4P4F0-030D050US927-FLONL

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	104	104	104	104	94	94	94	94	76	76	76	60	60	60	45	45	45
1	95	91	87	83	86	82	79	76	67	65	63	53	51	50	39	39	38
2	86	79	73	68	78	72	67	63	59	55	52	46	44	42	35	33	32
3	79	70	62	57	71	63	57	52	52	47	44	41	38	35	31	29	27
4	72	62	54	48	65	56	49	44	46	41	37	36	33	30	27	25	23
5	66	55	47	41	60	50	43	38	41	36	32	33	29	26	25	22	20
6	61	49	41	35	55	45	38	33	37	32	28	29	26	23	22	20	18
7	56	44	36	31	51	40	34	29	33	28	24	27	23	20	20	18	16
8	52	40	32	27	47	37	30	25	30	25	22	24	21	18	19	16	14
9	48	36	29	24	44	33	27	23	28	23	19	22	19	16	17	15	13
10	45	33	26	22	41	31	24	20	26	21	17	21	17	14	16	13	12

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	600	600	600
5°	601	592	596
10°	596	584	588
15°	587	575	575
20°	576	561	563
25°	564	546	548
30°	549	531	529
35°	535	514	510
40°	518	496	491
45°	501	479	471
50°	482	460	449
55°	463	439	429
60°	440	414	405
65°	416	387	377
70°	386	356	348
75°	343	318	321
80°	292	269	268
85°	212	185	181

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 690 cd/sqm

TEST NUMBER: P913195

CATALOG NUMBER: DFN2DIP-4P4F0-030D050US927-FLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	87.0	1.4
10°-20°	244.9	3.9
20°-30°	359.9	5.7
30°-40°	418.0	6.7
40°-50°	417.5	6.7
50°-60°	364.0	5.8
60°-70°	269.1	4.3
70°-80°	152.3	2.4
80°-90°	42.5	0.7
90°-100°	44.1	0.7
100°-110°	164.3	2.6
110°-120°	435.8	6.9
120°-130°	722.8	11.5
130°-140°	767.8	12.2
140°-150°	713.6	11.4
150°-160°	573.7	9.1
160°-170°	369.7	5.9
170°-180°	127.2	2.0
0°-30°	691.8	11.0
0°-40°	1109.8	17.7
0°-60°	1891.3	30.1
0°-90°	2355.1	37.5
90°-120°	644.2	10.3
90°-150°	2848.4	45.4
90°-180°	3919.0	62.5
0°-180°	6274.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	925	925	925	925	925	
5°	925	921	911	918	917	88
15°	880	875	863	867	862	248
25°	797	790	774	776	774	367
35°	687	678	664	659	654	429
45°	559	553	540	530	526	432
55°	423	418	407	397	392	378
65°	286	280	271	263	259	282
75°	149	148	143	138	140	159
85°	36	36	35	32	31	41
90°	1	12	19	24	26	6
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	

TEST NUMBER: P913195

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	924.7	924.7	924.7	924.7	924.7
2.5°	930.1	925.7	915.8	924.7	923.0
5°	924.7	921.2	911.4	918.5	916.8
7.5°	918.5	913.2	903.4	910.6	908.8
10°	908.8	902.5	891.9	899.0	896.4
12.5°	895.4	890.1	879.5	883.8	882.1
15°	880.3	875.0	863.4	867.0	862.5
17.5°	861.6	856.3	844.7	849.1	844.7
20°	841.1	835.8	823.4	826.0	822.5
22.5°	820.8	812.8	801.1	801.1	799.3
25°	796.7	789.6	774.5	776.3	774.5
27.5°	770.0	763.7	752.3	749.6	745.2
30°	743.4	736.3	722.9	720.3	716.7
32.5°	714.9	709.6	695.4	690.0	686.4
35°	687.4	678.5	664.2	658.9	654.4
37.5°	656.2	648.2	634.0	627.7	623.3
40°	624.2	617.1	602.8	594.9	591.4
42.5°	593.1	586.0	571.8	562.8	557.5
45°	559.4	553.1	539.7	530.0	526.4
47.5°	526.4	520.2	506.0	496.1	490.8
50°	491.7	487.3	474.8	462.4	458.0
52.5°	458.0	451.7	440.2	430.4	424.1
55°	423.3	418.0	407.3	396.6	392.2
57.5°	388.6	384.1	372.6	361.9	358.3
60°	353.9	350.4	337.9	328.1	325.5
62.5°	320.1	313.9	305.0	296.1	292.6
65°	285.5	280.1	271.2	263.2	258.8
67.5°	249.9	245.4	237.4	231.2	227.7
70°	217.0	213.4	205.4	199.2	195.7
72.5°	183.2	179.6	175.2	169.0	166.4
75°	149.3	147.7	143.1	137.8	139.7
77.5°	119.1	115.6	113.8	111.1	108.5
80°	89.0	88.0	86.2	83.6	81.8
82.5°	60.4	60.4	59.7	56.0	56.0
85°	36.4	35.6	34.7	32.0	31.1
87.5°	16.0	14.3	12.4	9.8	8.9
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

TEST NUMBER: P913195

CATALOG NUMBER: DFN2DIP-4P4F0-030D050US927-FLLONL

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	4.24	5.00	5.30	6.06	7.50	3.80	4.56	4.85	5.62	7.05
	3H	5.90	6.58	6.96	7.65	9.11	5.41	6.09	6.48	7.16	8.62
	4H	6.48	7.13	7.56	8.20	9.67	5.99	6.64	7.07	7.71	9.17
	6H	6.88	7.48	7.97	8.55	10.03	6.38	6.98	7.47	8.05	9.53
	8H	6.99	7.55	8.08	8.64	10.11	6.49	7.05	7.58	8.14	9.61
	12H	7.03	7.57	8.13	8.66	10.15	6.53	7.06	7.62	8.15	9.64
4H	2H	4.69	5.33	5.77	6.41	7.87	4.34	4.98	5.42	6.05	7.52
	3H	6.55	7.09	7.64	8.19	9.67	6.15	6.68	7.24	7.78	9.26
	4H	7.27	7.76	8.36	8.85	10.35	6.84	7.34	7.94	8.43	9.92
	6H	7.78	8.21	8.89	9.32	10.81	7.35	7.77	8.45	8.89	10.38
	8H	7.93	8.33	9.04	9.43	10.94	7.49	7.89	8.60	8.99	10.50
	12H	8.00	8.36	9.12	9.48	10.99	7.55	7.91	8.68	9.03	10.54
8H	4H	7.46	7.85	8.56	8.96	10.46	7.08	7.48	8.19	8.58	10.09
	6H	8.09	8.42	9.22	9.56	11.07	7.71	8.03	8.83	9.18	10.68
	8H	8.31	8.60	9.45	9.73	11.25	7.92	8.21	9.05	9.33	10.86
	12H	8.44	8.70	9.58	9.82	11.38	8.03	8.28	9.17	9.41	10.97
12H	4H	7.44	7.80	8.56	8.91	10.42	7.07	7.43	8.19	8.55	10.06
	6H	8.12	8.41	9.25	9.53	11.06	7.75	8.03	8.88	9.16	10.69
	8H	8.36	8.61	9.50	9.74	11.30	7.98	8.23	9.12	9.36	10.92

END OF REPORT