

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: P912733

Luminaire Tested: DFN2DIP-TR4F0-040D050US850-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P912733
REPORT IS A COMBINATION OF REPORTS P901908 AND P898849
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR4F0-040D050US850-RLLONL
Description: 4 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

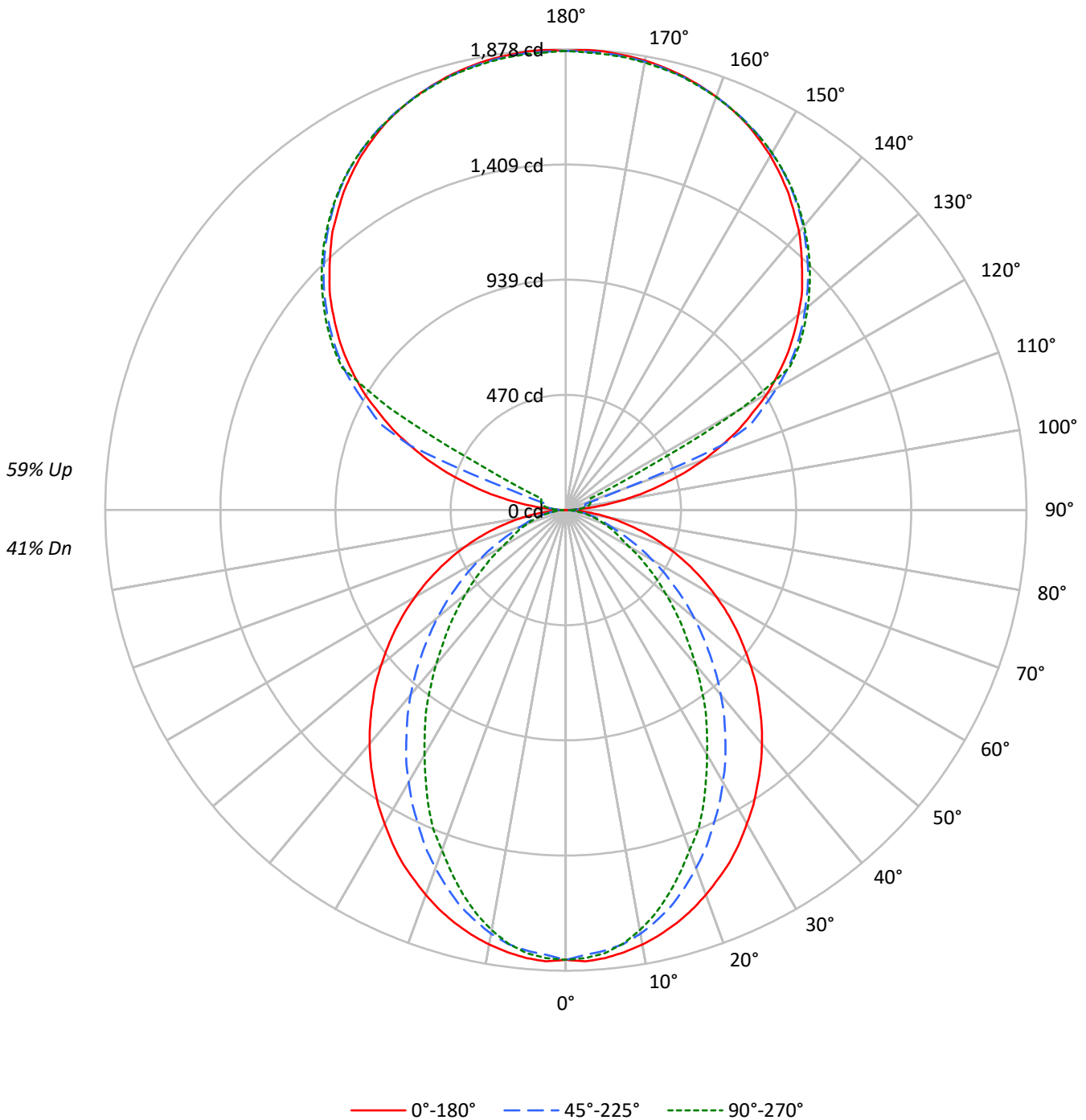
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 9260.2 lumens
Efficiency: N/A
Efficacy: 132.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.43' x L: 3.96' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 69.8
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

TEST NUMBER: P912733
CATALOG NUMBER: DFN2DIP-TR4F0-040D050US850-RLLONL

Luminous Intensity Polar Plot





TEST NUMBER: P912733

CATALOG NUMBER: DFN2DIP-TR4F0-040D050US850-RLLONL

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	50	30	10	0
RCR																					
0	105	105	105	105	96	96	96	96	78	78	78	62	62	62	48	48	48	48	48	48	41
1	96	92	88	85	87	84	81	78	69	67	65	55	54	53	43	42	41	41	41	41	35
2	88	81	75	70	80	74	69	65	61	57	54	49	47	44	38	36	35	35	35	35	30
3	80	71	64	59	73	65	59	54	54	50	46	44	41	38	34	32	30	30	30	30	26
4	74	63	56	50	67	58	52	46	48	43	40	39	36	33	31	28	26	26	26	26	23
5	68	57	49	43	62	52	45	40	43	38	34	35	32	29	28	25	23	23	23	23	20
6	62	51	43	37	57	47	40	35	39	34	30	32	28	25	25	23	21	21	21	21	18
7	58	46	38	33	53	42	36	31	36	30	27	29	25	23	23	21	19	19	19	19	16
8	54	42	34	29	49	39	32	27	33	27	24	27	23	20	21	19	17	17	17	17	14
9	50	38	31	26	46	35	29	24	30	25	21	25	21	18	20	17	15	15	15	15	13
10	47	35	28	23	43	32	26	22	28	23	19	23	19	17	18	16	14	14	14	14	12

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1457	1457	1457
5°	1459	1433	1443
10°	1444	1405	1396
15°	1425	1359	1323
20°	1398	1295	1234
25°	1371	1223	1148
30°	1335	1149	1039
35°	1300	1070	943
40°	1264	988	833
45°	1222	897	733
50°	1178	806	636
55°	1133	708	543
60°	1081	605	447
65°	1021	501	402
70°	948	404	364
75°	856	356	331
80°	723	299	287
85°	504	199	215

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 1222 cd/sqm



TEST NUMBER: P912733

CATALOG NUMBER: DFN2DIP-TR4F0-040D050US850-RLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	171.8	1.9
10°-20°	471.7	5.1
20°-30°	662.3	7.2
30°-40°	721.9	7.8
40°-50°	663.5	7.2
50°-60°	521.1	5.6
60°-70°	339.2	3.7
70°-80°	174.6	1.9
80°-90°	47.9	0.5
90°-100°	61.7	0.7
100°-110°	230.0	2.5
110°-120°	610.1	6.6
120°-130°	1011.9	10.9
130°-140°	1074.8	11.6
140°-150°	999.0	10.8
150°-160°	803.1	8.7
160°-170°	517.5	5.6
170°-180°	178.1	1.9
0°-30°	1305.8	14.1
0°-40°	2027.7	21.9
0°-60°	3212.2	34.7
0°-90°	3773.9	40.8
90°-120°	901.9	9.7
90°-150°	3987.5	43.1
90°-180°	5486.0	59.2
0°-180°	9260.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1833	1833	1833	1833	1833	
5°	1833	1825	1804	1818	1814	174
15°	1744	1726	1669	1638	1621	491
25°	1583	1530	1420	1352	1327	728
35°	1364	1279	1133	1029	992	854
45°	1115	1004	830	712	672	861
55°	848	718	539	440	408	758
65°	572	438	289	232	227	568
75°	305	189	133	121	120	323
85°	71	36	32	32	32	82
90°	1	16	27	34	36	9
95°	88	43	53	60	58	104
105°	412	452	83	98	103	440
115°	779	802	836	209	111	767
125°	1101	1118	1144	1154	1158	982
135°	1362	1384	1396	1410	1407	1052
145°	1580	1579	1602	1611	1605	988
155°	1740	1728	1744	1752	1742	802
165°	1833	1825	1829	1839	1829	518
175°	1875	1866	1869	1878	1865	178
180°	1871	1871	1871	1871	1871	



TEST NUMBER: P912733

CATALOG NUMBER: DFN2DIP-TR4F0-040D050US850-RLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1833.4	1833.4	1833.4	1833.4	1833.4
2.5°	1841.7	1833.4	1815.1	1831.8	1828.4
5°	1833.4	1825.1	1803.5	1818.4	1813.5
7.5°	1818.4	1808.6	1785.4	1791.8	1783.6
10°	1798.6	1786.9	1753.8	1748.7	1738.9
12.5°	1773.7	1758.8	1713.8	1704.0	1685.7
15°	1743.8	1725.5	1669.2	1637.7	1621.1
17.5°	1709.0	1682.4	1612.6	1576.2	1549.6
20°	1669.2	1635.9	1552.9	1511.6	1475.0
22.5°	1626.0	1587.9	1491.5	1435.2	1410.4
25°	1582.9	1529.8	1420.2	1352.3	1327.3
27.5°	1531.5	1475.0	1353.9	1275.9	1237.6
30°	1476.7	1413.5	1280.8	1196.3	1151.5
32.5°	1423.6	1347.2	1211.2	1111.7	1070.1
35°	1364.0	1279.2	1133.3	1028.7	992.1
37.5°	1305.8	1214.5	1060.2	945.6	904.3
40°	1244.4	1144.9	983.9	866.1	823.0
42.5°	1181.3	1075.2	907.6	784.7	743.4
45°	1115.0	1003.8	829.6	711.8	671.9
47.5°	1052.0	934.2	755.0	637.1	600.6
50°	982.2	864.5	681.9	567.4	532.7
52.5°	914.1	789.7	612.3	502.7	471.2
55°	847.8	718.4	539.2	439.7	408.2
57.5°	779.8	647.1	474.5	381.6	355.1
60°	710.1	577.3	406.4	321.9	295.4
62.5°	642.2	509.5	348.3	268.8	255.6
65°	572.5	437.9	288.7	232.3	227.2
67.5°	506.1	371.6	232.3	204.1	199.1
70°	436.4	307.0	192.4	175.9	169.1
72.5°	370.1	247.2	160.9	147.7	144.4
75°	305.2	189.1	132.7	121.1	119.6
77.5°	240.7	134.3	104.6	97.9	94.5
80°	180.8	96.3	79.5	73.1	73.1
82.5°	126.1	64.8	54.8	51.3	51.3
85°	71.3	36.5	31.5	31.5	31.5
87.5°	26.6	13.2	13.2	11.6	11.6
90°	1.3	16.2	27.1	33.9	36.5
92.5°	33.9	28.5	32.5	35.3	36.5
95°	87.9	43.3	52.8	59.7	58.2
97.5°	158.4	47.5	69.0	73.2	74.4
100°	239.8	54.2	77.2	87.9	90.7
102.5°	329.0	326.4	80.0	94.7	98.9
105°	411.7	452.4	82.6	97.5	102.9
107.5°	507.8	541.5	85.4	100.1	105.7
110°	600.0	628.2	237.0	101.6	106.9



TEST NUMBER: P912733

CATALOG NUMBER: DFN2DIP-TR4F0-040D050US850-RLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	686.6	710.9	687.9	104.2	108.3
115°	778.6	801.6	835.5	208.6	111.1
117.5°	858.5	885.5	908.7	714.9	360.2
120°	947.9	968.2	992.6	1008.9	826.0
122.5°	1023.6	1045.3	1072.5	1080.6	1082.1
125°	1100.8	1118.5	1144.3	1153.7	1157.8
127.5°	1171.2	1190.2	1210.7	1224.1	1225.4
130°	1237.6	1259.4	1274.1	1289.1	1287.9
132.5°	1305.4	1323.0	1337.8	1350.1	1348.8
135°	1362.3	1384.0	1396.0	1409.8	1407.0
137.5°	1421.7	1438.0	1451.7	1465.2	1461.2
140°	1480.0	1490.9	1505.7	1517.9	1511.2
142.5°	1528.9	1538.4	1555.9	1566.7	1559.9
145°	1580.3	1578.9	1601.8	1611.4	1604.6
147.5°	1624.9	1620.8	1643.9	1650.6	1645.3
150°	1668.3	1658.8	1680.5	1688.6	1681.8
152.5°	1704.8	1694.0	1714.3	1722.5	1713.0
155°	1740.0	1727.9	1744.1	1752.2	1741.5
157.5°	1768.4	1757.7	1769.9	1779.4	1768.4
160°	1792.9	1784.7	1792.9	1800.9	1791.5
162.5°	1814.4	1806.5	1813.1	1822.6	1810.4
165°	1833.4	1825.4	1829.4	1838.8	1829.4
167.5°	1848.4	1840.2	1844.4	1853.8	1841.6
170°	1860.6	1852.4	1855.1	1864.6	1852.4
172.5°	1868.7	1860.6	1863.3	1872.8	1860.6
175°	1875.4	1865.9	1868.7	1878.1	1864.6
177.5°	1878.1	1868.7	1870.1	1879.5	1867.3
180°	1871.3	1871.3	1871.3	1871.3	1871.3



TEST NUMBER: P912733
 CATALOG NUMBER: DFN2DIP-TR4F0-040D050US850-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	7.52	8.28	8.56	9.32	10.72	3.49	4.25	4.53	5.29	6.69
	3H	9.19	9.87	10.24	10.92	12.34	4.68	5.36	5.73	6.41	7.83
	4H	9.80	10.44	10.86	11.49	12.92	5.13	5.77	6.19	6.82	8.25
	6H	10.21	10.81	11.28	11.86	13.30	5.44	6.04	6.51	7.09	8.53
	8H	10.34	10.90	11.41	11.97	13.41	5.53	6.10	6.61	7.17	8.60
	12H	10.40	10.93	11.48	12.00	13.45	5.57	6.11	6.65	7.17	8.63
4H	2H	7.53	8.17	8.60	9.22	10.65	4.08	4.72	5.15	5.77	7.20
	3H	9.35	9.89	10.43	10.97	12.41	5.42	5.96	6.50	7.04	8.48
	4H	10.04	10.53	11.12	11.60	13.06	5.97	6.46	7.05	7.53	8.99
	6H	10.55	10.97	11.64	12.07	13.52	6.39	6.81	7.48	7.90	9.36
	8H	10.73	11.12	11.82	12.20	13.67	6.52	6.91	7.60	7.99	9.46
	12H	10.82	11.17	11.92	12.27	13.75	6.58	6.93	7.68	8.03	9.51
8H	4H	10.00	10.40	11.09	11.48	12.95	6.25	6.64	7.33	7.72	9.19
	6H	10.57	10.89	11.68	12.02	13.49	6.76	7.09	7.87	8.21	9.68
	8H	10.78	11.07	11.90	12.18	13.66	6.95	7.24	8.07	8.35	9.83
	12H	10.92	11.17	12.04	12.27	13.80	7.07	7.32	8.19	8.42	9.95
12H	4H	9.95	10.31	11.06	11.41	12.88	6.25	6.60	7.35	7.70	9.18
	6H	10.54	10.83	11.66	11.94	13.42	6.81	7.10	7.93	8.21	9.69
	8H	10.76	11.01	11.88	12.12	13.64	7.02	7.27	8.14	8.37	9.90