

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: P911701

Luminaire Tested: DFN2DIP-SQ2F0-050D030US850-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P911701
REPORT IS A COMBINATION OF REPORTS P901295 AND P898215
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ2F0-050D030US850-FLLONL
Description: 2 foot, Square Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

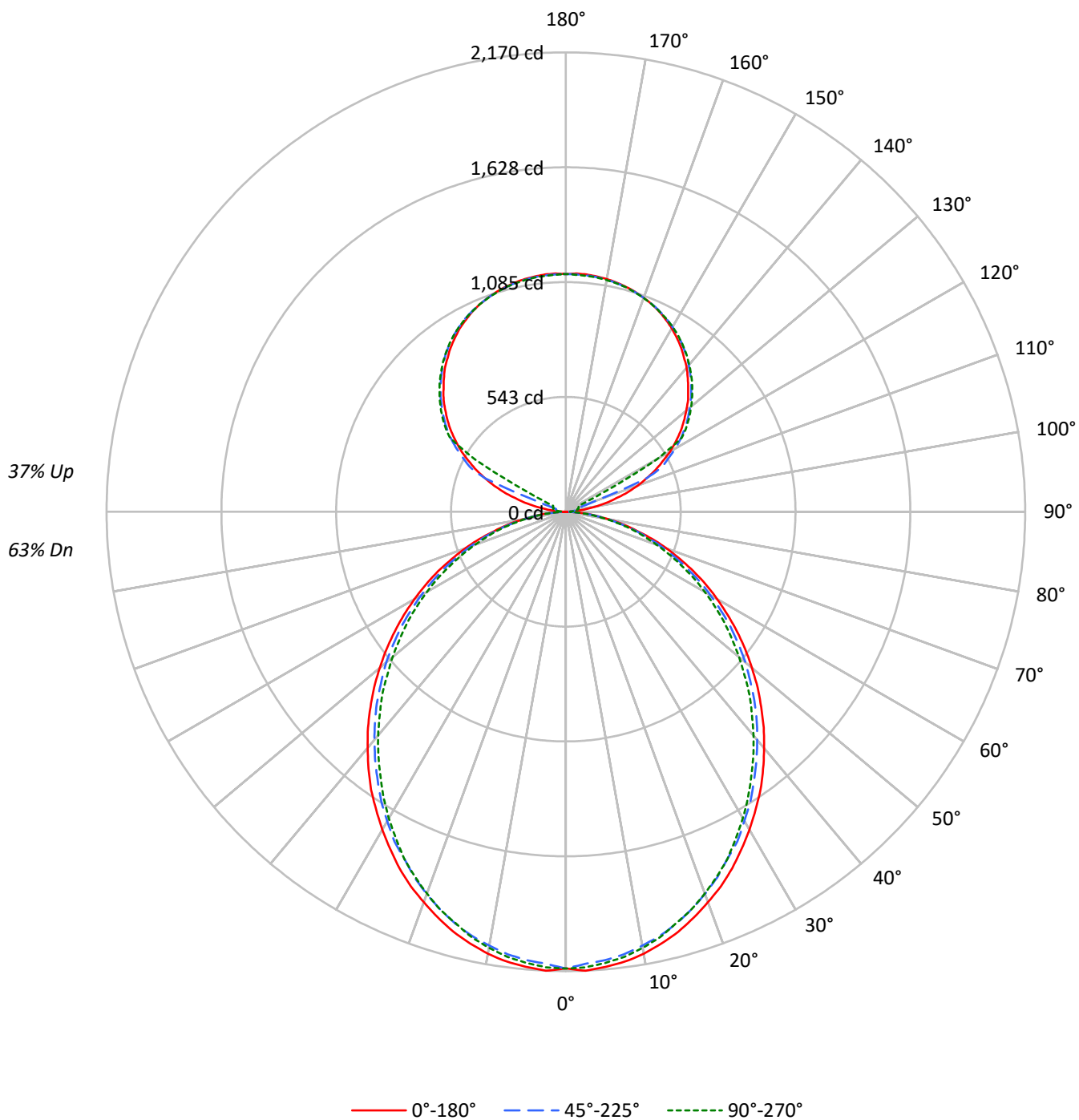
Lumens per Lamp: N/A
Luminaire Lumens: 8783.3 lumens
Efficiency: N/A
Efficacy: 131.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.21' x L: 2.21' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 67
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.996
Total Harmonic Distortion (THDi): 0.064
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
RCR																	
0	110	110	110	110	103	103	103	103	90	90	90	78	78	78	68	68	68
1	101	96	92	89	94	90	87	84	79	77	74	69	67	65	60	58	57
2	92	84	78	72	86	79	73	69	69	65	62	61	58	55	53	50	48
3	84	74	66	60	78	70	63	57	61	56	52	54	50	46	47	44	41
4	77	65	57	51	71	62	54	49	55	49	44	48	43	40	42	38	35
5	70	58	50	44	66	55	48	42	49	43	38	43	38	34	38	34	31
6	65	53	44	38	61	50	42	37	44	38	33	39	34	30	34	30	27
7	60	47	39	34	56	45	38	32	40	34	30	35	31	27	31	27	24
8	56	43	35	30	52	41	34	29	37	31	26	33	28	24	29	25	22
9	52	40	32	27	49	37	30	26	34	28	24	30	25	22	27	23	20
10	49	36	29	24	46	34	28	23	31	25	21	28	23	20	25	21	18

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4744	4744	4744
5°	4744	4668	4703
10°	4697	4595	4633
15°	4620	4509	4527
20°	4518	4393	4418
25°	4417	4258	4294
30°	4292	4130	4138
35°	4173	3982	3973
40°	4028	3832	3816
45°	3883	3681	3654
50°	3724	3522	3468
55°	3557	3338	3295
60°	3368	3122	3097
65°	3159	2896	2864
70°	2896	2621	2611
75°	2533	2290	2368
80°	2092	1870	1924
85°	1412	1181	1208

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3883 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	203.1	2.3
10°-20°	571.4	6.5
20°-30°	839.7	9.6
30°-40°	975.2	11.1
40°-50°	974.0	11.1
50°-60°	849.3	9.7
60°-70°	627.9	7.1
70°-80°	355.2	4.0
80°-90°	95.7	1.1
90°-100°	37.0	0.4
100°-110°	138.0	1.6
110°-120°	366.1	4.2
120°-130°	607.1	6.9
130°-140°	644.9	7.3
140°-150°	599.4	6.8
150°-160°	481.9	5.5
160°-170°	310.5	3.5
170°-180°	106.9	1.2
0°-30°	1614.1	18.4
0°-40°	2589.4	29.5
0°-60°	4412.7	50.2
0°-90°	5491.5	62.5
90°-120°	541.1	6.2
90°-150°	2392.5	27.2
90°-180°	3292.0	37.5
0°-180°	8783.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2158	2158	2158	2158	2158	
5°	2158	2150	2126	2143	2139	205
15°	2054	2042	2014	2023	2012	578
25°	1859	1842	1807	1811	1807	855
35°	1604	1583	1550	1537	1527	1001
45°	1305	1290	1259	1237	1228	1007
55°	988	975	950	925	915	883
65°	666	654	633	614	604	659
75°	348	344	334	322	326	372
85°	85	83	81	75	73	95
90°	1	10	16	20	22	8
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	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2157.6	2157.6	2157.6	2157.6	2157.6
2.5°	2170.1	2159.8	2136.9	2157.6	2153.7
5°	2157.6	2149.5	2126.5	2143.0	2139.2
7.5°	2143.0	2130.7	2107.9	2124.6	2120.4
10°	2120.4	2105.9	2081.0	2097.5	2091.4
12.5°	2089.1	2076.8	2052.0	2062.3	2058.1
15°	2053.9	2041.6	2014.5	2022.9	2012.5
17.5°	2010.3	1998.0	1970.9	1981.2	1970.9
20°	1962.6	1950.3	1921.2	1927.3	1919.2
22.5°	1915.0	1896.3	1869.2	1869.2	1865.0
25°	1858.9	1842.4	1807.1	1811.1	1807.1
27.5°	1796.6	1782.1	1755.2	1749.0	1738.7
30°	1734.5	1717.8	1686.8	1680.6	1672.3
32.5°	1668.0	1655.7	1622.5	1609.9	1601.6
35°	1603.7	1583.1	1549.8	1537.3	1527.0
37.5°	1531.1	1512.5	1479.2	1464.7	1454.3
40°	1456.6	1439.8	1406.5	1388.0	1379.7
42.5°	1383.9	1367.2	1334.1	1313.2	1300.9
45°	1305.1	1290.5	1259.3	1236.6	1228.2
47.5°	1228.2	1213.7	1180.5	1157.6	1145.3
50°	1147.3	1136.9	1107.9	1078.8	1068.4
52.5°	1068.4	1053.9	1027.0	1004.2	989.7
55°	987.7	975.1	950.2	925.3	915.0
57.5°	906.6	896.3	869.2	844.4	836.0
60°	825.7	817.6	788.5	765.5	759.4
62.5°	746.9	732.4	711.6	690.9	682.6
65°	666.1	653.5	632.8	614.2	603.7
67.5°	583.1	572.6	554.1	539.5	531.1
70°	506.3	497.9	479.2	464.7	456.6
72.5°	427.5	419.1	408.8	394.2	388.0
75°	348.4	344.5	333.9	321.6	325.8
77.5°	278.0	269.6	265.5	259.3	253.2
80°	207.6	205.4	201.2	195.1	190.9
82.5°	141.1	141.1	139.1	130.8	130.8
85°	84.9	83.0	81.0	74.6	72.6
87.5°	37.4	33.3	29.1	22.8	20.7
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



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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

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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	13.65	14.63	14.49	15.50	16.58	13.20	14.19	14.04	15.05	16.13
	3H	15.30	16.18	16.15	17.06	18.16	14.81	15.69	15.66	16.57	17.67
	4H	15.88	16.72	16.75	17.60	18.71	15.38	16.22	16.26	17.10	18.22
	6H	16.27	17.04	17.15	17.93	19.06	15.77	16.54	16.65	17.43	18.56
	8H	16.37	17.11	17.26	18.01	19.14	15.87	16.60	16.76	17.51	18.64
	12H	16.42	17.12	17.31	18.02	19.17	15.91	16.61	16.80	17.51	18.66
4H	2H	14.11	14.95	14.99	15.83	16.95	13.76	14.59	14.63	15.47	16.59
	3H	15.97	16.67	16.85	17.58	18.71	15.56	16.26	16.45	17.17	18.30
	4H	16.67	17.31	17.57	18.22	19.38	16.25	16.88	17.15	17.79	18.95
	6H	17.17	17.73	18.09	18.66	19.82	16.74	17.29	17.66	18.23	19.39
	8H	17.32	17.83	18.23	18.76	19.93	16.88	17.40	17.80	18.32	19.50
	12H	17.39	17.85	18.32	18.80	19.98	16.94	17.40	17.88	18.35	19.53
8H	4H	16.87	17.38	17.78	18.31	19.48	16.49	17.00	17.40	17.93	19.10
	6H	17.48	17.90	18.42	18.87	20.05	17.09	17.52	18.04	18.49	19.66
	8H	17.69	18.06	18.64	19.02	20.21	17.29	17.67	18.25	18.63	19.82
	12H	17.81	18.14	18.77	19.10	20.34	17.40	17.73	18.36	18.69	19.93
12H	4H	16.86	17.32	17.79	18.26	19.44	16.49	16.95	17.42	17.89	19.07
	6H	17.50	17.88	18.46	18.84	20.03	17.13	17.51	18.08	18.47	19.66
	8H	17.74	18.07	18.69	19.02	20.26	17.36	17.69	18.31	18.64	19.88