

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: P913131

Luminaire Tested: DFN2DIP-4P3F0-040D030US927-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P913131
REPORT IS A COMBINATION OF REPORTS P900563 AND P897473
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P3F0-040D030US927-FLLONL
Description: 3 foot, 90deg - 4way Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

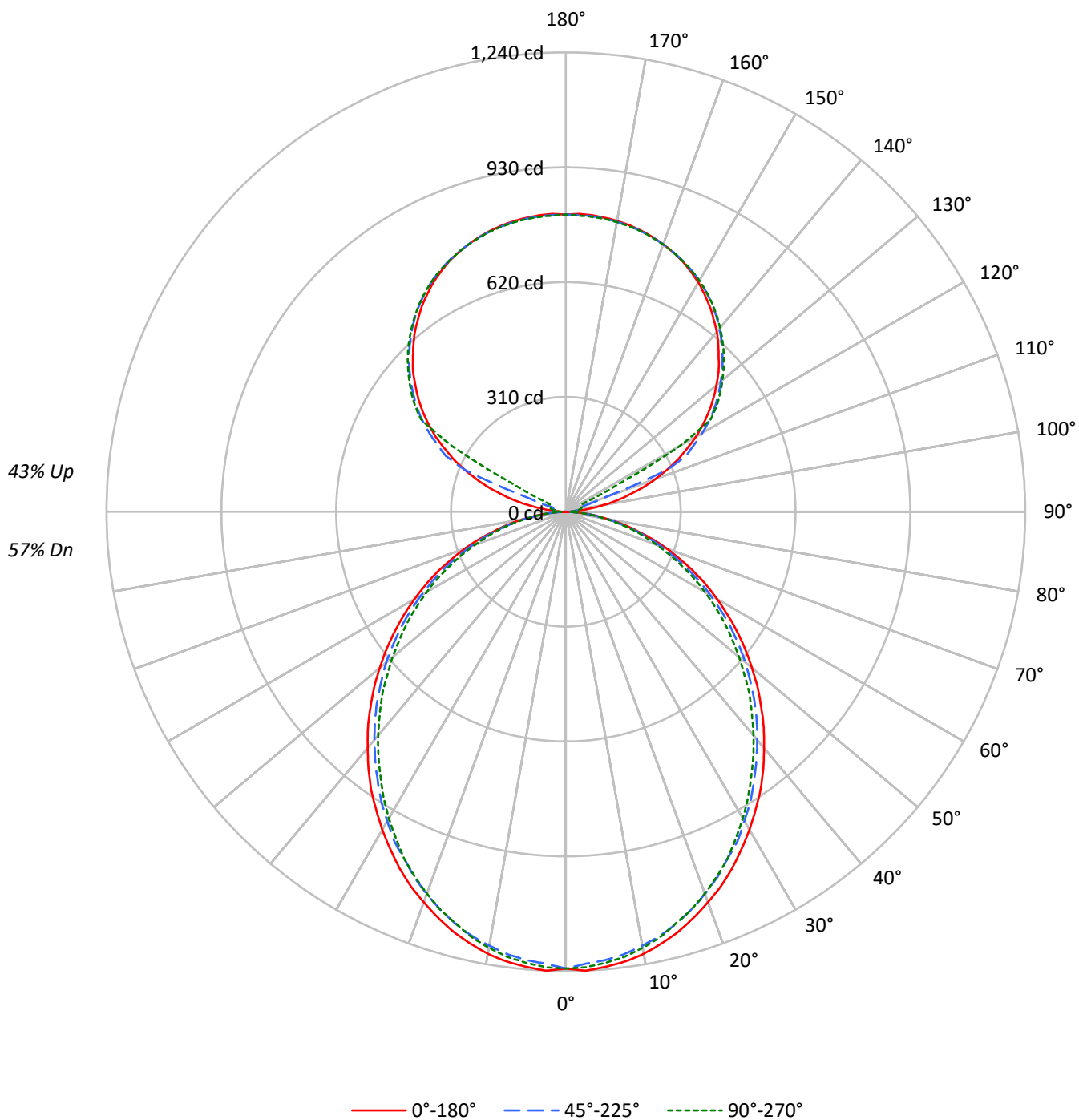
Lumens per Lamp: N/A
Luminaire Lumens: 5489.8 lumens
Efficiency: N/A
Efficacy: 91.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.07' x L: 3.07' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 59.9
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9789
Total Harmonic Distortion (THDi): 0.074
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	109	109	109	109	101	101	101	101	87	87	87	74	74	74	63	63	63
1	99	95	91	88	92	89	85	82	77	74	72	66	64	62	55	54	53
2	91	83	77	72	84	77	72	67	67	63	59	58	55	52	49	47	45
3	83	73	66	60	77	68	62	56	59	54	50	51	47	44	43	40	38
4	76	65	57	50	70	61	53	48	53	47	43	45	41	38	39	35	33
5	69	58	49	43	64	54	47	41	47	41	37	41	36	33	35	31	29
6	64	52	44	38	59	49	41	36	43	37	32	37	32	29	32	28	25
7	59	47	39	33	55	44	37	31	39	33	28	34	29	25	29	25	22
8	55	43	35	29	51	40	33	28	35	29	25	31	26	23	27	23	20
9	51	39	31	26	48	37	30	25	32	27	23	28	24	20	25	21	18
10	48	36	28	24	45	34	27	22	30	24	20	26	22	18	23	19	17

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1405	1405	1405
5°	1406	1385	1394
10°	1394	1365	1375
15°	1373	1342	1345
20°	1344	1310	1315
25°	1316	1271	1279
30°	1280	1236	1234
35°	1247	1194	1187
40°	1205	1151	1142
45°	1164	1109	1096
50°	1119	1064	1042
55°	1072	1012	993
60°	1018	951	936
65°	959	887	870
70°	885	810	798
75°	782	717	731
80°	657	598	604
85°	463	397	396

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 1164 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	116.0	2.1
10°-20°	326.5	5.9
20°-30°	479.8	8.7
30°-40°	557.3	10.2
40°-50°	556.6	10.1
50°-60°	485.3	8.8
60°-70°	358.8	6.5
70°-80°	203.0	3.7
80°-90°	55.0	1.0
90°-100°	26.5	0.5
100°-110°	98.6	1.8
110°-120°	261.5	4.8
120°-130°	433.7	7.9
130°-140°	460.7	8.4
140°-150°	428.1	7.8
150°-160°	344.2	6.3
160°-170°	221.8	4.0
170°-180°	76.3	1.4
0°-30°	922.4	16.8
0°-40°	1479.7	27.0
0°-60°	2521.7	45.9
0°-90°	3138.4	57.2
90°-120°	386.5	7.0
90°-150°	1709.0	31.1
90°-180°	2351.0	42.8
0°-180°	5489.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1233	1233	1233	1233	1233	
5°	1233	1228	1215	1225	1222	117
15°	1174	1167	1151	1156	1150	331
25°	1062	1053	1033	1035	1033	489
35°	916	905	886	878	873	572
45°	746	738	720	707	702	576
55°	564	557	543	529	523	505
65°	381	373	362	351	345	376
75°	199	197	191	184	186	213
85°	49	48	46	43	42	54
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°	1233.0	1233.0	1233.0	1233.0	1233.0
2.5°	1240.2	1234.2	1221.1	1233.0	1230.7
5°	1233.0	1228.3	1215.2	1224.6	1222.4
7.5°	1224.6	1217.6	1204.5	1214.1	1211.7
10°	1211.7	1203.4	1189.2	1198.6	1195.1
12.5°	1193.8	1186.8	1172.6	1178.5	1176.1
15°	1173.7	1166.6	1151.2	1156.0	1150.1
17.5°	1148.8	1141.8	1126.3	1132.2	1126.3
20°	1121.5	1114.4	1097.9	1101.4	1096.8
22.5°	1094.3	1083.6	1068.2	1068.2	1065.8
25°	1062.2	1052.8	1032.7	1035.0	1032.7
27.5°	1026.7	1018.3	1003.1	999.5	993.6
30°	991.2	981.7	963.9	960.4	955.6
32.5°	953.2	946.2	927.2	920.0	915.2
35°	916.5	904.7	885.7	878.5	872.6
37.5°	875.0	864.3	845.3	837.0	831.1
40°	832.3	822.8	803.7	793.2	788.5
42.5°	790.8	781.2	762.4	750.4	743.4
45°	745.8	737.5	719.6	706.7	701.9
47.5°	701.9	693.6	674.6	661.6	654.5
50°	655.6	649.7	633.1	616.5	610.5
52.5°	610.5	602.3	586.9	573.9	565.5
55°	564.4	557.2	543.0	528.8	522.9
57.5°	518.1	512.2	496.7	482.5	477.8
60°	471.8	467.1	450.6	437.5	434.0
62.5°	426.8	418.5	406.7	394.8	390.1
65°	380.6	373.4	361.6	350.9	345.1
67.5°	333.2	327.2	316.6	308.3	303.6
70°	289.3	284.6	273.9	265.5	260.9
72.5°	244.3	239.5	233.6	225.3	221.7
75°	199.2	196.9	190.8	183.8	186.2
77.5°	158.8	154.1	151.7	148.1	144.7
80°	118.6	117.3	114.9	111.5	109.1
82.5°	80.6	80.6	79.5	74.7	74.7
85°	48.6	47.5	46.3	42.6	41.5
87.5°	21.4	19.0	16.6	13.1	11.8
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	9.06	9.99	9.95	10.90	12.06	8.61	9.54	9.51	10.46	11.62
	3H	10.72	11.55	11.62	12.47	13.66	10.23	11.06	11.13	11.98	13.17
	4H	11.31	12.10	12.23	13.02	14.22	10.81	11.60	11.73	12.53	13.73
	6H	11.71	12.43	12.64	13.37	14.58	11.21	11.93	12.14	12.87	14.08
	8H	11.81	12.50	12.75	13.45	14.67	11.31	12.00	12.25	12.95	14.16
	12H	11.86	12.52	12.80	13.46	14.70	11.35	12.01	12.30	12.96	14.19
4H	2H	9.52	10.31	10.45	11.24	12.44	9.17	9.96	10.09	10.88	12.08
	3H	11.39	12.05	12.33	13.01	14.22	10.98	11.64	11.92	12.60	13.81
	4H	12.10	12.70	13.05	13.66	14.90	11.68	12.28	12.63	13.23	14.47
	6H	12.62	13.14	13.58	14.11	15.35	12.19	12.70	13.14	13.68	14.92
	8H	12.77	13.25	13.73	14.22	15.47	12.33	12.81	13.29	13.78	15.04
	12H	12.84	13.28	13.82	14.27	15.52	12.39	12.83	13.37	13.82	15.07
8H	4H	12.30	12.79	13.26	13.76	15.01	11.92	12.41	12.89	13.38	14.63
	6H	12.93	13.33	13.92	14.34	15.59	12.54	12.95	13.53	13.96	15.21
	8H	13.15	13.50	14.14	14.50	15.77	12.75	13.11	13.75	14.11	15.38
	12H	13.28	13.59	14.28	14.58	15.90	12.87	13.18	13.87	14.17	15.49
12H	4H	12.29	12.73	13.27	13.71	14.97	11.92	12.36	12.90	13.35	14.60
	6H	12.96	13.31	13.95	14.31	15.58	12.59	12.94	13.58	13.94	15.21
	8H	13.20	13.51	14.20	14.50	15.82	12.82	13.13	13.82	14.12	15.44