

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: P910382

Luminaire Tested: DFN2DIP-4P3F0-030D030US850-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P910382
REPORT IS A COMBINATION OF REPORTS P899041 AND P895917
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P3F0-030D030US850-FLLFLL
Description: 3 foot, 90deg - 4way Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

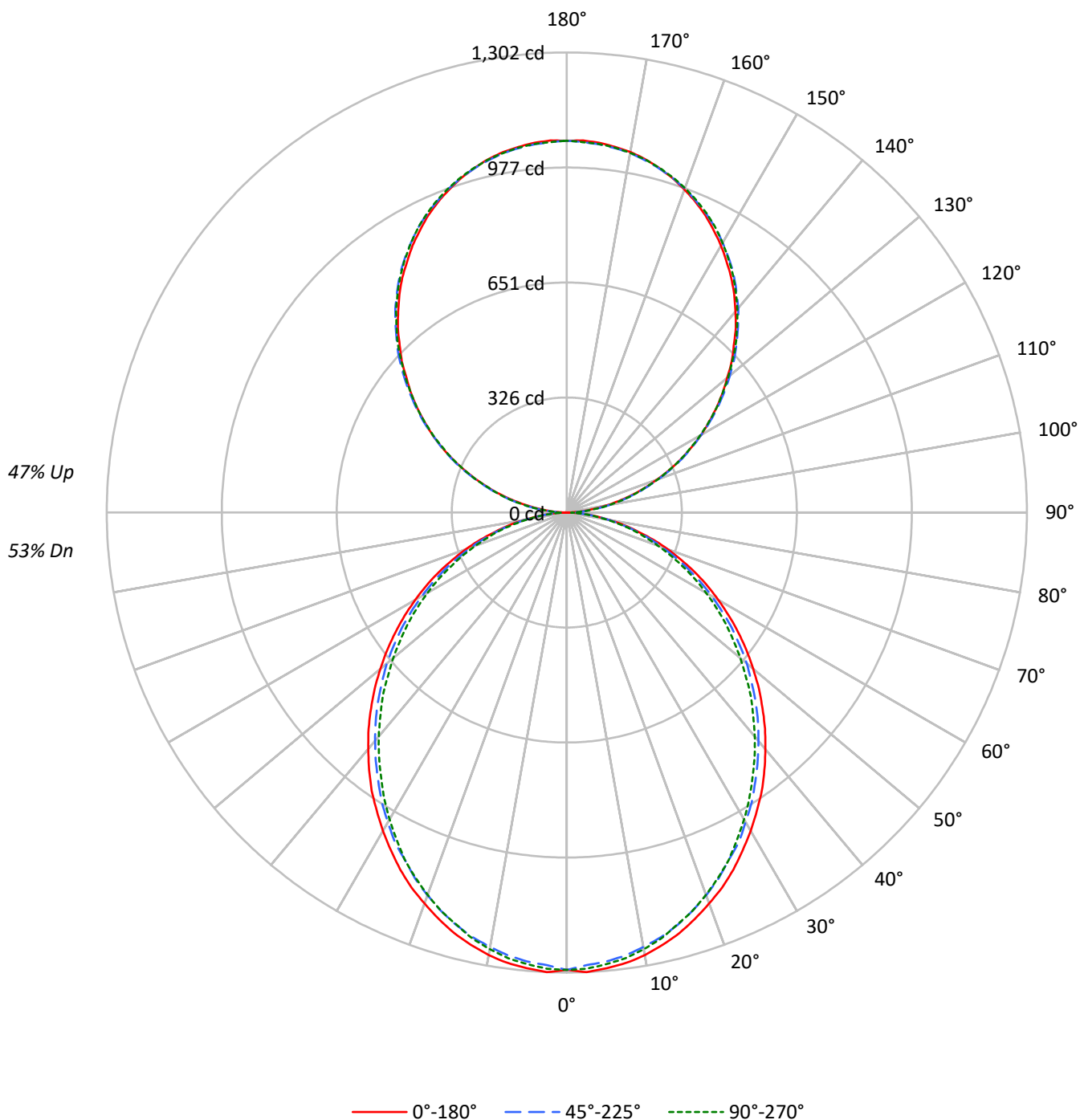
Lumens per Lamp: N/A
Luminaire Lumens: 6238.1 lumens
Efficiency: N/A
Efficacy: 129.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.07' x L: 3.07' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 48.2
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9933
Total Harmonic Distortion (THDi): 0.066
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P910382

CATALOG NUMBER: DFN2DIP-4P3F0-030D030US850-FLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P910382

CATALOG NUMBER: DFN2DIP-4P3F0-030D030US850-FLLFLL

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	108	108	108	108	100	100	100	100	85	85	85	71	71	71	59	59	59
1	98	94	90	87	91	87	84	81	74	72	70	63	61	59	52	51	50
2	90	82	76	71	83	76	71	66	65	61	58	55	52	50	46	44	42
3	82	72	65	59	75	67	61	55	58	53	49	49	45	42	41	38	36
4	75	64	56	50	69	60	52	47	51	46	41	43	39	36	36	33	31
5	69	57	49	43	63	53	46	40	46	40	36	39	35	31	33	29	27
6	63	51	43	37	58	48	40	35	41	36	31	35	31	27	30	26	24
7	59	46	38	33	54	43	36	31	37	32	28	32	28	24	27	24	21
8	54	42	34	29	50	39	32	27	34	29	24	29	25	22	25	21	19
9	51	38	31	26	47	36	29	24	31	26	22	27	23	19	23	20	17
10	47	35	28	23	44	33	26	22	29	23	20	25	21	18	21	18	15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1475	1475	1475
5°	1477	1454	1464
10°	1464	1433	1444
15°	1441	1409	1412
20°	1411	1375	1380
25°	1381	1335	1343
30°	1344	1297	1296
35°	1309	1253	1246
40°	1265	1209	1199
45°	1222	1164	1150
50°	1175	1117	1094
55°	1125	1063	1043
60°	1069	999	983
65°	1007	932	913
70°	929	851	838
75°	821	753	768
80°	690	628	635
85°	486	416	416

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1222 cd/sqm

TEST NUMBER: P910382

CATALOG NUMBER: DFN2DIP-4P3F0-030D030US850-FLLFL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	121.8	2.0
10°-20°	342.8	5.5
20°-30°	503.8	8.1
30°-40°	585.2	9.4
40°-50°	584.4	9.4
50°-60°	509.6	8.2
60°-70°	376.7	6.0
70°-80°	213.1	3.4
80°-90°	59.2	0.9
90°-100°	65.1	1.0
100°-110°	206.9	3.3
110°-120°	354.0	5.7
120°-130°	465.6	7.5
130°-140°	522.6	8.4
140°-150°	512.5	8.2
150°-160°	429.9	6.9
160°-170°	285.1	4.6
170°-180°	99.7	1.6
0°-30°	968.5	15.5
0°-40°	1553.6	24.9
0°-60°	2647.7	42.4
0°-90°	3296.7	52.8
90°-120°	626.0	10.0
90°-150°	2126.7	34.1
90°-180°	2941.0	47.1
0°-180°	6238.1	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	11	31	29	30	6
95°	46	55	57	57	55	52
105°	191	194	195	197	197	202
115°	355	360	359	358	355	351
125°	517	525	522	519	518	462
135°	668	678	680	679	677	517
145°	812	818	823	824	820	507
155°	928	930	933	938	935	427
165°	1009	1008	1008	1015	1010	285
175°	1050	1048	1046	1052	1047	100
180°	1052	1052	1052	1052	1052	

TEST NUMBER: P910382

CATALOG NUMBER: DFN2DIP-4P3F0-030D030US850-FLLFLL

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°	1.0	11.4	31.1	29.2	30.2
92.5°	19.6	26.6	27.6	28.5	28.5
95°	46.4	55.2	56.8	56.8	55.2
97.5°	77.1	85.3	88.8	88.8	88.8
100°	112.6	119.9	122.4	122.4	121.5
102.5°	150.0	155.5	158.9	159.9	158.9
105°	191.0	193.5	195.4	197.0	197.0
107.5°	231.6	235.3	235.3	236.0	231.6
110°	270.9	276.0	276.0	276.0	273.5

TEST NUMBER: P910382

CATALOG NUMBER: DFN2DIP-4P3F0-030D030US850-FLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	313.4	318.8	317.8	315.3	313.4
115°	355.3	360.3	358.8	357.9	355.3
117.5°	396.8	403.8	399.4	396.8	394.2
120°	438.7	445.7	438.7	438.7	435.8
122.5°	476.8	485.6	481.2	478.6	476.8
125°	516.8	524.7	522.1	519.2	518.3
127.5°	555.7	565.6	562.2	558.3	555.7
130°	592.2	603.6	602.1	600.2	596.6
132.5°	633.1	642.0	642.7	638.2	635.7
135°	668.4	678.2	680.1	679.2	676.6
137.5°	707.7	715.6	717.2	716.6	712.8
140°	742.3	750.2	754.7	754.7	751.1
142.5°	777.9	785.7	788.3	789.3	785.7
145°	811.5	817.8	822.9	823.8	820.3
147.5°	841.6	849.5	853.3	854.9	851.4
150°	872.7	878.1	881.5	884.4	881.5
152.5°	900.3	905.6	910.0	913.6	910.0
155°	927.9	930.3	933.2	937.7	934.9
157.5°	951.6	953.5	955.2	961.5	957.1
160°	972.9	974.8	975.8	981.1	977.4
162.5°	992.6	992.6	993.6	999.5	995.1
165°	1009.4	1008.4	1008.4	1014.7	1010.3
167.5°	1024.6	1021.7	1021.7	1028.0	1023.6
170°	1036.0	1033.5	1032.6	1038.9	1033.5
172.5°	1043.9	1041.5	1040.5	1046.8	1041.5
175°	1050.3	1047.8	1045.9	1052.2	1046.8
177.5°	1053.8	1051.2	1049.3	1054.8	1049.3
180°	1052.2	1052.2	1052.2	1052.2	1052.2

TEST NUMBER: P910382

CATALOG NUMBER: DFN2DIP-4P3F0-030D030US850-FLLFLL

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	8.85	9.74	9.78	10.69	11.92	8.40	9.29	9.34	10.24	11.47
	3H	10.51	11.30	11.45	12.26	13.51	10.02	10.81	10.96	11.77	13.02
	4H	11.09	11.85	12.05	12.81	14.07	10.60	11.35	11.56	12.31	13.58
	6H	11.49	12.18	12.46	13.15	14.43	10.99	11.68	11.96	12.65	13.93
	8H	11.59	12.25	12.57	13.24	14.51	11.09	11.75	12.07	12.74	14.01
	12H	11.64	12.27	12.62	13.25	14.55	11.13	11.76	12.11	12.74	14.04
4H	2H	9.31	10.06	10.27	11.03	12.29	8.95	9.71	9.92	10.67	11.93
	3H	11.17	11.80	12.15	12.79	14.07	10.76	11.39	11.74	12.39	13.66
	4H	11.88	12.46	12.87	13.44	14.74	11.46	12.03	12.44	13.02	14.32
	6H	12.40	12.89	13.39	13.90	15.20	11.96	12.46	12.96	13.47	14.77
	8H	12.54	13.01	13.54	14.01	15.32	12.11	12.57	13.10	13.57	14.89
	12H	12.62	13.03	13.63	14.05	15.37	12.17	12.58	13.18	13.60	14.92
8H	4H	12.08	12.54	13.07	13.54	14.86	11.70	12.16	12.70	13.17	14.48
	6H	12.70	13.09	13.72	14.13	15.44	12.32	12.70	13.34	13.75	15.06
	8H	12.92	13.26	13.95	14.29	15.62	12.53	12.87	13.56	13.90	15.23
	12H	13.05	13.35	14.08	14.37	15.75	12.64	12.94	13.67	13.96	15.34
12H	4H	12.06	12.48	13.08	13.50	14.82	11.69	12.11	12.71	13.13	14.45
	6H	12.73	13.07	13.76	14.10	15.43	12.36	12.70	13.39	13.73	15.06
	8H	12.97	13.27	14.00	14.29	15.67	12.59	12.89	13.62	13.91	15.29