

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: P909995

Luminaire Tested: DFN2DIP-TR3F0-090D080US840-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P909995
REPORT IS A COMBINATION OF REPORTS P901874 AND P898751
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR3F0-090D080US840-RLLONL
Description: 3 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

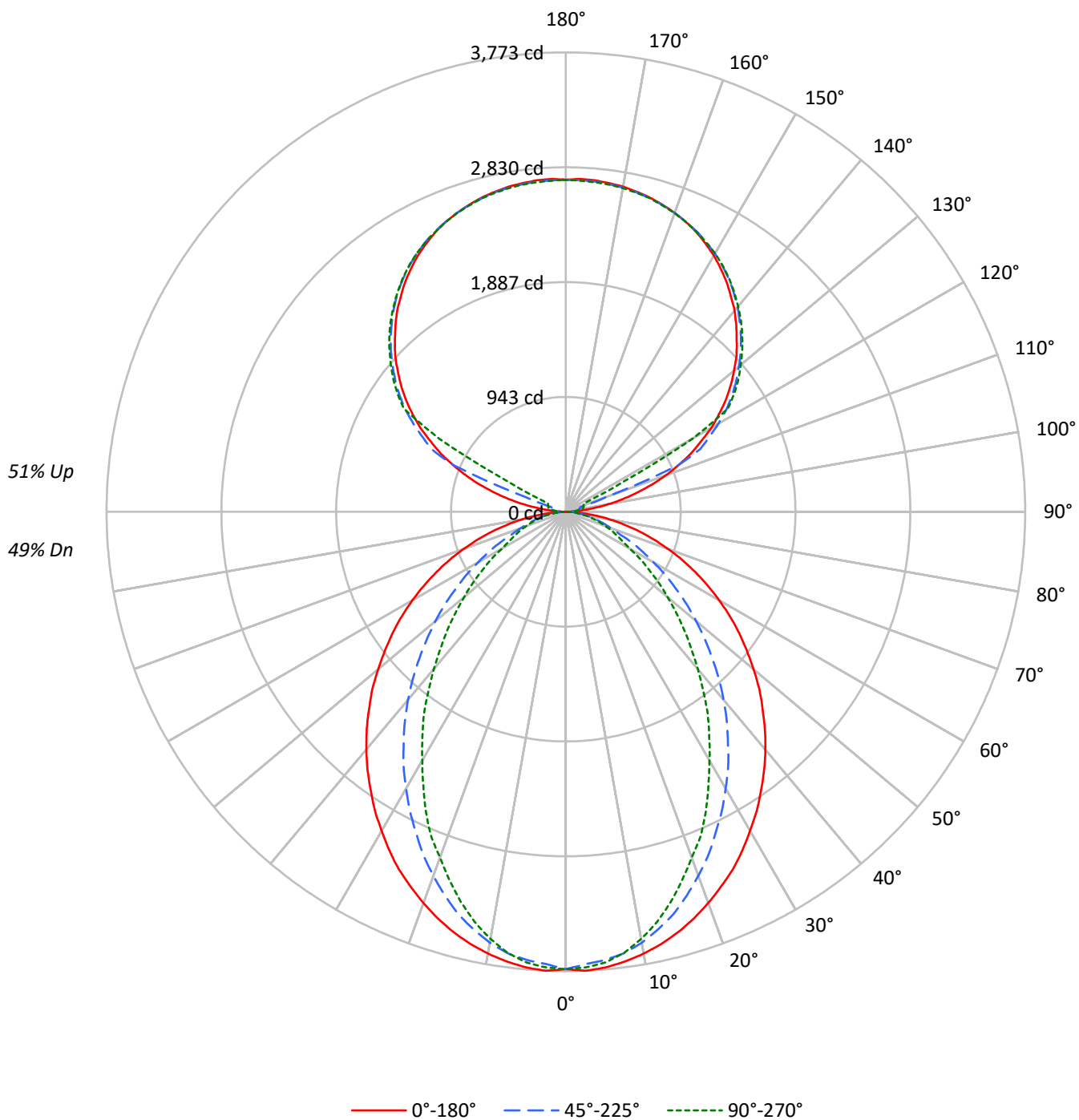
Lumens per Lamp: N/A
Luminaire Lumens: 15723.6 lumens
Efficiency: N/A
Efficacy: 100.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.74' x L: 3.16' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 156
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9951
Total Harmonic Distortion (THDi): 0.07
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P909995

CATALOG NUMBER: DFN2DIP-TR3F0-090D080US840-RLLONL

Luminous Intensity Polar Plot



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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	69	69	69	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	52	49	44	42	41
3	82	73	66	60	75	68	62	57	58	53	49	48	45	42	40	37	35
4	75	65	57	51	69	60	54	48	51	46	42	43	40	37	36	33	31
5	69	58	50	44	64	54	47	42	46	41	37	39	35	32	32	30	27
6	64	52	44	39	59	49	42	37	42	36	32	36	31	28	30	27	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	28	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°	4681	4681	4681
5°	4686	4603	4633
10°	4637	4508	4479
15°	4570	4356	4243
20°	4483	4147	3955
25°	4394	3913	3676
30°	4275	3674	3324
35°	4159	3417	3015
40°	4040	3151	2661
45°	3902	2858	2340
50°	3760	2561	2027
55°	3610	2245	1727
60°	3437	1915	1418
65°	3238	1581	1273
70°	2997	1268	1148
75°	2693	1110	1038
80°	2253	918	890
85°	1533	594	650

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 3902 cd/sqm

TEST NUMBER: P909995

CATALOG NUMBER: DFN2DIP-TR3F0-090D080US840-RLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	352.1	2.2
10°-20°	966.5	6.1
20°-30°	1356.9	8.6
30°-40°	1479.1	9.4
40°-50°	1359.4	8.6
50°-60°	1067.6	6.8
60°-70°	694.9	4.4
70°-80°	357.7	2.3
80°-90°	96.1	0.6
90°-100°	89.9	0.6
100°-110°	335.1	2.1
110°-120°	888.9	5.7
120°-130°	1474.3	9.4
130°-140°	1566.0	10.0
140°-150°	1455.4	9.3
150°-160°	1170.1	7.4
160°-170°	754.0	4.8
170°-180°	259.5	1.7
0°-30°	2675.4	17.0
0°-40°	4154.5	26.4
0°-60°	6581.5	41.9
0°-90°	7730.3	49.2
90°-120°	1314.0	8.4
90°-150°	5809.7	36.9
90°-180°	7993.0	50.8
0°-180°	15723.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3756	3756	3756	3756	3756	
5°	3756	3739	3695	3726	3716	356
15°	3573	3535	3420	3355	3321	1007
25°	3243	3134	2910	2771	2720	1492
35°	2794	2621	2322	2108	2033	1749
45°	2284	2057	1700	1458	1377	1764
55°	1737	1472	1105	901	836	1552
65°	1173	897	592	476	466	1163
75°	625	387	272	248	245	661
85°	146	75	64	64	64	168
90°	2	24	39	49	53	15
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: P909995

CATALOG NUMBER: DFN2DIP-TR3F0-090D080US840-RLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3756.4	3756.4	3756.4	3756.4	3756.4
2.5°	3773.4	3756.4	3718.8	3753.2	3746.3
5°	3756.4	3739.4	3695.1	3725.7	3715.6
7.5°	3725.7	3705.5	3657.9	3671.3	3654.3
10°	3685.0	3661.2	3593.4	3582.9	3562.7
12.5°	3634.1	3603.5	3511.5	3491.3	3453.7
15°	3572.8	3535.3	3419.9	3355.3	3321.4
17.5°	3501.4	3447.0	3304.1	3229.4	3175.0
20°	3419.9	3351.7	3181.8	3097.1	3022.0
22.5°	3331.5	3253.3	3056.0	2940.5	2889.7
25°	3243.2	3134.2	2909.9	2770.7	2719.5
27.5°	3137.9	3022.0	2773.9	2614.1	2535.9
30°	3025.7	2896.2	2624.2	2451.1	2359.1
32.5°	2916.7	2760.2	2481.7	2277.7	2192.5
35°	2794.5	2621.0	2322.0	2107.8	2032.8
37.5°	2675.4	2488.3	2172.3	1937.5	1852.8
40°	2549.6	2345.8	2015.8	1774.5	1686.2
42.5°	2420.4	2203.0	1859.6	1607.9	1523.1
45°	2284.5	2056.6	1699.8	1458.1	1376.6
47.5°	2155.4	1914.1	1546.9	1305.3	1230.6
50°	2012.6	1771.2	1397.2	1162.5	1091.4
52.5°	1873.0	1618.0	1254.5	1030.1	965.5
55°	1737.0	1471.9	1104.7	901.0	836.4
57.5°	1597.8	1325.9	972.4	781.9	727.5
60°	1454.9	1183.0	832.8	659.6	605.2
62.5°	1315.8	1043.8	713.8	550.8	523.7
65°	1172.9	897.4	591.5	476.1	465.6
67.5°	1036.9	761.3	476.1	418.0	407.9
70°	894.1	629.0	394.3	360.3	346.6
72.5°	758.1	506.3	329.6	302.6	295.8
75°	625.4	387.4	272.0	248.1	244.9
77.5°	493.0	275.2	214.2	200.6	193.7
80°	370.4	197.3	163.0	149.7	149.7
82.5°	258.2	132.7	112.2	105.3	105.3
85°	146.0	74.6	64.5	64.5	64.5
87.5°	54.4	27.1	27.1	23.8	23.8
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: P909995

CATALOG NUMBER: DFN2DIP-TR3F0-090D080US840-RLLONL

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

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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	12.38	13.20	13.35	14.18	15.47	8.36	9.18	9.33	10.16	11.45
	3H	14.05	14.78	15.03	15.77	17.08	9.54	10.27	10.52	11.26	12.57
	4H	14.65	15.34	15.64	16.34	17.65	9.98	10.68	10.98	11.67	12.99
	6H	15.06	15.70	16.07	16.70	18.03	10.30	10.94	11.31	11.94	13.27
	8H	15.18	15.79	16.20	16.81	18.13	10.39	11.00	11.40	12.01	13.34
	12H	15.24	15.82	16.26	16.83	18.18	10.43	11.01	11.45	12.02	13.37
4H	2H	12.40	13.09	13.40	14.08	15.40	8.95	9.64	9.95	10.63	11.95
	3H	14.21	14.79	15.22	15.81	17.14	10.29	10.87	11.30	11.89	13.22
	4H	14.90	15.43	15.92	16.44	17.79	10.83	11.36	11.85	12.37	13.73
	6H	15.40	15.86	16.43	16.90	18.25	11.24	11.70	12.27	12.74	14.09
	8H	15.57	16.00	16.60	17.03	18.39	11.37	11.79	12.40	12.82	14.19
	12H	15.66	16.05	16.71	17.09	18.46	11.43	11.81	12.48	12.86	14.23
8H	4H	14.86	15.29	15.89	16.32	17.68	11.11	11.53	12.13	12.56	13.92
	6H	15.42	15.77	16.47	16.84	18.20	11.62	11.97	12.67	13.04	14.40
	8H	15.63	15.94	16.69	17.00	18.38	11.80	12.11	12.86	13.17	14.55
	12H	15.76	16.03	16.83	17.08	18.51	11.92	12.19	12.98	13.24	14.66
12H	4H	14.82	15.20	15.86	16.24	17.61	11.11	11.49	12.16	12.54	13.91
	6H	15.39	15.70	16.46	16.76	18.14	11.66	11.97	12.72	13.03	14.41
	8H	15.61	15.88	16.67	16.93	18.35	11.87	12.14	12.93	13.19	14.61

END OF REPORT