

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: P910353

Luminaire Tested: DFN2DIP-4P2F0-040D030US850-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P910353
REPORT IS A COMBINATION OF REPORTS P900542 AND P897455
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P2F0-040D030US850-RLLONL
Description: 2 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

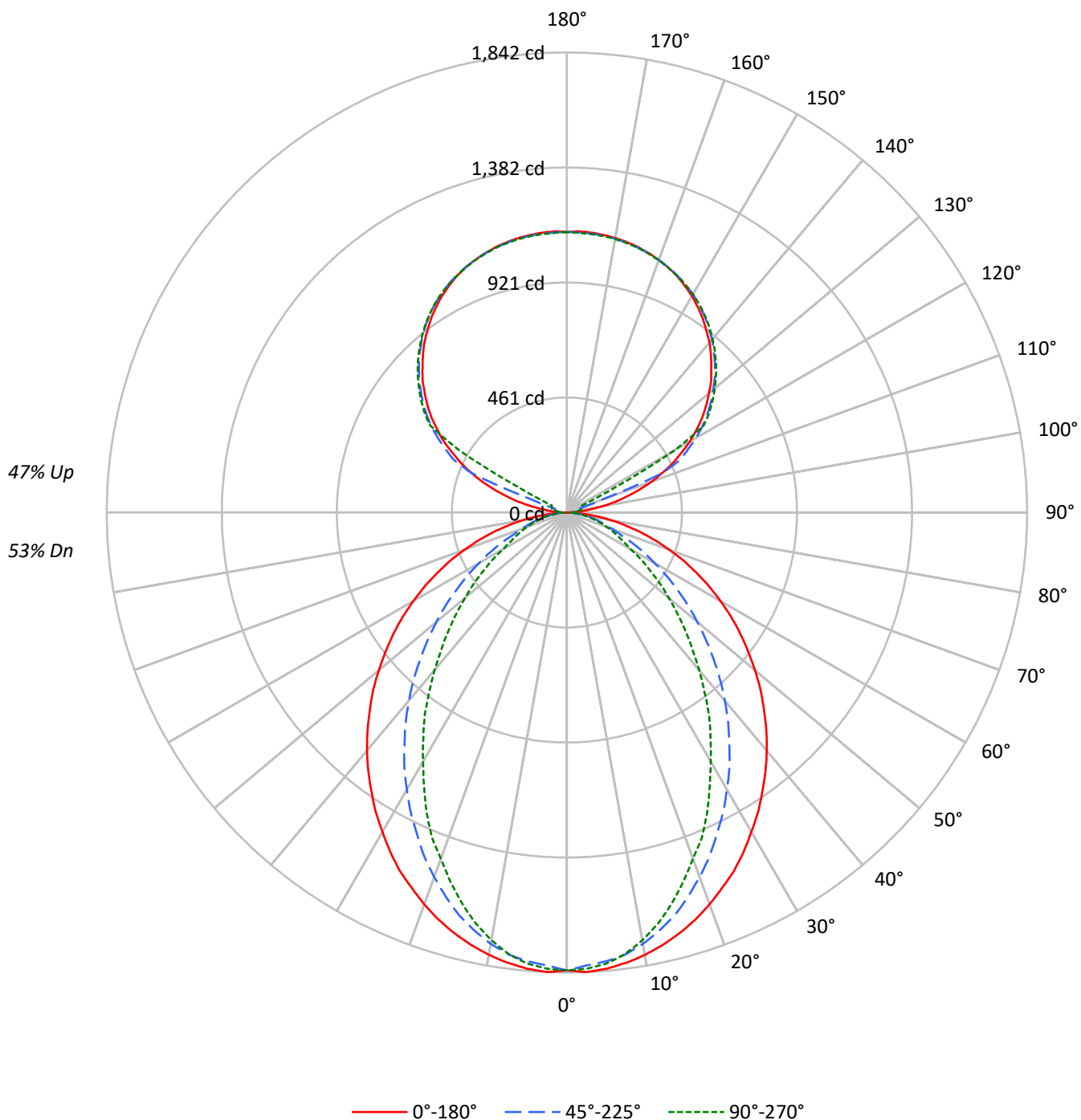
Lumens per Lamp: N/A
Luminaire Lumens: 7064.3 lumens
Efficiency: N/A
Efficacy: 110.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.07' x L: 2.07' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 63.8
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

TEST NUMBER: P910353

CATALOG NUMBER: DFN2DIP-4P2F0-040D030US850-RLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P910353

CATALOG NUMBER: DFN2DIP-4P2F0-040D030US850-RLLONL

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	72	72	72	59	59	59
1	99	95	91	88	92	88	85	82	76	73	71	64	62	61	53	52	51
2	91	83	78	73	84	78	73	68	67	63	60	57	54	52	47	45	44
3	83	74	67	61	77	69	63	58	59	55	51	51	47	44	42	40	38
4	76	66	58	52	70	61	55	49	53	48	44	45	42	38	38	35	33
5	70	59	51	45	65	55	48	43	48	42	38	41	37	34	35	32	29
6	65	53	45	39	60	50	43	37	43	38	34	37	33	30	32	28	26
7	60	48	40	35	56	45	38	33	39	34	30	34	30	26	29	26	23
8	56	44	36	31	52	41	34	29	36	31	27	31	27	24	27	24	21
9	52	40	33	28	48	38	31	26	33	28	24	29	25	22	25	22	19
10	49	37	30	25	45	35	28	24	31	25	22	27	23	20	23	20	17

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4591	4591	4591
5°	4589	4506	4539
10°	4535	4406	4384
15°	4463	4249	4149
20°	4371	4038	3863
25°	4277	3803	3586
30°	4154	3563	3239
35°	4033	3306	2934
40°	3909	3042	2586
45°	3767	2750	2270
50°	3618	2457	1962
55°	3463	2145	1667
60°	3282	1820	1365
65°	3074	1492	1220
70°	2821	1186	1093
75°	2502	1023	981
80°	2047	827	828
85°	1320	509	583

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3767 cd/sqm

TEST NUMBER: P910353

CATALOG NUMBER: DFN2DIP-4P2F0-040D030US850-RLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	171.8	2.4
10°-20°	471.7	6.7
20°-30°	662.3	9.4
30°-40°	721.9	10.2
40°-50°	663.5	9.4
50°-60°	521.1	7.4
60°-70°	339.2	4.8
70°-80°	174.6	2.5
80°-90°	46.5	0.7
90°-100°	37.0	0.5
100°-110°	138.0	2.0
110°-120°	366.1	5.2
120°-130°	607.1	8.6
130°-140°	644.9	9.1
140°-150°	599.4	8.5
150°-160°	481.9	6.8
160°-170°	310.5	4.4
170°-180°	106.9	1.5
0°-30°	1305.8	18.5
0°-40°	2027.7	28.7
0°-60°	3212.2	45.5
0°-90°	3772.6	53.4
90°-120°	541.1	7.7
90°-150°	2392.5	33.9
90°-180°	3292.0	46.6
0°-180°	7064.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1833	1833	1833	1833	1833	
5°	1833	1825	1804	1818	1814	174
15°	1744	1726	1669	1638	1621	491
25°	1583	1530	1420	1352	1327	728
35°	1364	1279	1133	1029	992	854
45°	1115	1004	830	712	672	861
55°	848	718	539	440	408	758
65°	572	438	289	232	227	568
75°	305	189	133	121	120	323
85°	71	36	32	32	32	82
90°	1	10	16	20	22	7
95°	53	26	32	36	35	63
105°	247	271	50	58	62	264
115°	467	481	501	125	67	460
125°	660	671	687	692	695	589
135°	817	830	838	846	844	631
145°	948	947	961	967	963	593
155°	1044	1037	1046	1051	1045	481
165°	1100	1095	1098	1103	1098	311
175°	1125	1120	1121	1127	1119	107
180°	1123	1123	1123	1123	1123	

TEST NUMBER: P910353

CATALOG NUMBER: DFN2DIP-4P2F0-040D030US850-RLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1833.4	1833.4	1833.4	1833.4	1833.4
2.5°	1841.7	1833.4	1815.1	1831.8	1828.4
5°	1833.4	1825.1	1803.5	1818.4	1813.5
7.5°	1818.4	1808.6	1785.4	1791.8	1783.6
10°	1798.6	1786.9	1753.8	1748.7	1738.9
12.5°	1773.7	1758.8	1713.8	1704.0	1685.7
15°	1743.8	1725.5	1669.2	1637.7	1621.1
17.5°	1709.0	1682.4	1612.6	1576.2	1549.6
20°	1669.2	1635.9	1552.9	1511.6	1475.0
22.5°	1626.0	1587.9	1491.5	1435.2	1410.4
25°	1582.9	1529.8	1420.2	1352.3	1327.3
27.5°	1531.5	1475.0	1353.9	1275.9	1237.6
30°	1476.7	1413.5	1280.8	1196.3	1151.5
32.5°	1423.6	1347.2	1211.2	1111.7	1070.1
35°	1364.0	1279.2	1133.3	1028.7	992.1
37.5°	1305.8	1214.5	1060.2	945.6	904.3
40°	1244.4	1144.9	983.9	866.1	823.0
42.5°	1181.3	1075.2	907.6	784.7	743.4
45°	1115.0	1003.8	829.6	711.8	671.9
47.5°	1052.0	934.2	755.0	637.1	600.6
50°	982.2	864.5	681.9	567.4	532.7
52.5°	914.1	789.7	612.3	502.7	471.2
55°	847.8	718.4	539.2	439.7	408.2
57.5°	779.8	647.1	474.5	381.6	355.1
60°	710.1	577.3	406.4	321.9	295.4
62.5°	642.2	509.5	348.3	268.8	255.6
65°	572.5	437.9	288.7	232.3	227.2
67.5°	506.1	371.6	232.3	204.1	199.1
70°	436.4	307.0	192.4	175.9	169.1
72.5°	370.1	247.2	160.9	147.7	144.4
75°	305.2	189.1	132.7	121.1	119.6
77.5°	240.7	134.3	104.6	97.9	94.5
80°	180.8	96.3	79.5	73.1	73.1
82.5°	126.1	64.8	54.8	51.3	51.3
85°	71.3	36.5	31.5	31.5	31.5
87.5°	26.6	13.2	13.2	11.6	11.6
90°	0.8	9.8	16.2	20.4	21.8
92.5°	20.4	17.1	19.5	21.2	21.8
95°	52.8	26.0	31.6	35.8	34.9
97.5°	95.0	28.5	41.4	43.9	44.7
100°	143.8	32.5	46.4	52.8	54.5
102.5°	197.4	195.8	47.9	56.8	59.3
105°	247.0	271.4	49.6	58.4	61.8
107.5°	304.6	324.9	51.2	60.1	63.4
110°	360.0	376.9	142.2	61.0	64.2



TEST NUMBER: P910353

CATALOG NUMBER: DFN2DIP-4P2F0-040D030US850-RLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	412.0	426.5	412.8	62.5	65.0
115°	467.1	481.0	501.3	125.1	66.7
117.5°	515.1	531.3	545.2	429.0	216.1
120°	568.7	580.9	595.5	605.3	495.6
122.5°	614.2	627.3	643.6	648.3	649.2
125°	660.5	671.1	686.6	692.2	694.7
127.5°	702.8	714.1	726.4	734.5	735.3
130°	742.6	755.7	764.5	773.4	772.8
132.5°	783.2	793.8	802.7	810.0	809.2
135°	817.3	830.4	837.6	845.8	844.2
137.5°	853.0	862.8	871.0	879.1	876.7
140°	888.0	894.5	903.4	910.7	906.7
142.5°	917.4	923.0	933.6	940.0	936.0
145°	948.2	947.3	961.2	966.8	962.7
147.5°	974.9	972.5	986.3	990.3	987.1
150°	1001.0	995.3	1008.3	1013.1	1009.1
152.5°	1022.8	1016.4	1028.6	1033.5	1027.8
155°	1044.0	1036.8	1046.5	1051.3	1044.9
157.5°	1061.1	1054.7	1062.0	1067.6	1061.1
160°	1075.7	1070.9	1075.7	1080.6	1074.8
162.5°	1088.7	1083.8	1087.9	1093.6	1086.3
165°	1100.0	1095.2	1097.7	1103.3	1097.7
167.5°	1109.0	1104.1	1106.6	1112.3	1105.0
170°	1116.3	1111.4	1113.1	1118.8	1111.4
172.5°	1121.2	1116.3	1118.0	1123.6	1116.3
175°	1125.2	1119.5	1121.2	1126.9	1118.8
177.5°	1126.9	1121.2	1122.1	1127.7	1120.4
180°	1122.9	1122.9	1122.9	1122.9	1122.9

TEST NUMBER: P910353

CATALOG NUMBER: DFN2DIP-4P2F0-040D030US850-RLLONL

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	12.62	13.48	13.55	14.43	15.65	8.58	9.44	9.51	10.39	11.61
	3H	14.28	15.05	15.22	16.00	17.25	9.75	10.52	10.70	11.47	12.72
	4H	14.87	15.60	15.83	16.56	17.82	10.19	10.91	11.15	11.87	13.13
	6H	15.28	15.94	16.25	16.91	18.18	10.49	11.16	11.46	12.13	13.40
	8H	15.39	16.03	16.37	17.01	18.28	10.57	11.21	11.55	12.19	13.46
	12H	15.45	16.05	16.43	17.03	18.32	10.61	11.21	11.59	12.19	13.48
4H	2H	12.64	13.36	13.60	14.32	15.58	9.17	9.89	10.13	10.85	12.11
	3H	14.44	15.04	15.42	16.04	17.31	10.50	11.10	11.47	12.09	13.36
	4H	15.12	15.67	16.10	16.65	17.95	11.03	11.58	12.01	12.56	13.86
	6H	15.61	16.09	16.61	17.09	18.39	11.43	11.90	12.42	12.91	14.20
	8H	15.78	16.22	16.77	17.22	18.53	11.54	11.98	12.54	12.99	14.29
	12H	15.86	16.26	16.88	17.27	18.59	11.60	12.00	12.61	13.01	14.32
8H	4H	15.08	15.52	16.08	16.52	17.83	11.30	11.74	12.29	12.74	14.05
	6H	15.62	15.99	16.65	17.03	18.34	11.79	12.15	12.81	13.19	14.50
	8H	15.83	16.15	16.86	17.18	18.50	11.96	12.28	12.99	13.31	14.64
	12H	15.95	16.23	16.98	17.26	18.62	12.07	12.35	13.10	13.37	14.74
12H	4H	15.03	15.43	16.05	16.45	17.76	11.30	11.70	12.31	12.71	14.03
	6H	15.60	15.92	16.63	16.95	18.27	11.83	12.15	12.86	13.18	14.51
	8H	15.80	16.09	16.84	17.11	18.48	12.02	12.31	13.06	13.33	14.70