

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: P926349

Luminaire Tested: DFN2DIP-TR3F0-090D050US950-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P926349
REPORT IS A COMBINATION OF REPORTS P901831 AND P898751
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR3F0-090D050US950-FLLONL
Description: 3 foot, Triangle Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

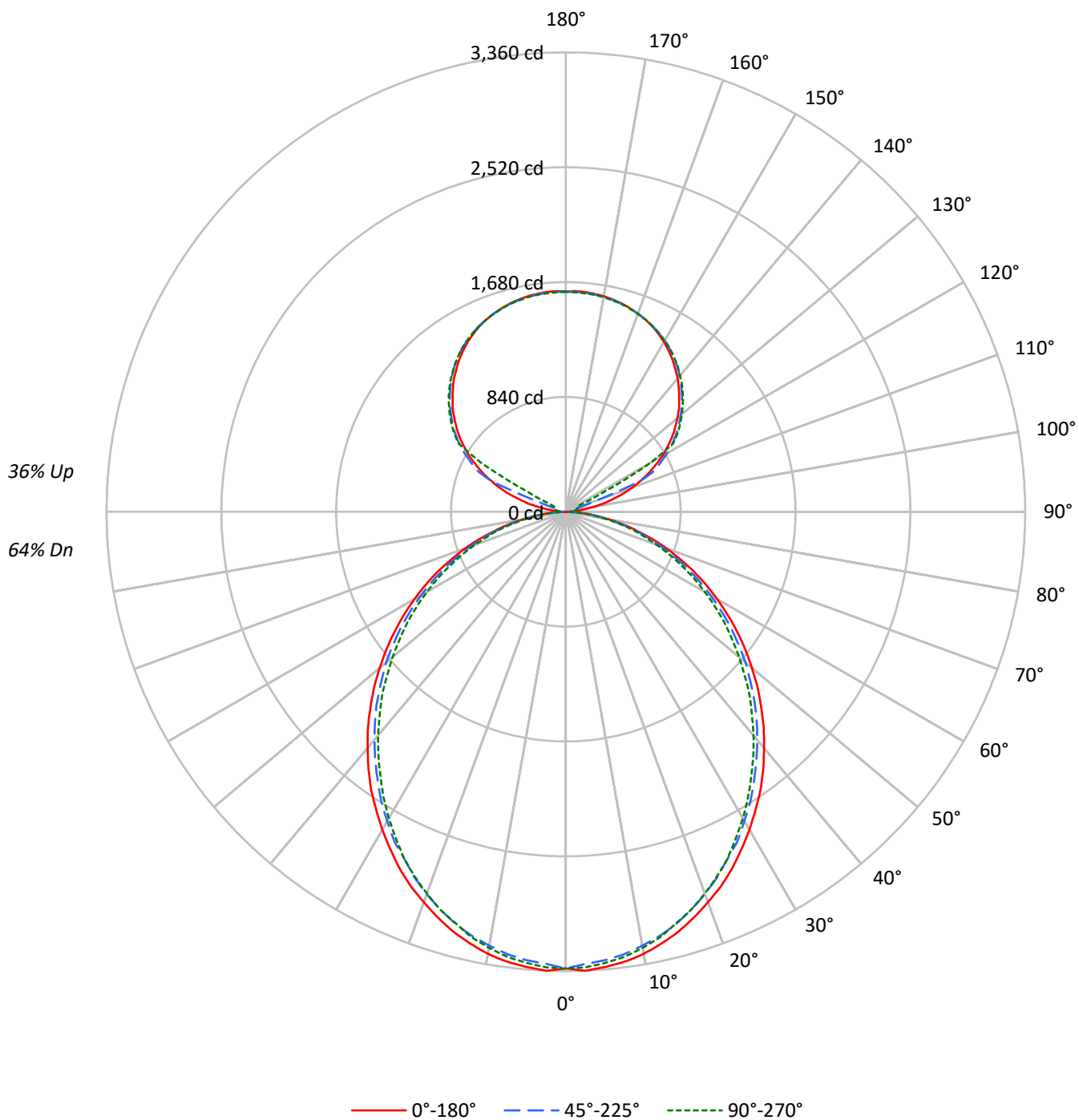
Lumens per Lamp: N/A
Luminaire Lumens: 13222.5 lumens
Efficiency: N/A
Efficacy: 100.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.74' x L: 3.16' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 132
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: P926349

CATALOG NUMBER: DFN2DIP-TR3F0-090D050US950-FLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P926349

CATALOG NUMBER: DFN2DIP-TR3F0-090D050US950-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	111	111	111	111	104	104	104	104	91	91	91	80	80	80	69	69	69
1	101	97	93	89	95	91	87	84	80	78	75	70	68	67	61	60	59
2	92	84	78	73	86	79	74	69	70	66	62	62	59	56	54	51	49
3	84	74	67	61	79	70	63	58	62	57	52	55	51	47	48	45	42
4	77	66	58	51	72	62	55	49	55	49	45	49	44	40	43	39	36
5	71	59	50	44	66	55	48	42	49	43	39	44	39	35	39	35	32
6	65	53	44	38	61	50	42	37	45	38	34	40	35	31	35	31	28
7	60	48	40	34	57	45	38	33	41	34	30	36	31	27	32	28	25
8	56	43	35	30	53	41	34	29	37	31	27	33	28	24	29	25	22
9	52	40	32	27	49	38	31	26	34	28	24	30	26	22	27	23	20
10	49	37	29	24	46	35	28	23	31	26	22	28	23	20	25	21	18

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4163	4163	4163
5°	4167	4102	4130
10°	4131	4043	4071
15°	4068	3973	3981
20°	3984	3877	3889
25°	3900	3763	3783
30°	3795	3656	3649
35°	3696	3531	3507
40°	3574	3405	3372
45°	3452	3278	3233
50°	3319	3145	3073
55°	3179	2991	2925
60°	3021	2808	2756
65°	2848	2618	2556
70°	2627	2387	2340
75°	2323	2110	2137
80°	1955	1755	1756
85°	1382	1157	1134

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3452 cd/sqm

TEST NUMBER: P926349

CATALOG NUMBER: DFN2DIP-TR3F0-090D050US950-FLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	314.4	2.4
10°-20°	884.7	6.7
20°-30°	1300.2	9.8
30°-40°	1510.1	11.4
40°-50°	1508.2	11.4
50°-60°	1315.1	9.9
60°-70°	972.2	7.4
70°-80°	550.0	4.2
80°-90°	148.0	1.1
90°-100°	53.1	0.4
100°-110°	197.9	1.5
110°-120°	524.8	4.0
120°-130°	870.4	6.6
130°-140°	924.6	7.0
140°-150°	859.3	6.5
150°-160°	690.9	5.2
160°-170°	445.2	3.4
170°-180°	153.2	1.2
0°-30°	2499.3	18.9
0°-40°	4009.4	30.3
0°-60°	6832.8	51.7
0°-90°	8503.0	64.3
90°-120°	775.8	5.9
90°-150°	3430.2	25.9
90°-180°	4719.0	35.7
0°-180°	13222.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3341	3341	3341	3341	3341	
5°	3341	3328	3293	3318	3312	317
15°	3180	3161	3119	3132	3116	896
25°	2878	2853	2798	2804	2798	1324
35°	2483	2451	2400	2380	2364	1551
45°	2021	1998	1950	1915	1902	1560
55°	1529	1510	1471	1433	1417	1367
65°	1031	1012	980	951	935	1020
75°	540	533	517	498	504	576
85°	132	128	126	116	112	147
90°	1	14	23	29	31	12
95°	76	37	45	51	50	90
105°	354	389	71	84	88	378
115°	670	690	719	179	96	659
125°	947	962	984	992	996	845
135°	1172	1191	1201	1213	1210	905
145°	1359	1358	1378	1386	1380	850
155°	1497	1486	1500	1507	1498	690
165°	1577	1570	1574	1582	1574	446
175°	1613	1605	1608	1616	1604	154
180°	1610	1610	1610	1610	1610	

TEST NUMBER: P926349

CATALOG NUMBER: DFN2DIP-TR3F0-090D050US950-FLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3340.8	3340.8	3340.8	3340.8	3340.8
2.5°	3360.3	3344.2	3308.9	3340.8	3334.7
5°	3340.8	3328.2	3292.8	3318.4	3312.2
7.5°	3318.4	3299.3	3263.8	3289.8	3283.3
10°	3283.3	3260.8	3222.2	3247.8	3238.3
12.5°	3234.8	3215.7	3177.3	3193.2	3186.8
15°	3180.3	3161.3	3119.3	3132.3	3116.2
17.5°	3112.8	3093.7	3051.8	3067.9	3051.8
20°	3038.9	3019.8	2974.8	2984.3	2971.7
22.5°	2965.2	2936.3	2894.3	2894.3	2887.9
25°	2878.3	2852.7	2798.3	2804.4	2798.3
27.5°	2781.9	2759.3	2717.9	2708.3	2692.3
30°	2685.8	2659.8	2611.8	2602.2	2589.3
32.5°	2582.9	2563.8	2512.3	2492.9	2479.9
35°	2483.4	2451.3	2399.8	2380.4	2364.4
37.5°	2370.9	2341.9	2290.4	2267.9	2251.9
40°	2255.3	2229.4	2177.9	2149.3	2136.4
42.5°	2142.8	2116.9	2065.8	2033.5	2014.4
45°	2020.8	1998.3	1949.9	1914.8	1901.9
47.5°	1901.9	1879.4	1827.9	1792.5	1773.4
50°	1776.4	1760.4	1715.4	1670.5	1654.4
52.5°	1654.4	1631.9	1590.3	1554.9	1532.4
55°	1529.4	1509.9	1471.4	1432.9	1416.9
57.5°	1403.9	1387.9	1346.0	1307.5	1294.5
60°	1278.5	1265.9	1220.8	1185.4	1175.9
62.5°	1156.4	1133.9	1101.9	1069.9	1056.9
65°	1031.4	1011.9	979.9	950.9	934.9
67.5°	902.9	886.6	857.8	835.4	822.4
70°	783.9	770.9	742.0	719.5	706.9
72.5°	661.9	648.9	632.9	610.5	600.9
75°	539.6	533.4	517.1	498.0	504.5
77.5°	430.4	417.6	411.1	401.5	392.0
80°	321.4	318.0	311.5	301.9	295.5
82.5°	218.5	218.5	215.4	202.4	202.4
85°	131.6	128.5	125.5	115.5	112.5
87.5°	57.9	51.4	45.0	35.5	32.1
90°	1.1	13.9	23.3	29.2	31.4
92.5°	29.2	24.5	28.0	30.3	31.4
95°	75.7	37.2	45.4	51.3	50.1
97.5°	136.2	40.8	59.3	63.0	64.0
100°	206.3	46.7	66.4	75.7	78.0
102.5°	283.1	280.8	68.8	81.5	85.1
105°	354.1	389.1	71.1	83.9	88.5
107.5°	436.8	465.8	73.5	86.1	90.9
110°	516.1	540.4	203.9	87.4	92.0



TEST NUMBER: P926349

CATALOG NUMBER: DFN2DIP-TR3F0-090D050US950-FLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	590.6	611.5	591.8	89.7	93.2
115°	669.8	689.6	718.7	179.4	95.6
117.5°	738.5	761.8	781.7	614.9	309.9
120°	815.4	832.8	853.8	867.9	710.5
122.5°	880.5	899.2	922.6	929.6	930.8
125°	946.9	962.2	984.3	992.4	996.0
127.5°	1007.5	1023.8	1041.5	1053.0	1054.2
130°	1064.7	1083.4	1096.1	1108.9	1107.9
132.5°	1123.0	1138.1	1150.8	1161.4	1160.3
135°	1171.9	1190.6	1200.9	1212.7	1210.3
137.5°	1223.0	1237.1	1248.8	1260.4	1257.0
140°	1273.1	1282.6	1295.2	1305.7	1300.0
142.5°	1315.2	1323.4	1338.5	1347.7	1341.9
145°	1359.4	1358.2	1378.0	1386.2	1380.3
147.5°	1397.8	1394.3	1414.1	1419.9	1415.4
150°	1435.1	1427.0	1445.6	1452.6	1446.7
152.5°	1466.5	1457.2	1474.7	1481.8	1473.5
155°	1496.8	1486.4	1500.4	1507.3	1498.1
157.5°	1521.2	1512.0	1522.5	1530.7	1521.2
160°	1542.3	1535.3	1542.3	1549.2	1541.1
162.5°	1560.8	1554.0	1559.7	1567.9	1557.4
165°	1577.2	1570.3	1573.7	1581.8	1573.7
167.5°	1590.0	1583.0	1586.6	1594.7	1584.2
170°	1600.5	1593.5	1595.9	1604.0	1593.5
172.5°	1607.5	1600.5	1602.9	1611.0	1600.5
175°	1613.3	1605.1	1607.5	1615.6	1604.0
177.5°	1615.6	1607.5	1608.7	1616.8	1606.3
180°	1609.8	1609.8	1609.8	1609.8	1609.8

TEST NUMBER: P926349

CATALOG NUMBER: DFN2DIP-TR3F0-090D050US950-FLLONL

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	13.40	14.41	14.22	15.25	16.30	12.97	13.98	13.80	14.83	15.88
	3H	15.06	15.97	15.90	16.82	17.90	14.59	15.50	15.43	16.35	17.43
	4H	15.65	16.50	16.50	17.37	18.46	15.18	16.04	16.04	16.90	17.99
	6H	16.05	16.84	16.92	17.71	18.81	15.58	16.37	16.45	17.24	18.34
	8H	16.16	16.91	17.03	17.79	18.90	15.69	16.44	16.56	17.33	18.43
	12H	16.21	16.92	17.08	17.80	18.93	15.73	16.45	16.61	17.33	18.46
4H	2H	13.88	14.73	14.73	15.59	16.68	13.53	14.39	14.39	15.25	16.34
	3H	15.74	16.46	16.61	17.35	18.46	15.35	16.07	16.22	16.96	18.07
	4H	16.46	17.11	17.34	18.00	19.13	16.06	16.71	16.94	17.60	18.73
	6H	16.97	17.53	17.87	18.45	19.58	16.57	17.13	17.46	18.05	19.18
	8H	17.12	17.64	18.02	18.56	19.70	16.71	17.24	17.61	18.15	19.30
	12H	17.20	17.67	18.11	18.60	19.75	16.78	17.25	17.70	18.18	19.34
8H	4H	16.66	17.19	17.56	18.10	19.24	16.30	16.83	17.20	17.74	18.89
	6H	17.29	17.72	18.21	18.67	19.82	16.93	17.36	17.86	18.32	19.46
	8H	17.50	17.89	18.44	18.83	20.00	17.14	17.52	18.08	18.47	19.63
	12H	17.64	17.97	18.58	18.91	20.13	17.26	17.60	18.20	18.53	19.75
12H	4H	16.65	17.13	17.57	18.06	19.21	16.30	16.78	17.22	17.71	18.86
	6H	17.32	17.70	18.25	18.65	19.81	16.97	17.35	17.91	18.30	19.46
	8H	17.56	17.90	18.50	18.83	20.05	17.21	17.55	18.15	18.48	19.70