

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: P904911

Luminaire Tested: DFN2DIP-4P3F0-020D040US835-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P904911
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-4P3F0-020D040US835-FLLONL
Description: 3 foot, 90deg - 4way Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

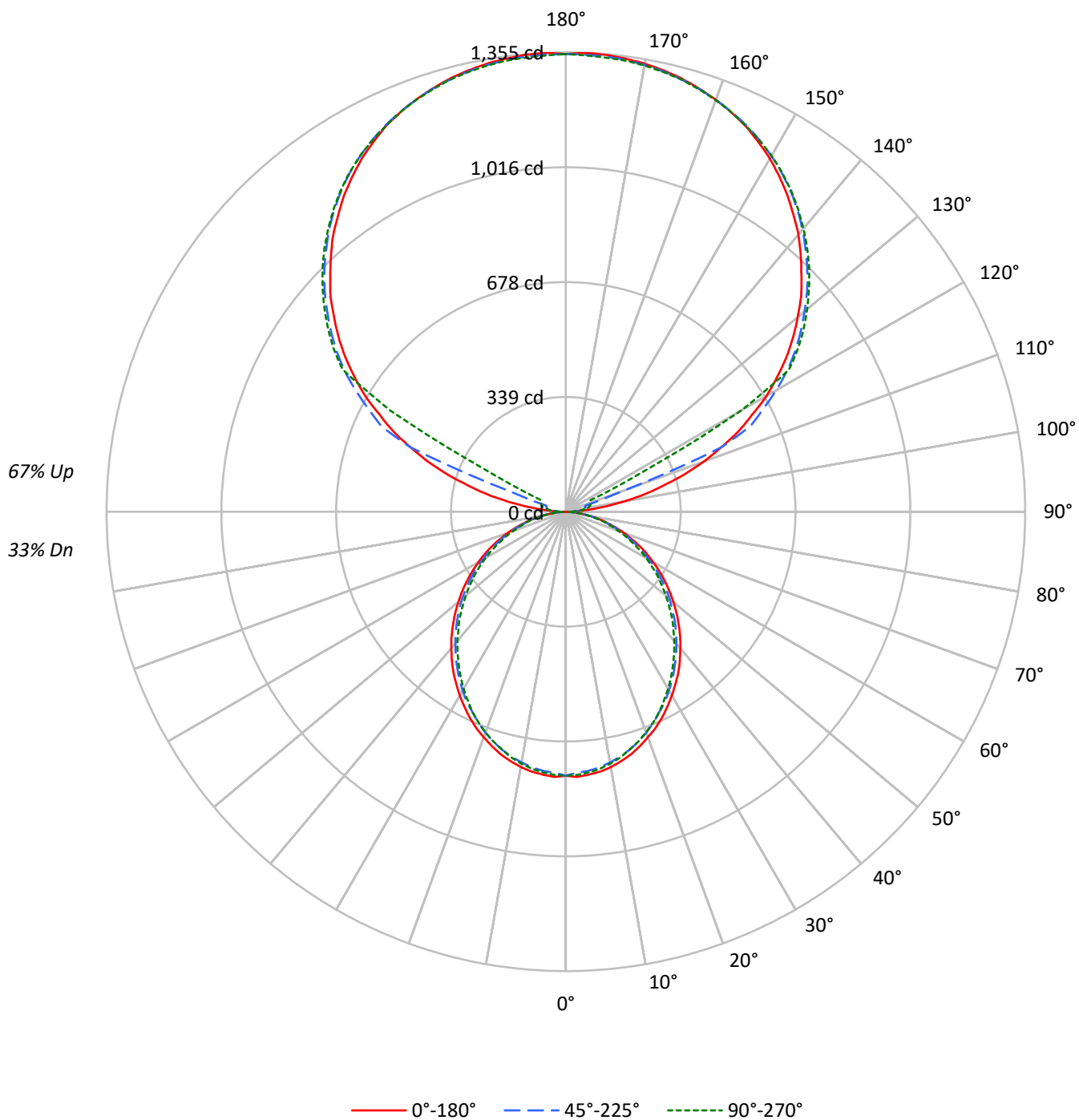
Lumens per Lamp: N/A
Luminaire Lumens: 5940.0 lumens
Efficiency: N/A
Efficacy: 130.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.07' x L: 3.07' x H: 0.1')
CIE Type: Semi-Indirect

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: P904911

CATALOG NUMBER: DFN2DIP-4P3F0-020D040US835-FLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P904911

CATALOG NUMBER: DFN2DIP-4P3F0-020D040US835-FLLONL

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°	887	887	887
5°	888	874	880
10°	880	862	868
15°	866	847	849
20°	848	826	830
25°	830	802	807
30°	808	780	779
35°	787	753	749
40°	761	727	721
45°	735	700	691
50°	706	672	658
55°	676	639	627
60°	643	600	591
65°	605	560	549
70°	558	511	504
75°	494	452	461
80°	415	378	381
85°	292	250	250

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 921 cd/sqm

TEST NUMBER: P904911

CATALOG NUMBER: DFN2DIP-4P3F0-020D040US835-FLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	73.2	1.2
10°-20°	206.1	3.5
20°-30°	302.9	5.1
30°-40°	351.8	5.9
40°-50°	351.3	5.9
50°-60°	306.3	5.2
60°-70°	226.5	3.8
70°-80°	128.1	2.2
80°-90°	36.2	0.6
90°-100°	44.5	0.7
100°-110°	165.9	2.8
110°-120°	440.1	7.4
120°-130°	729.9	12.3
130°-140°	775.4	13.1
140°-150°	720.6	12.1
150°-160°	579.4	9.8
160°-170°	373.3	6.3
170°-180°	128.5	2.2
0°-30°	582.2	9.8
0°-40°	934.0	15.7
0°-60°	1591.6	26.8
0°-90°	1982.4	33.4
90°-120°	650.5	11.0
90°-150°	2876.4	48.4
90°-180°	3958.0	66.6
0°-180°	5940.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	778	778	778	778	778	
5°	778	775	767	773	772	74
15°	741	736	727	730	726	209
25°	670	664	652	653	652	309
35°	578	571	559	554	551	361
45°	471	466	454	446	443	363
55°	356	352	343	334	330	318
65°	240	236	228	222	218	238
75°	126	124	120	116	118	134
85°	31	30	29	27	26	34
90°	1	12	20	24	26	5
95°	63	31	38	43	42	75
105°	297	326	60	70	74	317
115°	562	578	603	150	80	553
125°	794	807	825	832	835	708
135°	983	998	1007	1017	1015	759
145°	1140	1139	1156	1162	1158	713
155°	1255	1246	1258	1264	1256	578
165°	1323	1317	1320	1326	1320	374
175°	1353	1346	1348	1355	1345	129
180°	1350	1350	1350	1350	1350	

TEST NUMBER: P904911

CATALOG NUMBER: DFN2DIP-4P3F0-020D040US835-FLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	778.2	778.2	778.2	778.2	778.2
2.5°	782.7	779.0	770.7	778.2	776.8
5°	778.2	775.3	767.0	773.0	771.5
7.5°	773.0	768.5	760.3	766.3	764.8
10°	764.8	759.6	750.6	756.5	754.3
12.5°	753.5	749.1	740.1	743.8	742.3
15°	740.8	736.4	726.6	729.6	725.9
17.5°	725.1	720.7	710.9	714.6	710.9
20°	707.9	703.4	692.9	695.2	692.2
22.5°	690.7	684.0	674.2	674.2	672.7
25°	670.5	664.5	651.8	653.2	651.8
27.5°	648.0	642.8	633.1	630.9	627.1
30°	625.6	619.6	608.4	606.2	603.1
32.5°	601.6	597.2	585.2	580.7	577.7
35°	578.5	571.0	559.0	554.5	550.7
37.5°	552.3	545.5	533.5	528.3	524.5
40°	525.3	519.3	507.3	500.7	497.6
42.5°	499.1	493.1	481.2	473.7	469.2
45°	470.7	465.5	454.2	446.0	443.0
47.5°	443.0	437.8	425.8	417.5	413.1
50°	413.8	410.1	399.6	389.1	385.4
52.5°	385.4	380.1	370.4	362.2	357.0
55°	356.2	351.7	342.7	333.8	330.0
57.5°	327.0	323.3	313.5	304.6	301.5
60°	297.8	294.9	284.4	276.1	273.9
62.5°	269.4	264.1	256.7	249.2	246.2
65°	240.2	235.7	228.3	221.5	217.8
67.5°	210.3	206.5	199.8	194.6	191.6
70°	182.6	179.6	172.8	167.6	164.7
72.5°	154.2	151.2	147.4	142.2	140.0
75°	125.7	124.3	120.4	116.0	117.5
77.5°	100.3	97.3	95.7	93.5	91.3
80°	74.9	74.1	72.6	70.3	68.8
82.5°	50.9	50.9	50.2	47.2	47.2
85°	30.6	29.9	29.2	26.9	26.2
87.5°	13.5	12.0	10.5	8.3	7.5
90°	0.9	11.7	19.5	24.5	26.3
92.5°	24.5	20.5	23.4	25.4	26.3
95°	63.4	31.2	38.0	43.0	42.0
97.5°	114.3	34.2	49.8	52.8	53.7
100°	172.9	39.1	55.7	63.4	65.4
102.5°	237.3	235.5	57.6	68.3	71.3
105°	296.9	326.3	59.6	70.3	74.2
107.5°	366.3	390.7	61.6	72.3	76.2
110°	432.8	453.2	171.0	73.3	77.1

TEST NUMBER: P904911

CATALOG NUMBER: DFN2DIP-4P3F0-020D040US835-FLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	495.3	512.8	496.2	75.2	78.2
115°	561.6	578.2	602.7	150.4	80.2
117.5°	619.3	638.8	655.5	515.7	259.8
120°	683.8	698.4	716.0	727.8	595.9
122.5°	738.4	754.1	773.7	779.5	780.5
125°	794.1	806.9	825.4	832.3	835.2
127.5°	844.9	858.6	873.3	883.1	884.0
130°	892.8	908.5	919.1	929.9	929.0
132.5°	941.6	954.4	965.1	973.9	973.0
135°	982.7	998.4	1007.1	1016.9	1015.0
137.5°	1025.6	1037.3	1047.2	1056.9	1054.0
140°	1067.6	1075.5	1086.2	1095.0	1090.1
142.5°	1102.9	1109.7	1122.4	1130.1	1125.3
145°	1140.0	1139.0	1155.5	1162.4	1157.5
147.5°	1172.1	1169.2	1185.8	1190.7	1186.9
150°	1203.4	1196.6	1212.3	1218.1	1213.2
152.5°	1229.8	1222.0	1236.6	1242.5	1235.7
155°	1255.2	1246.5	1258.2	1264.0	1256.2
157.5°	1275.7	1267.9	1276.8	1283.6	1275.7
160°	1293.3	1287.4	1293.3	1299.1	1292.3
162.5°	1308.9	1303.1	1308.0	1314.8	1306.0
165°	1322.6	1316.8	1319.7	1326.5	1319.7
167.5°	1333.4	1327.4	1330.5	1337.3	1328.5
170°	1342.2	1336.3	1338.2	1345.1	1336.3
172.5°	1348.0	1342.2	1344.2	1351.0	1342.2
175°	1352.8	1346.0	1348.0	1354.8	1345.1
177.5°	1354.8	1348.0	1349.0	1355.9	1347.1
180°	1350.0	1350.0	1350.0	1350.0	1350.0

TEST NUMBER: P904911

CATALOG NUMBER: DFN2DIP-4P3F0-020D040US835-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	5.05	5.78	6.14	6.86	8.36	4.60	5.33	5.69	6.42	7.91
	3H	6.69	7.35	7.79	8.44	9.95	6.20	6.86	7.30	7.95	9.46
	4H	7.27	7.89	8.38	8.99	10.50	6.78	7.40	7.89	8.50	10.01
	6H	7.66	8.23	8.78	9.33	10.86	7.16	7.73	8.28	8.83	10.36
	8H	7.76	8.31	8.88	9.42	10.94	7.26	7.80	8.38	8.92	10.44
	12H	7.80	8.32	8.93	9.43	10.97	7.29	7.81	8.42	8.92	10.46
4H	2H	5.49	6.11	6.60	7.21	8.72	5.14	5.76	6.25	6.85	8.37
	3H	7.34	7.86	8.46	8.98	10.50	6.93	7.45	8.05	8.57	10.10
	4H	8.04	8.52	9.17	9.63	11.18	7.62	8.10	8.74	9.21	10.75
	6H	8.55	8.95	9.68	10.09	11.63	8.11	8.52	9.25	9.66	11.20
	8H	8.69	9.07	9.82	10.20	11.75	8.25	8.63	9.38	9.76	11.32
	12H	8.76	9.10	9.90	10.24	11.80	8.31	8.65	9.45	9.79	11.35
8H	4H	8.23	8.61	9.36	9.73	11.29	7.85	8.23	8.98	9.36	10.91
	6H	8.85	9.16	10.00	10.33	11.88	8.46	8.77	9.61	9.94	11.50
	8H	9.06	9.34	10.22	10.49	12.06	8.67	8.94	9.83	10.09	11.66
	12H	9.18	9.42	10.35	10.57	12.18	8.77	9.01	9.93	10.16	11.77
12H	4H	8.20	8.55	9.35	9.69	11.25	7.83	8.18	8.98	9.32	10.88
	6H	8.87	9.15	10.03	10.30	11.87	8.50	8.77	9.66	9.92	11.49
	8H	9.10	9.35	10.27	10.49	12.10	8.72	8.96	9.88	10.11	11.72

END OF REPORT