

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: P904740

Luminaire Tested: DFN2DIP-TR4F0-090D080US830-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P904740
REPORT IS A COMBINATION OF REPORTS P900452 AND P897293
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR4F0-090D080US830-RLLFLL
Description: 4 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

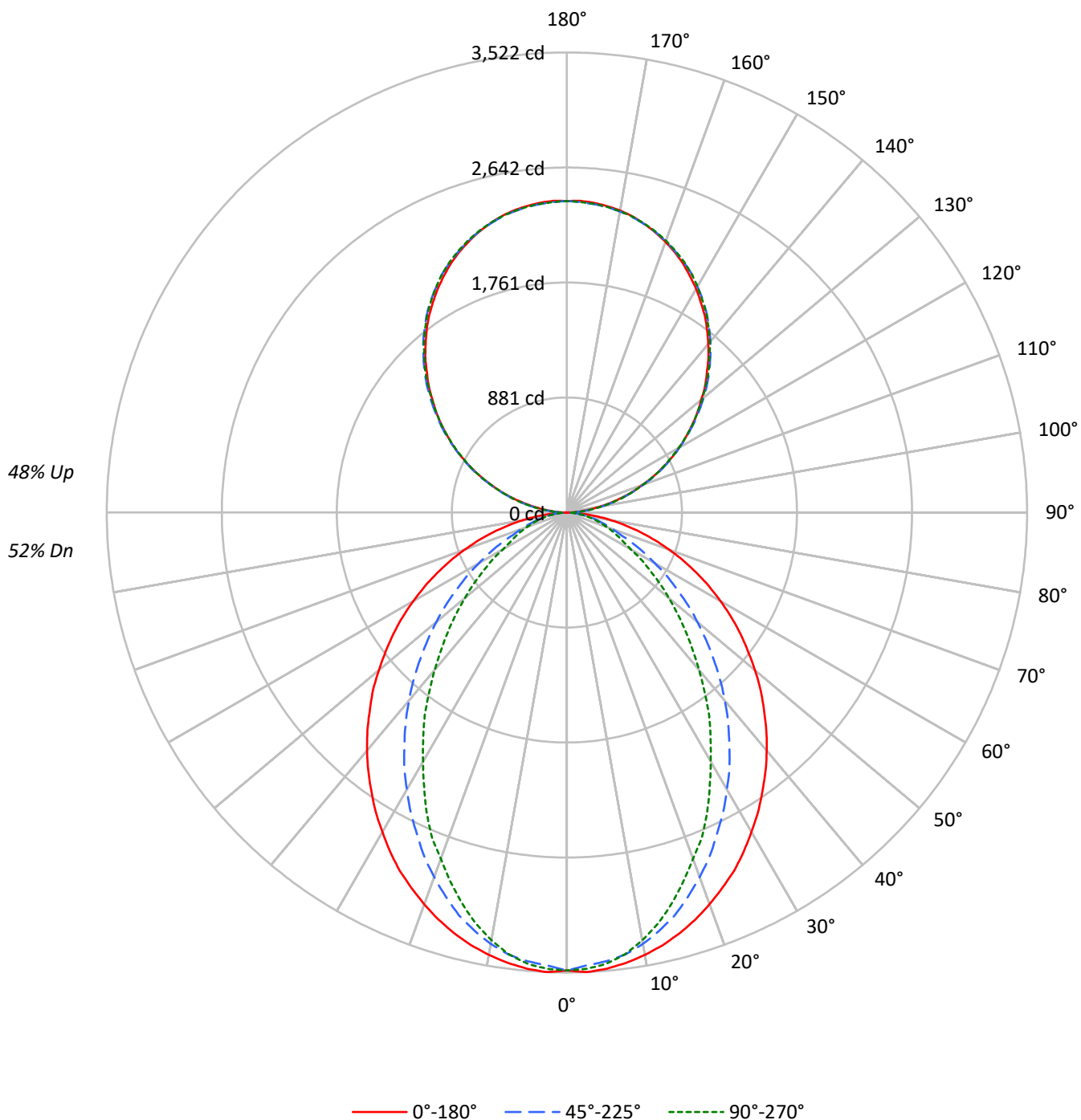
Lumens per Lamp: N/A
Luminaire Lumens: 13883.7 lumens
Efficiency: N/A
Efficacy: 94.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.43' x L: 3.96' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 146.6
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: P904740

CATALOG NUMBER: DFN2DIP-TR4F0-090D080US830-RLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P904740

CATALOG NUMBER: DFN2DIP-TR4F0-090D080US830-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	108	108	108	108	100	100	100	100	84	84	84	71	71	71	58	58	58
1	99	95	91	88	91	88	84	82	75	72	70	63	61	60	52	51	50
2	90	83	77	72	83	77	72	68	66	62	59	56	53	51	46	44	43
3	83	74	66	61	76	68	62	57	59	54	50	50	46	44	42	39	37
4	76	65	58	52	70	61	54	49	53	47	43	45	41	38	37	35	32
5	70	59	51	45	65	55	48	42	47	42	38	40	36	33	34	31	28
6	65	53	45	39	60	49	42	37	43	37	33	37	32	29	31	28	25
7	60	48	40	35	55	45	38	33	39	33	29	34	29	26	28	25	23
8	56	44	36	31	51	41	34	29	36	30	26	31	27	23	26	23	21
9	52	40	33	28	48	37	31	26	33	27	24	28	24	21	24	21	19
10	49	37	30	25	45	34	28	24	30	25	21	26	22	19	23	19	17

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2785	2785	2785
5°	2790	2741	2758
10°	2762	2687	2669
15°	2724	2598	2530
20°	2674	2476	2360
25°	2622	2339	2195
30°	2553	2198	1986
35°	2485	2047	1803
40°	2417	1890	1593
45°	2336	1716	1403
50°	2254	1541	1217
55°	2167	1354	1038
60°	2067	1158	854
65°	1952	958	769
70°	1812	773	696
75°	1637	681	633
80°	1383	571	548
85°	964	381	411

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2336 cd/sqm

TEST NUMBER: P904740

CATALOG NUMBER: DFN2DIP-TR4F0-090D080US830-RLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	328.6	2.4
10°-20°	902.0	6.5
20°-30°	1266.4	9.1
30°-40°	1380.5	9.9
40°-50°	1268.8	9.1
50°-60°	996.5	7.2
60°-70°	648.6	4.7
70°-80°	333.9	2.4
80°-90°	92.0	0.7
90°-100°	147.6	1.1
100°-110°	468.9	3.4
110°-120°	802.4	5.8
120°-130°	1055.3	7.6
130°-140°	1184.5	8.5
140°-150°	1161.5	8.4
150°-160°	974.4	7.0
160°-170°	646.2	4.7
170°-180°	225.9	1.6
0°-30°	2497.0	18.0
0°-40°	3877.5	27.9
0°-60°	6142.8	44.2
0°-90°	7217.2	52.0
90°-120°	1418.8	10.2
90°-150°	4820.1	34.7
90°-180°	6666.0	48.0
0°-180°	13883.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3506	3506	3506	3506	3506	
5°	3506	3490	3449	3477	3468	332
15°	3335	3300	3192	3132	3100	940
25°	3027	2925	2716	2586	2538	1392
35°	2608	2446	2167	1967	1897	1632
45°	2132	1920	1586	1361	1285	1647
55°	1621	1374	1031	841	781	1449
65°	1095	838	552	444	435	1085
75°	584	362	254	232	229	617
85°	136	70	60	60	60	156
90°	2	26	70	66	68	14
95°	105	125	129	129	125	117
105°	433	439	443	446	446	457
115°	805	817	813	811	805	796
125°	1171	1189	1183	1177	1175	1047
135°	1515	1537	1541	1539	1534	1171
145°	1839	1853	1865	1867	1859	1149
155°	2103	2109	2115	2125	2119	968
165°	2288	2286	2286	2300	2290	645
175°	2380	2375	2370	2385	2372	226
180°	2385	2385	2385	2385	2385	

TEST NUMBER: P904740

CATALOG NUMBER: DFN2DIP-TR4F0-090D080US830-RLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3506.0	3506.0	3506.0	3506.0	3506.0
2.5°	3521.8	3506.0	3470.9	3503.0	3496.5
5°	3506.0	3490.1	3448.8	3477.3	3467.9
7.5°	3477.3	3458.5	3414.1	3426.5	3410.7
10°	3439.3	3417.1	3353.8	3344.0	3325.2
12.5°	3391.8	3363.3	3277.4	3258.6	3223.5
15°	3334.6	3299.7	3191.9	3131.6	3100.0
17.5°	3268.0	3217.2	3083.8	3014.2	2963.4
20°	3191.9	3128.3	2969.7	2890.6	2820.6
22.5°	3109.4	3036.4	2852.2	2744.5	2697.1
25°	3027.0	2925.3	2715.9	2586.0	2538.2
27.5°	2928.7	2820.6	2589.0	2439.9	2366.8
30°	2824.0	2703.1	2449.3	2287.7	2201.9
32.5°	2722.3	2576.2	2316.3	2125.8	2046.4
35°	2608.2	2446.3	2167.2	1967.3	1897.2
37.5°	2497.1	2322.4	2027.5	1808.4	1729.3
40°	2379.6	2189.4	1881.4	1656.2	1573.8
42.5°	2259.1	2056.2	1735.6	1500.7	1421.5
45°	2132.2	1919.5	1586.5	1360.9	1284.9
47.5°	2011.7	1786.5	1443.8	1218.2	1148.6
50°	1878.4	1653.1	1304.1	1085.0	1018.6
52.5°	1748.1	1510.1	1170.8	961.4	901.2
55°	1621.2	1373.8	1031.0	840.9	780.6
57.5°	1491.3	1237.5	907.6	729.8	679.0
60°	1357.9	1104.1	777.3	615.7	564.9
62.5°	1228.0	974.2	666.2	514.1	488.8
65°	1094.7	837.5	552.0	444.3	434.6
67.5°	967.8	710.6	444.3	390.1	380.7
70°	834.5	587.1	368.0	336.3	323.5
72.5°	707.6	472.6	307.6	282.4	276.1
75°	583.7	361.6	253.8	231.6	228.6
77.5°	460.1	256.8	199.9	187.2	180.8
80°	345.7	184.2	152.1	139.7	139.7
82.5°	241.0	123.9	104.7	98.3	98.3
85°	136.3	69.7	60.2	60.2	60.2
87.5°	50.8	25.3	25.3	22.2	22.2
90°	2.2	25.9	70.5	66.2	68.3
92.5°	44.6	60.4	62.6	64.7	64.7
95°	105.0	125.1	128.7	128.7	125.1
97.5°	174.7	193.4	201.3	201.3	201.3
100°	255.2	271.7	277.5	277.5	275.3
102.5°	340.1	352.3	360.1	362.3	360.1
105°	432.8	438.6	442.9	446.5	446.5
107.5°	524.8	533.5	533.5	534.9	524.8
110°	614.0	625.5	625.5	625.5	619.7

TEST NUMBER: P904740

CATALOG NUMBER: DFN2DIP-TR4F0-090D080US830-RLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	710.3	722.6	720.4	714.6	710.3
115°	805.2	816.7	813.1	811.0	805.2
117.5°	899.4	915.2	905.1	899.4	893.6
120°	994.3	1010.1	994.3	994.3	987.8
122.5°	1080.5	1100.7	1090.6	1084.9	1080.5
125°	1171.1	1189.1	1183.4	1176.9	1174.8
127.5°	1259.6	1281.9	1273.9	1265.4	1259.6
130°	1342.3	1368.1	1364.5	1360.3	1352.4
132.5°	1435.0	1455.1	1456.6	1446.5	1440.8
135°	1514.8	1537.1	1541.4	1539.3	1533.5
137.5°	1603.9	1621.9	1625.5	1624.1	1615.4
140°	1682.3	1700.3	1710.3	1710.3	1702.4
142.5°	1762.8	1780.8	1786.6	1788.8	1780.8
145°	1839.1	1853.4	1864.9	1867.1	1859.2
147.5°	1907.3	1925.3	1933.9	1937.6	1929.7
150°	1977.8	1990.0	1997.9	2004.4	1997.9
152.5°	2040.3	2052.6	2062.7	2070.6	2062.7
155°	2102.9	2108.7	2115.2	2125.2	2118.7
157.5°	2156.8	2161.2	2164.7	2179.1	2169.1
160°	2205.0	2209.3	2211.5	2223.6	2215.1
162.5°	2249.6	2249.6	2251.7	2265.4	2255.3
165°	2287.6	2285.5	2285.5	2299.9	2289.8
167.5°	2322.1	2315.7	2315.7	2330.1	2320.0
170°	2348.1	2342.3	2340.1	2354.6	2342.3
172.5°	2366.1	2360.3	2358.1	2372.5	2360.3
175°	2380.4	2374.6	2370.3	2384.7	2372.5
177.5°	2388.3	2382.6	2378.2	2390.5	2378.2
180°	2384.7	2384.7	2384.7	2384.7	2384.7

TEST NUMBER: P904740

CATALOG NUMBER: DFN2DIP-TR4F0-090D080US830-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	10.88	11.73	11.83	12.69	13.93	6.86	7.70	7.80	8.66	9.91
	3H	12.56	13.32	13.52	14.29	15.56	8.05	8.80	9.01	9.77	11.04
	4H	13.17	13.89	14.14	14.86	16.14	8.50	9.21	9.47	10.19	11.46
	6H	13.59	14.25	14.58	15.23	16.52	8.82	9.48	9.81	10.46	11.75
	8H	13.72	14.35	14.71	15.34	16.63	8.91	9.54	9.90	10.53	11.82
	12H	13.78	14.38	14.78	15.36	16.68	8.96	9.55	9.95	10.54	11.85
4H	2H	10.90	11.62	11.88	12.59	13.87	7.45	8.17	8.43	9.14	10.42
	3H	12.73	13.33	13.72	14.33	15.62	8.81	9.40	9.79	10.40	11.69
	4H	13.43	13.97	14.42	14.96	16.28	9.36	9.90	10.35	10.89	12.21
	6H	13.94	14.41	14.95	15.43	16.74	9.78	10.24	10.78	11.26	12.57
	8H	14.12	14.55	15.13	15.56	16.89	9.91	10.34	10.92	11.35	12.68
	12H	14.21	14.61	15.24	15.63	16.97	9.97	10.37	11.00	11.39	12.73
8H	4H	13.40	13.83	14.40	14.84	16.17	9.64	10.07	10.65	11.08	12.41
	6H	13.96	14.32	15.00	15.38	16.70	10.16	10.52	11.19	11.57	12.89
	8H	14.18	14.50	15.22	15.54	16.88	10.35	10.67	11.39	11.71	13.05
	12H	14.32	14.60	15.36	15.63	17.02	10.47	10.75	11.51	11.78	13.17
12H	4H	13.35	13.74	14.38	14.77	16.10	9.64	10.04	10.67	11.06	12.39
	6H	13.94	14.26	14.98	15.29	16.64	10.21	10.52	11.25	11.56	12.91
	8H	14.16	14.44	15.20	15.47	16.86	10.42	10.70	11.46	11.73	13.12