

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: P910367

Luminaire Tested: DFN2DIP-4P3F0-020D040US850-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P910367
REPORT IS A COMBINATION OF REPORTS P900569 AND P897473
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P3F0-020D040US850-FLLONL
Description: 3 foot, 90deg - 4way Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

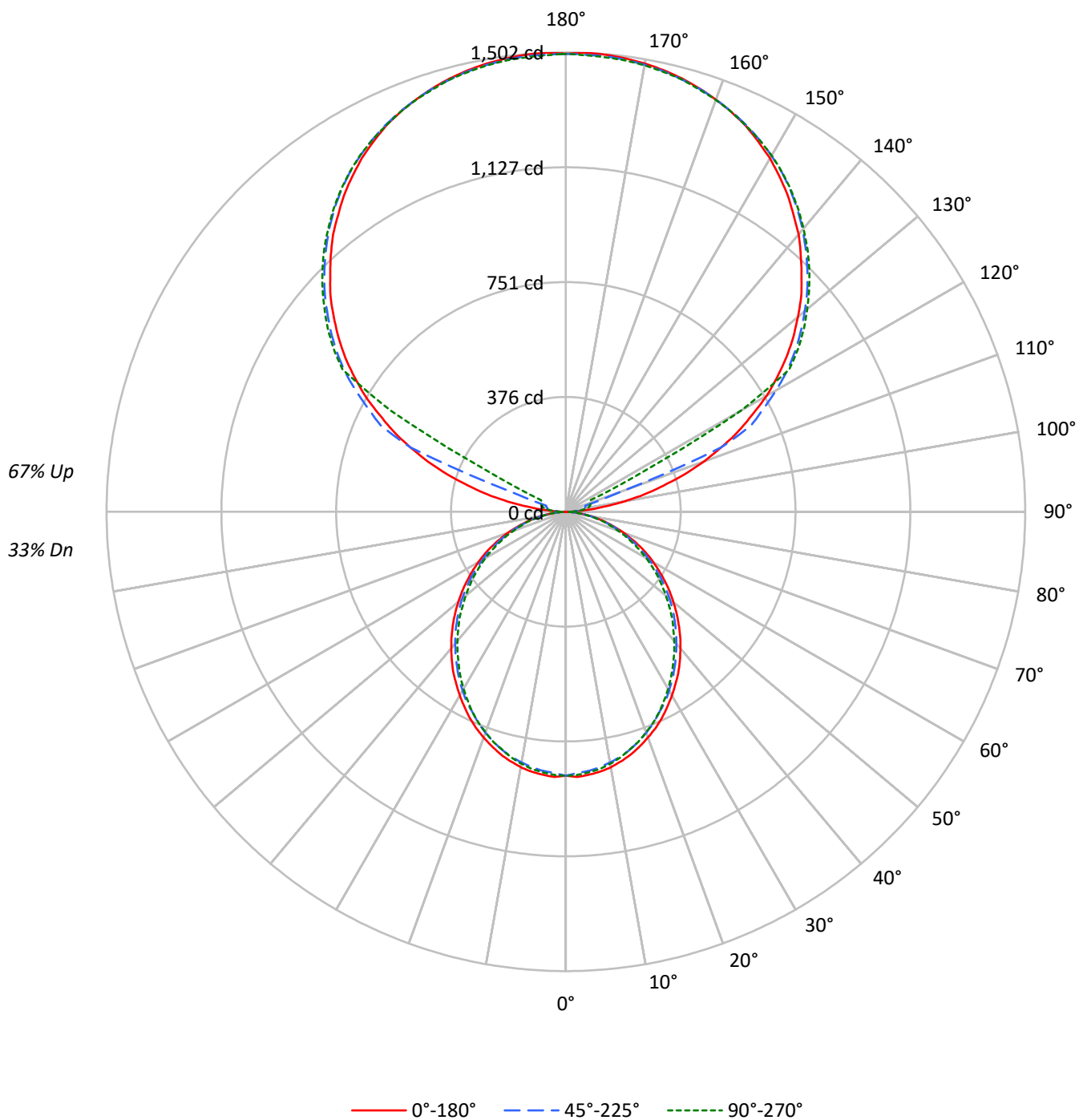
Lumens per Lamp: N/A
Luminaire Lumens: 6587.5 lumens
Efficiency: N/A
Efficacy: 145.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.07' x L: 3.07' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 45.4
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9951
Total Harmonic Distortion (THDi): 0.07
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P910367

CATALOG NUMBER: DFN2DIP-4P3F0-020D040US850-FLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P910367

CATALOG NUMBER: DFN2DIP-4P3F0-020D040US850-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	103	103	103	103	93	93	93	93	74	74	74	57	57	57	41	41	41
1	94	90	86	83	85	81	78	75	65	63	61	50	48	47	36	35	34
2	86	78	72	67	77	71	66	62	57	53	50	44	41	39	32	30	29
3	78	69	62	56	70	62	56	51	50	46	42	39	36	33	28	26	25
4	71	61	53	47	64	55	49	43	44	40	36	34	31	28	25	23	21
5	65	54	46	40	59	49	42	37	40	35	31	31	27	25	23	20	18
6	60	48	41	35	54	44	37	32	36	31	27	28	24	21	20	18	16
7	56	44	36	30	50	40	33	28	32	27	23	25	22	19	19	16	14
8	51	39	32	27	46	36	29	25	29	24	21	23	19	17	17	15	13
9	48	36	29	24	43	33	26	22	27	22	19	21	18	15	16	13	12
10	45	33	26	21	40	30	24	20	25	20	17	19	16	14	15	12	11

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	983	983	983
5°	984	969	976
10°	976	955	962
15°	961	939	942
20°	941	917	920
25°	921	890	895
30°	896	865	864
35°	873	835	831
40°	844	806	799
45°	815	776	767
50°	783	745	729
55°	750	709	695
60°	713	666	655
65°	671	621	609
70°	619	567	559
75°	547	502	512
80°	460	419	423
85°	323	278	277

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1023 cd/sqm

TEST NUMBER: P910367

CATALOG NUMBER: DFN2DIP-4P3F0-020D040US850-FLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	81.2	1.2
10°-20°	228.6	3.5
20°-30°	335.9	5.1
30°-40°	390.1	5.9
40°-50°	389.6	5.9
50°-60°	339.7	5.2
60°-70°	251.1	3.8
70°-80°	142.1	2.2
80°-90°	40.1	0.6
90°-100°	49.4	0.7
100°-110°	184.0	2.8
110°-120°	488.1	7.4
120°-130°	809.5	12.3
130°-140°	859.9	13.1
140°-150°	799.2	12.1
150°-160°	642.5	9.8
160°-170°	414.0	6.3
170°-180°	142.5	2.2
0°-30°	645.7	9.8
0°-40°	1035.8	15.7
0°-60°	1765.1	26.8
0°-90°	2198.5	33.4
90°-120°	721.5	11.0
90°-150°	3190.0	48.4
90°-180°	4389.0	66.6
0°-180°	6587.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	863	863	863	863	863	
5°	863	860	851	857	856	82
15°	822	817	806	809	805	231
25°	744	737	723	724	723	342
35°	642	633	620	615	611	401
45°	522	516	504	495	491	403
55°	395	390	380	370	366	353
65°	266	261	253	246	242	263
75°	139	138	134	129	130	149
85°	34	33	32	30	29	38
90°	1	13	22	27	29	6
95°	70	35	42	48	47	83
105°	329	362	66	78	82	352
115°	623	641	668	167	89	613
125°	881	895	915	923	926	785
135°	1090	1107	1117	1128	1126	842
145°	1264	1263	1281	1289	1284	791
155°	1392	1382	1395	1402	1393	641
165°	1467	1460	1464	1471	1464	414
175°	1500	1493	1495	1502	1492	143
180°	1497	1497	1497	1497	1497	

TEST NUMBER: P910367

CATALOG NUMBER: DFN2DIP-4P3F0-020D040US850-FLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	863.0	863.0	863.0	863.0	863.0
2.5°	868.0	863.9	854.7	863.0	861.5
5°	863.0	859.8	850.6	857.3	855.6
7.5°	857.3	852.3	843.2	849.8	848.2
10°	848.2	842.4	832.4	839.0	836.5
12.5°	835.6	830.8	820.8	824.9	823.2
15°	821.5	816.7	805.8	809.1	805.0
17.5°	804.1	799.3	788.4	792.5	788.4
20°	785.1	780.1	768.4	771.0	767.6
22.5°	766.0	758.6	747.7	747.7	746.0
25°	743.6	736.9	722.8	724.4	722.8
27.5°	718.6	712.9	702.1	699.7	695.5
30°	693.8	687.1	674.7	672.3	668.8
32.5°	667.2	662.3	649.0	644.0	640.7
35°	641.6	633.2	619.9	614.9	610.7
37.5°	612.5	605.0	591.7	585.9	581.7
40°	582.6	575.9	562.6	555.3	551.8
42.5°	553.5	546.8	533.7	525.3	520.3
45°	522.0	516.2	503.7	494.6	491.3
47.5°	491.3	485.5	472.2	463.0	458.1
50°	458.9	454.8	443.2	431.5	427.4
52.5°	427.4	421.5	410.8	401.7	395.9
55°	395.0	390.0	380.1	370.2	366.0
57.5°	362.6	358.5	347.7	337.8	334.4
60°	330.3	327.0	315.4	306.2	303.8
62.5°	298.8	292.9	284.7	276.4	273.0
65°	266.4	261.4	253.2	245.6	241.5
67.5°	233.2	229.0	221.6	215.8	212.5
70°	202.5	199.2	191.6	185.9	182.7
72.5°	171.0	167.7	163.5	157.7	155.3
75°	139.4	137.8	133.5	128.6	130.3
77.5°	111.2	107.9	106.1	103.7	101.3
80°	83.1	82.2	80.5	78.0	76.3
82.5°	56.4	56.4	55.7	52.3	52.3
85°	33.9	33.2	32.4	29.8	29.1
87.5°	15.0	13.3	11.6	9.2	8.3
90°	1.0	13.0	21.6	27.2	29.2
92.5°	27.2	22.7	26.0	28.2	29.2
95°	70.3	34.6	42.1	47.7	46.6
97.5°	126.8	37.9	55.2	58.6	59.6
100°	191.7	43.4	61.8	70.3	72.5
102.5°	263.2	261.2	63.9	75.7	79.1
105°	329.3	361.9	66.1	78.0	82.3
107.5°	406.2	433.3	68.3	80.2	84.5
110°	480.0	502.6	189.6	81.3	85.5

TEST NUMBER: P910367

CATALOG NUMBER: DFN2DIP-4P3F0-020D040US850-FLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	549.3	568.7	550.3	83.4	86.7
115°	622.8	641.2	668.4	166.8	88.9
117.5°	686.8	708.4	726.9	571.9	288.1
120°	758.3	774.5	794.0	807.1	660.9
122.5°	818.9	836.3	858.0	864.5	865.6
125°	880.7	894.9	915.4	923.0	926.2
127.5°	937.0	952.2	968.5	979.4	980.4
130°	990.1	1007.5	1019.3	1031.3	1030.3
132.5°	1044.2	1058.4	1070.3	1080.1	1079.1
135°	1089.8	1107.2	1116.9	1127.7	1125.6
137.5°	1137.4	1150.4	1161.3	1172.1	1168.9
140°	1184.0	1192.7	1204.6	1214.4	1208.9
142.5°	1223.1	1230.7	1244.7	1253.3	1248.0
145°	1264.3	1263.2	1281.4	1289.1	1283.7
147.5°	1299.9	1296.6	1315.1	1320.5	1316.3
150°	1334.6	1327.0	1344.4	1350.9	1345.4
152.5°	1363.8	1355.2	1371.4	1377.9	1370.4
155°	1392.0	1382.4	1395.3	1401.8	1393.1
157.5°	1414.8	1406.1	1416.0	1423.5	1414.8
160°	1434.3	1427.7	1434.3	1440.7	1433.2
162.5°	1451.6	1445.1	1450.6	1458.1	1448.4
165°	1466.8	1460.3	1463.5	1471.1	1463.5
167.5°	1478.7	1472.1	1475.5	1483.1	1473.3
170°	1488.5	1482.0	1484.1	1491.7	1482.0
172.5°	1494.9	1488.5	1490.7	1498.3	1488.5
175°	1500.3	1492.7	1494.9	1502.5	1491.7
177.5°	1502.5	1494.9	1496.0	1503.7	1493.9
180°	1497.2	1497.2	1497.2	1497.2	1497.2

TEST NUMBER: P910367

CATALOG NUMBER: DFN2DIP-4P3F0-020D040US850-FLONL

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	5.41	6.14	6.50	7.22	8.71	4.96	5.69	6.05	6.78	8.27
	3H	7.05	7.71	8.15	8.80	10.31	6.56	7.22	7.66	8.31	9.82
	4H	7.63	8.25	8.74	9.35	10.86	7.14	7.76	8.25	8.86	10.37
	6H	8.02	8.59	9.14	9.69	11.22	7.52	8.09	8.64	9.19	10.72
	8H	8.12	8.66	9.24	9.78	11.30	7.62	8.16	8.74	9.28	10.80
	12H	8.16	8.68	9.29	9.79	11.33	7.65	8.17	8.78	9.28	10.82
4H	2H	5.85	6.47	6.96	7.57	9.08	5.49	6.12	6.61	7.21	8.73
	3H	7.70	8.21	8.82	9.34	10.86	7.29	7.81	8.41	8.93	10.46
	4H	8.40	8.88	9.53	9.99	11.54	7.98	8.45	9.10	9.57	11.11
	6H	8.91	9.31	10.04	10.45	11.99	8.47	8.88	9.61	10.02	11.56
	8H	9.05	9.43	10.18	10.56	12.11	8.61	8.99	9.74	10.12	11.68
	12H	9.11	9.46	10.26	10.60	12.16	8.67	9.01	9.81	10.15	11.71
8H	4H	8.58	8.96	9.72	10.09	11.65	8.21	8.59	9.34	9.72	11.27
	6H	9.20	9.52	10.36	10.69	12.24	8.82	9.13	9.97	10.30	11.86
	8H	9.42	9.69	10.58	10.84	12.42	9.03	9.30	10.19	10.45	12.02
	12H	9.54	9.78	10.70	10.93	12.54	9.13	9.37	10.29	10.52	12.13
12H	4H	8.56	8.91	9.71	10.05	11.61	8.19	8.54	9.34	9.68	11.24
	6H	9.23	9.51	10.39	10.66	12.23	8.86	9.13	10.02	10.28	11.85
	8H	9.46	9.70	10.63	10.85	12.46	9.08	9.32	10.24	10.47	12.08

END OF REPORT