

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: P923672

Luminaire Tested: DFN2DIP-TR4F0-040D120US940-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P923672
REPORT IS A COMBINATION OF REPORTS P900514 AND P897293
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR4F0-040D120US940-RLLFLL
Description: 4 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

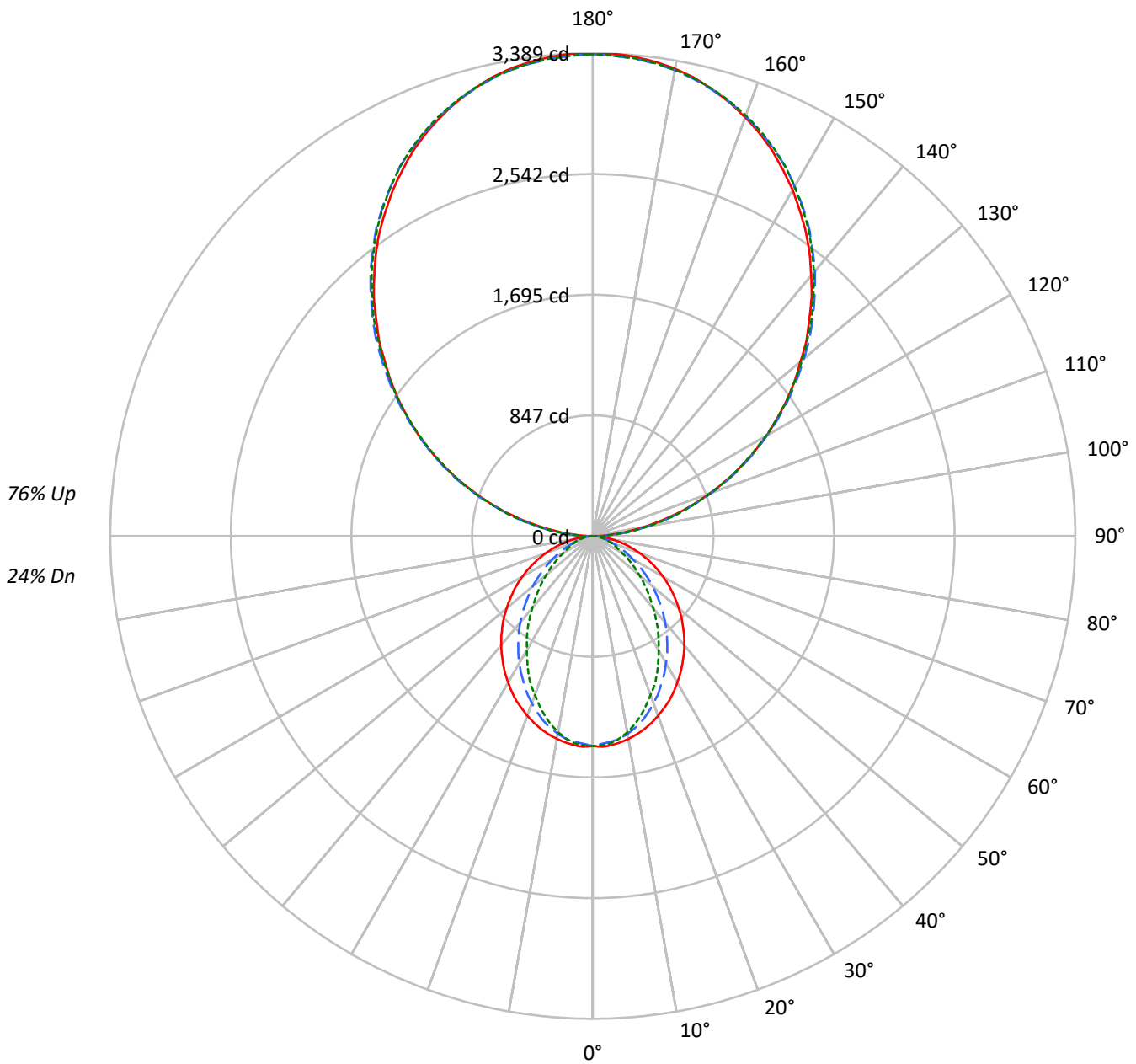
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 12501.8 lumens
Efficiency: N/A
Efficacy: 101.4 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-Indirect

Input Watts (W): 123.3
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9952
Total Harmonic Distortion (THDi): 0.069
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



— 0°-180° - - 45°-225° - - - 90°-270°



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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20				20	
RC	80				70				50				30				10				0	
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0	
RCR																						
0	101	101	101	101	90	90	90	90	69	69	69	50	50	50	33	33	33	24				24
1	92	88	85	81	82	79	76	73	61	59	57	44	43	42	29	28	28	21				21
2	84	77	71	67	75	69	64	60	53	50	47	39	37	35	26	25	24	18				18
3	77	68	61	56	68	61	55	50	47	43	40	35	32	30	23	22	20	15				15
4	70	60	53	47	62	54	48	43	42	38	34	31	28	26	21	19	18	13				13
5	64	54	46	40	57	48	42	37	38	33	29	28	25	22	19	17	16	12				12
6	59	48	40	35	53	43	37	32	34	29	26	25	22	20	17	15	14	11				11
7	55	43	36	30	49	39	32	28	31	26	23	23	20	17	16	14	12	9				9
8	51	39	32	27	45	35	29	24	28	23	20	21	18	16	14	12	11	8				8
9	47	36	29	24	42	32	26	22	25	21	18	19	16	14	13	11	10	8				8
10	44	33	26	21	39	29	23	19	23	19	16	18	15	13	12	10	9	7				7

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1171	1171	1171
5°	1173	1153	1160
10°	1161	1130	1122
15°	1145	1093	1064
20°	1124	1041	992
25°	1103	983	923
30°	1074	924	835
35°	1045	860	758
40°	1016	795	670
45°	982	722	590
50°	948	648	512
55°	911	569	436
60°	869	487	359
65°	821	403	323
70°	762	325	292
75°	688	286	266
80°	581	240	231
85°	405	160	173

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 90°
 Luminance: 2637 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	138.2	1.1
10°-20°	379.3	3.0
20°-30°	532.5	4.3
30°-40°	580.5	4.6
40°-50°	533.5	4.3
50°-60°	419.0	3.4
60°-70°	272.7	2.2
70°-80°	140.4	1.1
80°-90°	45.5	0.4
90°-100°	209.4	1.7
100°-110°	665.4	5.3
110°-120°	1138.7	9.1
120°-130°	1497.5	12.0
130°-140°	1680.9	13.4
140°-150°	1648.3	13.2
150°-160°	1382.7	11.1
160°-170°	917.0	7.3
170°-180°	320.5	2.6
0°-30°	1049.9	8.4
0°-40°	1630.4	13.0
0°-60°	2582.9	20.7
0°-90°	3041.4	24.3
90°-120°	2013.4	16.1
90°-150°	6840.1	54.7
90°-180°	9460.0	75.7
0°-180°	12501.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1474	1474	1474	1474	1474	
5°	1474	1468	1450	1462	1458	140
15°	1402	1387	1342	1317	1304	395
25°	1273	1230	1142	1087	1067	585
35°	1097	1029	911	827	798	686
45°	896	807	667	572	540	692
55°	682	578	434	354	328	609
65°	460	352	232	187	183	456
75°	245	152	107	97	96	260
85°	57	29	25	25	25	66
90°	3	37	100	94	97	12
95°	149	178	183	183	178	166
105°	614	622	628	634	634	648
115°	1143	1159	1154	1151	1143	1130
125°	1662	1688	1679	1670	1667	1485
135°	2150	2181	2188	2184	2176	1662
145°	2610	2630	2646	2650	2638	1631
155°	2984	2992	3002	3016	3007	1374
165°	3246	3243	3243	3264	3250	916
175°	3378	3370	3364	3384	3367	321
180°	3384	3384	3384	3384	3384	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1474.2	1474.2	1474.2	1474.2	1474.2
2.5°	1480.9	1474.2	1459.5	1472.9	1470.2
5°	1474.2	1467.5	1450.1	1462.1	1458.2
7.5°	1462.1	1454.2	1435.6	1440.7	1434.1
10°	1446.2	1436.8	1410.2	1406.0	1398.2
12.5°	1426.2	1414.2	1378.0	1370.1	1355.4
15°	1402.1	1387.4	1342.1	1316.8	1303.5
17.5°	1374.1	1352.7	1296.6	1267.4	1246.0
20°	1342.1	1315.4	1248.7	1215.4	1186.0
22.5°	1307.4	1276.8	1199.3	1154.0	1134.1
25°	1272.7	1230.0	1141.9	1087.4	1067.2
27.5°	1231.5	1186.0	1088.6	1025.9	995.1
30°	1187.4	1136.6	1029.8	961.9	925.9
32.5°	1144.7	1083.2	973.9	893.9	860.4
35°	1096.7	1028.6	911.2	827.2	797.7
37.5°	1050.0	976.5	852.5	760.4	727.1
40°	1000.6	920.6	791.1	696.4	661.7
42.5°	949.8	864.5	729.8	631.0	597.7
45°	896.5	807.1	667.1	572.3	540.3
47.5°	845.9	751.2	607.1	512.3	483.0
50°	789.8	695.1	548.3	456.2	428.3
52.5°	735.0	635.0	492.3	404.2	378.9
55°	681.7	577.6	433.5	353.6	328.2
57.5°	627.1	520.3	381.6	306.8	285.5
60°	571.0	464.2	326.8	258.9	237.6
62.5°	516.4	409.7	280.1	216.2	205.5
65°	460.3	352.1	232.1	186.8	182.7
67.5°	407.0	298.8	186.8	164.1	160.1
70°	350.9	246.8	154.7	141.4	136.0
72.5°	297.6	198.8	129.4	118.8	116.1
75°	245.4	152.0	106.7	97.4	96.1
77.5°	193.5	108.0	84.1	78.7	76.0
80°	145.3	77.4	63.9	58.8	58.8
82.5°	101.4	52.1	44.1	41.3	41.3
85°	57.3	29.3	25.3	25.3	25.3
87.5°	21.4	10.6	10.6	9.4	9.4
90°	3.0	36.7	100.0	93.9	96.9
92.5°	63.2	85.7	88.7	91.8	91.8
95°	148.9	177.5	182.6	182.6	177.5
97.5°	247.9	274.5	285.7	285.7	285.7
100°	362.2	385.7	393.8	393.8	390.7
102.5°	482.6	499.9	511.1	514.2	511.1
105°	614.2	622.3	628.5	633.6	633.6
107.5°	744.8	757.1	757.1	759.0	744.8
110°	871.3	887.6	887.6	887.6	879.5



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1008.0	1025.4	1022.3	1014.1	1008.0
115°	1142.6	1159.0	1153.9	1150.8	1142.6
117.5°	1276.3	1298.8	1284.5	1276.3	1268.2
120°	1411.0	1433.4	1411.0	1411.0	1401.9
122.5°	1533.5	1562.0	1547.7	1539.5	1533.5
125°	1662.0	1687.5	1679.4	1670.2	1667.1
127.5°	1787.5	1819.1	1807.9	1795.6	1787.5
130°	1904.8	1941.5	1936.4	1930.3	1919.0
132.5°	2036.4	2065.0	2067.0	2052.7	2044.6
135°	2149.6	2181.3	2187.5	2184.3	2176.2
137.5°	2276.2	2301.7	2306.8	2304.7	2292.5
140°	2387.4	2412.9	2427.1	2427.1	2415.9
142.5°	2501.7	2527.2	2535.3	2538.3	2527.2
145°	2609.8	2630.2	2646.5	2649.6	2638.4
147.5°	2706.7	2732.2	2744.5	2749.6	2738.4
150°	2806.7	2824.0	2835.3	2844.5	2835.3
152.5°	2895.5	2912.8	2927.1	2938.4	2927.1
155°	2984.2	2992.4	3001.6	3015.9	3006.7
157.5°	3060.8	3066.9	3071.9	3092.4	3078.1
160°	3129.1	3135.3	3138.3	3155.7	3143.4
162.5°	3192.3	3192.3	3195.4	3214.8	3200.5
165°	3246.4	3243.4	3243.4	3263.7	3249.5
167.5°	3295.4	3286.2	3286.2	3306.6	3292.4
170°	3332.1	3323.9	3320.9	3341.3	3323.9
172.5°	3357.6	3349.4	3346.4	3366.8	3349.4
175°	3378.1	3369.9	3363.8	3384.1	3366.8
177.5°	3389.3	3381.1	3374.9	3392.3	3374.9
180°	3384.1	3384.1	3384.1	3384.1	3384.1



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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	4.61	5.26	5.76	6.40	8.00	0.58	1.24	1.73	2.37	3.97
	3H	6.27	6.86	7.43	8.00	9.62	1.75	2.34	2.92	3.49	5.10
	4H	6.87	7.43	8.04	8.58	10.19	2.20	2.76	3.37	3.90	5.52
	6H	7.28	7.80	8.46	8.94	10.57	2.51	3.02	3.69	4.17	5.80
	8H	7.40	7.89	8.58	9.06	10.68	2.60	3.09	3.78	4.25	5.87
	12H	7.46	7.92	8.64	9.08	10.72	2.64	3.10	3.82	4.26	5.90
4H	2H	4.60	5.16	5.78	6.31	7.92	1.15	1.71	2.33	2.86	4.47
	3H	6.42	6.88	7.60	8.05	9.68	2.49	2.95	3.67	4.12	5.75
	4H	7.10	7.53	8.28	8.69	10.34	3.03	3.46	4.21	4.62	6.27
	6H	7.61	7.97	8.79	9.16	10.79	3.44	3.81	4.63	4.99	6.63
	8H	7.78	8.12	8.96	9.29	10.95	3.57	3.91	4.75	5.08	6.74
	12H	7.86	8.17	9.07	9.36	11.02	3.62	3.93	4.83	5.12	6.78
8H	4H	7.06	7.40	8.24	8.57	10.23	3.30	3.64	4.48	4.81	6.47
	6H	7.62	7.90	8.82	9.11	10.76	3.81	4.09	5.02	5.31	6.96
	8H	7.83	8.08	9.04	9.27	10.94	4.00	4.25	5.21	5.44	7.11
	12H	7.96	8.18	9.18	9.37	11.07	4.11	4.33	5.33	5.52	7.22
12H	4H	7.00	7.31	8.20	8.49	10.15	3.29	3.60	4.50	4.79	6.45
	6H	7.59	7.83	8.80	9.03	10.70	3.86	4.10	5.07	5.30	6.97
	8H	7.80	8.02	9.02	9.21	10.91	4.06	4.28	5.28	5.47	7.17