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: P911832

Luminaire Tested: DFN2DIP-SQ3F0-050D040US850-FLLFLL

Issue Date: 11/21/2024

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Scaled Data Report

Test Information

Test Method:	LM-79-2019
Report Number:	P911832
	REPORT IS A COMBINATION OF REPORTS P899863 AND P896733
Test Lab:	INNOVATION CENTER
Issue Date:	11/21/2024
Manufacturer:	COOPER LIGHTING SOLUTIONS
Product Line:	NEO-RAY
Catalog Number:	DFN2DIP-SQ3F0-050D040US850-FLLFLL
Description:	3 foot, Square Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source:	-
Ballast/Driver:	-

Summary

Lumens per Lamp:	N/A
Luminaire Lumens:	9415.4 lumens
Efficiency:	N/A
Efficacy:	129.9 lumens/watt
Spacing Criteria (0/90/45):	1.2 / 1.16 / 1.29
Luminous Opening:	Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type:	General Diffuse

Input Watts (W):	72.5
Input Voltage (V):	120
Input Current (Ain):	NR
Voltage Rise (V):	NR
Power Factor:	0.9789
Total Harmonic Distortion (THDi):	0.074
Frequency (hertz):	60
Stabilization Time:	NR
Operation Time:	NR
Ambient Temperature (°C):	NR
Test Distance:	24 FT

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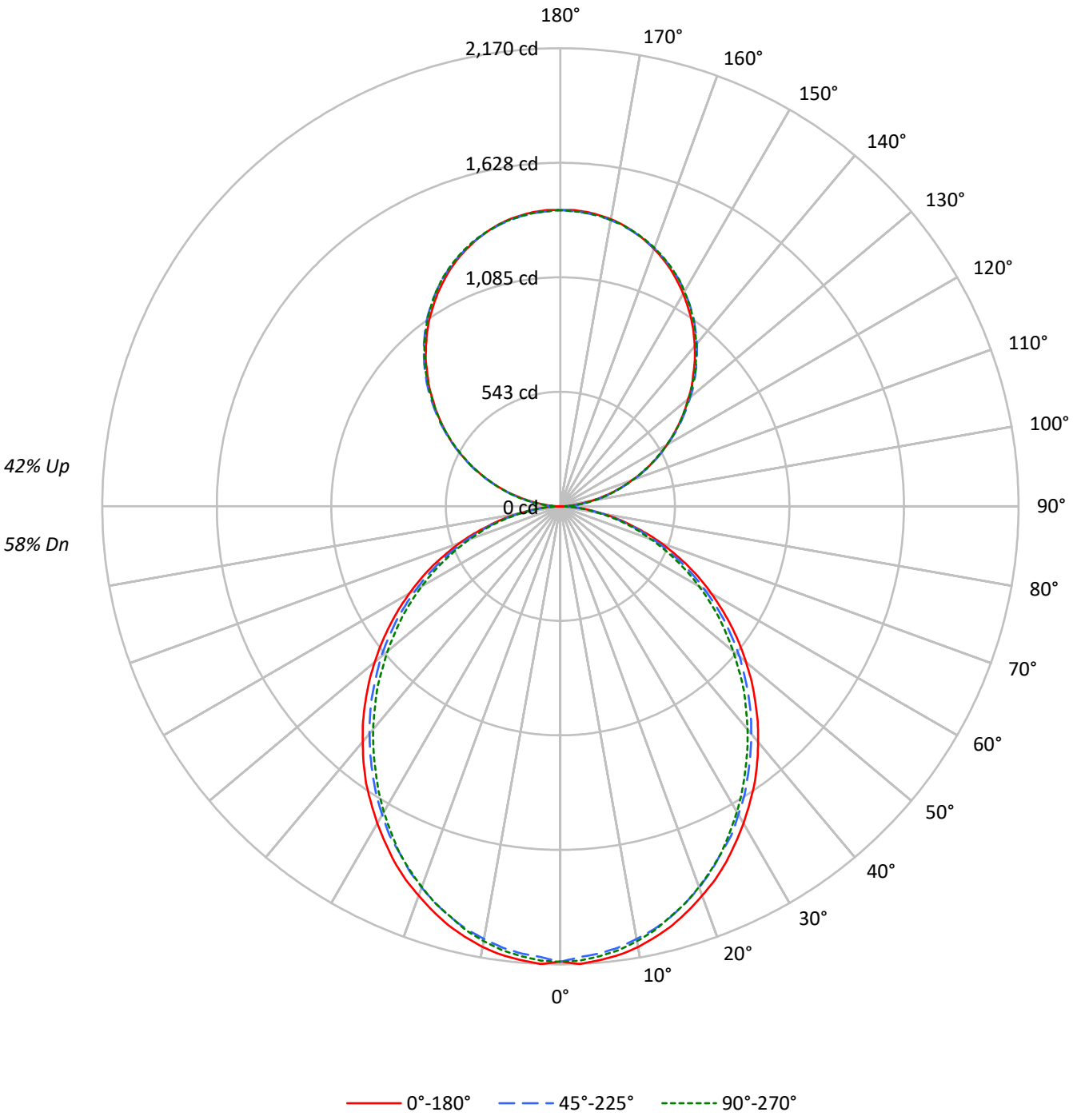
Luminous Intensity Polar Plot



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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20			20			20			20
RC	80				70				50			30			10			0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																		
0	109	109	109	109	102	102	102	102	88	88	88	75	75	75	64	64	64	58
1	100	95	91	88	93	89	86	82	77	75	72	66	65	63	56	55	54	49
2	91	83	77	72	84	78	72	68	68	64	60	58	55	52	50	47	45	41
3	83	73	66	60	77	69	62	57	60	55	50	52	48	44	44	41	39	35
4	76	65	57	51	70	61	54	48	53	47	43	46	42	38	39	36	33	30
5	70	58	50	43	65	54	47	41	48	42	37	41	37	33	35	32	29	26
6	64	52	44	38	60	49	41	36	43	37	32	37	33	29	32	29	26	23
7	59	47	39	33	55	44	37	32	39	33	29	34	29	26	29	26	23	20
8	55	43	35	29	51	40	33	28	36	30	26	31	26	23	27	23	20	18
9	51	39	31	26	48	37	30	25	33	27	23	29	24	21	25	21	18	16
10	48	36	28	24	45	34	27	23	30	25	21	27	22	19	23	19	17	15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2472	2472	2472
5°	2475	2436	2453
10°	2453	2402	2419
15°	2415	2360	2367
20°	2365	2304	2313
25°	2315	2237	2250
30°	2252	2174	2172
35°	2193	2100	2088
40°	2121	2025	2009
45°	2048	1951	1927
50°	1969	1872	1833
55°	1885	1781	1746
60°	1791	1673	1647
65°	1688	1561	1530
70°	1557	1425	1404
75°	1375	1261	1286
80°	1156	1052	1063
85°	813	697	695

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 2048 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	203.1	2.2
10°-20°	571.4	6.1
20°-30°	839.7	8.9
30°-40°	975.2	10.4
40°-50°	974.0	10.3
50°-60°	849.3	9.0
60°-70°	627.9	6.7
70°-80°	355.2	3.8
80°-90°	97.7	1.0
90°-100°	86.8	0.9
100°-110°	275.8	2.9
110°-120°	472.0	5.0
120°-130°	620.8	6.6
130°-140°	696.8	7.4
140°-150°	683.3	7.3
150°-160°	573.2	6.1
160°-170°	380.1	4.0
170°-180°	132.9	1.4
0°-30°	1614.1	17.1
0°-40°	2589.4	27.5
0°-60°	4412.7	46.9
0°-90°	5493.5	58.3
90°-120°	834.7	8.9
90°-150°	2835.6	30.1
90°-180°	3922.0	41.7
0°-180°	9415.4	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	15	42	39	40	9
95°	62	74	76	76	74	69
105°	255	258	260	263	263	269
115°	474	480	478	477	474	469
125°	689	700	696	692	691	616
135°	891	904	907	906	902	689
145°	1082	1090	1097	1098	1094	676
155°	1237	1240	1244	1250	1246	569
165°	1346	1345	1345	1353	1347	380
175°	1400	1397	1394	1403	1396	133
180°	1403	1403	1403	1403	1403	

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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°	*1.2*	15.2	41.5	38.9	40.1
92.5°	*26.2*	35.5	36.8	38.0	38.0
95°	*61.8*	73.6	75.7	75.7	73.6
97.5°	*102.8*	113.8	118.4	118.4	118.4
100°	*150.2*	159.9	163.2	163.2	162.0
102.5°	*200.1*	207.3	211.9	213.1	211.9
105°	*254.6*	258.0	260.5	262.6	262.6
107.5°	*308.7*	313.8	313.8	314.6	308.7
110°	*361.2*	368.0	368.0	368.0	364.6

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	*417.9*	425.1	423.7	420.4	417.9
115°	*473.7*	480.5	478.3	477.1	473.7
117.5°	*529.1*	538.4	532.5	529.1	525.8
120°	*585.0*	594.2	585.0	585.0	581.1
122.5°	*635.7*	647.5	641.7	638.2	635.7
125°	*689.0*	699.6	696.2	692.3	691.1
127.5°	*741.0*	754.1	749.5	744.4	741.0
130°	*789.6*	804.9	802.8	800.3	795.6
132.5°	*844.2*	856.0	856.9	850.9	847.6
135°	*891.2*	904.3	906.8	905.5	902.2
137.5°	*943.6*	954.2	956.3	955.4	950.4
140°	*989.7*	1000.3	1006.2	1006.2	1001.5
142.5°	*1037.1*	1047.7	1051.0	1052.3	1047.7
145°	*1081.9*	1090.4	1097.1	1098.5	1093.8
147.5°	*1122.1*	1132.6	1137.7	1139.8	1135.2
150°	*1163.6*	1170.8	1175.4	1179.2	1175.4
152.5°	*1200.4*	1207.5	1213.5	1218.1	1213.5
155°	*1237.1*	1240.5	1244.3	1250.3	1246.4
157.5°	*1268.9*	1271.4	1273.5	1282.0	1276.0
160°	*1297.2*	1299.7	1301.0	1308.2	1303.1
162.5°	*1323.4*	1323.4	1324.7	1332.7	1326.8
165°	*1345.9*	1344.6	1344.6	1353.0	1347.1
167.5°	*1366.2*	1362.3	1362.3	1370.8	1364.8
170°	*1381.4*	1377.9	1376.7	1385.1	1377.9
172.5°	*1391.9*	1388.6	1387.2	1395.8	1388.6
175°	*1400.4*	1397.0	1394.5	1402.9	1395.8
177.5°	*1405.1*	1401.7	1399.1	1406.3	1399.1
180°	*1402.9*	1402.9	1402.9	1402.9	1402.9

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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	11.12	12.06	12.00	12.96	14.11	10.67	11.62	11.56	12.52	13.67
	3H	12.78	13.63	13.67	14.54	15.71	12.29	13.14	13.18	14.05	15.22
	4H	13.37	14.17	14.28	15.09	16.27	12.87	13.67	13.78	14.59	15.77
	6H	13.77	14.51	14.69	15.43	16.62	13.27	14.01	14.19	14.93	16.12
	8H	13.87	14.58	14.80	15.52	16.71	13.37	14.07	14.30	15.02	16.21
	12H	13.92	14.59	14.86	15.53	16.75	13.41	14.08	14.35	15.02	16.24
4H	2H	11.58	12.38	12.50	13.30	14.48	11.23	12.03	12.14	12.95	14.13
	3H	13.45	14.12	14.38	15.07	16.27	13.04	13.71	13.97	14.66	15.86
	4H	14.17	14.78	15.10	15.72	16.94	13.74	14.35	14.68	15.30	16.52
	6H	14.68	15.21	15.63	16.17	17.40	14.25	14.78	15.20	15.74	16.96
	8H	14.83	15.32	15.78	16.28	17.52	14.39	14.89	15.35	15.85	17.08
	12H	14.91	15.35	15.88	16.33	17.57	14.46	14.90	15.43	15.88	17.12
8H	4H	14.37	14.86	15.32	15.82	17.05	13.99	14.48	14.94	15.44	16.68
	6H	14.99	15.40	15.97	16.40	17.64	14.61	15.02	15.59	16.02	17.25
	8H	15.21	15.57	16.20	16.56	17.82	14.82	15.18	15.81	16.17	17.42
	12H	15.34	15.66	16.33	16.65	17.95	14.93	15.25	15.92	16.24	17.54
12H	4H	14.35	14.80	15.32	15.78	17.02	13.99	14.43	14.96	15.41	16.65
	6H	15.02	15.38	16.01	16.37	17.63	14.65	15.01	15.64	16.00	17.25
	8H	15.26	15.58	16.25	16.57	17.87	14.88	15.20	15.87	16.19	17.49

END OF REPORT