

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: P923761

Luminaire Tested: DFN2DIP-TR4F0-070D070US940-RLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P923761
REPORT IS A COMBINATION OF REPORTS P901950 AND P898849
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR4F0-070D070US940-RLLONL
Description: 4 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

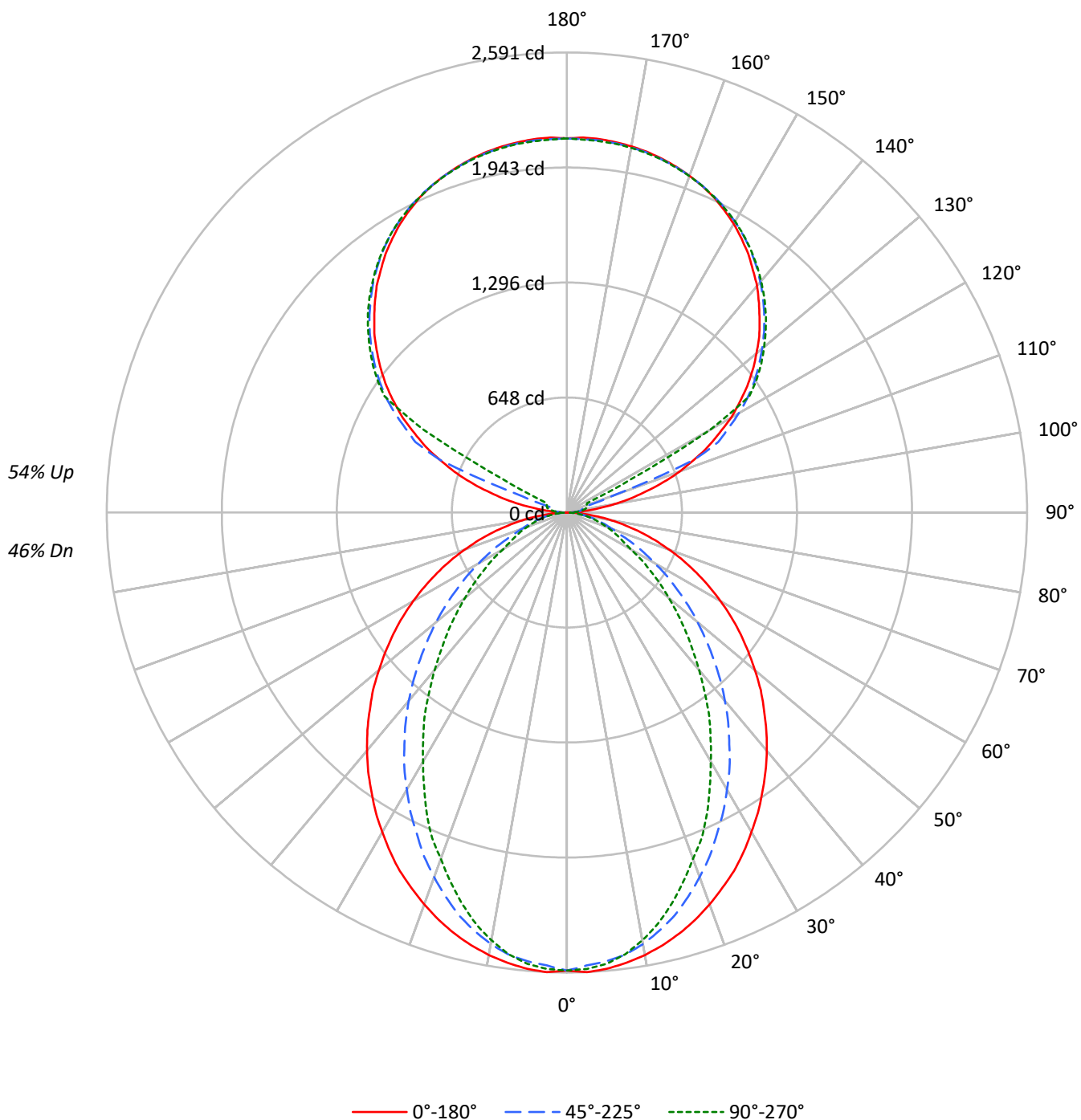
Lumens per Lamp: N/A
Luminaire Lumens: 11485.2 lumens
Efficiency: N/A
Efficacy: 97.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.43' x L: 3.96' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 117.7
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9977
Total Harmonic Distortion (THDi): 0.049
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P923761

CATALOG NUMBER: DFN2DIP-TR4F0-070D070US940-RLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P923761

CATALOG NUMBER: DFN2DIP-TR4F0-070D070US940-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	106	106	106	106	98	98	98	98	81	81	81	66	66	66	53	53	53
1	97	93	90	86	89	86	83	80	72	70	68	59	58	56	47	46	45
2	89	82	76	71	82	76	70	66	63	60	57	52	50	48	42	40	39
3	81	72	65	60	75	67	61	56	56	52	48	47	43	41	38	35	34
4	75	64	57	51	68	60	53	48	50	45	41	42	38	35	34	31	29
5	69	58	50	44	63	53	46	41	45	40	36	38	34	31	31	28	26
6	63	52	44	38	58	48	41	36	41	36	32	34	30	27	28	25	23
7	59	47	39	34	54	44	37	32	37	32	28	31	27	24	26	23	21
8	55	43	35	30	50	40	33	28	34	29	25	29	25	22	24	21	19
9	51	39	32	27	47	36	30	25	31	26	22	27	23	20	22	19	17
10	48	36	29	24	44	33	27	23	29	24	20	25	21	18	20	18	15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2049	2049	2049
5°	2053	2017	2030
10°	2033	1977	1964
15°	2004	1912	1862
20°	1968	1822	1736
25°	1930	1721	1615
30°	1879	1617	1462
35°	1829	1506	1327
40°	1778	1391	1172
45°	1719	1263	1032
50°	1658	1134	895
55°	1595	996	764
60°	1521	852	629
65°	1436	705	566
70°	1334	569	512
75°	1205	501	466
80°	1018	421	404
85°	709	280	303

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1719 cd/sqm

TEST NUMBER: P923761

CATALOG NUMBER: DFN2DIP-TR4F0-070D070US940-RLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	241.8	2.1
10°-20°	663.7	5.8
20°-30°	931.9	8.1
30°-40°	1015.8	8.8
40°-50°	933.6	8.1
50°-60°	733.2	6.4
60°-70°	477.3	4.2
70°-80°	245.7	2.1
80°-90°	66.4	0.6
90°-100°	69.5	0.6
100°-110°	259.0	2.3
110°-120°	686.8	6.0
120°-130°	1139.1	9.9
130°-140°	1209.9	10.5
140°-150°	1124.5	9.8
150°-160°	904.1	7.9
160°-170°	582.6	5.1
170°-180°	200.5	1.7
0°-30°	1837.4	16.0
0°-40°	2853.2	24.8
0°-60°	4520.0	39.4
0°-90°	5309.4	46.2
90°-120°	1015.2	8.8
90°-150°	4488.7	39.1
90°-180°	6176.0	53.8
0°-180°	11485.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2580	2580	2580	2580	2580	
5°	2580	2568	2538	2559	2552	245
15°	2454	2428	2349	2304	2281	691
25°	2227	2152	1998	1903	1868	1024
35°	1919	1800	1595	1448	1396	1201
45°	1569	1412	1167	1002	946	1212
55°	1193	1011	759	619	574	1066
65°	806	616	406	327	320	799
75°	430	266	187	170	168	454
85°	100	51	44	44	44	115
90°	1	18	30	38	41	11
95°	99	49	59	67	66	117
105°	463	509	93	110	116	495
115°	876	902	940	235	125	863
125°	1239	1259	1288	1299	1303	1105
135°	1534	1558	1572	1587	1584	1185
145°	1779	1777	1803	1814	1806	1113
155°	1959	1945	1963	1972	1960	903
165°	2064	2055	2059	2070	2059	583
175°	2111	2100	2104	2114	2099	201
180°	2107	2107	2107	2107	2107	

TEST NUMBER: P923761

CATALOG NUMBER: DFN2DIP-TR4F0-070D070US940-RLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2579.8	2579.8	2579.8	2579.8	2579.8
2.5°	2591.4	2579.8	2554.0	2577.6	2572.9
5°	2579.8	2568.1	2537.7	2558.8	2551.8
7.5°	2558.8	2544.9	2512.2	2521.3	2509.7
10°	2530.8	2514.4	2467.8	2460.7	2446.8
12.5°	2495.8	2474.8	2411.6	2397.7	2371.9
15°	2453.7	2427.9	2348.7	2304.4	2281.1
17.5°	2404.7	2367.3	2269.2	2217.9	2180.5
20°	2348.7	2301.9	2185.2	2127.0	2075.5
22.5°	2288.0	2234.3	2098.7	2019.5	1984.6
25°	2227.3	2152.5	1998.4	1902.8	1867.7
27.5°	2155.0	2075.5	1905.1	1795.4	1741.6
30°	2078.0	1989.0	1802.2	1683.4	1620.2
32.5°	2003.1	1895.7	1704.4	1564.2	1505.7
35°	1919.1	1800.0	1594.7	1447.6	1396.1
37.5°	1837.5	1708.9	1491.9	1330.6	1272.5
40°	1751.0	1611.1	1384.4	1218.7	1158.0
42.5°	1662.3	1513.0	1277.1	1104.2	1046.1
45°	1569.0	1412.4	1167.4	1001.5	945.5
47.5°	1480.2	1314.6	1062.4	896.4	845.2
50°	1382.2	1216.5	959.6	798.3	749.6
52.5°	1286.3	1111.2	861.5	707.4	663.1
55°	1192.9	1010.8	758.7	618.8	574.4
57.5°	1097.3	910.5	667.8	537.0	499.6
60°	999.3	812.4	571.9	453.1	415.6
62.5°	903.6	716.8	490.2	378.3	359.6
65°	805.5	616.3	406.3	327.0	319.8
67.5°	712.1	522.9	327.0	287.0	280.2
70°	614.0	431.9	270.7	247.4	238.0
72.5°	520.7	347.8	226.4	207.9	203.1
75°	429.5	266.0	186.7	170.4	168.2
77.5°	338.6	189.0	147.1	137.7	133.0
80°	254.4	135.5	112.0	102.8	102.8
82.5°	177.4	91.1	77.0	72.3	72.3
85°	100.3	51.3	44.3	44.3	44.3
87.5°	37.4	18.5	18.5	16.3	16.3
90°	1.4	18.3	30.4	38.2	41.1
92.5°	38.2	32.0	36.6	39.7	41.1
95°	99.0	48.7	59.4	67.1	65.5
97.5°	178.3	53.4	77.7	82.4	83.8
100°	269.9	61.0	86.9	99.0	102.1
102.5°	370.3	367.5	90.0	106.6	111.3
105°	463.4	509.2	93.0	109.7	115.8
107.5°	571.6	609.7	96.1	112.8	119.0
110°	675.4	707.2	266.8	114.4	120.4

TEST NUMBER: P923761

CATALOG NUMBER: DFN2DIP-TR4F0-070D070US940-RLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	772.9	800.2	774.4	117.3	122.0
115°	876.5	902.3	940.5	234.8	125.1
117.5°	966.4	996.8	1022.9	804.8	405.5
120°	1067.0	1089.8	1117.4	1135.7	929.9
122.5°	1152.3	1176.7	1207.4	1216.4	1218.0
125°	1239.2	1259.1	1288.1	1298.8	1303.2
127.5°	1318.5	1339.8	1362.8	1378.0	1379.5
130°	1393.2	1417.6	1434.3	1451.2	1449.7
132.5°	1469.4	1489.3	1506.0	1519.7	1518.3
135°	1533.5	1557.9	1571.6	1586.9	1583.9
137.5°	1600.4	1618.8	1634.1	1649.4	1644.8
140°	1666.0	1678.3	1695.0	1708.7	1701.1
142.5°	1721.0	1731.7	1751.4	1763.5	1756.0
145°	1779.0	1777.4	1803.2	1813.9	1806.3
147.5°	1829.1	1824.6	1850.5	1858.1	1852.1
150°	1877.9	1867.3	1891.8	1900.8	1893.2
152.5°	1919.0	1906.9	1929.8	1938.9	1928.3
155°	1958.7	1945.1	1963.4	1972.5	1960.3
157.5°	1990.7	1978.6	1992.3	2003.0	1990.7
160°	2018.3	2009.0	2018.3	2027.3	2016.6
162.5°	2042.6	2033.5	2041.0	2051.7	2038.0
165°	2063.9	2054.9	2059.3	2070.0	2059.3
167.5°	2080.7	2071.4	2076.2	2086.9	2073.1
170°	2094.4	2085.3	2088.3	2099.0	2085.3
172.5°	2103.5	2094.4	2097.6	2108.2	2094.4
175°	2111.1	2100.4	2103.5	2114.2	2099.0
177.5°	2114.2	2103.5	2105.1	2115.9	2102.0
180°	2106.6	2106.6	2106.6	2106.6	2106.6

TEST NUMBER: P923761

CATALOG NUMBER: DFN2DIP-TR4F0-070D070US940-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	9.27	10.07	10.27	11.07	12.40	5.25	6.05	6.24	7.05	8.37
	3H	10.95	11.66	11.95	12.67	14.02	6.43	7.15	7.44	8.16	9.51
	4H	11.55	12.23	12.57	13.25	14.60	6.88	7.56	7.90	8.57	9.93
	6H	11.97	12.60	13.00	13.62	14.98	7.20	7.83	8.23	8.84	10.21
	8H	12.10	12.69	13.13	13.73	15.09	7.29	7.88	8.33	8.92	10.28
	12H	12.16	12.72	13.20	13.75	15.14	7.34	7.90	8.37	8.93	10.31
4H	2H	9.29	9.96	10.31	10.98	12.33	5.84	6.51	6.86	7.53	8.88
	3H	11.11	11.68	12.15	12.72	14.09	7.19	7.75	8.22	8.79	10.16
	4H	11.80	12.32	12.84	13.35	14.74	7.73	8.25	8.77	9.28	10.67
	6H	12.32	12.76	13.37	13.82	15.20	8.15	8.59	9.20	9.65	11.04
	8H	12.49	12.90	13.54	13.95	15.36	8.28	8.69	9.33	9.74	11.15
	12H	12.59	12.96	13.65	14.02	15.43	8.34	8.72	9.41	9.78	11.19
8H	4H	11.77	12.18	12.82	13.23	14.63	8.01	8.42	9.06	9.47	10.88
	6H	12.33	12.67	13.41	13.77	15.17	8.53	8.87	9.60	9.96	11.36
	8H	12.55	12.85	13.63	13.93	15.35	8.72	9.02	9.80	10.10	11.52
	12H	12.69	12.95	13.77	14.02	15.48	8.84	9.10	9.92	10.17	11.63
12H	4H	11.72	12.09	12.79	13.16	14.56	8.01	8.39	9.08	9.45	10.86
	6H	12.31	12.61	13.39	13.69	15.10	8.58	8.88	9.66	9.95	11.37
	8H	12.53	12.79	13.61	13.86	15.32	8.79	9.05	9.87	10.12	11.58

END OF REPORT