

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: P920980

Luminaire Tested: DFN2DIP-TR4F0-050D120US935-RLFL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P920980
REPORT IS A COMBINATION OF REPORTS P900516 AND P897293
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR4F0-050D120US935-RLLFLL
Description: 4 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

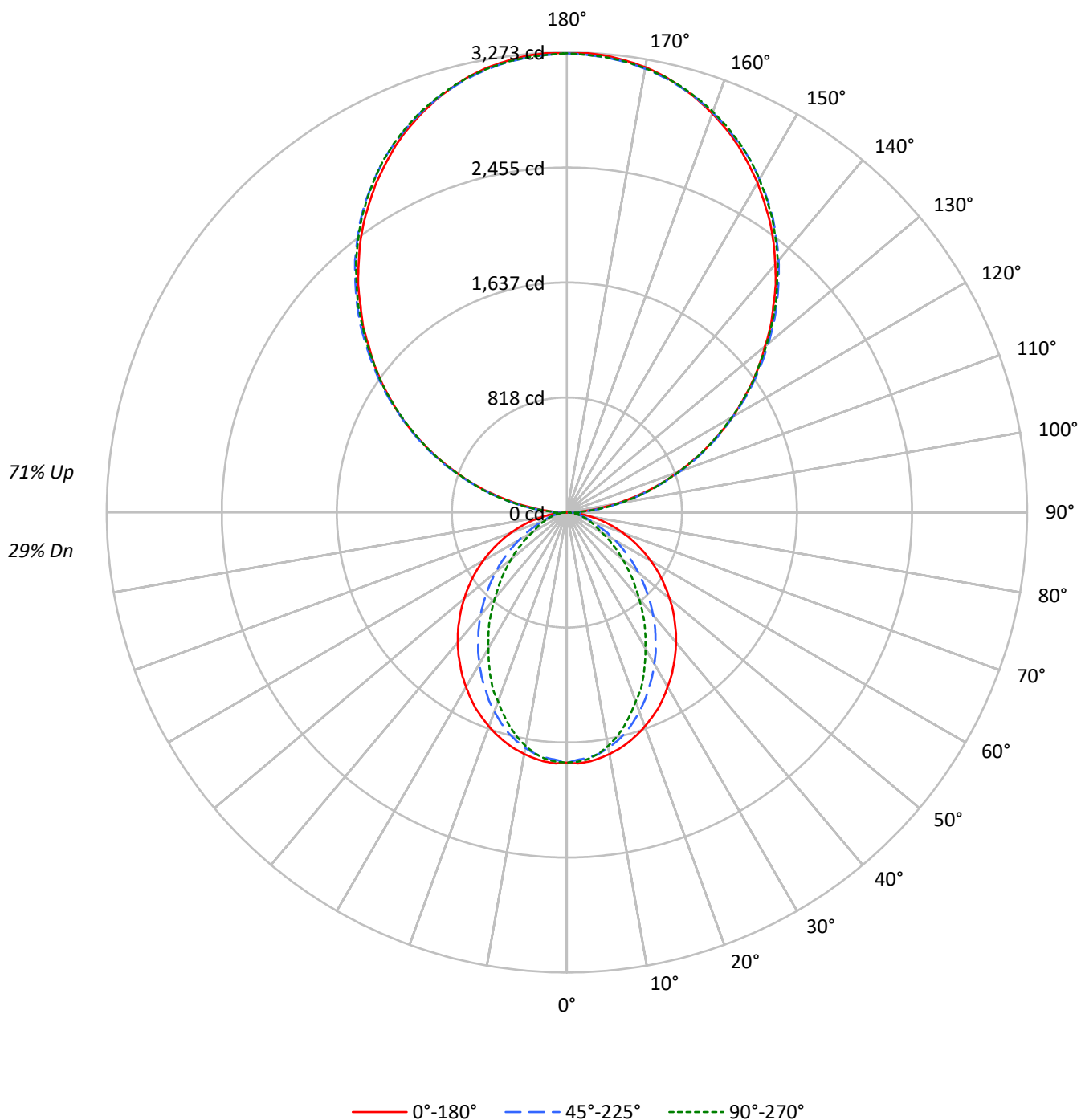
Lumens per Lamp: N/A
Luminaire Lumens: 12803.0 lumens
Efficiency: N/A
Efficacy: 96.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.43' x L: 3.96' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 133.3
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.996
Total Harmonic Distortion (THDi): 0.064
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
RCR																	
0	102	102	102	102	91	91	91	91	71	71	71	53	53	53	37	37	37
1	93	89	86	82	83	80	77	74	63	61	59	47	46	45	33	32	31
2	85	78	72	68	76	70	65	61	55	52	49	42	40	38	29	28	27
3	78	69	62	56	69	62	56	51	49	45	42	37	34	32	26	24	23
4	71	61	54	48	64	55	49	44	44	39	36	33	30	28	23	22	20
5	65	54	47	41	58	49	42	38	39	34	31	30	27	24	21	19	18
6	60	49	41	36	54	44	37	33	35	30	27	27	24	21	19	17	16
7	56	44	36	31	50	40	33	29	32	27	24	25	21	19	18	16	14
8	52	40	32	27	46	36	30	25	29	24	21	22	19	17	16	14	13
9	48	36	29	24	43	33	27	22	27	22	19	21	17	15	15	13	11
10	45	33	26	22	40	30	24	20	24	20	17	19	16	14	14	12	10

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1414	1414	1414
5°	1416	1391	1400
10°	1402	1364	1354
15°	1382	1319	1284
20°	1357	1257	1197
25°	1331	1187	1114
30°	1296	1115	1008
35°	1261	1039	915
40°	1226	959	808
45°	1186	871	712
50°	1144	782	617
55°	1100	687	527
60°	1049	587	433
65°	991	487	390
70°	920	392	353
75°	831	346	321
80°	702	290	278
85°	489	194	209

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 2547 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	166.8	1.3
10°-20°	457.8	3.6
20°-30°	642.7	5.0
30°-40°	700.6	5.5
40°-50°	643.9	5.0
50°-60°	505.7	3.9
60°-70°	329.2	2.6
70°-80°	169.5	1.3
80°-90°	52.5	0.4
90°-100°	202.2	1.6
100°-110°	642.4	5.0
110°-120°	1099.4	8.6
120°-130°	1445.9	11.3
130°-140°	1623.0	12.7
140°-150°	1591.6	12.4
150°-160°	1335.1	10.4
160°-170°	885.4	6.9
170°-180°	309.5	2.4
0°-30°	1267.2	9.9
0°-40°	1967.8	15.4
0°-60°	3117.4	24.3
0°-90°	3668.5	28.7
90°-120°	1944.1	15.2
90°-150°	6604.6	51.6
90°-180°	9134.0	71.3
0°-180°	12803.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1779	1779	1779	1779	1779	
5°	1779	1771	1750	1765	1760	169
15°	1692	1675	1620	1589	1573	477
25°	1536	1484	1378	1312	1288	706
35°	1324	1242	1100	998	963	828
45°	1082	974	805	691	652	836
55°	823	697	523	427	396	735
65°	556	425	280	226	221	551
75°	296	184	129	118	116	313
85°	69	35	31	31	31	79
90°	3	36	96	91	94	13
95°	144	171	176	176	171	160
105°	593	601	607	612	612	626
115°	1103	1119	1114	1111	1103	1091
125°	1605	1629	1622	1613	1610	1434
135°	2076	2106	2112	2109	2101	1604
145°	2520	2540	2555	2558	2548	1574
155°	2881	2889	2898	2912	2903	1326
165°	3135	3132	3132	3151	3138	884
175°	3262	3254	3248	3268	3251	310
180°	3268	3268	3268	3268	3268	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1779.3	1779.3	1779.3	1779.3	1779.3
2.5°	1787.3	1779.3	1761.5	1777.7	1774.4
5°	1779.3	1771.2	1750.2	1764.7	1760.0
7.5°	1764.7	1755.1	1732.6	1739.0	1730.9
10°	1745.4	1734.1	1702.0	1697.1	1687.5
12.5°	1721.3	1706.8	1663.3	1653.7	1635.9
15°	1692.3	1674.6	1619.9	1589.3	1573.2
17.5°	1658.5	1632.7	1565.0	1529.6	1503.8
20°	1619.9	1587.6	1507.1	1467.0	1431.4
22.5°	1578.0	1540.9	1447.5	1392.8	1368.7
25°	1536.1	1484.5	1378.3	1312.3	1288.1
27.5°	1486.3	1431.4	1313.9	1238.2	1201.2
30°	1433.1	1371.8	1243.0	1161.0	1117.4
32.5°	1381.6	1307.4	1175.5	1078.8	1038.5
35°	1323.6	1241.5	1099.8	998.3	962.9
37.5°	1267.2	1178.6	1029.0	917.7	877.6
40°	1207.6	1111.1	954.8	840.5	798.7
42.5°	1146.5	1043.4	880.8	761.6	721.4
45°	1082.1	974.1	805.1	690.7	652.0
47.5°	1020.9	906.6	732.7	618.3	582.9
50°	953.3	839.0	661.8	550.6	516.9
52.5°	887.2	766.4	594.2	487.9	457.4
55°	822.8	697.1	523.2	426.7	396.1
57.5°	756.8	628.0	460.5	370.4	344.6
60°	689.1	560.3	394.4	312.5	286.6
62.5°	623.2	494.4	338.1	260.9	248.1
65°	555.5	425.1	280.2	225.5	220.6
67.5°	491.1	360.7	225.5	198.0	193.2
70°	423.5	297.9	186.8	170.6	164.2
72.5°	359.1	239.9	156.2	143.4	140.1
75°	296.3	183.5	128.8	117.5	116.0
77.5°	233.5	130.4	101.5	95.0	91.7
80°	175.5	93.4	77.2	70.9	70.9
82.5°	122.3	62.9	53.1	49.9	49.9
85°	69.2	35.4	30.6	30.6	30.6
87.5°	25.8	12.8	12.8	11.3	11.3
90°	2.9	35.5	96.5	90.7	93.6
92.5°	61.0	82.7	85.7	88.7	88.7
95°	143.8	171.4	176.3	176.3	171.4
97.5°	239.4	265.0	275.9	275.9	275.9
100°	349.7	372.4	380.2	380.2	377.3
102.5°	466.0	482.7	493.5	496.5	493.5
105°	593.1	600.9	606.8	611.7	611.7
107.5°	719.1	731.0	731.0	732.9	719.1
110°	841.3	857.0	857.0	857.0	849.2

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	973.3	990.1	987.0	979.2	973.3
115°	1103.3	1119.1	1114.1	1111.2	1103.3
117.5°	1232.3	1254.0	1240.3	1232.3	1224.5
120°	1362.4	1384.1	1362.4	1362.4	1353.6
122.5°	1480.7	1508.2	1494.4	1486.5	1480.7
125°	1604.7	1629.4	1621.5	1612.6	1609.6
127.5°	1726.0	1756.4	1745.6	1733.8	1726.0
130°	1839.2	1874.7	1869.7	1863.8	1853.0
132.5°	1966.3	1993.9	1995.8	1982.0	1974.2
135°	2075.6	2106.2	2112.1	2109.1	2101.3
137.5°	2197.8	2222.4	2227.3	2225.3	2213.5
140°	2305.1	2329.8	2343.6	2343.6	2332.7
142.5°	2415.5	2440.2	2448.0	2450.9	2440.2
145°	2519.9	2539.6	2555.4	2558.4	2547.5
147.5°	2613.5	2638.1	2650.0	2654.9	2644.0
150°	2710.1	2726.8	2737.6	2746.5	2737.6
152.5°	2795.7	2812.4	2826.3	2837.2	2826.3
155°	2881.4	2889.3	2898.2	2912.0	2903.1
157.5°	2955.4	2961.2	2966.1	2985.9	2972.1
160°	3021.3	3027.3	3030.2	3047.0	3035.1
162.5°	3082.4	3082.4	3085.4	3104.1	3090.3
165°	3134.6	3131.7	3131.7	3151.3	3137.6
167.5°	3181.9	3173.0	3173.0	3192.8	3179.0
170°	3217.4	3209.5	3206.5	3226.2	3209.5
172.5°	3242.0	3234.1	3231.2	3250.9	3234.1
175°	3261.7	3253.8	3247.9	3267.6	3250.9
177.5°	3272.6	3264.6	3258.7	3275.5	3258.7
180°	3267.6	3267.6	3267.6	3267.6	3267.6

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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	5.92	6.60	7.05	7.72	9.27	1.89	2.58	3.02	3.69	5.24
	3H	7.59	8.20	8.72	9.32	10.88	3.07	3.68	4.21	4.81	6.37
	4H	8.19	8.77	9.33	9.89	11.46	3.52	4.09	4.66	5.22	6.79
	6H	8.60	9.13	9.75	10.26	11.84	3.83	4.36	4.98	5.49	7.07
	8H	8.72	9.23	9.88	10.37	11.94	3.92	4.42	5.07	5.56	7.14
	12H	8.78	9.26	9.94	10.40	11.99	3.96	4.44	5.11	5.57	7.17
4H	2H	5.92	6.50	7.07	7.62	9.19	2.47	3.05	3.62	4.17	5.74
	3H	7.74	8.22	8.89	9.37	10.95	3.81	4.29	4.96	5.44	7.02
	4H	8.42	8.86	9.58	10.00	11.61	4.35	4.79	5.51	5.93	7.53
	6H	8.93	9.31	10.09	10.47	12.06	4.76	5.14	5.93	6.30	7.90
	8H	9.10	9.45	10.26	10.61	12.22	4.89	5.24	6.05	6.40	8.00
	12H	9.19	9.51	10.37	10.67	12.29	4.95	5.27	6.13	6.43	8.05
8H	4H	8.38	8.73	9.54	9.89	11.49	4.62	4.97	5.78	6.13	7.74
	6H	8.94	9.23	10.12	10.43	12.03	5.13	5.43	6.32	6.62	8.23
	8H	9.16	9.41	10.34	10.58	12.21	5.33	5.58	6.51	6.75	8.38
	12H	9.29	9.51	10.48	10.68	12.34	5.44	5.66	6.63	6.83	8.49
12H	4H	8.32	8.64	9.50	9.81	11.42	4.62	4.94	5.80	6.10	7.72
	6H	8.91	9.17	10.10	10.34	11.97	5.18	5.44	6.37	6.61	8.24
	8H	9.13	9.35	10.32	10.52	12.18	5.39	5.61	6.58	6.78	8.44

END OF REPORT