

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: P909889

Luminaire Tested: DFN2DIP-TR3F0-050D080US840-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P909889
REPORT IS A COMBINATION OF REPORTS P901865 AND P898751
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR3F0-050D080US840-FLLONL
Description: 3 foot, Triangle Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

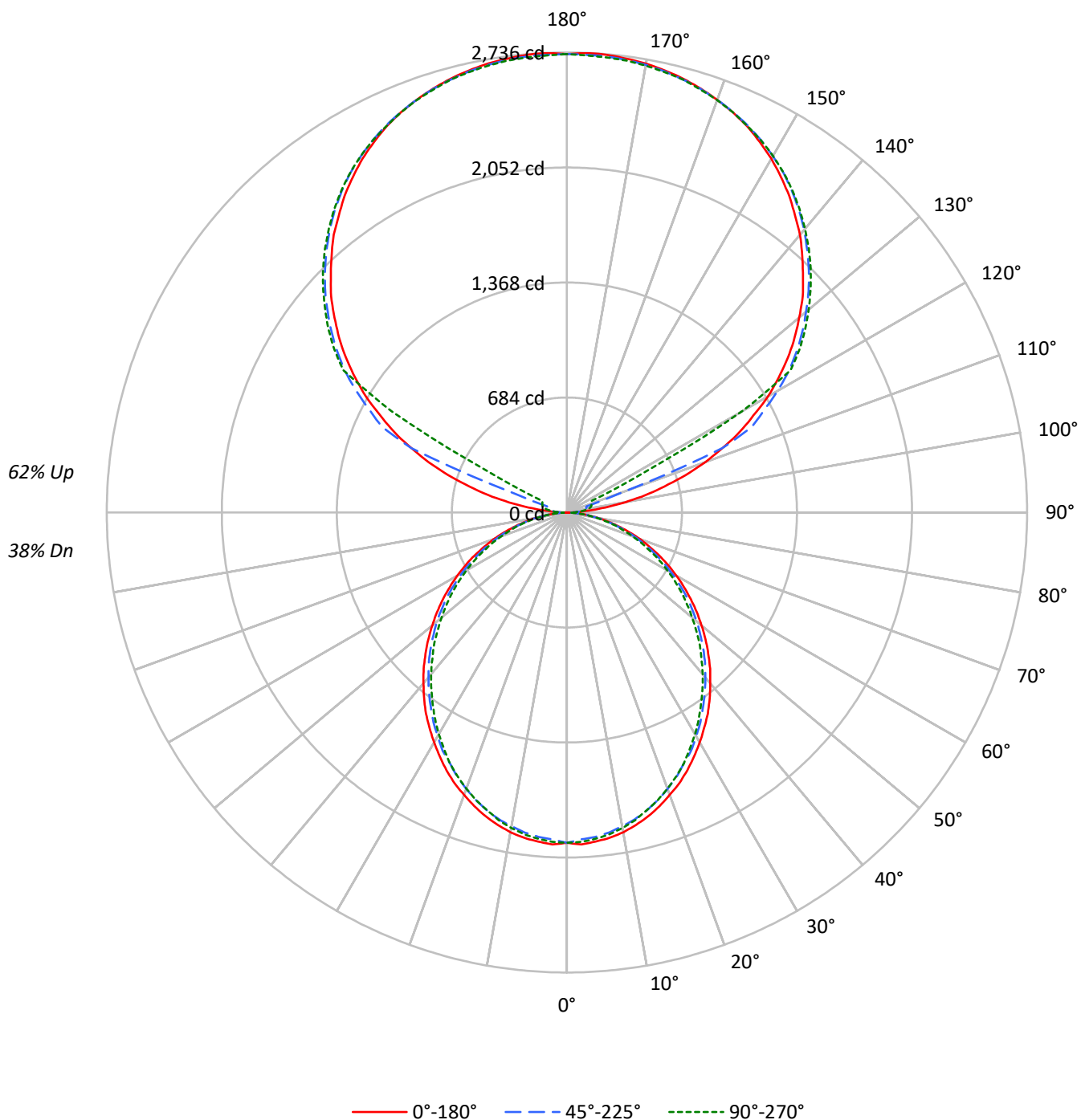
Lumens per Lamp: N/A
Luminaire Lumens: 12997.0 lumens
Efficiency: N/A
Efficacy: 122.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.74' x L: 3.16' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 106.5
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9933
Total Harmonic Distortion (THDi): 0.066
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P909889

CATALOG NUMBER: DFN2DIP-TR3F0-050D080US840-FLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P909889

CATALOG NUMBER: DFN2DIP-TR3F0-050D080US840-FLONL

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	104	104	104	104	95	95	95	95	77	77	77	61	61	61	46	46	46
1	95	91	87	84	86	83	80	77	67	65	63	53	52	50	40	39	38
2	87	79	73	68	78	72	67	63	59	55	52	47	44	42	35	34	32
3	79	70	63	57	71	64	57	52	52	48	44	41	38	36	31	29	28
4	72	62	54	48	65	56	50	44	46	41	37	37	33	30	28	26	24
5	66	55	47	41	60	50	43	38	41	36	32	33	29	26	25	23	21
6	61	49	41	36	55	45	38	33	37	32	28	30	26	23	23	20	18
7	56	44	36	31	51	41	34	29	34	28	25	27	23	20	21	18	16
8	52	40	33	27	47	37	30	25	31	25	22	25	21	18	19	16	14
9	49	37	29	24	44	34	27	23	28	23	19	23	19	16	18	15	13
10	45	33	26	22	41	31	25	20	26	21	17	21	17	15	16	14	12

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2448	2448	2448
5°	2451	2412	2429
10°	2430	2378	2394
15°	2393	2336	2341
20°	2343	2280	2287
25°	2293	2213	2225
30°	2232	2150	2146
35°	2173	2077	2062
40°	2102	2002	1983
45°	2030	1928	1901
50°	1952	1850	1807
55°	1869	1759	1720
60°	1776	1651	1621
65°	1675	1540	1503
70°	1545	1404	1377
75°	1366	1241	1257
80°	1150	1032	1033
85°	813	679	667

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 2030 cd/sqm

TEST NUMBER: P909889

CATALOG NUMBER: DFN2DIP-TR3F0-050D080US840-FLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	184.9	1.4
10°-20°	520.3	4.0
20°-30°	764.6	5.9
30°-40°	888.1	6.8
40°-50°	887.0	6.8
50°-60°	773.4	6.0
60°-70°	571.7	4.4
70°-80°	323.5	2.5
80°-90°	90.2	0.7
90°-100°	89.9	0.7
100°-110°	335.1	2.6
110°-120°	888.9	6.8
120°-130°	1474.3	11.3
130°-140°	1566.0	12.0
140°-150°	1455.4	11.2
150°-160°	1170.1	9.0
160°-170°	754.0	5.8
170°-180°	259.5	2.0
0°-30°	1469.8	11.3
0°-40°	2357.9	18.1
0°-60°	4018.3	30.9
0°-90°	5003.6	38.5
90°-120°	1314.0	10.1
90°-150°	5809.7	44.7
90°-180°	7993.0	61.5
0°-180°	12997.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1965	1965	1965	1965	1965	
5°	1965	1957	1936	1952	1948	187
15°	1870	1859	1834	1842	1833	527
25°	1693	1678	1646	1649	1646	779
35°	1460	1442	1411	1400	1390	912
45°	1188	1175	1147	1126	1118	917
55°	899	888	865	843	833	804
65°	606	595	576	559	550	600
75°	317	314	304	293	297	339
85°	77	76	74	68	66	86
90°	2	24	39	49	53	12
95°	128	63	77	87	85	152
105°	600	659	120	142	150	641
115°	1134	1168	1217	304	162	1117
125°	1604	1630	1667	1681	1687	1430
135°	1985	2016	2034	2054	2050	1533
145°	2302	2300	2334	2348	2338	1440
155°	2535	2518	2541	2553	2537	1168
165°	2671	2660	2665	2679	2665	755
175°	2732	2719	2723	2736	2717	260
180°	2726	2726	2726	2726	2726	

TEST NUMBER: P909889

CATALOG NUMBER: DFN2DIP-TR3F0-050D080US840-FLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1964.7	1964.7	1964.7	1964.7	1964.7
2.5°	1976.1	1966.7	1945.9	1964.7	1961.2
5°	1964.7	1957.3	1936.4	1951.5	1947.9
7.5°	1951.5	1940.3	1919.5	1934.7	1930.9
10°	1930.9	1917.6	1895.0	1910.0	1904.4
12.5°	1902.4	1891.2	1868.6	1877.9	1874.1
15°	1870.3	1859.1	1834.4	1842.1	1832.6
17.5°	1830.6	1819.4	1794.7	1804.1	1794.7
20°	1787.2	1775.9	1749.5	1755.0	1747.7
22.5°	1743.8	1726.8	1702.1	1702.1	1698.3
25°	1692.7	1677.7	1645.6	1649.2	1645.6
27.5°	1636.0	1622.8	1598.3	1592.7	1583.3
30°	1579.4	1564.3	1536.0	1530.4	1522.8
32.5°	1518.9	1507.7	1477.4	1466.0	1458.4
35°	1460.4	1441.6	1411.3	1399.9	1390.5
37.5°	1394.2	1377.3	1347.0	1333.7	1324.3
40°	1326.4	1311.1	1280.8	1263.9	1256.4
42.5°	1260.2	1245.0	1214.9	1195.8	1184.6
45°	1188.4	1175.2	1146.7	1126.1	1118.4
47.5°	1118.4	1105.2	1075.0	1054.1	1042.9
50°	1044.7	1035.3	1008.9	982.4	972.9
52.5°	972.9	959.7	935.2	914.4	901.2
55°	899.4	888.0	865.3	842.6	833.2
57.5°	825.6	816.2	791.5	768.9	761.2
60°	751.8	744.5	718.0	697.1	691.6
62.5°	680.1	666.9	648.0	629.1	621.6
65°	606.5	595.1	576.2	559.3	549.8
67.5°	531.0	521.4	504.5	491.3	483.6
70°	461.0	453.4	436.4	423.1	415.8
72.5°	389.3	381.6	372.2	359.0	353.4
75°	317.3	313.7	304.1	292.9	296.7
77.5°	253.2	245.5	241.8	236.1	230.6
80°	189.0	187.0	183.2	177.6	173.8
82.5°	128.5	128.5	126.6	119.1	119.1
85°	77.4	75.5	73.7	68.0	66.1
87.5°	34.0	30.3	26.5	20.8	18.9
90°	1.9	23.6	39.4	49.4	53.2
92.5°	49.4	41.5	47.4	51.3	53.2
95°	128.2	63.0	76.9	86.9	84.8
97.5°	230.8	69.1	100.5	106.6	108.5
100°	349.3	79.0	112.5	128.2	132.1
102.5°	479.4	475.5	116.4	137.9	144.1
105°	599.8	659.0	120.4	142.0	150.0
107.5°	739.8	789.0	124.4	145.9	153.9
110°	874.1	915.3	345.4	148.0	155.8

TEST NUMBER: P909889

CATALOG NUMBER: DFN2DIP-TR3F0-050D080US840-FLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1000.4	1035.7	1002.3	151.8	157.9
115°	1134.4	1167.9	1217.3	303.9	161.9
117.5°	1250.8	1290.2	1323.9	1041.6	524.8
120°	1381.1	1410.6	1446.2	1469.9	1203.5
122.5°	1491.4	1523.1	1562.7	1574.4	1576.5
125°	1603.9	1629.6	1667.1	1680.9	1686.8
127.5°	1706.5	1734.1	1763.9	1783.5	1785.4
130°	1803.2	1834.8	1856.4	1878.2	1876.3
132.5°	1901.9	1927.6	1949.2	1967.0	1965.1
135°	1984.8	2016.4	2034.0	2054.0	2049.9
137.5°	2071.5	2095.2	2115.1	2134.8	2128.9
140°	2156.3	2172.2	2193.8	2211.6	2201.7
142.5°	2227.6	2241.3	2266.8	2282.6	2272.7
145°	2302.5	2300.4	2333.9	2347.7	2337.8
147.5°	2367.4	2361.6	2395.0	2404.9	2397.1
150°	2430.6	2416.8	2448.4	2460.1	2450.3
152.5°	2483.9	2468.1	2497.6	2509.6	2495.8
155°	2535.2	2517.6	2541.2	2552.9	2537.3
157.5°	2576.6	2560.9	2578.7	2592.5	2576.6
160°	2612.2	2600.3	2612.2	2623.9	2610.1
162.5°	2643.6	2631.9	2641.7	2655.5	2637.8
165°	2671.3	2659.6	2665.4	2679.2	2665.4
167.5°	2693.0	2681.1	2687.2	2701.0	2683.2
170°	2710.9	2698.9	2702.9	2716.7	2698.9
172.5°	2722.6	2710.9	2714.8	2728.7	2710.9
175°	2732.4	2718.6	2722.6	2736.3	2716.7
177.5°	2736.3	2722.6	2724.6	2738.5	2720.7
180°	2726.5	2726.5	2726.5	2726.5	2726.5

TEST NUMBER: P909889

CATALOG NUMBER: DFN2DIP-TR3F0-050D080US840-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	9.16	9.93	10.21	10.99	12.41	8.74	9.50	9.79	10.56	11.98
	3H	10.81	11.50	11.87	12.56	14.00	10.34	11.03	11.40	12.09	13.54
	4H	11.39	12.04	12.46	13.10	14.55	10.92	11.57	11.99	12.63	14.09
	6H	11.77	12.37	12.85	13.44	14.91	11.30	11.90	12.38	12.97	14.44
	8H	11.87	12.44	12.96	13.53	14.99	11.40	11.97	12.49	13.06	14.52
	12H	11.91	12.46	13.00	13.53	15.02	11.44	11.98	12.53	13.06	14.54
4H	2H	9.61	10.26	10.69	11.33	12.78	9.27	9.92	10.35	10.98	12.44
	3H	11.46	12.00	12.54	13.09	14.56	11.07	11.61	12.15	12.70	14.17
	4H	12.16	12.66	13.25	13.74	15.23	11.76	12.26	12.85	13.34	14.83
	6H	12.66	13.09	13.76	14.20	15.67	12.26	12.69	13.36	13.79	15.27
	8H	12.80	13.20	13.90	14.30	15.80	12.40	12.80	13.50	13.90	15.39
	12H	12.87	13.23	13.98	14.34	15.84	12.45	12.82	13.57	13.93	15.43
8H	4H	12.35	12.75	13.44	13.84	15.34	11.99	12.39	13.09	13.49	14.98
	6H	12.96	13.29	14.08	14.43	15.92	12.60	12.93	13.72	14.07	15.57
	8H	13.18	13.46	14.30	14.59	16.10	12.81	13.10	13.94	14.22	15.73
	12H	13.30	13.55	14.43	14.67	16.22	12.92	13.17	14.05	14.29	15.84
12H	4H	12.33	12.69	13.44	13.80	15.30	11.98	12.34	13.09	13.45	14.95
	6H	12.99	13.28	14.12	14.40	15.91	12.64	12.93	13.77	14.05	15.56
	8H	13.22	13.47	14.35	14.59	16.14	12.87	13.12	14.00	14.24	15.79