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: P903807

Luminaire Tested: DFN2DIP-SQ3F0-090D070US830-RLLONL

Issue Date: 11/21/2024

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Scaled Data Report

Test Information

Test Method:	LM-79-2019
Report Number:	P903807
	REPORT IS A COMBINATION OF REPORTS P901446 AND P898289
Test Lab:	INNOVATION CENTER
Issue Date:	11/21/2024
Manufacturer:	COOPER LIGHTING SOLUTIONS
Product Line:	NEO-RAY
Catalog Number:	DFN2DIP-SQ3F0-090D070US830-RLLONL
Description:	3 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source:	-
Ballast/Driver:	-

Summary

Lumens per Lamp:	N/A
Luminaire Lumens:	13742.3 lumens
Efficiency:	N/A
Efficacy:	97.9 lumens/watt
Spacing Criteria (0/90/45):	1.2 / 0.99 / 1.16
Luminous Opening:	Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type:	General Diffuse

Input Watts (W):	140.3
Input Voltage (V):	
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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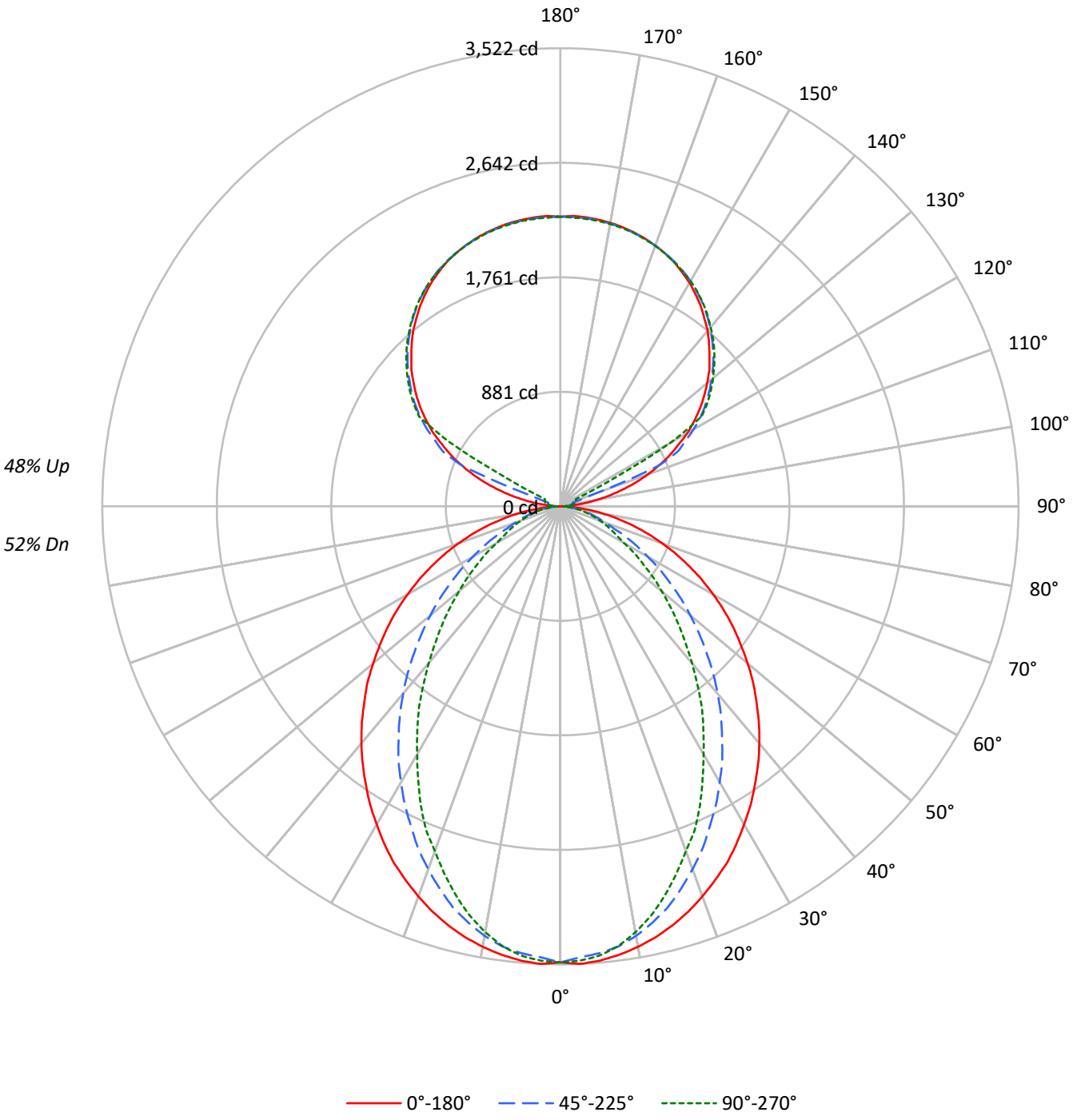
Luminous Intensity Polar Plot



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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20			20			20			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	108	108	108	108	100	100	100	100	85	85	85	71	71	71	58	58	58	52
1	99	95	91	88	91	88	85	82	75	73	71	63	62	60	52	51	50	45
2	90	83	77	72	84	77	72	68	66	63	59	56	53	51	47	45	43	39
3	83	74	67	61	76	69	62	57	59	54	50	50	47	44	42	39	37	33
4	76	66	58	52	70	61	54	49	53	48	43	45	41	38	38	35	33	29
5	70	59	51	45	65	55	48	43	47	42	38	41	36	33	34	31	29	26
6	65	53	45	39	60	49	42	37	43	37	33	37	33	29	31	28	26	23
7	60	48	40	35	55	45	38	33	39	34	30	34	29	26	29	25	23	20
8	56	44	36	31	52	41	34	29	36	30	26	31	27	24	26	23	21	18
9	52	40	33	28	48	38	31	26	33	28	24	29	24	21	25	21	19	17
10	49	37	30	25	45	35	28	24	30	25	22	27	22	19	23	20	17	15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4017	4017	4017
5°	4021	3951	3977
10°	3979	3871	3847
15°	3921	3740	3645
20°	3846	3561	3399
25°	3770	3361	3161
30°	3667	3156	2859
35°	3567	2937	2594
40°	3464	2709	2291
45°	3346	2457	2016
50°	3223	2203	1748
55°	3094	1932	1490
60°	2945	1649	1225
65°	2774	1362	1101
70°	2566	1094	995
75°	2304	959	902
80°	1925	795	778
85°	1305	518	576

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 3346 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	328.6	2.4
10°-20°	902.0	6.6
20°-30°	1266.4	9.2
30°-40°	1380.5	10.0
40°-50°	1268.8	9.2
50°-60°	996.5	7.3
60°-70°	648.6	4.7
70°-80°	333.9	2.4
80°-90°	89.1	0.6
90°-100°	73.4	0.5
100°-110°	273.7	2.0
110°-120°	725.9	5.3
120°-130°	1204.0	8.8
130°-140°	1278.9	9.3
140°-150°	1188.6	8.6
150°-160°	955.6	7.0
160°-170°	615.8	4.5
170°-180°	211.9	1.5
0°-30°	2497.0	18.2
0°-40°	3877.5	28.2
0°-60°	6142.8	44.7
0°-90°	7214.4	52.5
90°-120°	1073.0	7.8
90°-150°	4744.6	34.5
90°-180°	6528.0	47.5
0°-180°	13742.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3506	3506	3506	3506	3506	
5°	3506	3490	3449	3477	3468	332
15°	3335	3300	3192	3132	3100	940
25°	3027	2925	2716	2586	2538	1392
35°	2608	2446	2167	1967	1897	1632
45°	2132	1920	1586	1361	1285	1647
55°	1621	1374	1031	841	781	1449
65°	1095	838	552	444	435	1085
75°	584	362	254	232	229	617
85°	136	70	60	60	60	156
90°	2	19	32	40	44	13
95°	105	52	63	71	69	124
105°	490	538	98	116	122	523
115°	926	954	994	248	132	912
125°	1310	1331	1362	1373	1378	1168
135°	1621	1647	1661	1677	1674	1252
145°	1880	1879	1906	1917	1909	1176
155°	2070	2056	2075	2085	2072	954
165°	2182	2172	2177	2188	2177	616
175°	2232	2220	2224	2235	2219	212
180°	2227	2227	2227	2227	2227	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	*3506.0*	3506.0	3506.0	3506.0	3506.0
2.5°	*3521.8*	*3506.0*	*3470.9*	*3503.0*	*3496.5*
5°	*3506.0*	3490.1	3448.8	3477.3	3467.9
7.5°	*3477.3*	3458.5	3414.1	3426.5	3410.7
10°	*3439.3*	3417.1	3353.8	3344.0	3325.2
12.5°	*3391.8*	3363.3	3277.4	3258.6	3223.5
15°	*3334.6*	3299.7	3191.9	3131.6	3100.0
17.5°	*3268.0*	3217.2	3083.8	3014.2	2963.4
20°	*3191.9*	3128.3	2969.7	2890.6	2820.6
22.5°	*3109.4*	3036.4	2852.2	2744.5	2697.1
25°	*3027.0*	2925.3	2715.9	2586.0	2538.2
27.5°	*2928.7*	2820.6	2589.0	2439.9	2366.8
30°	*2824.0*	2703.1	2449.3	2287.7	2201.9
32.5°	*2722.3*	2576.2	2316.3	2125.8	2046.4
35°	*2608.2*	2446.3	2167.2	1967.3	1897.2
37.5°	*2497.1*	2322.4	2027.5	1808.4	1729.3
40°	*2379.6*	2189.4	1881.4	1656.2	1573.8
42.5°	*2259.1*	2056.2	1735.6	1500.7	1421.5
45°	*2132.2*	1919.5	1586.5	1360.9	1284.9
47.5°	*2011.7*	1786.5	1443.8	1218.2	1148.6
50°	*1878.4*	1653.1	1304.1	1085.0	1018.6
52.5°	*1748.1*	1510.1	1170.8	961.4	901.2
55°	*1621.2*	1373.8	1031.0	840.9	780.6
57.5°	*1491.3*	1237.5	907.6	729.8	679.0
60°	*1357.9*	1104.1	777.3	615.7	564.9
62.5°	*1228.0*	974.2	666.2	514.1	488.8
65°	*1094.7*	837.5	552.0	444.3	434.6
67.5°	*967.8*	710.6	444.3	390.1	380.7
70°	*834.5*	587.1	368.0	336.3	323.5
72.5°	*707.6*	472.6	307.6	282.4	276.1
75°	*583.7*	361.6	253.8	231.6	228.6
77.5°	*460.1*	256.8	199.9	187.2	180.8
80°	*345.7*	184.2	152.1	139.7	139.7
82.5°	*241.0*	123.9	104.7	98.3	98.3
85°	*136.3*	69.7	60.2	60.2	60.2
87.5°	*50.8*	25.3	25.3	22.2	22.2
90°	*1.5*	19.3	32.1	40.3	43.5
92.5°	*40.3*	33.8	38.6	41.9	43.5
95°	*104.6*	51.5	62.8	71.0	69.3
97.5°	*188.4*	56.5	82.1	87.1	88.6
100°	*285.3*	64.5	91.8	104.6	107.9
102.5°	*391.4*	388.4	95.1	112.7	117.6
105°	*489.8*	538.2	98.3	115.9	122.4
107.5°	*604.2*	644.4	101.6	119.2	125.7
110°	*713.9*	747.5	282.0	120.9	127.2

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	*817.0*	845.8	818.5	123.9	128.9
115°	*926.4*	953.8	994.1	248.2	132.2
117.5°	*1021.5*	1053.7	1081.2	850.6	428.6
120°	*1127.8*	1152.0	1181.1	1200.4	982.9
122.5°	*1218.0*	1243.8	1276.2	1285.7	1287.4
125°	*1309.9*	1330.9	1361.5	1372.8	1377.5
127.5°	*1393.6*	1416.2	1440.5	1456.6	1458.1
130°	*1472.6*	1498.5	1516.1	1533.9	1532.4
132.5°	*1553.2*	1574.2	1591.9	1606.4	1604.9
135°	*1620.9*	1646.7	1661.1	1677.3	1674.1
137.5°	*1691.7*	1711.1	1727.3	1743.4	1738.6
140°	*1761.0*	1774.0	1791.6	1806.1	1798.1
142.5°	*1819.1*	1830.4	1851.2	1864.1	1856.1
145°	*1880.4*	1878.7	1906.0	1917.3	1909.3
147.5°	*1933.3*	1928.6	1956.0	1964.0	1957.7
150°	*1985.0*	1973.8	1999.6	2009.1	2001.1
152.5°	*2028.4*	2015.6	2039.8	2049.5	2038.2
155°	*2070.4*	2056.0	2075.3	2084.9	2072.1
157.5°	*2104.2*	2091.4	2105.9	2117.2	2104.2
160°	*2133.4*	2123.5	2133.4	2142.9	2131.6
162.5°	*2159.0*	2149.4	2157.4	2168.7	2154.2
165°	*2181.5*	2172.0	2176.7	2188.0	2176.7
167.5°	*2199.3*	2189.5	2194.5	2205.8	2191.3
170°	*2213.8*	2204.1	2207.3	2218.7	2204.1
172.5°	*2223.5*	2213.8	2217.1	2228.4	2213.8
175°	*2231.5*	2220.2	2223.5	2234.7	2218.7
177.5°	*2234.7*	2223.5	2225.2	2236.5	2221.9
180°	*2226.7*	2226.7	2226.7	2226.7	2226.7

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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	12.18	13.03	13.12	13.98	15.22	8.14	8.99	9.08	9.94	11.18
	3H	13.85	14.61	14.80	15.57	16.84	9.32	10.08	10.27	11.04	12.31
	4H	14.46	15.18	15.42	16.14	17.41	9.77	10.49	10.73	11.45	12.72
	6H	14.88	15.54	15.85	16.51	17.79	10.08	10.74	11.06	11.72	13.00
	8H	15.00	15.63	15.99	16.62	17.90	10.17	10.80	11.16	11.79	13.07
	12H	15.06	15.66	16.05	16.64	17.95	10.21	10.81	11.20	11.79	13.10
4H	2H	12.19	12.91	13.17	13.88	15.15	8.73	9.45	9.71	10.42	11.69
	3H	14.02	14.62	15.00	15.62	16.90	10.08	10.67	11.06	11.67	12.95
	4H	14.71	15.25	15.70	16.25	17.55	10.62	11.16	11.61	12.16	13.46
	6H	15.22	15.69	16.22	16.70	18.01	11.03	11.50	12.04	12.52	13.82
	8H	15.39	15.83	16.40	16.84	18.16	11.16	11.60	12.16	12.60	13.92
	12H	15.49	15.88	16.51	16.91	18.23	11.22	11.62	12.24	12.64	13.96
8H	4H	14.68	15.11	15.68	16.12	17.44	10.90	11.34	11.90	12.34	13.66
	6H	15.24	15.60	16.27	16.65	17.97	11.41	11.77	12.44	12.82	14.14
	8H	15.45	15.77	16.49	16.81	18.14	11.60	11.91	12.63	12.95	14.29
	12H	15.59	15.87	16.63	16.90	18.28	11.71	11.99	12.75	13.02	14.40
12H	4H	14.63	15.02	15.65	16.05	17.37	10.90	11.30	11.93	12.32	13.65
	6H	15.21	15.53	16.25	16.57	17.90	11.46	11.78	12.49	12.81	14.15
	8H	15.43	15.71	16.47	16.74	18.12	11.66	11.94	12.70	12.97	14.35

END OF REPORT