

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: P915749

Luminaire Tested: DFN2DIP-TR4F0-120D050US927-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P915749
REPORT IS A COMBINATION OF REPORTS P901924 AND P898849
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR4F0-120D050US927-RLLONL
Description: 4 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

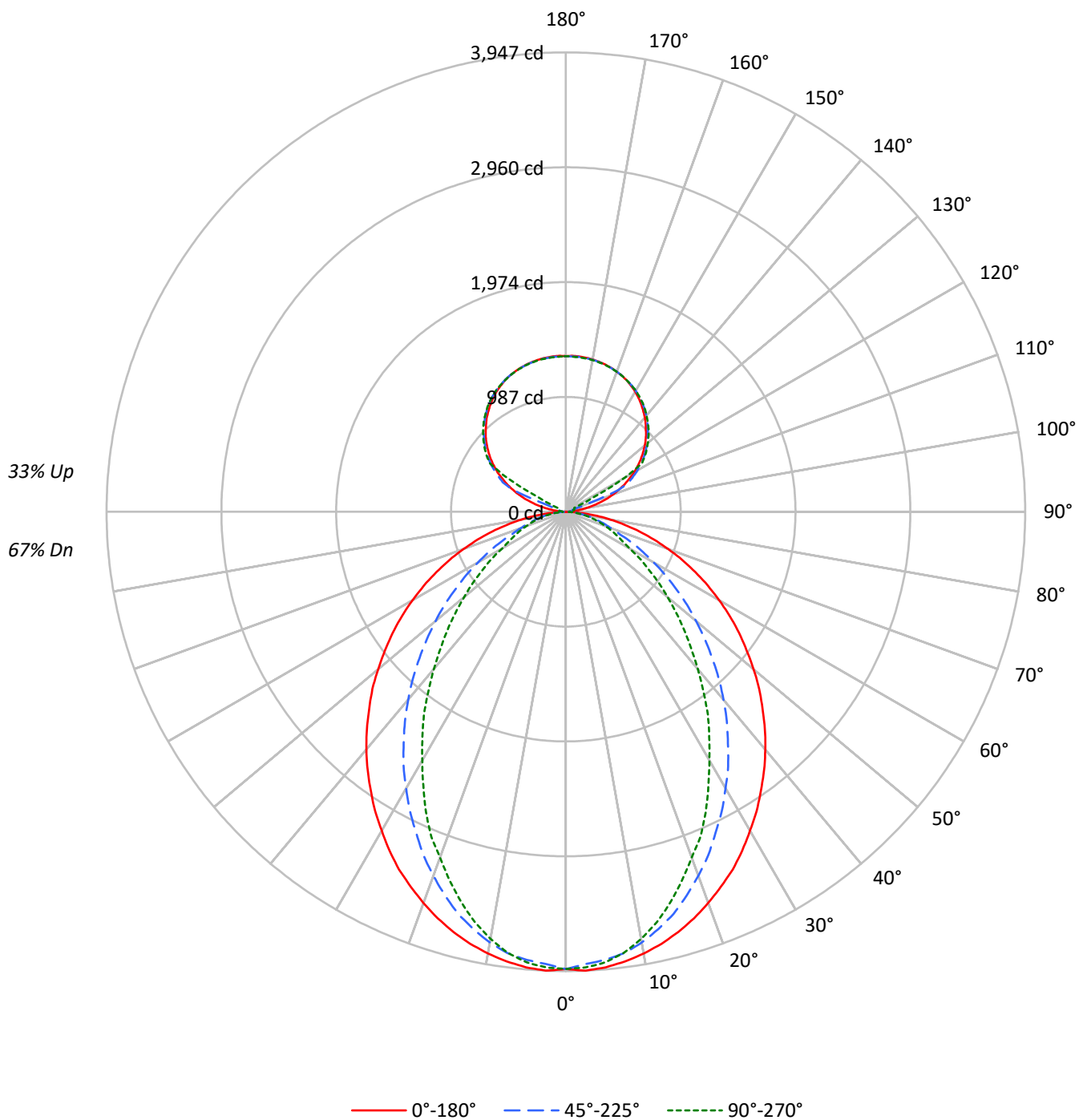
Lumens per Lamp: N/A
Luminaire Lumens: 12001.6 lumens
Efficiency: N/A
Efficacy: 73.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.43' x L: 3.96' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 163.5
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9821
Total Harmonic Distortion (THDi): 0.08
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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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	50	30	10
RCR																				
0	111	111	111	111	105	105	105	105	93	93	93	82	82	82	72	72	72	67		
1	102	98	94	91	96	93	89	86	83	80	78	73	71	70	65	63	62	58		
2	94	86	80	75	88	82	77	72	73	69	66	65	62	59	58	55	53	50		
3	86	77	69	64	81	73	66	61	65	60	56	58	54	51	52	49	46	43		
4	79	68	61	55	74	65	58	52	58	53	48	52	48	44	47	43	40	37		
5	73	61	53	47	69	58	51	46	53	47	42	47	43	39	42	39	36	33		
6	67	55	47	42	63	53	45	40	48	42	37	43	38	34	39	35	32	29		
7	63	50	42	37	59	48	41	36	44	38	33	39	35	31	36	32	28	26		
8	58	46	38	33	55	44	37	32	40	34	30	36	31	28	33	29	26	24		
9	54	42	35	30	51	40	33	29	37	31	27	34	29	25	30	26	23	21		
10	51	39	32	27	48	37	31	26	34	28	25	31	26	23	28	24	21	20		

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3121	3121	3121
5°	3126	3072	3091
10°	3095	3011	2991
15°	3053	2912	2835
20°	2996	2775	2644
25°	2939	2621	2460
30°	2861	2463	2226
35°	2785	2293	2021
40°	2708	2118	1785
45°	2618	1923	1572
50°	2526	1727	1363
55°	2429	1517	1163
60°	2316	1297	957
65°	2188	1074	862
70°	2031	866	779
75°	1835	764	709
80°	1550	640	614
85°	1081	427	461

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2618 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	368.2	3.1
10°-20°	1010.8	8.4
20°-30°	1419.2	11.8
30°-40°	1547.0	12.9
40°-50°	1421.9	11.8
50°-60°	1116.7	9.3
60°-70°	726.9	6.1
70°-80°	374.2	3.1
80°-90°	97.9	0.8
90°-100°	44.1	0.4
100°-110°	164.3	1.4
110°-120°	435.8	3.6
120°-130°	722.8	6.0
130°-140°	767.8	6.4
140°-150°	713.6	5.9
150°-160°	573.7	4.8
160°-170°	369.7	3.1
170°-180°	127.2	1.1
0°-30°	2798.2	23.3
0°-40°	4345.2	36.2
0°-60°	6883.7	57.4
0°-90°	8082.6	67.3
90°-120°	644.2	5.4
90°-150°	2848.4	23.7
90°-180°	3919.0	32.7
0°-180°	12001.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3929	3929	3929	3929	3929	
5°	3929	3911	3865	3897	3886	373
15°	3737	3698	3577	3509	3474	1053
25°	3392	3278	3044	2898	2844	1560
35°	2923	2741	2429	2205	2126	1829
45°	2389	2151	1778	1525	1440	1845
55°	1817	1540	1156	942	875	1623
65°	1227	939	619	498	487	1216
75°	654	405	284	260	256	692
85°	153	78	68	68	68	175
90°	1	12	19	24	26	11
95°	63	31	38	43	42	74
105°	294	323	59	70	74	314
115°	556	573	597	149	79	548
125°	786	799	817	824	827	701
135°	973	989	997	1007	1005	752
145°	1129	1128	1144	1151	1146	706
155°	1243	1234	1246	1252	1244	573
165°	1310	1304	1307	1314	1307	370
175°	1340	1333	1335	1342	1332	127
180°	1337	1337	1337	1337	1337	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3928.9	3928.9	3928.9	3928.9	3928.9
2.5°	3946.6	3928.9	3889.7	3925.5	3918.3
5°	3928.9	3911.2	3864.7	3896.8	3886.3
7.5°	3896.8	3875.7	3825.9	3839.9	3822.1
10°	3854.2	3829.3	3758.3	3747.4	3726.3
12.5°	3801.0	3769.0	3672.7	3651.6	3612.4
15°	3736.9	3697.7	3576.9	3509.4	3474.0
17.5°	3662.2	3605.2	3455.8	3377.8	3320.8
20°	3576.9	3505.6	3328.0	3239.3	3160.8
22.5°	3484.5	3402.7	3196.3	3075.6	3022.4
25°	3392.1	3278.1	3043.5	2897.9	2844.3
27.5°	3281.9	3160.8	2901.3	2734.2	2652.3
30°	3164.6	3029.2	2744.7	2563.7	2467.5
32.5°	3050.7	2886.9	2595.7	2382.2	2293.2
35°	2922.8	2741.3	2428.6	2204.6	2126.1
37.5°	2798.3	2602.6	2272.1	2026.5	1937.8
40°	2666.6	2453.5	2108.4	1856.0	1763.6
42.5°	2531.6	2304.1	1945.0	1681.7	1593.1
45°	2389.4	2151.0	1777.9	1525.2	1439.9
47.5°	2254.3	2002.0	1618.0	1365.2	1287.1
50°	2105.0	1852.6	1461.4	1215.8	1141.5
52.5°	1959.0	1692.3	1312.0	1077.4	1009.9
55°	1816.8	1539.5	1155.5	942.3	874.8
57.5°	1671.1	1386.7	1017.0	817.8	760.9
60°	1521.8	1237.3	871.0	690.0	633.0
62.5°	1376.2	1091.7	746.6	576.1	547.7
65°	1226.8	938.6	618.7	498.0	487.0
67.5°	1084.6	796.3	498.0	437.2	426.7
70°	935.2	657.9	412.3	376.8	362.5
72.5°	793.0	529.7	344.8	316.5	309.3
75°	654.1	405.1	284.5	259.5	256.1
77.5°	515.7	287.8	224.1	209.8	202.6
80°	387.5	206.4	170.5	156.5	156.5
82.5°	270.1	138.8	117.3	110.1	110.1
85°	152.8	78.1	67.5	67.5	67.5
87.5°	57.0	28.3	28.3	24.9	24.9
90°	1.0	11.6	19.3	24.2	26.1
92.5°	24.2	20.4	23.2	25.2	26.1
95°	62.8	30.9	37.7	42.6	41.6
97.5°	113.1	33.9	49.3	52.3	53.2
100°	171.3	38.7	55.1	62.8	64.8
102.5°	235.0	233.1	57.1	67.7	70.7
105°	294.1	323.1	59.0	69.6	73.5
107.5°	362.7	386.8	61.0	71.5	75.5
110°	428.6	448.8	169.3	72.6	76.4



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	490.4	507.8	491.4	74.5	77.4
115°	556.2	572.6	596.8	149.0	79.4
117.5°	613.2	632.6	649.1	510.6	257.3
120°	677.1	691.6	709.0	720.6	590.0
122.5°	731.2	746.7	766.1	771.9	772.9
125°	786.3	799.0	817.4	824.1	827.0
127.5°	836.6	850.2	864.8	874.4	875.4
130°	884.1	899.6	910.1	920.8	920.0
132.5°	932.5	945.1	955.6	964.4	963.5
135°	973.1	988.6	997.2	1007.0	1005.0
137.5°	1015.6	1027.2	1037.0	1046.6	1043.8
140°	1057.2	1065.0	1075.5	1084.3	1079.5
142.5°	1092.1	1098.9	1111.4	1119.1	1114.3
145°	1128.9	1127.8	1144.2	1151.0	1146.2
147.5°	1160.7	1157.8	1174.3	1179.1	1175.3
150°	1191.7	1184.9	1200.4	1206.2	1201.3
152.5°	1217.7	1210.1	1224.6	1230.4	1223.6
155°	1242.9	1234.3	1245.9	1251.6	1244.0
157.5°	1263.2	1255.5	1264.2	1271.1	1263.2
160°	1280.7	1274.9	1280.7	1286.4	1279.7
162.5°	1296.1	1290.4	1295.1	1301.9	1293.2
165°	1309.6	1303.9	1306.8	1313.5	1306.8
167.5°	1320.3	1314.5	1317.5	1324.2	1315.5
170°	1329.0	1323.2	1325.2	1331.9	1323.2
172.5°	1334.8	1329.0	1331.0	1337.8	1329.0
175°	1339.7	1332.8	1334.8	1341.6	1331.9
177.5°	1341.6	1334.8	1335.9	1342.6	1333.9
180°	1336.7	1336.7	1336.7	1336.7	1336.7

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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	12.58	13.58	13.38	14.39	15.40	8.55	9.55	9.35	10.37	11.37
	3H	14.27	15.16	15.08	15.99	17.02	9.76	10.65	10.57	11.47	12.51
	4H	14.89	15.73	15.72	16.56	17.60	10.21	11.05	11.05	11.89	12.93
	6H	15.32	16.09	16.16	16.93	17.99	10.55	11.32	11.39	12.16	13.22
	8H	15.45	16.18	16.30	17.04	18.10	10.64	11.38	11.49	12.24	13.29
	12H	15.51	16.21	16.37	17.07	18.15	10.69	11.39	11.55	12.24	13.33
4H	2H	12.62	13.46	13.45	14.29	15.34	9.17	10.01	10.00	10.84	11.89
	3H	14.46	15.16	15.31	16.03	17.09	10.54	11.23	11.38	12.10	13.16
	4H	15.16	15.79	16.02	16.66	17.75	11.09	11.72	11.95	12.59	13.68
	6H	15.69	16.23	16.56	17.12	18.21	11.52	12.07	12.39	12.96	14.05
	8H	15.86	16.37	16.74	17.26	18.36	11.65	12.16	12.53	13.05	14.15
	12H	15.97	16.42	16.86	17.33	18.44	11.73	12.18	12.62	13.09	14.20
8H	4H	15.14	15.65	16.02	16.54	17.64	11.38	11.89	12.26	12.78	13.88
	6H	15.71	16.13	16.62	17.06	18.16	11.91	12.33	12.81	13.26	14.36
	8H	15.93	16.30	16.85	17.22	18.34	12.10	12.47	13.02	13.39	14.51
	12H	16.08	16.41	16.99	17.32	18.49	12.23	12.56	13.14	13.47	14.64
12H	4H	15.10	15.56	16.00	16.46	17.57	11.40	11.85	12.29	12.76	13.87
	6H	15.69	16.06	16.60	16.98	18.10	11.96	12.33	12.87	13.25	14.37
	8H	15.92	16.25	16.83	17.16	18.33	12.18	12.51	13.09	13.42	14.59