

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: P910462

Luminaire Tested: DFN2DIP-4P4F0-030D040US850-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P910462
REPORT IS A COMBINATION OF REPORTS P899091 AND P895967
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P4F0-030D040US850-FLLFLL
Description: 4 foot, 90deg - 4way Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

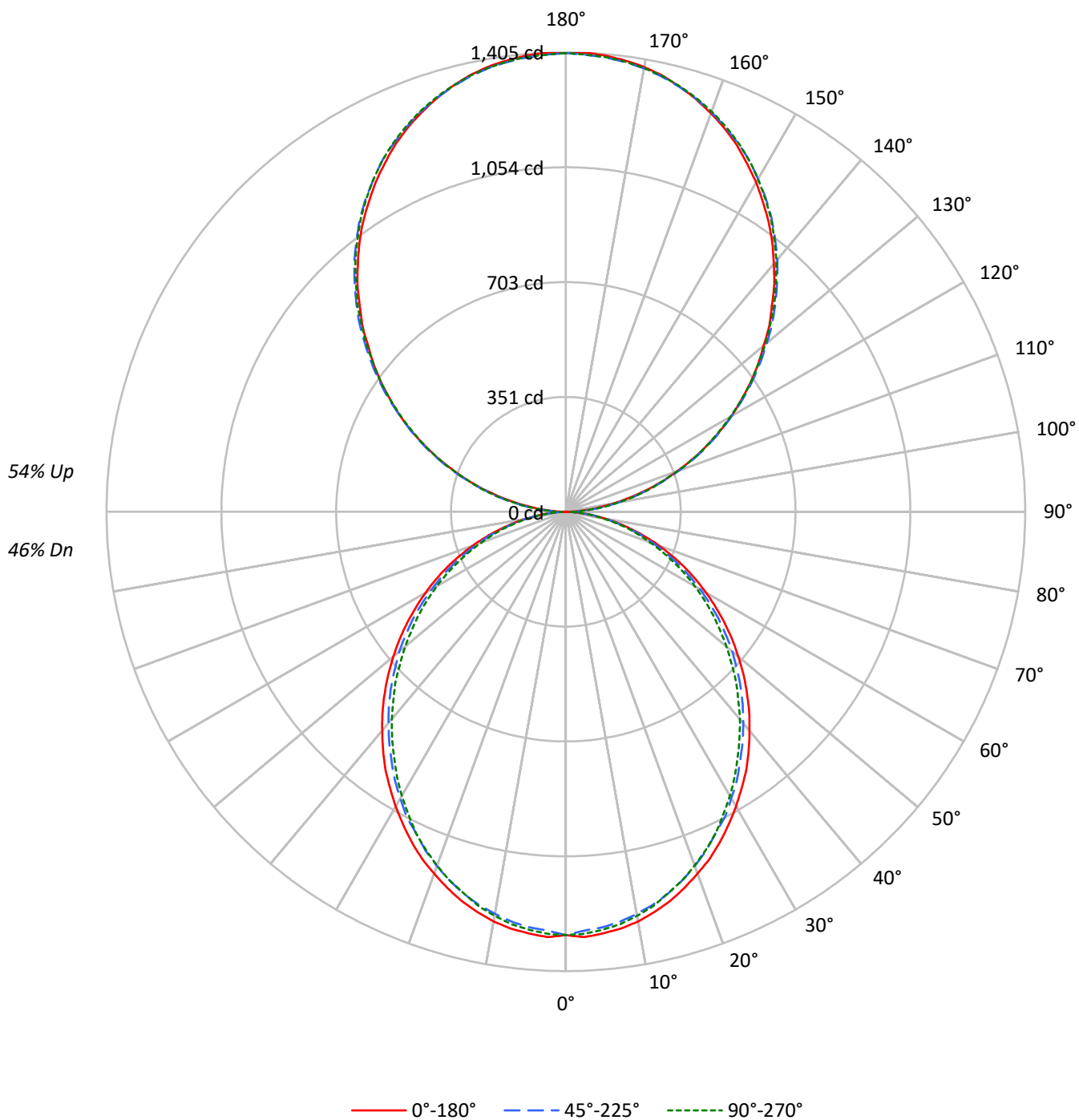
Lumens per Lamp: N/A
Luminaire Lumens: 7219.6 lumens
Efficiency: N/A
Efficacy: 123.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 4.07' x L: 4.07' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 58.5
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

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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	50	30	10
RCR																				
0	106	106	106	106	97	97	97	97	81	81	81	66	66	66	52	52	52			46
1	97	93	89	85	89	85	82	79	71	69	66	58	56	55	46	45	44			38
2	88	81	75	70	81	74	69	65	62	58	55	51	48	46	41	39	37			32
3	80	71	64	58	73	65	59	54	55	50	46	45	42	39	36	34	32			27
4	74	63	55	49	67	58	51	46	49	43	39	40	36	33	32	29	27			23
5	67	56	48	42	62	52	45	39	44	38	34	36	32	29	29	26	24			20
6	62	50	42	36	57	46	39	34	39	34	30	33	28	25	26	23	21			18
7	57	45	37	32	53	42	35	30	36	30	26	30	25	22	24	21	19			16
8	53	41	33	28	49	38	31	26	32	27	23	27	23	20	22	19	17			14
9	50	37	30	25	45	35	28	24	30	24	21	25	21	18	20	17	15			13
10	46	34	27	22	42	32	25	21	27	22	19	23	19	16	19	16	14			12

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	840	840	840
5°	841	828	834
10°	834	818	823
15°	822	804	806
20°	806	786	788
25°	789	764	767
30°	769	743	741
35°	749	719	713
40°	725	694	687
45°	701	670	660
50°	675	644	629
55°	648	614	600
60°	617	579	567
65°	583	542	528
70°	540	498	487
75°	480	445	449
80°	408	377	376
85°	296	259	253

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1060 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	121.8	1.7
10°-20°	342.8	4.7
20°-30°	503.8	7.0
30°-40°	585.2	8.1
40°-50°	584.4	8.1
50°-60°	509.6	7.1
60°-70°	376.7	5.2
70°-80°	213.1	3.0
80°-90°	60.2	0.8
90°-100°	86.8	1.2
100°-110°	275.8	3.8
110°-120°	472.0	6.5
120°-130°	620.8	8.6
130°-140°	696.8	9.7
140°-150°	683.3	9.5
150°-160°	573.2	7.9
160°-170°	380.1	5.3
170°-180°	132.9	1.8
0°-30°	968.5	13.4
0°-40°	1553.6	21.5
0°-60°	2647.7	36.7
0°-90°	3297.7	45.7
90°-120°	834.7	11.6
90°-150°	2835.6	39.3
90°-180°	3922.0	54.3
0°-180°	7219.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1294	1294	1294	1294	1294	
5°	1294	1290	1276	1286	1283	123
15°	1232	1225	1209	1214	1208	347
25°	1115	1106	1084	1087	1084	513
35°	962	950	930	922	916	601
45°	783	774	756	742	737	604
55°	593	585	570	555	549	530
65°	400	392	380	368	362	395
75°	209	207	200	193	196	223
85°	51	50	49	45	44	57
90°	1	15	42	39	40	7
95°	62	74	76	76	74	69
105°	255	258	260	263	263	269
115°	474	480	478	477	474	469
125°	689	700	696	692	691	616
135°	891	904	907	906	902	689
145°	1082	1090	1097	1098	1094	676
155°	1237	1240	1244	1250	1246	569
165°	1346	1345	1345	1353	1347	380
175°	1400	1397	1394	1403	1396	133
180°	1403	1403	1403	1403	1403	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1294.5	1294.5	1294.5	1294.5	1294.5
2.5°	1302.1	1295.9	1282.1	1294.5	1292.2
5°	1294.5	1289.7	1275.9	1285.9	1283.4
7.5°	1285.9	1278.5	1264.7	1274.8	1272.2
10°	1272.2	1263.5	1248.6	1258.5	1254.8
12.5°	1253.5	1246.1	1231.2	1237.3	1234.9
15°	1232.3	1225.0	1208.7	1213.7	1207.5
17.5°	1206.1	1198.8	1182.5	1188.7	1182.5
20°	1177.5	1170.1	1152.7	1156.4	1151.5
22.5°	1149.0	1137.8	1121.5	1121.5	1119.0
25°	1115.3	1105.5	1084.3	1086.7	1084.3
27.5°	1077.9	1069.2	1053.1	1049.4	1043.2
30°	1040.7	1030.7	1012.1	1008.3	1003.3
32.5°	1000.9	993.4	973.5	965.9	960.9
35°	962.3	949.9	929.9	922.4	916.1
37.5°	918.7	907.5	887.5	878.8	872.6
40°	873.9	863.9	843.9	832.9	827.9
42.5°	830.3	820.3	800.5	787.9	780.5
45°	783.1	774.3	755.6	741.9	736.9
47.5°	736.9	728.3	708.3	694.6	687.1
50°	688.4	682.1	664.7	647.3	641.1
52.5°	641.1	632.4	616.3	602.5	593.8
55°	592.6	585.1	570.1	555.3	549.1
57.5°	544.0	537.8	521.6	506.6	501.6
60°	495.4	490.5	473.1	459.3	455.7
62.5°	448.1	439.4	427.0	414.5	409.6
65°	399.7	392.1	379.7	368.5	362.3
67.5°	349.9	343.6	332.4	323.7	318.7
70°	303.8	298.8	287.6	278.8	273.9
72.5°	256.5	251.4	245.2	236.5	232.9
75°	209.0	206.7	200.4	193.0	195.5
77.5°	166.8	161.8	159.3	155.6	151.9
80°	124.5	123.2	120.7	117.0	114.6
82.5°	84.6	84.6	83.5	78.4	78.4
85°	51.0	49.8	48.6	44.8	43.6
87.5°	22.4	20.0	17.4	13.8	12.4
90°	1.2	15.2	41.5	38.9	40.1
92.5°	26.2	35.5	36.8	38.0	38.0
95°	61.8	73.6	75.7	75.7	73.6
97.5°	102.8	113.8	118.4	118.4	118.4
100°	150.2	159.9	163.2	163.2	162.0
102.5°	200.1	207.3	211.9	213.1	211.9
105°	254.6	258.0	260.5	262.6	262.6
107.5°	308.7	313.8	313.8	314.6	308.7
110°	361.2	368.0	368.0	368.0	364.6

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	417.9	425.1	423.7	420.4	417.9
115°	473.7	480.5	478.3	477.1	473.7
117.5°	529.1	538.4	532.5	529.1	525.8
120°	585.0	594.2	585.0	585.0	581.1
122.5°	635.7	647.5	641.7	638.2	635.7
125°	689.0	699.6	696.2	692.3	691.1
127.5°	741.0	754.1	749.5	744.4	741.0
130°	789.6	804.9	802.8	800.3	795.6
132.5°	844.2	856.0	856.9	850.9	847.6
135°	891.2	904.3	906.8	905.5	902.2
137.5°	943.6	954.2	956.3	955.4	950.4
140°	989.7	1000.3	1006.2	1006.2	1001.5
142.5°	1037.1	1047.7	1051.0	1052.3	1047.7
145°	1081.9	1090.4	1097.1	1098.5	1093.8
147.5°	1122.1	1132.6	1137.7	1139.8	1135.2
150°	1163.6	1170.8	1175.4	1179.2	1175.4
152.5°	1200.4	1207.5	1213.5	1218.1	1213.5
155°	1237.1	1240.5	1244.3	1250.3	1246.4
157.5°	1268.9	1271.4	1273.5	1282.0	1276.0
160°	1297.2	1299.7	1301.0	1308.2	1303.1
162.5°	1323.4	1323.4	1324.7	1332.7	1326.8
165°	1345.9	1344.6	1344.6	1353.0	1347.1
167.5°	1366.2	1362.3	1362.3	1370.8	1364.8
170°	1381.4	1377.9	1376.7	1385.1	1377.9
172.5°	1391.9	1388.6	1387.2	1395.8	1388.6
175°	1400.4	1397.0	1394.5	1402.9	1395.8
177.5°	1405.1	1401.7	1399.1	1406.3	1399.1
180°	1402.9	1402.9	1402.9	1402.9	1402.9

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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	6.27	7.09	7.26	8.10	9.43	5.82	6.65	6.82	7.65	8.99
	3H	7.93	8.67	8.94	9.69	11.04	7.44	8.18	8.45	9.19	10.55
	4H	8.52	9.22	9.54	10.24	11.60	8.03	8.73	9.04	9.74	11.10
	6H	8.92	9.57	9.95	10.59	11.96	8.42	9.07	9.45	10.09	11.46
	8H	9.03	9.64	10.06	10.68	12.05	8.53	9.14	9.56	10.18	11.55
	12H	9.08	9.66	10.12	10.70	12.09	8.57	9.15	9.61	10.19	11.58
4H	2H	6.73	7.43	7.75	8.44	9.80	6.37	7.07	7.39	8.09	9.45
	3H	8.60	9.18	9.63	10.23	11.60	8.19	8.77	9.22	9.82	11.19
	4H	9.31	9.85	10.35	10.89	12.28	8.89	9.42	9.93	10.46	11.86
	6H	9.83	10.29	10.88	11.35	12.74	9.40	9.86	10.45	10.92	12.31
	8H	9.98	10.41	11.03	11.47	12.87	9.55	9.98	10.60	11.03	12.44
	12H	10.06	10.45	11.12	11.51	12.93	9.61	10.00	10.68	11.06	12.48
8H	4H	9.51	9.94	10.56	10.99	12.40	9.13	9.56	10.18	10.61	12.02
	6H	10.14	10.50	11.22	11.59	13.00	9.76	10.12	10.83	11.21	12.62
	8H	10.37	10.68	11.45	11.76	13.18	9.98	10.29	11.06	11.37	12.79
	12H	10.50	10.78	11.59	11.85	13.31	10.09	10.37	11.17	11.44	12.90
12H	4H	9.49	9.88	10.56	10.95	12.36	9.12	9.51	10.19	10.58	11.99
	6H	10.17	10.49	11.25	11.57	12.99	9.80	10.11	10.88	11.19	12.62
	8H	10.42	10.69	11.50	11.77	13.23	10.04	10.31	11.12	11.39	12.85

END OF REPORT