

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: P915909

Luminaire Tested: DFN2DIP-4P3F0-060D050US930-RLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P915909
REPORT IS A COMBINATION OF REPORTS P900588 AND P897473
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P3F0-060D050US930-RLLONL
Description: 3 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open
No Lens
Light Source: -
Ballast/Driver: -

Summary

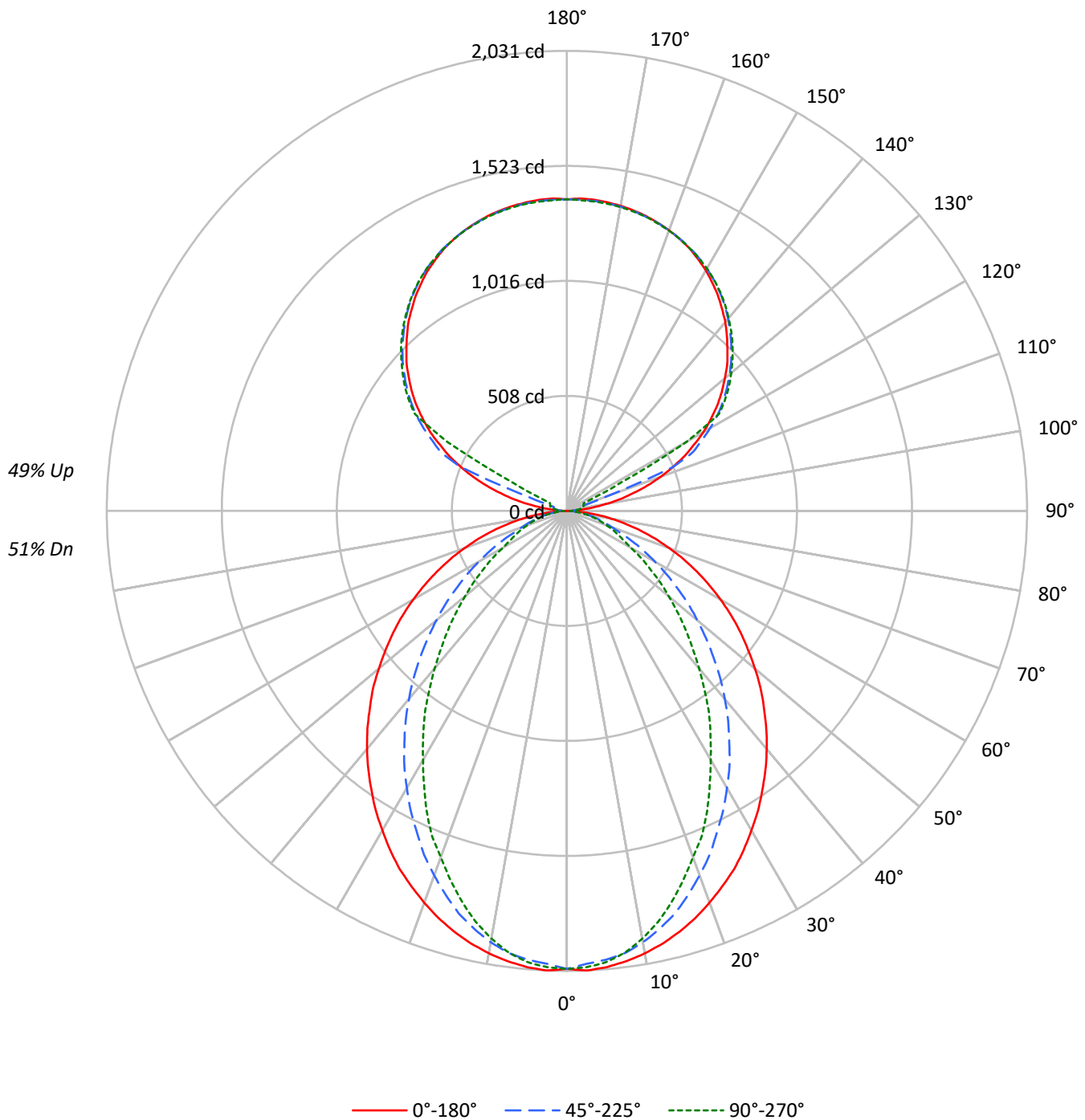
Lumens per Lamp: N/A
Luminaire Lumens: 8193.7 lumens
Efficiency: N/A
Efficacy: 81.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.07' x L: 3.07' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 100.2
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: P915909

CATALOG NUMBER: DFN2DIP-4P3F0-060D050US930-RLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P915909

CATALOG NUMBER: DFN2DIP-4P3F0-060D050US930-RLONL

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20					20					20					20
RC	80				70					50					30					0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10
RCR																				
0	107	107	107	107	99	99	99	99	84	84	84	70	70	70	57	57	57	57	57	51
1	98	94	91	87	91	87	84	81	74	72	70	62	61	59	51	50	49	49	49	44
2	90	83	77	72	83	77	72	67	66	62	59	55	52	50	45	44	42	42	42	37
3	82	73	66	61	76	68	62	57	58	54	50	49	46	43	41	38	36	36	36	32
4	76	65	58	52	70	61	54	49	52	47	43	44	40	37	37	34	32	32	32	28
5	70	58	50	45	64	54	47	42	47	41	37	40	36	33	33	30	28	28	28	25
6	64	53	45	39	59	49	42	37	42	37	33	36	32	29	30	27	25	25	25	22
7	60	48	40	34	55	45	38	33	39	33	29	33	29	26	28	25	22	22	22	20
8	55	43	36	31	51	41	34	29	35	30	26	30	26	23	26	23	20	20	20	18
9	52	40	32	27	48	37	31	26	32	27	23	28	24	21	24	21	18	18	18	16
10	48	36	29	25	45	34	28	24	30	25	21	26	22	19	22	19	17	17	17	15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2304	2304	2304
5°	2306	2266	2281
10°	2282	2220	2206
15°	2249	2145	2091
20°	2206	2043	1949
25°	2162	1928	1813
30°	2103	1810	1640
35°	2046	1684	1488
40°	1987	1554	1314
45°	1919	1410	1156
50°	1849	1264	1003
55°	1775	1109	855
60°	1690	946	703
65°	1591	781	632
70°	1472	627	570
75°	1322	550	517
80°	1104	456	447
85°	749	297	331

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1919 cd/sqm

TEST NUMBER: P915909

CATALOG NUMBER: DFN2DIP-4P3F0-060D050US930-RLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	189.5	2.3
10°-20°	520.2	6.3
20°-30°	730.3	8.9
30°-40°	796.1	9.7
40°-50°	731.7	8.9
50°-60°	574.6	7.0
60°-70°	374.0	4.6
70°-80°	192.5	2.3
80°-90°	51.6	0.6
90°-100°	45.4	0.6
100°-110°	169.1	2.1
110°-120°	448.5	5.5
120°-130°	743.9	9.1
130°-140°	790.2	9.6
140°-150°	734.4	9.0
150°-160°	590.4	7.2
160°-170°	380.5	4.6
170°-180°	130.9	1.6
0°-30°	1439.9	17.6
0°-40°	2236.0	27.3
0°-60°	3542.3	43.2
0°-90°	4160.4	50.8
90°-120°	663.0	8.1
90°-150°	2931.5	35.8
90°-180°	4033.0	49.2
0°-180°	8193.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2022	2022	2022	2022	2022	
5°	2022	2013	1989	2005	2000	192
15°	1923	1903	1841	1806	1788	542
25°	1746	1687	1566	1491	1464	803
35°	1504	1411	1250	1134	1094	941
45°	1230	1107	915	785	741	950
55°	935	792	595	485	450	835
65°	631	483	318	256	251	626
75°	337	208	146	134	132	356
85°	79	40	35	35	35	90
90°	1	12	20	25	27	8
95°	65	32	39	44	43	77
105°	303	333	61	72	76	323
115°	572	589	614	153	82	564
125°	809	822	841	848	851	722
135°	1002	1018	1026	1036	1034	774
145°	1162	1161	1178	1185	1180	727
155°	1279	1270	1282	1288	1280	589
165°	1348	1342	1345	1352	1345	381
175°	1379	1372	1374	1381	1371	131
180°	1376	1376	1376	1376	1376	

TEST NUMBER: P915909

CATALOG NUMBER: DFN2DIP-4P3F0-060D050US930-RLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2021.8	2021.8	2021.8	2021.8	2021.8
2.5°	2030.9	2021.8	2001.6	2020.0	2016.3
5°	2021.8	2012.6	1988.8	2005.3	1999.8
7.5°	2005.3	1994.4	1968.8	1976.0	1966.8
10°	1983.3	1970.5	1934.1	1928.4	1917.5
12.5°	1956.0	1939.4	1889.9	1879.1	1858.9
15°	1923.0	1902.7	1840.6	1805.9	1787.6
17.5°	1884.6	1855.2	1778.3	1738.1	1708.9
20°	1840.6	1803.9	1712.5	1666.9	1626.5
22.5°	1793.1	1750.9	1644.8	1582.7	1555.3
25°	1745.6	1686.9	1566.2	1491.3	1463.7
27.5°	1688.9	1626.5	1493.0	1407.0	1364.9
30°	1628.5	1558.8	1412.4	1319.2	1269.7
32.5°	1569.9	1485.6	1335.8	1225.9	1180.1
35°	1504.1	1410.7	1249.8	1134.4	1094.0
37.5°	1440.0	1339.2	1169.2	1042.8	997.2
40°	1372.2	1262.6	1084.9	955.0	907.5
42.5°	1302.8	1185.7	1000.9	865.4	819.8
45°	1229.6	1106.8	914.9	784.8	740.9
47.5°	1160.1	1030.2	832.6	702.5	662.3
50°	1083.2	953.3	752.0	625.7	587.4
52.5°	1008.0	870.8	675.1	554.4	519.7
55°	934.9	792.2	594.6	484.9	450.1
57.5°	860.0	713.5	523.3	420.9	391.5
60°	783.1	636.7	448.3	355.1	325.7
62.5°	708.2	561.8	384.2	296.4	281.8
65°	631.3	483.0	318.4	256.2	250.6
67.5°	558.1	409.8	256.2	225.0	219.6
70°	481.2	338.5	212.1	194.0	186.5
72.5°	408.1	272.6	177.4	162.9	159.1
75°	336.6	208.5	146.3	133.5	131.8
77.5°	265.4	148.1	115.3	107.9	104.3
80°	199.3	106.2	87.7	80.6	80.6
82.5°	139.0	71.4	60.3	56.7	56.7
85°	78.6	40.2	34.7	34.7	34.7
87.5°	29.4	14.6	14.6	12.8	12.8
90°	1.0	11.9	19.9	24.9	26.8
92.5°	24.9	21.0	23.9	25.9	26.8
95°	64.7	31.8	38.8	43.9	42.8
97.5°	116.4	34.9	50.7	53.8	54.7
100°	176.3	39.9	56.7	64.7	66.7
102.5°	241.9	239.9	58.8	69.6	72.7
105°	302.6	332.6	60.7	71.7	75.7
107.5°	373.3	398.1	62.8	73.6	77.7
110°	441.1	461.9	174.2	74.7	78.6

TEST NUMBER: P915909

CATALOG NUMBER: DFN2DIP-4P3F0-060D050US930-RLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	504.8	522.6	505.7	76.6	79.7
115°	572.4	589.3	614.2	153.4	81.7
117.5°	631.1	651.0	668.1	525.5	264.8
120°	696.8	711.8	729.7	741.7	607.2
122.5°	752.5	768.5	788.5	794.4	795.5
125°	809.3	822.3	841.2	848.2	851.2
127.5°	861.0	875.0	890.1	899.9	900.9
130°	909.9	925.9	936.7	947.7	946.8
132.5°	959.7	972.7	983.5	992.5	991.6
135°	1001.5	1017.5	1026.3	1036.4	1034.4
137.5°	1045.2	1057.2	1067.2	1077.2	1074.2
140°	1088.0	1096.1	1106.9	1115.9	1111.0
142.5°	1124.0	1131.0	1143.9	1151.8	1146.8
145°	1161.8	1160.7	1177.6	1184.6	1179.7
147.5°	1194.6	1191.6	1208.5	1213.5	1209.6
150°	1226.5	1219.5	1235.4	1241.4	1236.4
152.5°	1253.3	1245.4	1260.3	1266.3	1259.3
155°	1279.2	1270.3	1282.2	1288.2	1280.3
157.5°	1300.1	1292.2	1301.1	1308.1	1300.1
160°	1318.1	1312.1	1318.1	1324.0	1317.0
162.5°	1333.9	1328.0	1332.9	1339.9	1331.0
165°	1347.9	1342.0	1344.9	1351.8	1344.9
167.5°	1358.9	1352.8	1355.9	1362.9	1353.9
170°	1367.8	1361.8	1363.8	1370.8	1361.8
172.5°	1373.8	1367.8	1369.9	1376.8	1367.8
175°	1378.8	1371.7	1373.8	1380.7	1370.8
177.5°	1380.7	1373.8	1374.8	1381.8	1372.8
180°	1375.7	1375.7	1375.7	1375.7	1375.7



TEST NUMBER: P915909

CATALOG NUMBER: DFN2DIP-4P3F0-060D050US930-RLONL

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	10.09	10.92	11.04	11.89	13.15	6.05	6.88	7.00	7.85	9.11
	3H	11.76	12.51	12.73	13.48	14.77	7.23	7.98	8.20	8.96	10.24
	4H	12.37	13.07	13.35	14.05	15.35	7.68	8.38	8.66	9.36	10.66
	6H	12.78	13.43	13.78	14.42	15.73	7.99	8.64	8.98	9.63	10.94
	8H	12.91	13.53	13.91	14.53	15.83	8.08	8.70	9.08	9.70	11.00
	12H	12.97	13.56	13.97	14.55	15.88	8.12	8.71	9.12	9.70	11.03
4H	2H	10.10	10.81	11.09	11.79	13.09	6.64	7.35	7.63	8.33	9.62
	3H	11.93	12.52	12.92	13.53	14.83	7.98	8.57	8.98	9.58	10.89
	4H	12.62	13.15	13.62	14.16	15.49	8.53	9.06	9.53	10.07	11.40
	6H	13.13	13.59	14.14	14.62	15.94	8.94	9.40	9.96	10.43	11.76
	8H	13.30	13.73	14.32	14.75	16.09	9.07	9.50	10.08	10.52	11.86
	12H	13.39	13.78	14.43	14.82	16.16	9.13	9.52	10.16	10.55	11.90
8H	4H	12.58	13.01	13.60	14.03	15.38	8.80	9.24	9.82	10.26	11.60
	6H	13.14	13.50	14.19	14.56	15.90	9.32	9.67	10.36	10.73	12.07
	8H	13.36	13.67	14.41	14.72	16.08	9.50	9.81	10.55	10.86	12.22
	12H	13.49	13.77	14.55	14.81	16.21	9.62	9.89	10.67	10.93	12.34
12H	4H	12.54	12.92	13.57	13.96	15.31	8.81	9.20	9.84	10.23	11.58
	6H	13.12	13.43	14.17	14.48	15.84	9.36	9.68	10.41	10.72	12.08
	8H	13.34	13.61	14.39	14.65	16.06	9.57	9.84	10.62	10.89	12.29

END OF REPORT