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: P918169

Luminaire Tested: DFN2DIP-TR3F0-090D060US930-FLLONL

Issue Date: 11/21/2024

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Scaled Data Report

Test Information

Test Method:	LM-79-2019
Report Number:	P918169
	REPORT IS A COMBINATION OF REPORTS P901845 AND P898751
Test Lab:	INNOVATION CENTER
Issue Date:	11/21/2024
Manufacturer:	COOPER LIGHTING SOLUTIONS
Product Line:	NEO-RAY
Catalog Number:	DFN2DIP-TR3F0-090D060US930-FLLONL
Description:	3 foot, Triangle Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source:	-
Ballast/Driver:	-

Summary

Lumens per Lamp:	N/A
Luminaire Lumens:	12107.2 lumens
Efficiency:	N/A
Efficacy:	86.5 lumens/watt
Spacing Criteria (0/90/45):	1.2 / 1.16 / 1.29
Luminous Opening:	Rectangular w/ Sides (W: 2.74' x L: 3.16' x H: 0.1')
CIE Type:	Semi-Direct

Input Watts (W):	140
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

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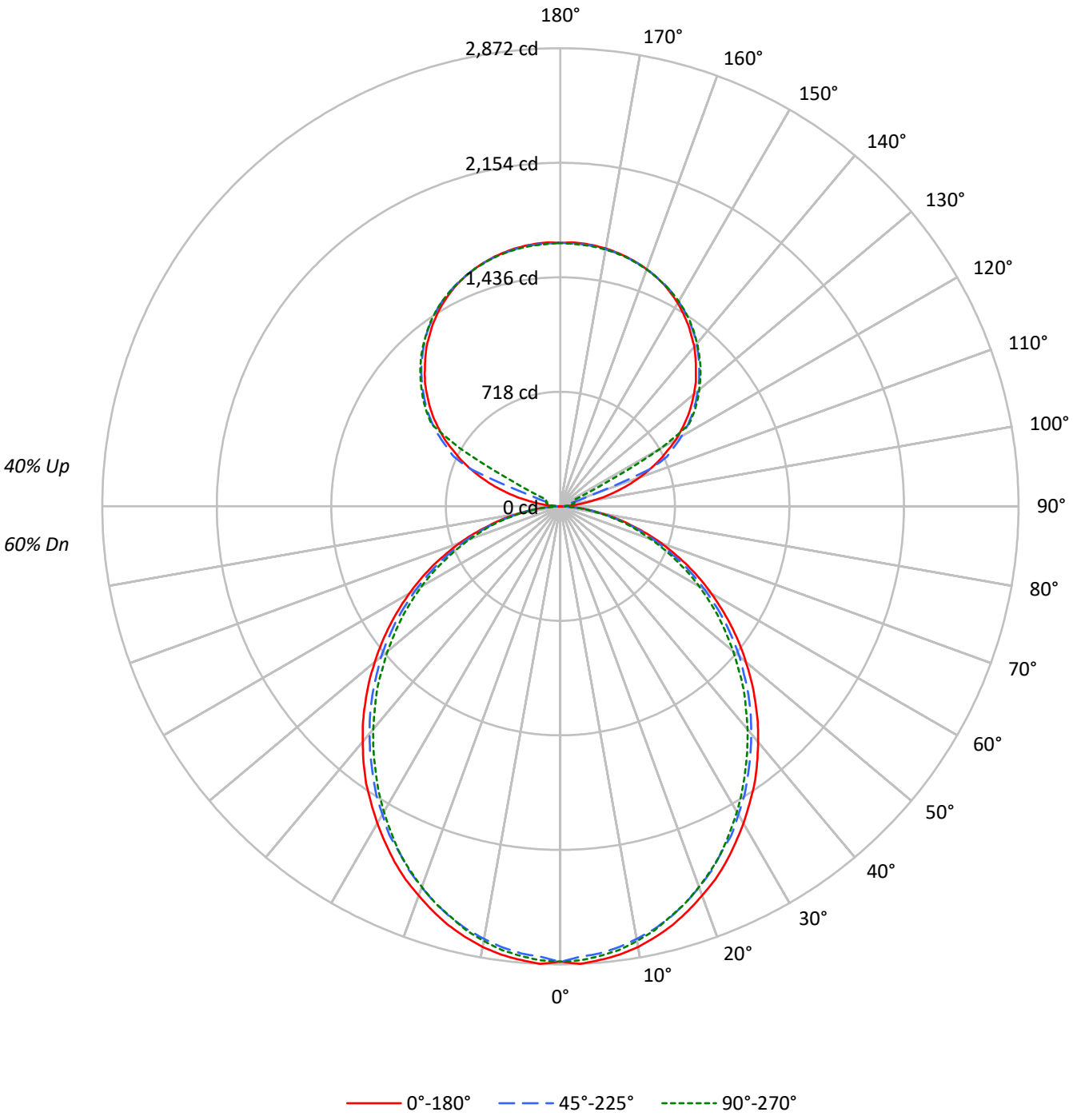
Luminous Intensity Polar Plot



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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	110	110	110	110	102	102	102	102	89	89	89	77	77	77	65	65	65	60
1	100	96	92	88	93	90	86	83	78	75	73	67	66	64	58	56	55	51
2	91	84	77	72	85	78	73	68	68	64	61	59	56	53	51	49	47	42
3	83	73	66	60	77	69	62	57	60	55	51	52	48	45	45	42	40	36
4	76	65	57	51	71	61	54	48	54	48	44	47	42	39	40	37	34	31
5	70	58	50	44	65	55	47	42	48	42	38	42	37	34	36	33	30	27
6	64	52	44	38	60	49	42	36	43	37	33	38	33	30	33	29	26	24
7	60	47	39	33	56	44	37	32	39	33	29	35	30	26	30	26	23	21
8	55	43	35	30	52	40	33	28	36	30	26	32	27	23	28	24	21	19
9	52	39	32	26	48	37	30	25	33	27	23	29	24	21	26	22	19	17
10	48	36	29	24	45	34	27	23	30	25	21	27	22	19	24	20	17	15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3558	3558	3558
5°	3561	3505	3529
10°	3531	3455	3479
15°	3477	3395	3402
20°	3405	3313	3324
25°	3333	3216	3233
30°	3243	3125	3118
35°	3158	3018	2997
40°	3054	2910	2882
45°	2950	2801	2763
50°	2836	2687	2627
55°	2717	2556	2500
60°	2581	2400	2355
65°	2434	2238	2185
70°	2245	2040	2000
75°	1985	1803	1826
80°	1671	1500	1501
85°	1180	988	969

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 2950 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	268.7	2.2
10°-20°	756.1	6.2
20°-30°	1111.2	9.2
30°-40°	1290.5	10.7
40°-50°	1288.9	10.6
50°-60°	1123.9	9.3
60°-70°	830.8	6.9
70°-80°	470.1	3.9
80°-90°	127.0	1.0
90°-100°	54.4	0.4
100°-110°	202.9	1.7
110°-120°	538.2	4.4
120°-130°	892.7	7.4
130°-140°	948.2	7.8
140°-150°	881.3	7.3
150°-160°	708.5	5.9
160°-170°	456.5	3.8
170°-180°	157.1	1.3
0°-30°	2136.0	17.6
0°-40°	3426.5	28.3
0°-60°	5839.4	48.2
0°-90°	7267.2	60.0
90°-120°	795.6	6.6
90°-150°	3517.8	29.1
90°-180°	4840.0	40.0
0°-180°	12107.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2855	2855	2855	2855	2855	
5°	2855	2844	2814	2836	2831	271
15°	2718	2702	2666	2677	2663	765
25°	2460	2438	2391	2397	2391	1132
35°	2122	2095	2051	2034	2021	1325
45°	1727	1708	1666	1636	1625	1333
55°	1307	1290	1257	1225	1211	1169
65°	881	865	837	813	799	871
75°	461	456	442	426	431	492
85°	112	110	107	99	96	125
90°	1	14	24	30	32	11
95°	78	38	47	53	51	92
105°	363	399	73	86	91	388
115°	687	707	737	184	98	676
125°	971	987	1009	1018	1021	866
135°	1202	1221	1232	1244	1241	928
145°	1394	1393	1413	1422	1416	872
155°	1535	1524	1539	1546	1536	707
165°	1618	1610	1614	1622	1614	457
175°	1654	1646	1648	1657	1645	157
180°	1651	1651	1651	1651	1651	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	*2855.1*	2855.1	2855.1	2855.1	2855.1
2.5°	*2871.7*	*2858.0*	*2827.8*	*2855.1*	*2849.9*
5°	*2855.1*	2844.3	2814.1	2835.9	2830.6
7.5°	*2835.9*	2819.6	2789.3	2811.5	2805.9
10°	*2805.9*	2786.7	2753.8	2775.6	2767.4
12.5°	*2764.5*	2748.2	2715.4	2729.0	2723.5
15°	*2718.0*	2701.7	2665.8	2676.9	2663.2
17.5°	*2660.2*	2643.9	2608.1	2621.8	2608.1
20°	*2597.1*	2580.7	2542.3	2550.4	2539.7
22.5°	*2534.1*	2509.4	2473.5	2473.5	2468.0
25°	*2459.8*	2438.0	2391.4	2396.7	2391.4
27.5°	*2377.4*	2358.2	2322.7	2314.6	2300.9
30°	*2295.3*	2273.1	2232.0	2223.9	2212.9
32.5°	*2207.3*	2191.0	2147.0	2130.5	2119.4
35°	*2122.3*	2094.9	2050.9	2034.3	2020.6
37.5°	*2026.2*	2001.4	1957.4	1938.2	1924.5
40°	*1927.4*	1905.3	1861.2	1836.8	1825.8
42.5°	*1831.2*	1809.1	1765.4	1737.8	1721.5
45°	*1727.0*	1707.8	1666.4	1636.4	1625.4
47.5°	*1625.4*	1606.1	1562.1	1531.9	1515.6
50°	*1518.2*	1504.5	1466.0	1427.6	1413.9
52.5°	*1413.9*	1394.6	1359.1	1328.9	1309.6
55°	*1307.0*	1290.4	1257.4	1224.6	1210.9
57.5°	*1199.8*	1186.1	1150.3	1117.4	1106.3
60°	*1092.6*	1081.8	1043.3	1013.1	1004.9
62.5°	*988.3*	969.1	941.7	914.4	903.3
65°	*881.4*	864.8	837.4	812.7	799.0
67.5°	*771.6*	757.7	733.1	714.0	702.9
70°	*669.9*	658.8	634.1	614.9	604.1
72.5°	*565.7*	554.6	540.9	521.7	513.6
75°	*461.1*	455.8	441.9	425.6	431.1
77.5°	*367.9*	356.9	351.3	343.2	335.0
80°	*274.7*	271.7	266.2	258.0	252.6
82.5°	*186.7*	186.7	184.1	173.0	173.0
85°	*112.4*	109.8	107.2	98.7	96.1
87.5°	*49.5*	43.9	38.5	30.3	27.4
90°	*1.1*	14.3	23.8	29.9	32.2
92.5°	*29.9*	25.1	28.6	31.1	32.2
95°	*77.6*	38.2	46.6	52.7	51.4
97.5°	*139.7*	41.8	60.8	64.6	65.7
100°	*211.5*	47.8	68.1	77.6	80.0
102.5°	*290.2*	288.0	70.5	83.6	87.2
105°	*363.1*	399.0	72.9	85.9	90.8
107.5°	*448.0*	477.8	75.3	88.4	93.2
110°	*529.3*	554.2	209.1	89.7	94.3

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	*605.7*	627.1	606.8	91.9	95.6
115°	*686.9*	707.2	737.1	184.0	98.0
117.5°	*757.3*	781.2	801.6	630.7	317.7
120°	*836.3*	854.1	875.7	890.0	728.7
122.5°	*903.0*	922.2	946.2	953.2	954.6
125°	*971.2*	986.8	1009.4	1017.8	1021.3
127.5°	*1033.3*	1050.0	1068.0	1079.9	1081.1
130°	*1091.8*	1111.0	1124.1	1137.3	1136.1
132.5°	*1151.6*	1167.2	1180.2	1191.0	1189.8
135°	*1201.8*	1221.0	1231.6	1243.7	1241.2
137.5°	*1254.3*	1268.6	1280.7	1292.6	1289.1
140°	*1305.6*	1315.3	1328.4	1339.1	1333.2
142.5°	*1348.7*	1357.1	1372.6	1382.1	1376.1
145°	*1394.2*	1392.9	1413.2	1421.6	1415.6
147.5°	*1433.5*	1429.9	1450.2	1456.1	1451.5
150°	*1471.8*	1463.4	1482.5	1489.6	1483.7
152.5°	*1504.0*	1494.4	1512.3	1519.6	1511.2
155°	*1535.0*	1524.4	1538.7	1545.8	1536.3
157.5°	*1560.2*	1550.6	1561.4	1569.8	1560.2
160°	*1581.7*	1574.4	1581.7	1588.8	1580.5
162.5°	*1600.7*	1593.6	1599.5	1607.9	1597.2
165°	*1617.5*	1610.4	1613.9	1622.3	1613.9
167.5°	*1630.6*	1623.4	1627.1	1635.5	1624.6
170°	*1641.4*	1634.2	1636.6	1644.9	1634.2
172.5°	*1648.5*	1641.4	1643.8	1652.2	1641.4
175°	*1654.5*	1646.1	1648.5	1656.8	1644.9
177.5°	*1656.8*	1648.5	1649.8	1658.2	1647.4
180°	*1650.9*	1650.9	1650.9	1650.9	1650.9

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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	12.51	13.47	13.37	14.35	15.47	12.08	13.04	12.94	13.93	15.05
	3H	14.16	15.03	15.04	15.92	17.07	13.70	14.56	14.58	15.45	16.60
	4H	14.75	15.56	15.64	16.47	17.62	14.28	15.10	15.18	16.00	17.16
	6H	15.15	15.90	16.05	16.81	17.98	14.68	15.43	15.59	16.34	17.51
	8H	15.25	15.97	16.17	16.89	18.06	14.78	15.50	15.70	16.43	17.59
	12H	15.30	15.98	16.22	16.90	18.10	14.83	15.51	15.75	16.43	17.62
4H	2H	12.98	13.79	13.88	14.69	15.85	12.63	13.45	13.53	14.35	15.51
	3H	14.84	15.52	15.75	16.45	17.63	14.45	15.13	15.36	16.06	17.24
	4H	15.55	16.17	16.47	17.10	18.30	15.15	15.77	16.07	16.70	17.90
	6H	16.06	16.60	17.00	17.55	18.75	15.66	16.19	16.59	17.15	18.35
	8H	16.21	16.71	17.15	17.66	18.87	15.80	16.30	16.74	17.25	18.46
	12H	16.28	16.73	17.24	17.70	18.92	15.87	16.32	16.83	17.29	18.50
8H	4H	15.75	16.25	16.69	17.20	18.41	15.40	15.90	16.33	16.84	18.05
	6H	16.38	16.79	17.34	17.78	18.99	16.02	16.43	16.98	17.42	18.63
	8H	16.59	16.96	17.56	17.94	19.16	16.23	16.59	17.20	17.57	18.80
	12H	16.72	17.04	17.70	18.02	19.29	16.34	16.67	17.32	17.64	18.91
12H	4H	15.74	16.19	16.70	17.16	18.37	15.39	15.84	16.35	16.81	18.03
	6H	16.41	16.77	17.38	17.75	18.98	16.06	16.42	17.03	17.40	18.63
	8H	16.64	16.97	17.62	17.94	19.22	16.29	16.61	17.27	17.59	18.86

END OF REPORT