

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: P903159

Luminaire Tested: DFN2DIP-PN4F0-040D070US830-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P903159
REPORT IS A COMBINATION OF REPORTS P901184 AND P898053
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-040D070US830-RLLONL
Description: 4 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

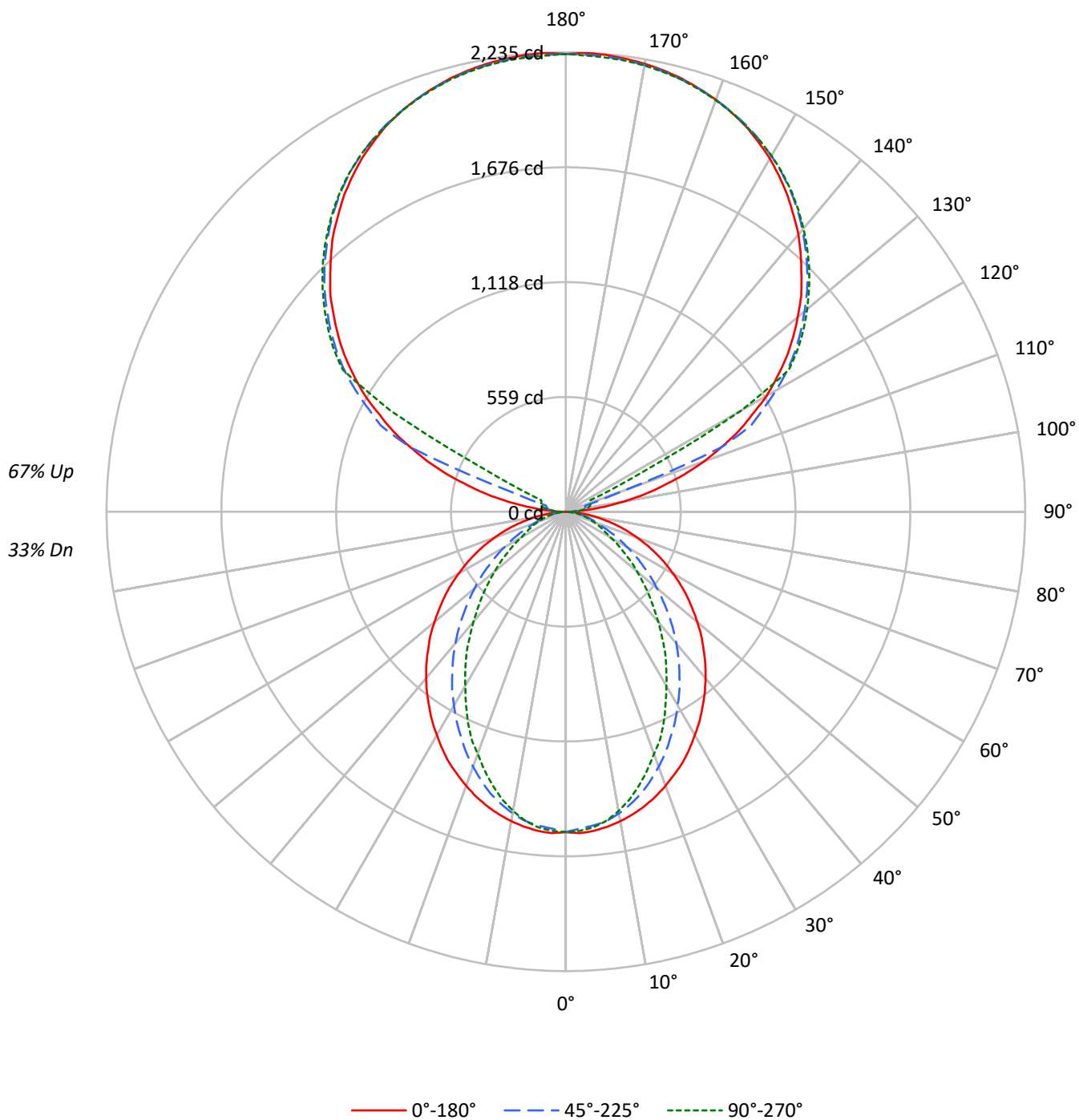
Lumens per Lamp: N/A
Luminaire Lumens: 9736.4 lumens
Efficiency: N/A
Efficacy: 113.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.74' x L: 3.94' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 85.9
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9968
Total Harmonic Distortion (THDi): 0.064
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P903159

CATALOG NUMBER: DFN2DIP-PN4F0-040D070US830-RLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P903159

CATALOG NUMBER: DFN2DIP-PN4F0-040D070US830-RLLONL

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	103	103	103	103	93	93	93	93	74	74	74	56	56	56	40	40	40
1	94	90	87	83	85	81	78	76	65	63	61	50	49	48	36	35	35
2	86	79	73	68	77	72	67	62	57	54	51	44	42	40	32	31	30
3	79	70	63	57	71	63	57	53	51	47	43	39	37	34	29	27	26
4	72	62	54	49	65	56	50	45	45	41	37	35	32	30	26	24	22
5	66	55	47	42	59	50	43	38	41	36	32	32	28	26	24	21	20
6	61	49	42	36	55	45	38	33	37	32	28	29	25	23	21	19	17
7	56	45	37	32	51	41	34	29	33	28	25	26	23	20	20	17	16
8	52	41	33	28	47	37	31	26	30	25	22	24	21	18	18	16	14
9	49	37	30	25	44	34	27	23	28	23	20	22	19	16	17	14	13
10	45	34	27	22	41	31	25	21	26	21	18	20	17	15	16	13	12

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1137	1137	1137
5°	1139	1120	1127
10°	1128	1098	1090
15°	1112	1062	1034
20°	1092	1012	964
25°	1071	956	897
30°	1043	898	812
35°	1015	837	738
40°	987	773	652
45°	954	702	574
50°	920	631	498
55°	885	554	425
60°	844	474	350
65°	797	393	315
70°	740	317	286
75°	668	280	261
80°	564	235	227
85°	393	158	172

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1189 cd/sqm

TEST NUMBER: P903159

CATALOG NUMBER: DFN2DIP-PN4F0-040D070US830-RLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	146.0	1.5
10°-20°	400.9	4.1
20°-30°	562.8	5.8
30°-40°	613.5	6.3
40°-50°	563.9	5.8
50°-60°	442.9	4.5
60°-70°	288.3	3.0
70°-80°	148.4	1.5
80°-90°	41.8	0.4
90°-100°	73.4	0.8
100°-110°	273.7	2.8
110°-120°	725.9	7.5
120°-130°	1204.0	12.4
130°-140°	1278.9	13.1
140°-150°	1188.6	12.2
150°-160°	955.6	9.8
160°-170°	615.8	6.3
170°-180°	211.9	2.2
0°-30°	1109.8	11.4
0°-40°	1723.3	17.7
0°-60°	2730.1	28.0
0°-90°	3208.5	33.0
90°-120°	1073.0	11.0
90°-150°	4744.6	48.7
90°-180°	6528.0	67.0
0°-180°	9736.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1558	1558	1558	1558	1558	
5°	1558	1551	1533	1546	1541	148
15°	1482	1466	1419	1392	1378	418
25°	1345	1300	1207	1149	1128	619
35°	1159	1087	963	874	843	726
45°	948	853	705	605	571	732
55°	721	611	458	374	347	644
65°	486	372	245	198	193	482
75°	259	161	113	103	102	274
85°	61	31	27	27	27	70
90°	2	19	32	40	44	9
95°	105	52	63	71	69	124
105°	490	538	98	116	122	523
115°	926	954	994	248	132	912
125°	1310	1331	1362	1373	1378	1168
135°	1621	1647	1661	1677	1674	1252
145°	1880	1879	1906	1917	1909	1176
155°	2070	2056	2075	2085	2072	954
165°	2182	2172	2177	2188	2177	616
175°	2232	2220	2224	2235	2219	212
180°	2227	2227	2227	2227	2227	

TEST NUMBER: P903159

CATALOG NUMBER: DFN2DIP-PN4F0-040D070US830-RLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1558.2	1558.2	1558.2	1558.2	1558.2
2.5°	1565.3	1558.2	1542.7	1556.9	1554.0
5°	1558.2	1551.1	1532.8	1545.5	1541.3
7.5°	1545.5	1537.1	1517.4	1522.9	1515.9
10°	1528.6	1518.7	1490.5	1486.2	1477.9
12.5°	1507.5	1494.8	1456.6	1448.2	1432.7
15°	1482.1	1466.5	1418.6	1391.9	1377.8
17.5°	1452.5	1429.8	1370.6	1339.6	1317.0
20°	1418.6	1390.3	1319.8	1284.7	1253.6
22.5°	1382.0	1349.5	1267.6	1219.7	1198.7
25°	1345.3	1300.1	1207.0	1149.3	1128.0
27.5°	1301.7	1253.6	1150.7	1084.4	1051.9
30°	1255.1	1201.4	1088.5	1016.7	978.6
32.5°	1209.9	1145.0	1029.4	944.8	909.5
35°	1159.2	1087.2	963.2	874.3	843.2
37.5°	1109.8	1032.2	901.1	803.7	768.5
40°	1057.6	973.1	836.2	736.1	699.5
42.5°	1004.0	913.8	771.4	666.9	631.8
45°	947.6	853.1	705.1	604.9	571.1
47.5°	894.1	794.0	641.7	541.5	510.5
50°	834.8	734.7	579.6	482.2	452.7
52.5°	776.9	671.2	520.4	427.3	400.5
55°	720.6	610.6	458.3	373.7	346.9
57.5°	662.8	550.0	403.3	324.3	301.8
60°	603.5	490.7	345.4	273.6	251.1
62.5°	545.8	433.0	296.1	228.5	217.3
65°	486.5	372.2	245.3	197.5	193.1
67.5°	430.2	315.8	197.5	173.4	169.2
70°	370.9	260.9	163.5	149.5	143.7
72.5°	314.5	210.1	136.8	125.5	122.7
75°	259.4	160.7	112.8	102.9	101.6
77.5°	204.5	114.1	88.9	83.2	80.3
80°	153.6	81.8	67.6	62.1	62.1
82.5°	107.2	55.0	46.6	43.6	43.6
85°	60.6	31.0	26.8	26.8	26.8
87.5°	22.6	11.2	11.2	9.9	9.9
90°	1.5	19.3	32.1	40.3	43.5
92.5°	40.3	33.8	38.6	41.9	43.5
95°	104.6	51.5	62.8	71.0	69.3
97.5°	188.4	56.5	82.1	87.1	88.6
100°	285.3	64.5	91.8	104.6	107.9
102.5°	391.4	388.4	95.1	112.7	117.6
105°	489.8	538.2	98.3	115.9	122.4
107.5°	604.2	644.4	101.6	119.2	125.7
110°	713.9	747.5	282.0	120.9	127.2

TEST NUMBER: P903159

CATALOG NUMBER: DFN2DIP-PN4F0-040D070US830-RLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	817.0	845.8	818.5	123.9	128.9
115°	926.4	953.8	994.1	248.2	132.2
117.5°	1021.5	1053.7	1081.2	850.6	428.6
120°	1127.8	1152.0	1181.1	1200.4	982.9
122.5°	1218.0	1243.8	1276.2	1285.7	1287.4
125°	1309.9	1330.9	1361.5	1372.8	1377.5
127.5°	1393.6	1416.2	1440.5	1456.6	1458.1
130°	1472.6	1498.5	1516.1	1533.9	1532.4
132.5°	1553.2	1574.2	1591.9	1606.4	1604.9
135°	1620.9	1646.7	1661.1	1677.3	1674.1
137.5°	1691.7	1711.1	1727.3	1743.4	1738.6
140°	1761.0	1774.0	1791.6	1806.1	1798.1
142.5°	1819.1	1830.4	1851.2	1864.1	1856.1
145°	1880.4	1878.7	1906.0	1917.3	1909.3
147.5°	1933.3	1928.6	1956.0	1964.0	1957.7
150°	1985.0	1973.8	1999.6	2009.1	2001.1
152.5°	2028.4	2015.6	2039.8	2049.5	2038.2
155°	2070.4	2056.0	2075.3	2084.9	2072.1
157.5°	2104.2	2091.4	2105.9	2117.2	2104.2
160°	2133.4	2123.5	2133.4	2142.9	2131.6
162.5°	2159.0	2149.4	2157.4	2168.7	2154.2
165°	2181.5	2172.0	2176.7	2188.0	2176.7
167.5°	2199.3	2189.5	2194.5	2205.8	2191.3
170°	2213.8	2204.1	2207.3	2218.7	2204.1
172.5°	2223.5	2213.8	2217.1	2228.4	2213.8
175°	2231.5	2220.2	2223.5	2234.7	2218.7
177.5°	2234.7	2223.5	2225.2	2236.5	2221.9
180°	2226.7	2226.7	2226.7	2226.7	2226.7

TEST NUMBER: P903159

CATALOG NUMBER: DFN2DIP-PN4F0-040D070US830-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	5.76	6.47	6.86	7.56	9.06	1.72	2.43	2.82	3.52	5.02
	3H	7.43	8.06	8.54	9.16	10.68	2.90	3.54	4.01	4.64	6.15
	4H	8.04	8.64	9.15	9.74	11.26	3.35	3.95	4.46	5.05	6.57
	6H	8.45	9.01	9.58	10.11	11.64	3.66	4.22	4.79	5.32	6.85
	8H	8.58	9.10	9.70	10.22	11.75	3.75	4.28	4.88	5.40	6.92
	12H	8.64	9.14	9.77	10.25	11.80	3.79	4.29	4.92	5.40	6.95
4H	2H	5.76	6.36	6.89	7.46	8.98	2.31	2.91	3.43	4.01	5.53
	3H	7.58	8.08	8.71	9.21	10.74	3.65	4.15	4.77	5.27	6.80
	4H	8.27	8.73	9.41	9.85	11.40	4.19	4.65	5.32	5.76	7.32
	6H	8.79	9.18	9.92	10.32	11.86	4.60	5.00	5.74	6.14	7.68
	8H	8.96	9.33	10.10	10.46	12.02	4.73	5.10	5.87	6.23	7.79
	12H	9.05	9.38	10.20	10.53	12.09	4.79	5.12	5.94	6.26	7.83
8H	4H	8.23	8.60	9.37	9.73	11.29	4.46	4.83	5.60	5.96	7.52
	6H	8.80	9.10	9.96	10.27	11.83	4.98	5.28	6.14	6.45	8.01
	8H	9.02	9.28	10.18	10.43	12.01	5.17	5.43	6.33	6.59	8.16
	12H	9.15	9.38	10.32	10.53	12.14	5.28	5.52	6.45	6.66	8.28
12H	4H	8.18	8.51	9.33	9.65	11.22	4.46	4.79	5.62	5.94	7.50
	6H	8.77	9.04	9.94	10.19	11.77	5.03	5.29	6.19	6.44	8.02
	8H	8.99	9.22	10.16	10.37	11.98	5.23	5.47	6.40	6.61	8.23

END OF REPORT