

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: P916585

Luminaire Tested: DFN2DIP-PN2F0-060D060US930-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P916585
REPORT IS A COMBINATION OF REPORTS P901029 AND P897905
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN2F0-060D060US930-FLLONL
Description: 2 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

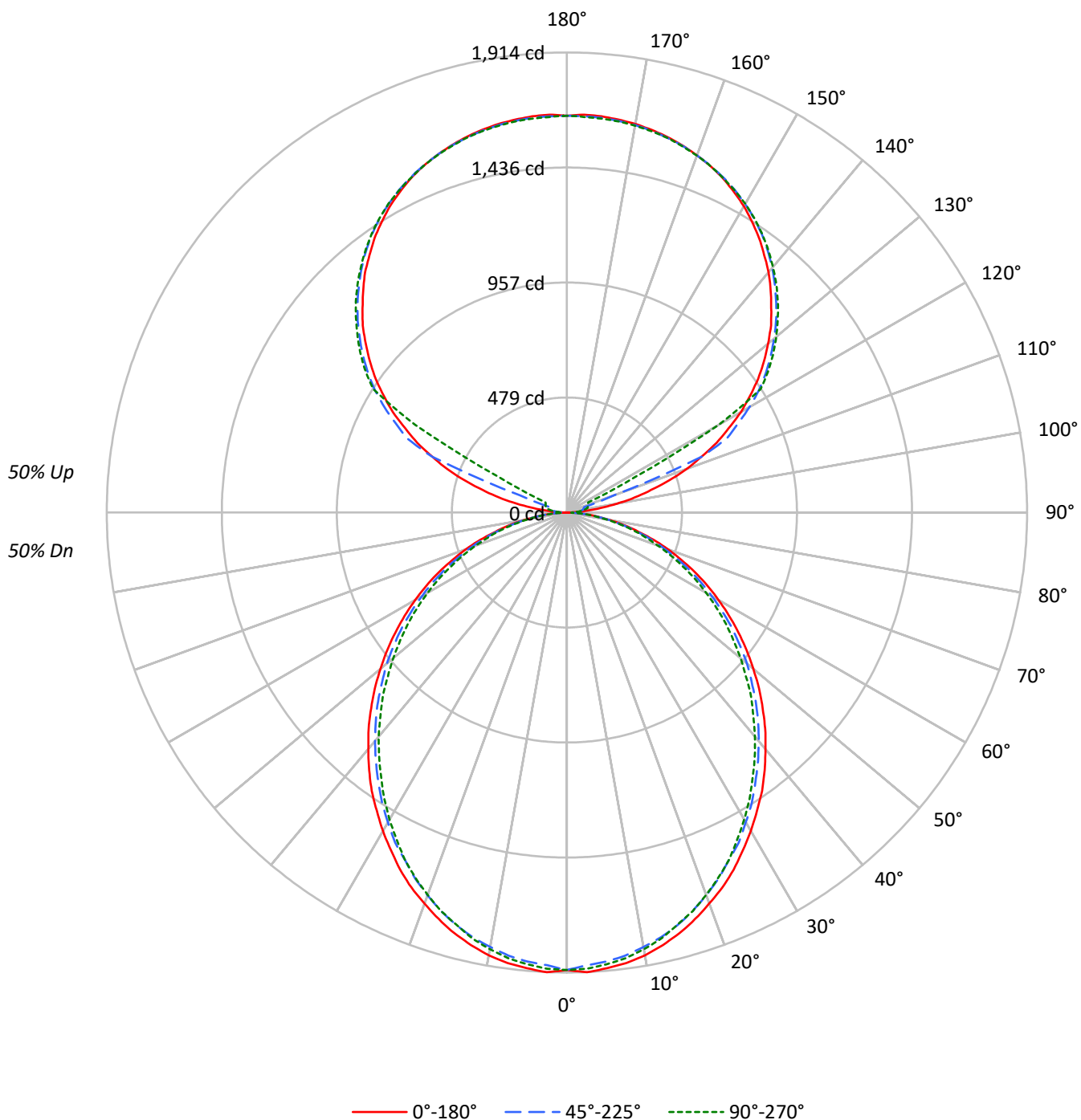
Lumens per Lamp: N/A
Luminaire Lumens: 9685.7 lumens
Efficiency: N/A
Efficacy: 82.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.17' x L: 2.29' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 117.3
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.946
Total Harmonic Distortion (THDi): 0.132
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P916585

CATALOG NUMBER: DFN2DIP-PN2F0-060D060US930-FLLONL

Luminous Intensity Polar Plot



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CATALOG NUMBER: DFN2DIP-PN2F0-060D060US930-FLLONL

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	107	107	107	107	99	99	99	99	83	83	83	69	69	69	56	56	56
1	98	93	90	86	90	86	83	80	73	71	68	61	59	58	50	48	47
2	89	82	75	70	82	76	70	66	64	60	57	53	51	48	44	42	40
3	81	72	64	59	75	66	60	55	56	52	48	47	44	41	39	36	34
4	74	64	56	50	68	59	52	47	50	45	41	42	38	35	35	32	29
5	68	57	48	42	63	53	45	40	45	39	35	38	34	30	31	28	26
6	63	51	43	37	58	47	40	35	40	35	31	34	30	27	28	25	23
7	58	46	38	32	53	43	36	30	37	31	27	31	27	23	26	23	20
8	54	42	34	29	50	39	32	27	33	28	24	28	24	21	24	20	18
9	50	38	30	25	46	35	29	24	31	25	21	26	22	19	22	19	16
10	47	35	28	23	43	33	26	22	28	23	19	24	20	17	20	17	15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4123	4123	4123
5°	4122	4056	4086
10°	4082	3993	4025
15°	4016	3918	3933
20°	3928	3818	3838
25°	3841	3700	3730
30°	3733	3590	3594
35°	3630	3461	3450
40°	3504	3331	3314
45°	3379	3200	3173
50°	3241	3062	3011
55°	3097	2902	2860
60°	2933	2715	2688
65°	2753	2518	2484
70°	2525	2279	2265
75°	2211	1993	2053
80°	1830	1628	1666
85°	1241	1028	1044

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 3379 cd/sqm

TEST NUMBER: P916585

CATALOG NUMBER: DFN2DIP-PN2F0-060D060US930-FLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	179.1	1.8
10°-20°	504.1	5.2
20°-30°	740.8	7.6
30°-40°	860.4	8.9
40°-50°	859.3	8.9
50°-60°	749.3	7.7
60°-70°	553.9	5.7
70°-80°	313.4	3.2
80°-90°	85.6	0.9
90°-100°	54.4	0.6
100°-110°	202.9	2.1
110°-120°	538.2	5.6
120°-130°	892.7	9.2
130°-140°	948.2	9.8
140°-150°	881.3	9.1
150°-160°	708.5	7.3
160°-170°	456.5	4.7
170°-180°	157.1	1.6
0°-30°	1424.0	14.7
0°-40°	2284.3	23.6
0°-60°	3892.9	40.2
0°-90°	4845.8	50.0
90°-120°	795.6	8.2
90°-150°	3517.8	36.3
90°-180°	4840.0	50.0
0°-180°	9685.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1903	1903	1903	1903	1903	
5°	1903	1896	1876	1891	1887	181
15°	1812	1801	1777	1785	1776	510
25°	1640	1625	1594	1598	1594	755
35°	1415	1397	1367	1356	1347	884
45°	1151	1138	1111	1091	1084	889
55°	871	860	838	816	807	779
65°	588	577	558	542	533	581
75°	307	304	295	284	287	328
85°	75	73	71	66	64	84
90°	1	14	24	30	32	9
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	

TEST NUMBER: P916585

CATALOG NUMBER: DFN2DIP-PN2F0-060D060US930-FLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1903.4	1903.4	1903.4	1903.4	1903.4
2.5°	1914.5	1905.4	1885.1	1903.4	1899.9
5°	1903.4	1896.2	1876.0	1890.6	1887.1
7.5°	1890.6	1879.8	1859.5	1874.3	1870.6
10°	1870.6	1857.8	1835.8	1850.4	1844.9
12.5°	1843.1	1832.1	1810.2	1819.3	1815.7
15°	1811.9	1801.1	1777.2	1784.6	1775.5
17.5°	1773.5	1762.7	1738.8	1747.8	1738.8
20°	1731.4	1720.5	1694.8	1700.3	1693.1
22.5°	1689.5	1672.9	1649.0	1649.0	1645.4
25°	1639.9	1625.4	1594.2	1597.7	1594.2
27.5°	1584.9	1572.1	1548.4	1543.0	1533.9
30°	1530.2	1515.4	1488.1	1482.6	1475.2
32.5°	1471.5	1460.7	1431.3	1420.2	1412.9
35°	1414.9	1396.6	1367.3	1356.2	1347.0
37.5°	1350.8	1334.2	1305.0	1292.1	1283.0
40°	1284.9	1270.2	1240.9	1224.6	1217.2
42.5°	1220.8	1206.1	1177.0	1158.5	1147.6
45°	1151.4	1138.5	1110.9	1091.0	1083.5
47.5°	1083.5	1070.7	1041.5	1021.2	1010.3
50°	1012.1	1003.0	977.4	951.7	942.6
52.5°	942.6	929.8	906.0	885.9	873.1
55°	871.3	860.2	838.3	816.4	807.2
57.5°	799.9	790.8	766.9	744.9	737.5
60°	728.4	721.2	695.6	675.4	669.9
62.5°	658.8	646.0	627.8	609.5	602.2
65°	587.6	576.6	558.3	541.8	532.6
67.5°	514.4	505.1	488.8	476.0	468.6
70°	446.6	439.3	422.7	409.9	402.8
72.5°	377.1	369.7	360.6	347.8	342.3
75°	307.4	303.9	294.6	283.7	287.4
77.5°	245.2	237.9	234.2	228.8	223.3
80°	183.1	181.2	177.5	172.0	168.4
82.5°	124.5	124.5	122.7	115.4	115.4
85°	74.9	73.2	71.4	65.8	64.1
87.5°	33.0	29.4	25.6	20.2	18.3
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

TEST NUMBER: P916585

CATALOG NUMBER: DFN2DIP-PN2F0-060D060US930-FLLONL

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	12.08	12.94	13.04	13.91	15.18	11.64	12.50	12.60	13.48	14.75
	3H	13.72	14.49	14.69	15.47	16.77	13.24	14.01	14.21	14.99	16.29
	4H	14.29	15.03	15.28	16.01	17.31	13.81	14.54	14.79	15.53	16.83
	6H	14.68	15.35	15.67	16.34	17.66	14.19	14.87	15.18	15.86	17.17
	8H	14.78	15.42	15.77	16.42	17.73	14.29	14.93	15.29	15.94	17.25
	12H	14.82	15.43	15.82	16.43	17.76	14.32	14.93	15.33	15.93	17.27
4H	2H	12.53	13.26	13.52	14.25	15.55	12.18	12.91	13.17	13.90	15.20
	3H	14.37	14.98	15.37	16.00	17.31	13.97	14.58	14.97	15.60	16.91
	4H	15.07	15.63	16.08	16.64	17.98	14.66	15.22	15.66	16.22	17.56
	6H	15.57	16.05	16.58	17.08	18.41	15.15	15.63	16.16	16.66	17.99
	8H	15.71	16.16	16.72	17.18	18.53	15.28	15.73	16.30	16.76	18.11
	12H	15.77	16.18	16.81	17.22	18.57	15.34	15.74	16.37	16.78	18.14
8H	4H	15.26	15.71	16.28	16.73	18.08	14.89	15.34	15.91	16.36	17.71
	6H	15.86	16.24	16.91	17.30	18.65	15.49	15.86	16.53	16.93	18.28
	8H	16.07	16.40	17.12	17.45	18.82	15.69	16.02	16.74	17.07	18.44
	12H	16.19	16.48	17.24	17.52	18.93	15.79	16.08	16.85	17.13	18.54
12H	4H	15.24	15.65	16.28	16.69	18.04	14.88	15.28	15.92	16.32	17.68
	6H	15.89	16.22	16.94	17.27	18.63	15.53	15.85	16.58	16.90	18.27
	8H	16.12	16.40	17.17	17.45	18.86	15.75	16.03	16.80	17.08	18.49