

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: P918631

Luminaire Tested: DFN2DIP-4P3F0-060D040US935-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P918631
REPORT IS A COMBINATION OF REPORTS P900577 AND P897473
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P3F0-060D040US935-FLLONL
Description: 3 foot, 90deg - 4way Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

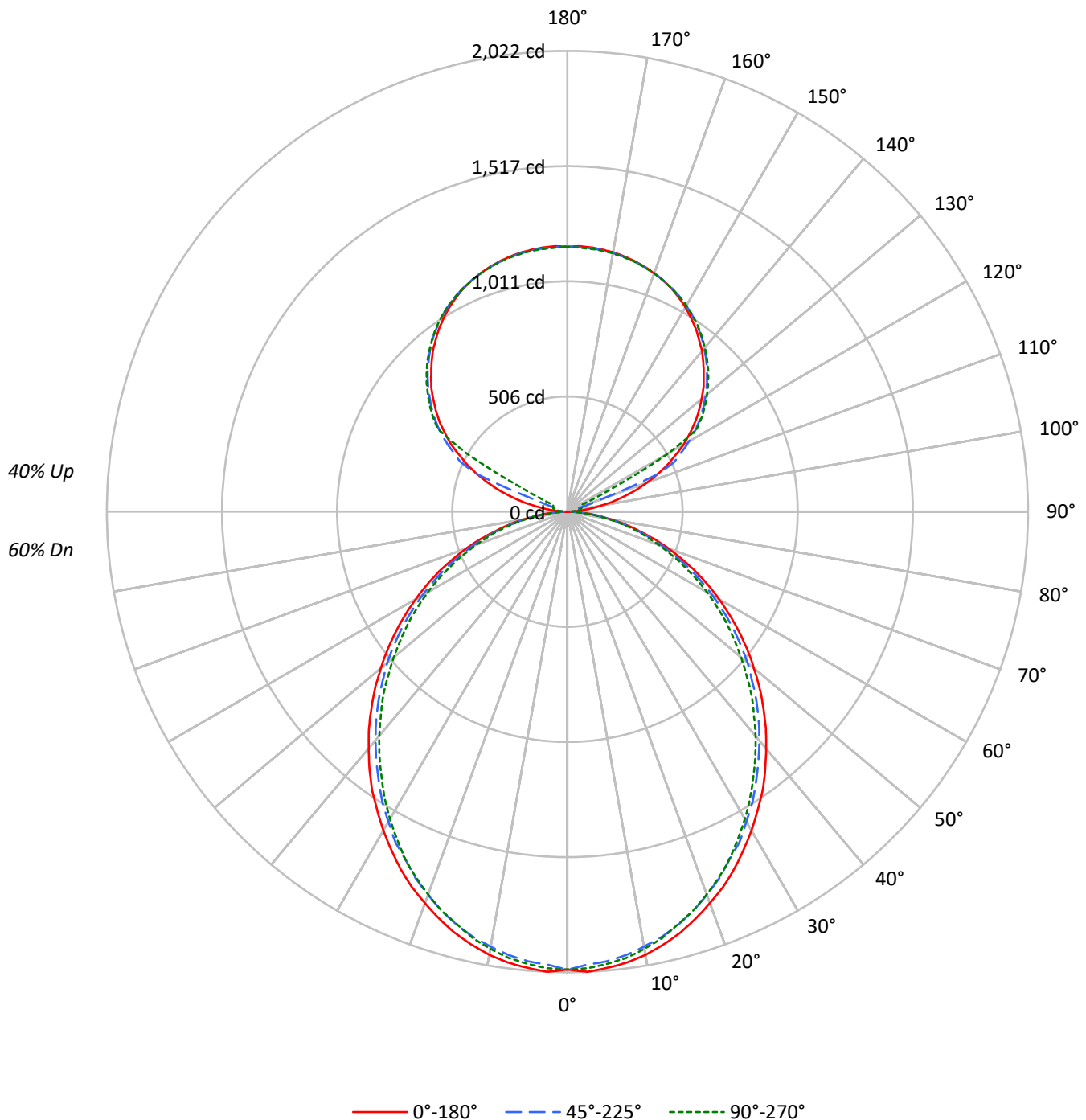
Lumens per Lamp: N/A
Luminaire Lumens: 8523.8 lumens
Efficiency: N/A
Efficacy: 92.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.07' x L: 3.07' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 91.8
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9963
Total Harmonic Distortion (THDi): 0.065
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P918631

CATALOG NUMBER: DFN2DIP-4P3F0-060D040US935-FLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P918631

CATALOG NUMBER: DFN2DIP-4P3F0-060D040US935-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	110	110	110	110	102	102	102	102	89	89	89	77	77	77	65	65	65
1	100	96	92	88	93	90	86	83	78	75	73	67	66	64	58	56	55
2	91	84	77	72	85	78	73	68	68	64	61	59	56	53	51	49	47
3	83	73	66	60	77	69	62	57	60	55	51	52	48	45	45	42	40
4	76	65	57	51	71	61	54	48	54	48	44	47	42	39	40	37	34
5	70	58	50	44	65	55	47	42	48	42	38	42	37	34	36	33	30
6	64	52	44	38	60	49	42	36	43	37	33	38	33	30	33	29	26
7	60	47	39	33	56	44	37	32	39	33	29	35	30	26	30	26	23
8	55	43	35	30	52	40	33	28	36	30	26	32	27	23	28	24	21
9	52	39	32	26	48	37	30	25	33	27	23	29	24	21	26	22	19
10	48	36	29	24	45	34	27	23	30	25	21	27	22	19	24	20	17

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2291	2291	2291
5°	2293	2257	2273
10°	2273	2225	2242
15°	2238	2187	2193
20°	2191	2135	2143
25°	2145	2072	2085
30°	2087	2014	2012
35°	2032	1946	1935
40°	1965	1877	1861
45°	1898	1808	1786
50°	1824	1735	1699
55°	1747	1650	1619
60°	1660	1551	1526
65°	1564	1447	1418
70°	1443	1320	1301
75°	1274	1169	1192
80°	1071	975	985
85°	754	646	645

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 1898 cd/sqm

TEST NUMBER: P918631

CATALOG NUMBER: DFN2DIP-4P3F0-060D040US935-FLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	189.2	2.2
10°-20°	532.3	6.2
20°-30°	782.3	9.2
30°-40°	908.6	10.7
40°-50°	907.5	10.6
50°-60°	791.3	9.3
60°-70°	584.9	6.9
70°-80°	330.9	3.9
80°-90°	89.4	1.0
90°-100°	38.3	0.4
100°-110°	142.9	1.7
110°-120°	378.9	4.4
120°-130°	628.5	7.4
130°-140°	667.6	7.8
140°-150°	620.4	7.3
150°-160°	498.8	5.9
160°-170°	321.4	3.8
170°-180°	110.6	1.3
0°-30°	1503.8	17.6
0°-40°	2412.4	28.3
0°-60°	4111.1	48.2
0°-90°	5116.4	60.0
90°-120°	560.1	6.6
90°-150°	2476.6	29.1
90°-180°	3407.0	40.0
0°-180°	8523.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2010	2010	2010	2010	2010	
5°	2010	2002	1981	1997	1993	191
15°	1914	1902	1877	1885	1875	539
25°	1732	1716	1684	1687	1684	797
35°	1494	1475	1444	1432	1422	933
45°	1216	1202	1173	1152	1144	938
55°	920	908	885	862	852	823
65°	620	609	590	572	562	614
75°	325	321	311	300	304	347
85°	79	77	75	70	68	88
90°	1	10	17	21	23	8
95°	55	27	33	37	36	65
105°	256	281	51	60	64	273
115°	484	498	519	130	69	476
125°	684	695	711	717	719	610
135°	846	860	867	876	874	654
145°	982	981	995	1001	997	614
155°	1081	1073	1083	1088	1082	498
165°	1139	1134	1136	1142	1136	322
175°	1165	1159	1161	1166	1158	111
180°	1162	1162	1162	1162	1162	

TEST NUMBER: P918631

CATALOG NUMBER: DFN2DIP-4P3F0-060D040US935-FLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2010.1	2010.1	2010.1	2010.1	2010.1
2.5°	2021.8	2012.2	1990.8	2010.1	2006.4
5°	2010.1	2002.5	1981.2	1996.6	1992.9
7.5°	1996.6	1985.1	1963.8	1979.3	1975.5
10°	1975.5	1962.0	1938.7	1954.1	1948.4
12.5°	1946.4	1934.8	1911.7	1921.3	1917.4
15°	1913.5	1902.0	1876.8	1884.6	1875.0
17.5°	1872.9	1861.5	1836.3	1845.8	1836.3
20°	1828.4	1817.0	1789.8	1795.6	1788.0
22.5°	1784.2	1766.7	1741.5	1741.5	1737.6
25°	1731.8	1716.5	1683.6	1687.3	1683.6
27.5°	1673.8	1660.3	1635.2	1629.5	1619.9
30°	1616.0	1600.3	1571.5	1565.7	1557.9
32.5°	1554.0	1542.6	1511.6	1499.9	1492.1
35°	1494.2	1474.9	1443.9	1432.2	1422.5
37.5°	1426.5	1409.0	1378.1	1364.5	1354.9
40°	1356.9	1341.3	1310.4	1293.2	1285.4
42.5°	1289.3	1273.7	1242.9	1223.5	1211.9
45°	1215.9	1202.3	1173.2	1152.1	1144.3
47.5°	1144.3	1130.7	1099.8	1078.5	1066.9
50°	1068.8	1059.2	1032.2	1005.0	995.4
52.5°	995.4	981.9	956.8	935.6	922.0
55°	920.1	908.4	885.3	862.1	852.5
57.5°	844.7	835.1	809.9	786.7	778.9
60°	769.2	761.6	734.6	713.3	707.5
62.5°	695.8	682.3	663.0	643.7	635.9
65°	620.5	608.9	589.6	572.1	562.5
67.5°	543.2	533.4	516.2	502.7	494.8
70°	471.7	463.9	446.4	432.9	425.3
72.5°	398.2	390.5	380.8	367.3	361.5
75°	324.6	321.0	311.1	299.6	303.5
77.5°	259.0	251.2	247.3	241.6	235.8
80°	193.4	191.3	187.4	181.7	177.8
82.5°	131.5	131.5	129.6	121.8	121.8
85°	79.1	77.3	75.4	69.5	67.7
87.5°	34.9	31.0	27.0	21.4	19.3
90°	0.8	10.1	16.8	21.1	22.6
92.5°	21.1	17.7	20.1	21.9	22.6
95°	54.6	26.9	32.7	37.0	36.2
97.5°	98.4	29.4	42.9	45.5	46.2
100°	148.9	33.7	48.0	54.6	56.3
102.5°	204.3	202.8	49.6	58.8	61.4
105°	255.6	280.9	51.3	60.5	63.9
107.5°	315.4	336.4	53.0	62.3	65.6
110°	372.6	390.2	147.2	63.1	66.4



TEST NUMBER: P918631

CATALOG NUMBER: DFN2DIP-4P3F0-060D040US935-FLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	426.5	441.5	427.2	64.7	67.3
115°	483.5	497.8	518.9	129.5	69.1
117.5°	533.2	550.0	564.4	444.0	223.7
120°	588.8	601.3	616.5	626.6	513.1
122.5°	635.8	649.3	666.2	671.1	672.0
125°	683.7	694.7	710.7	716.6	719.1
127.5°	727.5	739.3	751.9	760.3	761.1
130°	768.7	782.2	791.3	800.6	799.9
132.5°	810.7	821.7	830.9	838.5	837.8
135°	846.1	859.6	867.1	875.5	873.9
137.5°	883.0	893.1	901.6	910.0	907.5
140°	919.2	926.0	935.2	942.8	938.6
142.5°	949.6	955.4	966.4	973.0	968.9
145°	981.5	980.7	994.9	1000.8	996.6
147.5°	1009.2	1006.7	1021.0	1025.2	1021.9
150°	1036.1	1030.3	1043.8	1048.8	1044.6
152.5°	1058.9	1052.1	1064.7	1069.8	1063.9
155°	1080.7	1073.2	1083.3	1088.3	1081.6
157.5°	1098.4	1091.7	1099.3	1105.2	1098.4
160°	1113.5	1108.4	1113.5	1118.5	1112.7
162.5°	1127.0	1122.0	1126.2	1132.0	1124.5
165°	1138.8	1133.8	1136.3	1142.1	1136.3
167.5°	1148.1	1142.9	1145.6	1151.4	1143.8
170°	1155.6	1150.6	1152.2	1158.1	1150.6
172.5°	1160.6	1155.6	1157.4	1163.2	1155.6
175°	1164.8	1158.9	1160.6	1166.5	1158.1
177.5°	1166.5	1160.6	1161.5	1167.4	1159.9
180°	1162.3	1162.3	1162.3	1162.3	1162.3

TEST NUMBER: P918631

CATALOG NUMBER: DFN2DIP-4P3F0-060D040US935-FLONL

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	11.00	11.95	11.86	12.84	13.96	10.55	11.51	11.42	12.40	13.52
	3H	12.66	13.52	13.54	14.42	15.56	12.17	13.03	13.05	13.93	15.07
	4H	13.25	14.06	14.14	14.96	16.12	12.75	13.57	13.65	14.47	15.63
	6H	13.65	14.40	14.56	15.31	16.48	13.15	13.90	14.05	14.81	15.98
	8H	13.76	14.47	14.67	15.40	16.57	13.25	13.97	14.17	14.90	16.06
	12H	13.80	14.49	14.72	15.41	16.60	13.30	13.98	14.22	14.90	16.09
4H	2H	11.46	12.28	12.36	13.18	14.34	11.11	11.92	12.01	12.83	13.98
	3H	13.33	14.01	14.24	14.95	16.12	12.93	13.61	13.84	14.54	15.71
	4H	14.05	14.67	14.97	15.60	16.79	13.62	14.24	14.55	15.17	16.37
	6H	14.56	15.10	15.50	16.05	17.25	14.13	14.67	15.07	15.62	16.82
	8H	14.71	15.21	15.65	16.16	17.37	14.28	14.78	15.21	15.72	16.94
	12H	14.79	15.24	15.75	16.21	17.42	14.34	14.79	15.30	15.76	16.97
8H	4H	14.25	14.75	15.19	15.70	16.91	13.87	14.37	14.81	15.32	16.53
	6H	14.88	15.29	15.84	16.28	17.49	14.49	14.91	15.46	15.90	17.11
	8H	15.10	15.46	16.07	16.44	17.67	14.70	15.07	15.68	16.05	17.28
	12H	15.23	15.55	16.21	16.52	17.80	14.82	15.14	15.79	16.11	17.39
12H	4H	14.24	14.69	15.20	15.65	16.87	13.87	14.32	14.83	15.29	16.50
	6H	14.91	15.27	15.88	16.25	17.48	14.53	14.90	15.51	15.88	17.11
	8H	15.15	15.47	16.13	16.44	17.72	14.77	15.09	15.75	16.06	17.34

END OF REPORT