

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: P918384

Luminaire Tested: DFN2DIP-TR4F0-090D090US930-RLFL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P918384
REPORT IS A COMBINATION OF REPORTS P900470 AND P897293
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR4F0-090D090US930-RLLFLL
Description: 4 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

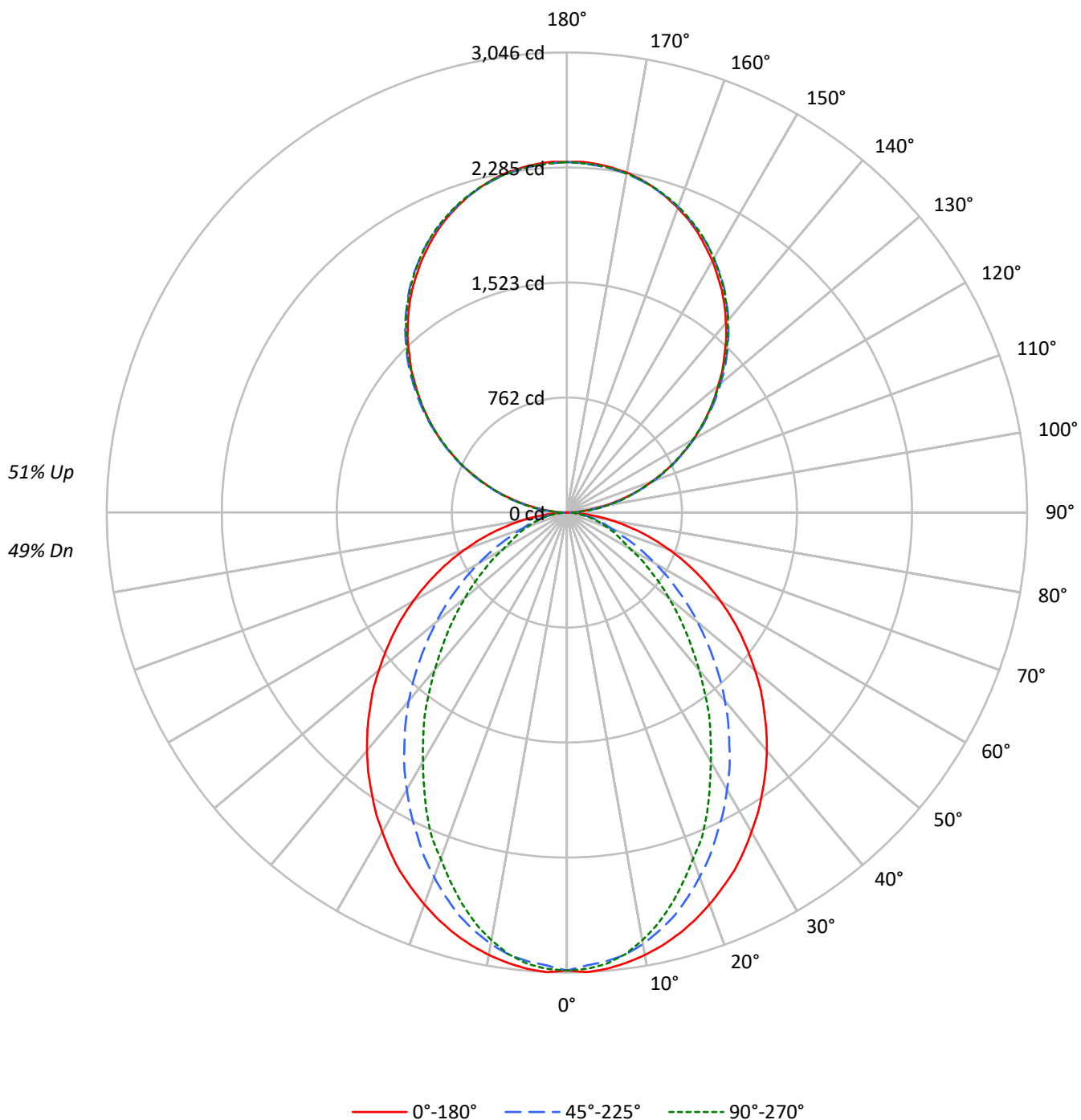
Lumens per Lamp: N/A
Luminaire Lumens: 12730.9 lumens
Efficiency: N/A
Efficacy: 82.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.43' x L: 3.96' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 155.1
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.099
Total Harmonic Distortion (THDi): 0.979
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P918384

CATALOG NUMBER: DFN2DIP-TR4F0-090D090US930-RLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P918384

CATALOG NUMBER: DFN2DIP-TR4F0-090D090US930-RLLFLL

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	107	107	107	107	99	99	99	99	83	83	83	68	68	68	55	55	55
1	98	94	90	87	90	87	84	81	73	71	69	61	59	58	50	49	48
2	90	83	77	72	82	76	71	67	65	61	58	54	51	49	44	42	41
3	82	73	66	60	75	68	61	57	58	53	49	48	45	42	40	37	35
4	75	65	57	51	69	60	54	48	51	46	42	43	40	36	36	33	31
5	69	58	50	44	64	54	47	42	46	41	37	39	35	32	32	29	27
6	64	52	44	39	59	49	42	37	42	36	32	35	31	28	30	26	24
7	59	47	40	34	55	44	37	32	38	33	29	32	28	25	27	24	22
8	55	43	36	30	51	40	33	29	35	29	26	30	26	23	25	22	20
9	51	39	32	27	47	37	30	26	32	27	23	27	23	20	23	20	18
10	48	36	29	24	44	34	28	23	30	24	21	25	21	19	22	18	16

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2409	2409	2409
5°	2413	2371	2386
10°	2389	2324	2308
15°	2356	2248	2188
20°	2313	2142	2041
25°	2268	2023	1899
30°	2209	1901	1718
35°	2150	1770	1560
40°	2090	1635	1378
45°	2021	1485	1213
50°	1949	1333	1052
55°	1875	1171	898
60°	1788	1002	739
65°	1688	829	665
70°	1568	669	602
75°	1416	589	547
80°	1197	494	474
85°	834	330	356

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2021 cd/sqm

TEST NUMBER: P918384

CATALOG NUMBER: DFN2DIP-TR4F0-090D090US930-RLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	284.2	2.2
10°-20°	780.3	6.1
20°-30°	1095.5	8.6
30°-40°	1194.1	9.4
40°-50°	1097.5	8.6
50°-60°	861.9	6.8
60°-70°	561.0	4.4
70°-80°	288.8	2.3
80°-90°	80.3	0.6
90°-100°	143.6	1.1
100°-110°	456.3	3.6
110°-120°	780.8	6.1
120°-130°	1026.9	8.1
130°-140°	1152.6	9.1
140°-150°	1130.3	8.9
150°-160°	948.2	7.4
160°-170°	628.8	4.9
170°-180°	219.8	1.7
0°-30°	2159.9	17.0
0°-40°	3354.0	26.3
0°-60°	5313.5	41.7
0°-90°	6243.6	49.0
90°-120°	1380.7	10.8
90°-150°	4690.5	36.8
90°-180°	6487.0	51.0
0°-180°	12730.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3033	3033	3033	3033	3033	
5°	3033	3019	2983	3008	3000	288
15°	2884	2854	2761	2709	2682	813
25°	2618	2530	2349	2237	2196	1204
35°	2256	2116	1875	1702	1641	1412
45°	1844	1660	1372	1177	1111	1424
55°	1402	1188	892	727	675	1253
65°	947	724	478	384	376	939
75°	505	313	220	200	198	534
85°	118	60	52	52	52	135
90°	2	25	69	64	66	13
95°	102	122	125	125	122	114
105°	421	427	431	434	434	444
115°	784	795	791	789	784	775
125°	1140	1157	1152	1145	1143	1018
135°	1474	1496	1500	1498	1492	1139
145°	1790	1804	1815	1817	1809	1118
155°	2046	2052	2058	2068	2062	942
165°	2226	2224	2224	2238	2228	628
175°	2316	2311	2307	2321	2309	220
180°	2321	2321	2321	2321	2321	

TEST NUMBER: P918384

CATALOG NUMBER: DFN2DIP-TR4F0-090D090US930-RLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3032.7	3032.7	3032.7	3032.7	3032.7
2.5°	3046.4	3032.7	3002.3	3030.1	3024.5
5°	3032.7	3019.0	2983.2	3007.9	2999.7
7.5°	3007.9	2991.6	2953.2	2963.9	2950.2
10°	2975.0	2955.8	2901.1	2892.6	2876.3
12.5°	2933.9	2909.2	2835.0	2818.6	2788.3
15°	2884.4	2854.2	2761.0	2708.8	2681.5
17.5°	2826.8	2782.9	2667.5	2607.2	2563.3
20°	2761.0	2706.0	2568.8	2500.4	2439.8
22.5°	2689.7	2626.5	2467.2	2374.0	2333.0
25°	2618.3	2530.4	2349.3	2236.9	2195.5
27.5°	2533.3	2439.8	2239.5	2110.5	2047.3
30°	2442.7	2338.2	2118.6	1978.9	1904.6
32.5°	2354.7	2228.4	2003.6	1838.8	1770.1
35°	2256.1	2116.0	1874.6	1701.7	1641.1
37.5°	2160.0	2008.9	1753.8	1564.2	1495.8
40°	2058.4	1893.9	1627.4	1432.6	1361.3
42.5°	1954.1	1778.6	1501.3	1298.1	1229.6
45°	1844.4	1660.4	1372.3	1177.2	1111.4
47.5°	1740.1	1545.3	1248.9	1053.8	993.5
50°	1624.8	1430.0	1128.0	938.5	881.1
52.5°	1512.1	1306.3	1012.8	831.6	779.5
55°	1402.3	1188.3	891.9	727.4	675.2
57.5°	1290.0	1070.4	785.1	631.3	587.3
60°	1174.6	955.0	672.4	532.6	488.6
62.5°	1062.3	842.7	576.3	444.7	422.8
65°	946.9	724.5	477.5	384.3	375.9
67.5°	837.1	614.7	384.3	337.5	329.3
70°	721.9	507.8	318.3	290.9	279.8
72.5°	612.0	408.8	266.1	244.3	238.8
75°	504.9	312.7	219.6	200.3	197.7
77.5°	398.0	222.2	172.9	161.9	156.4
80°	299.1	159.3	131.6	120.8	120.8
82.5°	208.5	107.1	90.6	85.0	85.0
85°	117.9	60.3	52.1	52.1	52.1
87.5°	43.9	21.8	21.8	19.2	19.2
90°	2.1	25.2	68.6	64.3	66.4
92.5°	43.4	58.8	60.9	62.9	62.9
95°	102.2	121.7	125.2	125.2	121.7
97.5°	170.0	188.2	195.9	195.9	195.9
100°	248.3	264.5	270.0	270.0	268.0
102.5°	330.9	342.8	350.5	352.6	350.5
105°	421.2	426.7	431.0	434.5	434.5
107.5°	510.7	519.1	519.1	520.5	510.7
110°	597.5	608.7	608.7	608.7	603.1

TEST NUMBER: P918384

CATALOG NUMBER: DFN2DIP-TR4F0-090D090US930-RLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	691.2	703.1	701.0	695.4	691.2
115°	783.6	794.8	791.2	789.2	783.6
117.5°	875.2	890.6	880.8	875.2	869.6
120°	967.6	982.9	967.6	967.6	961.2
122.5°	1051.5	1071.1	1061.4	1055.7	1051.5
125°	1139.7	1157.2	1151.6	1145.2	1143.2
127.5°	1225.7	1247.4	1239.7	1231.3	1225.7
130°	1306.2	1331.4	1327.9	1323.6	1316.0
132.5°	1396.4	1416.0	1417.4	1407.6	1402.1
135°	1474.1	1495.7	1500.0	1497.9	1492.3
137.5°	1560.8	1578.3	1581.8	1580.5	1572.1
140°	1637.1	1654.6	1664.3	1664.3	1656.7
142.5°	1715.5	1732.9	1738.5	1740.7	1732.9
145°	1789.7	1803.6	1814.8	1816.9	1809.2
147.5°	1856.1	1873.6	1882.0	1885.5	1877.8
150°	1924.7	1936.6	1944.2	1950.5	1944.2
152.5°	1985.5	1997.4	2007.2	2014.9	2007.2
155°	2046.4	2051.9	2058.3	2068.1	2061.8
157.5°	2098.8	2103.1	2106.6	2120.5	2110.7
160°	2145.7	2149.9	2152.1	2163.9	2155.5
162.5°	2189.1	2189.1	2191.2	2204.5	2194.7
165°	2226.2	2224.1	2224.1	2238.1	2228.3
167.5°	2259.8	2253.5	2253.5	2267.4	2257.6
170°	2285.0	2279.3	2277.3	2291.2	2279.3
172.5°	2302.4	2296.9	2294.7	2308.8	2296.9
175°	2316.4	2310.8	2306.6	2320.7	2308.8
177.5°	2324.1	2318.5	2314.3	2326.2	2314.3
180°	2320.7	2320.7	2320.7	2320.7	2320.7

TEST NUMBER: P918384

CATALOG NUMBER: DFN2DIP-TR4F0-090D090US930-RLLFLL

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	10.11	10.93	11.08	11.91	13.20	6.08	6.90	7.05	7.88	9.17
	3H	11.78	12.52	12.76	13.51	14.82	7.27	8.00	8.25	8.99	10.30
	4H	12.39	13.09	13.39	14.08	15.40	7.72	8.41	8.71	9.41	10.73
	6H	12.81	13.45	13.82	14.45	15.78	8.04	8.68	9.05	9.68	11.01
	8H	12.94	13.55	13.95	14.56	15.89	8.13	8.74	9.14	9.75	11.08
	12H	13.00	13.58	14.02	14.59	15.94	8.17	8.75	9.19	9.76	11.11
4H	2H	10.12	10.82	11.13	11.81	13.13	6.67	7.37	7.68	8.36	9.68
	3H	11.95	12.53	12.96	13.55	14.88	8.02	8.60	9.03	9.62	10.96
	4H	12.64	13.17	13.66	14.19	15.54	8.57	9.10	9.59	10.12	11.47
	6H	13.16	13.61	14.19	14.65	16.00	8.99	9.45	10.02	10.48	11.84
	8H	13.33	13.76	14.36	14.79	16.15	9.12	9.54	10.15	10.58	11.94
	12H	13.43	13.81	14.47	14.86	16.23	9.19	9.57	10.23	10.62	11.99
8H	4H	12.61	13.03	13.64	14.07	15.43	8.85	9.27	9.88	10.31	11.67
	6H	13.18	13.53	14.23	14.60	15.96	9.37	9.72	10.42	10.79	12.16
	8H	13.39	13.70	14.45	14.76	16.14	9.56	9.87	10.62	10.93	12.31
	12H	13.53	13.80	14.59	14.85	16.28	9.68	9.95	10.75	11.01	12.43
12H	4H	12.56	12.94	13.61	13.99	15.36	8.86	9.24	9.90	10.28	11.66
	6H	13.15	13.46	14.21	14.52	15.90	9.42	9.73	10.48	10.79	12.17
	8H	13.37	13.64	14.44	14.70	16.12	9.63	9.90	10.70	10.95	12.38

END OF REPORT