

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: P917141

Luminaire Tested: DFN2DIP-SQ2F0-040D050US930-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P917141
REPORT IS A COMBINATION OF REPORTS P901317 AND P898215
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ2F0-040D050US930-FLLONL
Description: 2 foot, Square Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

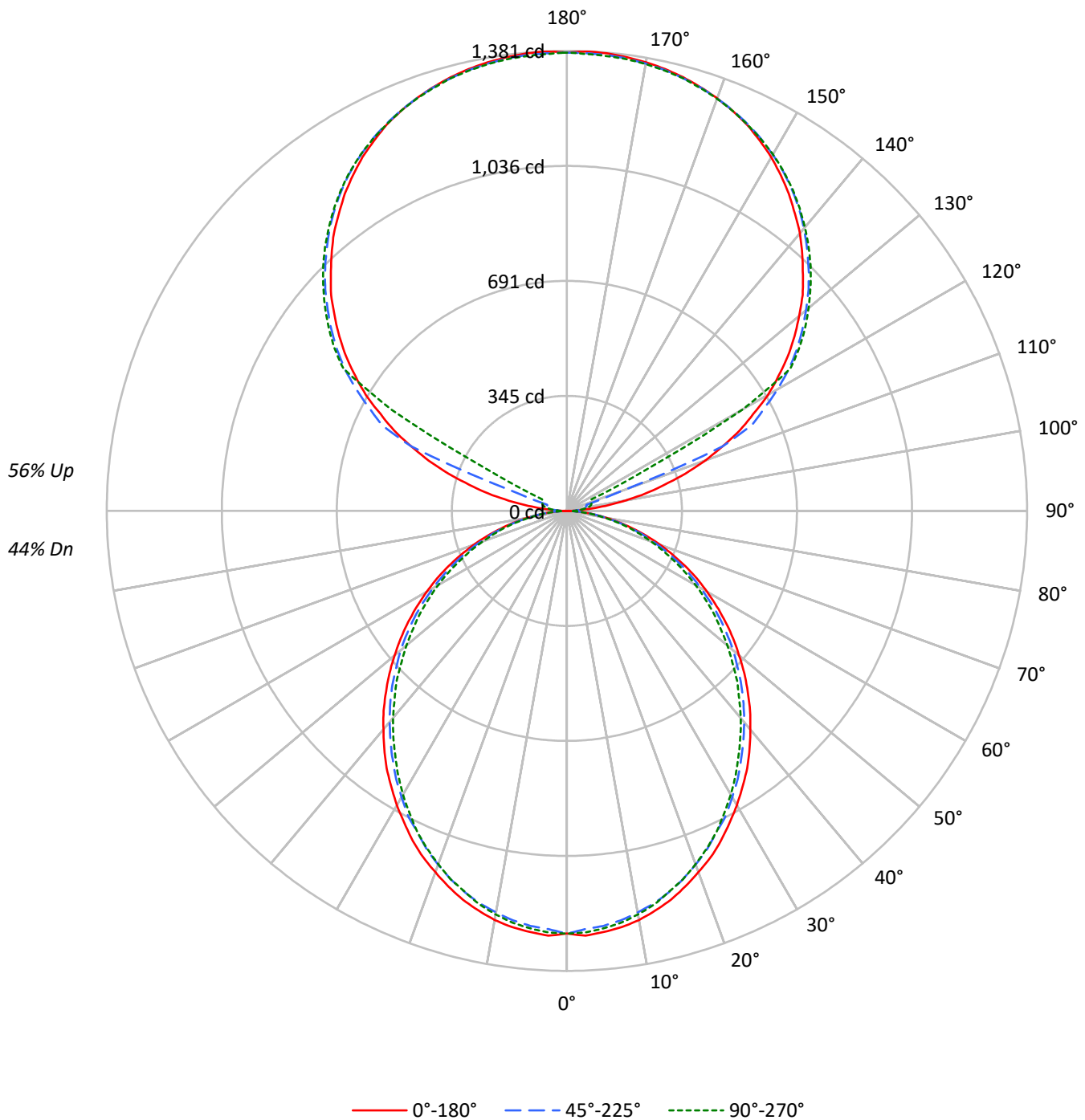
Lumens per Lamp: N/A
Luminaire Lumens: 7264.3 lumens
Efficiency: N/A
Efficacy: 102.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.21' x L: 2.21' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 71.2
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9952
Total Harmonic Distortion (THDi): 0.069
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					0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10
RCR																				
0	106	106	106	106	97	97	97	97	80	80	80	65	65	65	51	51	51			44
1	97	92	88	85	88	85	81	78	70	68	66	57	56	54	45	44	43			37
2	88	81	74	69	80	74	69	64	62	58	55	50	48	45	40	38	36			31
3	80	71	64	58	73	65	59	54	54	50	46	44	41	38	35	33	31			27
4	73	63	55	49	67	58	51	46	48	43	39	40	36	33	31	29	27			23
5	67	56	48	42	61	51	44	39	43	38	34	35	31	28	28	25	23			20
6	62	50	42	36	57	46	39	34	39	33	29	32	28	25	26	23	20			17
7	57	45	37	32	52	42	35	30	35	30	26	29	25	22	23	20	18			15
8	53	41	33	28	49	38	31	26	32	27	23	27	23	20	22	19	16			14
9	49	37	30	25	45	35	28	23	29	24	20	25	20	18	20	17	15			12
10	46	34	27	22	42	32	25	21	27	22	18	23	19	16	18	15	13			11

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2790	2790	2790
5°	2790	2745	2766
10°	2763	2702	2725
15°	2717	2652	2662
20°	2657	2584	2599
25°	2598	2504	2525
30°	2524	2429	2434
35°	2454	2342	2337
40°	2369	2254	2244
45°	2283	2165	2149
50°	2190	2071	2040
55°	2092	1963	1938
60°	1981	1836	1821
65°	1858	1703	1684
70°	1703	1541	1536
75°	1490	1347	1393
80°	1231	1099	1132
85°	832	694	710

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 2283 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	119.4	1.6
10°-20°	336.0	4.6
20°-30°	493.8	6.8
30°-40°	573.6	7.9
40°-50°	572.9	7.9
50°-60°	499.5	6.9
60°-70°	369.3	5.1
70°-80°	208.9	2.9
80°-90°	57.6	0.8
90°-100°	45.4	0.6
100°-110°	169.1	2.3
110°-120°	448.5	6.2
120°-130°	743.9	10.2
130°-140°	790.2	10.9
140°-150°	734.4	10.1
150°-160°	590.4	8.1
160°-170°	380.5	5.2
170°-180°	130.9	1.8
0°-30°	949.3	13.1
0°-40°	1522.9	21.0
0°-60°	2595.3	35.7
0°-90°	3231.0	44.5
90°-120°	663.0	9.1
90°-150°	2931.5	40.4
90°-180°	4033.0	55.5
0°-180°	7264.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1269	1269	1269	1269	1269	
5°	1269	1264	1251	1260	1258	120
15°	1208	1201	1185	1190	1184	340
25°	1093	1084	1063	1065	1063	503
35°	943	931	912	904	898	589
45°	768	759	741	727	722	592
55°	581	574	559	544	538	519
65°	392	384	372	361	355	387
75°	205	203	196	189	192	219
85°	50	49	48	44	43	56
90°	1	12	20	25	27	7
95°	65	32	39	44	43	77
105°	303	333	61	72	76	323
115°	572	589	614	153	82	564
125°	809	822	841	848	851	722
135°	1002	1018	1026	1036	1034	774
145°	1162	1161	1178	1185	1180	727
155°	1279	1270	1282	1288	1280	589
165°	1348	1342	1345	1352	1345	381
175°	1379	1372	1374	1381	1371	131
180°	1376	1376	1376	1376	1376	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1268.9	1268.9	1268.9	1268.9	1268.9
2.5°	1276.3	1270.2	1256.8	1268.9	1266.6
5°	1268.9	1264.1	1250.7	1260.4	1258.1
7.5°	1260.4	1253.1	1239.7	1249.5	1247.1
10°	1247.1	1238.5	1223.9	1233.6	1230.0
12.5°	1228.7	1221.4	1206.8	1212.9	1210.4
15°	1207.9	1200.7	1184.8	1189.7	1183.6
17.5°	1182.3	1175.1	1159.2	1165.2	1159.2
20°	1154.2	1147.0	1129.9	1133.5	1128.8
22.5°	1126.3	1115.2	1099.3	1099.3	1096.9
25°	1093.2	1083.5	1062.8	1065.2	1062.8
27.5°	1056.6	1048.1	1032.3	1028.7	1022.6
30°	1020.1	1010.3	992.1	988.4	983.5
32.5°	981.0	973.8	954.2	946.9	941.9
35°	943.2	931.1	911.5	904.2	898.1
37.5°	900.5	889.5	869.9	861.4	855.3
40°	856.6	846.8	827.2	816.4	811.5
42.5°	813.9	804.0	784.6	772.3	765.1
45°	767.5	759.0	740.6	727.3	722.4
47.5°	722.4	713.8	694.3	680.9	673.6
50°	674.7	668.6	651.6	634.5	628.4
52.5°	628.4	619.9	604.1	590.6	582.0
55°	580.9	573.5	558.9	544.2	538.2
57.5°	533.2	527.2	511.2	496.6	491.7
60°	485.6	480.8	463.7	450.3	446.6
62.5°	439.3	430.7	418.6	406.3	401.5
65°	391.8	384.3	372.2	361.2	355.1
67.5°	342.9	336.7	325.9	317.3	312.4
70°	297.7	292.9	281.8	273.3	268.5
72.5°	251.4	246.5	240.4	231.9	228.2
75°	205.0	202.6	196.4	189.1	191.6
77.5°	163.5	158.6	156.1	152.5	148.9
80°	122.1	120.7	118.3	114.7	112.3
82.5°	83.0	83.0	81.9	76.9	76.9
85°	50.0	48.8	47.6	43.9	42.7
87.5°	22.0	19.6	17.1	13.5	12.1
90°	1.0	11.9	19.9	24.9	26.8
92.5°	24.9	21.0	23.9	25.9	26.8
95°	64.7	31.8	38.8	43.9	42.8
97.5°	116.4	34.9	50.7	53.8	54.7
100°	176.3	39.9	56.7	64.7	66.7
102.5°	241.9	239.9	58.8	69.6	72.7
105°	302.6	332.6	60.7	71.7	75.7
107.5°	373.3	398.1	62.8	73.6	77.7
110°	441.1	461.9	174.2	74.7	78.6

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	504.8	522.6	505.7	76.6	79.7
115°	572.4	589.3	614.2	153.4	81.7
117.5°	631.1	651.0	668.1	525.5	264.8
120°	696.8	711.8	729.7	741.7	607.2
122.5°	752.5	768.5	788.5	794.4	795.5
125°	809.3	822.3	841.2	848.2	851.2
127.5°	861.0	875.0	890.1	899.9	900.9
130°	909.9	925.9	936.7	947.7	946.8
132.5°	959.7	972.7	983.5	992.5	991.6
135°	1001.5	1017.5	1026.3	1036.4	1034.4
137.5°	1045.2	1057.2	1067.2	1077.2	1074.2
140°	1088.0	1096.1	1106.9	1115.9	1111.0
142.5°	1124.0	1131.0	1143.9	1151.8	1146.8
145°	1161.8	1160.7	1177.6	1184.6	1179.7
147.5°	1194.6	1191.6	1208.5	1213.5	1209.6
150°	1226.5	1219.5	1235.4	1241.4	1236.4
152.5°	1253.3	1245.4	1260.3	1266.3	1259.3
155°	1279.2	1270.3	1282.2	1288.2	1280.3
157.5°	1300.1	1292.2	1301.1	1308.1	1300.1
160°	1318.1	1312.1	1318.1	1324.0	1317.0
162.5°	1333.9	1328.0	1332.9	1339.9	1331.0
165°	1347.9	1342.0	1344.9	1351.8	1344.9
167.5°	1358.9	1352.8	1355.9	1362.9	1353.9
170°	1367.8	1361.8	1363.8	1370.8	1361.8
172.5°	1373.8	1367.8	1369.9	1376.8	1367.8
175°	1378.8	1371.7	1373.8	1380.7	1370.8
177.5°	1380.7	1373.8	1374.8	1381.8	1372.8
180°	1375.7	1375.7	1375.7	1375.7	1375.7

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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	10.19	11.00	11.19	12.02	13.36	9.74	10.56	10.75	11.57	12.92
	3H	11.83	12.56	12.84	13.58	14.95	11.34	12.07	12.35	13.09	14.46
	4H	12.40	13.09	13.43	14.12	15.49	11.91	12.60	12.93	13.62	15.00
	6H	12.78	13.42	13.82	14.45	15.84	12.28	12.92	13.32	13.95	15.34
	8H	12.88	13.48	13.92	14.53	15.91	12.38	12.98	13.42	14.03	15.41
	12H	12.92	13.49	13.96	14.53	15.94	12.41	12.98	13.46	14.02	15.43
4H	2H	10.63	11.33	11.67	12.35	13.73	10.28	10.97	11.31	11.99	13.37
	3H	12.47	13.05	13.51	14.10	15.49	12.06	12.64	13.11	13.69	15.08
	4H	13.17	13.70	14.22	14.74	16.15	12.74	13.27	13.79	14.32	15.73
	6H	13.66	14.12	14.72	15.19	16.59	13.23	13.69	14.29	14.75	16.16
	8H	13.80	14.23	14.86	15.29	16.71	13.37	13.79	14.42	14.85	16.27
	12H	13.86	14.25	14.94	15.32	16.75	13.42	13.80	14.49	14.87	16.30
8H	4H	13.35	13.77	14.41	14.84	16.26	12.97	13.40	14.03	14.46	15.88
	6H	13.96	14.31	15.04	15.41	16.83	13.57	13.92	14.65	15.02	16.44
	8H	14.16	14.47	15.25	15.56	17.00	13.77	14.08	14.86	15.16	16.60
	12H	14.28	14.55	15.37	15.63	17.11	13.87	14.14	14.96	15.22	16.70
12H	4H	13.33	13.71	14.41	14.79	16.22	12.96	13.34	14.04	14.42	15.85
	6H	13.98	14.29	15.07	15.37	16.81	13.61	13.91	14.70	15.00	16.44
	8H	14.20	14.48	15.30	15.56	17.04	13.82	14.09	14.92	15.18	16.66