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: P917009

Luminaire Tested: DFN2DIP-PN4F0-100D060US930-FLLONL

Issue Date: 11/21/2024

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Scaled Data Report

Test Information

Test Method:	LM-79-2019
Report Number:	P917009
	REPORT IS A COMBINATION OF REPORTS P901177 AND P898053
Test Lab:	INNOVATION CENTER
Issue Date:	11/21/2024
Manufacturer:	COOPER LIGHTING SOLUTIONS
Product Line:	NEO-RAY
Catalog Number:	DFN2DIP-PN4F0-100D060US930-FLLONL
Description:	4 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source:	-
Ballast/Driver:	-

Summary

Lumens per Lamp:	N/A
Luminaire Lumens:	12914.3 lumens
Efficiency:	N/A
Efficacy:	88.4 lumens/watt
Spacing Criteria (0/90/45):	1.2 / 1.16 / 1.29
Luminous Opening:	Rectangular w/ Sides (W: 3.74' x L: 3.94' x H: 0.1')
CIE Type:	Semi-Direct

Input Watts (W):	146.1
Input Voltage (V):	
Input Current (Ain):	NR
Voltage Rise (V):	NR
Power Factor:	0.9952
Total Harmonic Distortion (THDi):	0.069
Frequency (hertz):	60
Stabilization Time:	NR
Operation Time:	NR
Ambient Temperature (°C):	NR
Test Distance:	24 FT

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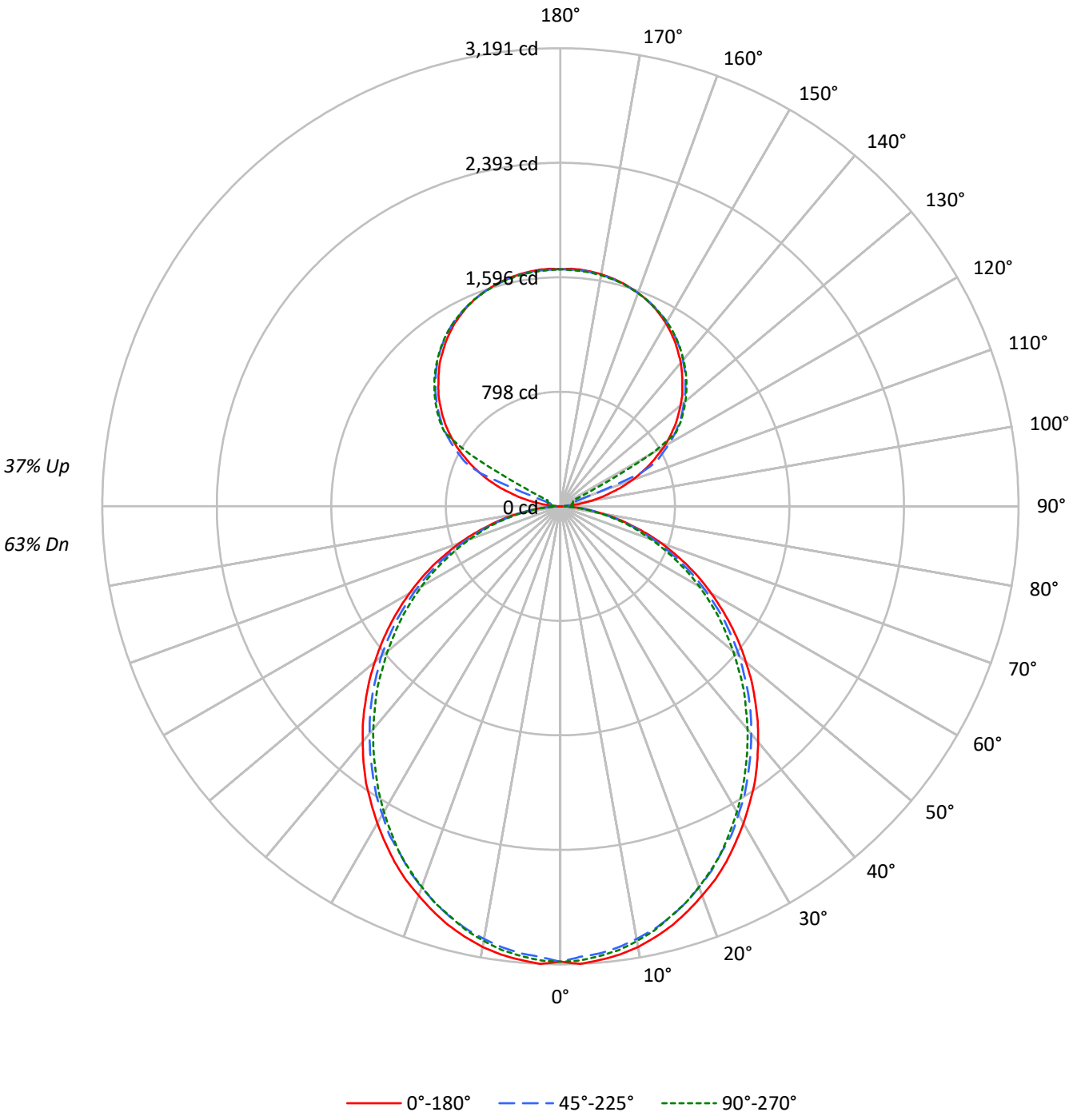
Luminous Intensity Polar Plot



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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	103	103	103	103	90	90	90	78	78	78	68	68	68	63
1	101	96	92	89	94	90	87	84	79	77	74	69	67	65	60	58	57	53
2	92	84	78	72	86	79	73	69	69	65	62	61	58	55	53	50	48	44
3	84	74	66	60	78	70	63	57	61	56	52	54	50	46	47	44	41	37
4	77	65	57	51	71	62	54	49	55	49	44	48	43	40	42	38	35	32
5	70	58	50	44	66	55	48	42	49	43	38	43	38	34	38	34	31	28
6	65	53	44	38	61	50	42	37	44	38	33	39	34	30	34	30	27	25
7	60	47	39	34	56	45	38	32	40	34	30	35	31	27	31	27	24	22
8	56	43	35	30	52	41	34	29	37	31	26	33	28	24	29	25	22	19
9	52	40	32	27	49	37	30	26	34	28	24	30	25	22	27	23	20	18
10	49	36	29	24	46	34	28	23	31	25	21	28	23	20	25	21	18	16

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2316	2316	2316
5°	2319	2284	2299
10°	2301	2253	2269
15°	2267	2217	2220
20°	2221	2165	2171
25°	2176	2104	2114
30°	2119	2047	2041
35°	2065	1980	1964
40°	1998	1912	1891
45°	1932	1843	1816
50°	1859	1772	1729
55°	1783	1689	1649
60°	1698	1591	1558
65°	1604	1490	1450
70°	1485	1366	1335
75°	1320	1217	1229
80°	1121	1029	1024
85°	811	702	685

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 1932 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	298.6	2.3
10°-20°	840.1	6.5
20°-30°	1234.6	9.6
30°-40°	1433.9	11.1
40°-50°	1432.1	11.1
50°-60°	1248.8	9.7
60°-70°	923.1	7.1
70°-80°	522.3	4.0
80°-90°	140.8	1.1
90°-100°	54.4	0.4
100°-110°	202.9	1.6
110°-120°	538.2	4.2
120°-130°	892.7	6.9
130°-140°	948.2	7.3
140°-150°	881.3	6.8
150°-160°	708.5	5.5
160°-170°	456.5	3.5
170°-180°	157.1	1.2
0°-30°	2373.3	18.4
0°-40°	3807.2	29.5
0°-60°	6488.2	50.2
0°-90°	8074.3	62.5
90°-120°	795.6	6.2
90°-150°	3517.8	27.2
90°-180°	4840.0	37.5
0°-180°	12914.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3172	3172	3172	3172	3172	
5°	3172	3160	3127	3151	3145	301
15°	3020	3002	2962	2974	2959	851
25°	2733	2709	2657	2663	2657	1258
35°	2358	2328	2279	2260	2245	1473
45°	1919	1898	1852	1818	1806	1481
55°	1452	1434	1397	1361	1345	1298
65°	979	961	930	903	888	968
75°	512	506	491	473	479	547
85°	125	122	119	110	107	139
90°	1	14	24	30	32	12
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°	*3172.4*	3172.4	3172.4	3172.4	3172.4
2.5°	*3190.8*	*3175.6*	*3141.9*	*3172.4*	*3166.5*
5°	*3172.4*	3160.4	3126.8	3151.0	3145.2
7.5°	*3151.0*	3132.9	3099.2	3123.8	3117.7
10°	*3117.7*	3096.3	3059.7	3084.0	3075.0
12.5°	*3071.7*	3053.6	3017.0	3032.3	3026.1
15°	*3019.9*	3001.8	2962.0	2974.3	2959.1
17.5°	*2955.9*	2937.8	2897.9	2913.1	2897.9
20°	*2885.6*	2867.5	2824.8	2833.8	2821.8
22.5°	*2815.7*	2788.2	2748.4	2748.4	2742.3
25°	*2733.2*	2708.9	2657.1	2662.9	2657.1
27.5°	*2641.6*	2620.2	2580.7	2571.7	2556.4
30°	*2550.3*	2525.7	2480.1	2471.0	2458.7
32.5°	*2452.6*	2434.5	2385.6	2367.1	2354.8
35°	*2358.1*	2327.7	2278.8	2260.3	2245.1
37.5°	*2251.3*	2223.7	2174.9	2153.5	2138.3
40°	*2141.5*	2116.9	2068.1	2040.9	2028.6
42.5°	*2034.7*	2010.1	1961.6	1930.9	1912.8
45°	*1918.9*	1897.5	1851.5	1818.2	1806.0
47.5°	*1806.0*	1784.6	1735.7	1702.0	1683.9
50°	*1686.9*	1671.6	1628.9	1586.2	1571.0
52.5°	*1571.0*	1549.6	1510.1	1476.5	1455.1
55°	*1452.2*	1433.8	1397.2	1360.6	1345.4
57.5°	*1333.1*	1317.8	1278.1	1241.5	1229.2
60°	*1214.0*	1202.0	1159.3	1125.6	1116.6
62.5°	*1098.1*	1076.8	1046.4	1015.9	1003.6
65°	*979.3*	960.9	930.5	902.9	887.8
67.5°	*857.4*	841.8	814.6	793.3	781.0
70°	*744.4*	732.1	704.6	683.2	671.2
72.5°	*628.5*	616.2	601.0	579.7	570.5
75°	*512.3*	506.5	491.0	472.9	479.0
77.5°	*408.8*	396.5	390.3	381.2	372.2
80°	*305.2*	302.0	295.8	286.7	280.6
82.5°	*207.5*	207.5	204.6	192.2	192.2
85°	*124.9*	122.1	119.1	109.7	106.8
87.5°	*55.0*	48.8	42.7	33.7	30.4
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	11.28	12.26	12.12	13.13	14.21	10.84	11.82	11.68	12.69	13.77
	3H	12.95	13.84	13.80	14.71	15.82	12.47	13.35	13.32	14.22	15.33
	4H	13.55	14.38	14.42	15.26	16.38	13.06	13.90	13.93	14.78	15.89
	6H	13.95	14.73	14.84	15.61	16.74	13.46	14.23	14.34	15.12	16.25
	8H	14.06	14.80	14.95	15.70	16.83	13.57	14.31	14.46	15.21	16.34
	12H	14.12	14.82	15.01	15.72	16.87	13.62	14.32	14.51	15.22	16.37
4H	2H	11.75	12.59	12.63	13.47	14.59	11.40	12.24	12.28	13.12	14.24
	3H	13.63	14.33	14.52	15.25	16.38	13.23	13.93	14.12	14.84	15.98
	4H	14.36	14.99	15.25	15.90	17.06	13.94	14.58	14.84	15.48	16.64
	6H	14.88	15.43	15.79	16.36	17.52	14.46	15.01	15.37	15.94	17.10
	8H	15.04	15.55	15.95	16.48	17.65	14.61	15.12	15.52	16.05	17.22
	12H	15.12	15.58	16.05	16.52	17.70	14.68	15.14	15.61	16.08	17.26
8H	4H	14.56	15.08	15.48	16.00	17.18	14.19	14.71	15.11	15.63	16.81
	6H	15.20	15.63	16.15	16.60	17.77	14.83	15.25	15.77	16.22	17.39
	8H	15.43	15.80	16.38	16.76	17.95	15.04	15.42	15.99	16.38	17.57
	12H	15.57	15.90	16.52	16.85	18.09	15.16	15.50	16.12	16.45	17.69
12H	4H	14.56	15.02	15.49	15.96	17.14	14.19	14.66	15.13	15.60	16.78
	6H	15.23	15.61	16.19	16.57	17.76	14.87	15.25	15.82	16.21	17.40
	8H	15.48	15.82	16.44	16.77	18.01	15.11	15.44	16.07	16.40	17.64

END OF REPORT