

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: P923670

Luminaire Tested: DFN2DIP-TR4F0-040D120US940-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P923670
REPORT IS A COMBINATION OF REPORTS P900513 AND P897293
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR4F0-040D120US940-FLLFLL
Description: 4 foot, Triangle Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

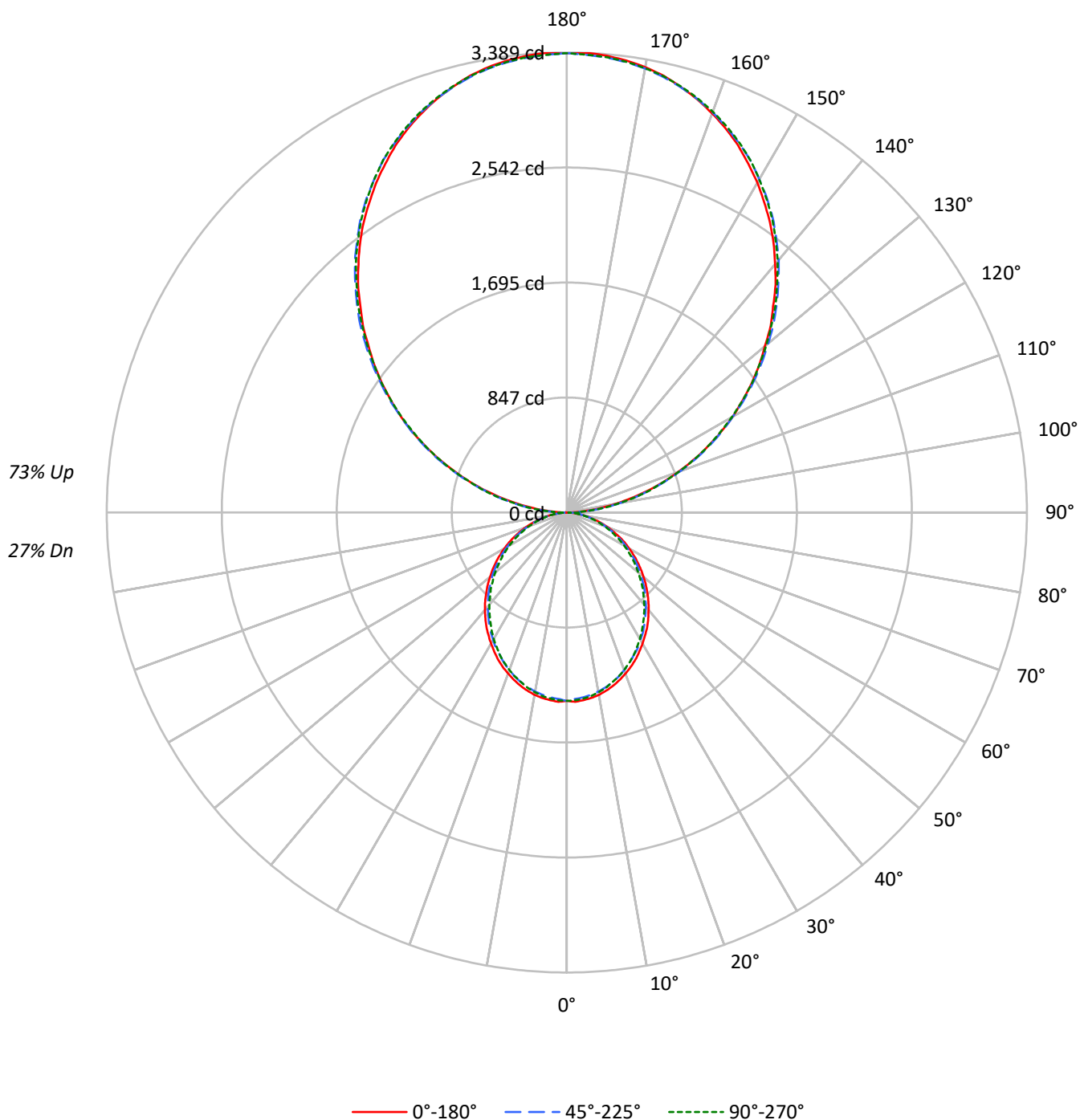
Lumens per Lamp: N/A
Luminaire Lumens: 13001.1 lumens
Efficiency: N/A
Efficacy: 105.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.43' x L: 3.96' x H: 0.1')
CIE Type: Semi-Indirect

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



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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	52	52	52	35	35	35
1	93	88	85	81	83	79	76	73	62	60	58	46	44	43	31	30	30
2	84	77	71	66	75	69	64	60	54	51	48	40	38	36	27	26	25
3	77	68	61	55	68	61	55	50	48	44	40	35	33	30	24	23	21
4	70	60	52	47	62	54	47	42	42	38	34	32	29	26	22	20	18
5	64	53	45	40	57	48	41	36	38	33	29	28	25	22	19	17	16
6	59	48	40	34	53	43	36	31	34	29	25	25	22	20	18	16	14
7	55	43	35	30	49	39	32	27	31	26	22	23	20	17	16	14	12
8	51	39	31	26	45	35	28	24	28	23	20	21	18	15	15	13	11
9	47	35	28	23	42	32	26	21	25	21	17	19	16	14	14	11	10
10	44	32	25	21	39	29	23	19	23	19	16	18	15	12	13	10	9

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1103	1103	1103
5°	1104	1087	1095
10°	1095	1073	1080
15°	1079	1055	1056
20°	1058	1030	1033
25°	1036	1001	1005
30°	1009	974	970
35°	983	941	933
40°	951	909	898
45°	920	876	862
50°	885	842	821
55°	849	803	783
60°	808	755	739
65°	764	707	687
70°	707	648	631
75°	629	576	580
80°	534	486	482
85°	387	330	319

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°	130.6	1.0
10°-20°	367.5	2.8
20°-30°	540.1	4.2
30°-40°	627.3	4.8
40°-50°	626.6	4.8
50°-60°	546.3	4.2
60°-70°	403.9	3.1
70°-80°	228.5	1.8
80°-90°	69.9	0.5
90°-100°	209.4	1.6
100°-110°	665.4	5.1
110°-120°	1138.7	8.8
120°-130°	1497.5	11.5
130°-140°	1680.9	12.9
140°-150°	1648.3	12.7
150°-160°	1382.7	10.6
160°-170°	917.0	7.1
170°-180°	320.5	2.5
0°-30°	1038.3	8.0
0°-40°	1665.6	12.8
0°-60°	2838.5	21.8
0°-90°	3540.8	27.2
90°-120°	2013.4	15.5
90°-150°	6840.1	52.6
90°-180°	9460.0	72.8
0°-180°	13001.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1388	1388	1388	1388	1388	
5°	1388	1383	1368	1378	1376	132
15°	1321	1313	1296	1301	1295	372
25°	1196	1185	1162	1165	1162	550
35°	1032	1018	997	989	982	644
45°	840	830	810	796	790	648
55°	635	627	611	595	589	568
65°	428	420	407	395	388	424
75°	224	222	215	207	210	239
85°	55	53	52	48	47	61
90°	3	37	100	94	97	13
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°	1387.9	1387.9	1387.9	1387.9	1387.9
2.5°	1396.0	1389.3	1374.6	1387.9	1385.4
5°	1387.9	1382.6	1367.9	1378.5	1376.0
7.5°	1378.5	1370.6	1355.8	1366.6	1364.0
10°	1364.0	1354.6	1338.6	1349.2	1345.2
12.5°	1343.8	1335.9	1319.9	1326.6	1323.8
15°	1321.2	1313.2	1295.8	1301.2	1294.6
17.5°	1293.2	1285.2	1267.8	1274.4	1267.8
20°	1262.4	1254.5	1235.8	1239.7	1234.6
22.5°	1231.8	1219.8	1202.4	1202.4	1199.7
25°	1195.7	1185.1	1162.4	1165.0	1162.4
27.5°	1155.7	1146.3	1129.1	1125.1	1118.5
30°	1115.7	1105.0	1085.0	1081.0	1075.7
32.5°	1073.0	1065.1	1043.7	1035.6	1030.2
35°	1031.6	1018.3	996.9	988.9	982.2
37.5°	984.9	972.9	951.5	942.2	935.5
40°	936.9	926.1	904.7	892.9	887.5
42.5°	890.2	879.4	858.2	844.7	836.8
45°	839.5	830.2	810.0	795.5	790.1
47.5°	790.1	780.7	759.4	744.7	736.7
50°	738.0	731.3	712.7	693.9	687.2
52.5°	687.2	678.0	660.7	646.0	636.6
55°	635.3	627.2	611.3	595.2	588.6
57.5°	583.2	576.6	559.1	543.1	537.8
60°	531.1	525.8	507.2	492.5	488.5
62.5°	480.5	471.1	457.8	444.4	439.1
65°	428.5	420.4	407.1	395.0	388.4
67.5°	375.1	368.3	356.4	347.1	341.7
70°	325.7	320.3	308.3	298.9	293.6
72.5°	275.0	269.6	263.0	253.6	249.6
75°	224.2	221.6	214.8	206.9	209.6
77.5°	178.8	173.4	170.8	166.7	162.8
80°	133.5	132.1	129.4	125.5	122.8
82.5°	90.8	90.8	89.5	84.1	84.1
85°	54.7	53.4	52.1	48.0	46.7
87.5°	24.1	21.4	18.7	14.7	13.3
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	5.00	5.68	6.13	6.81	8.37	4.56	5.25	5.69	6.37	7.94
	3H	6.64	7.26	7.78	8.39	9.97	6.17	6.79	7.31	7.92	9.50
	4H	7.22	7.81	8.37	8.94	10.52	6.75	7.33	7.90	8.47	10.05
	6H	7.61	8.15	8.77	9.28	10.88	7.14	7.68	8.29	8.81	10.40
	8H	7.71	8.22	8.87	9.37	10.96	7.24	7.75	8.40	8.90	10.49
	12H	7.75	8.24	8.92	9.38	10.99	7.27	7.76	8.44	8.90	10.51
4H	2H	5.44	6.02	6.59	7.15	8.74	5.09	5.68	6.25	6.81	8.39
	3H	7.29	7.77	8.45	8.93	10.53	6.89	7.38	8.05	8.54	10.13
	4H	7.99	8.44	9.16	9.59	11.20	7.59	8.04	8.75	9.18	10.80
	6H	8.50	8.88	9.67	10.05	11.66	8.09	8.47	9.26	9.64	11.25
	8H	8.64	9.00	9.81	10.16	11.78	8.23	8.59	9.40	9.75	11.37
	12H	8.71	9.03	9.89	10.20	11.83	8.29	8.61	9.47	9.78	11.41
8H	4H	8.18	8.53	9.34	9.69	11.32	7.82	8.17	8.98	9.33	10.96
	6H	8.80	9.10	9.99	10.30	11.92	8.44	8.73	9.62	9.94	11.55
	8H	9.02	9.28	10.21	10.46	12.10	8.65	8.91	9.84	10.09	11.73
	12H	9.14	9.37	10.34	10.55	12.22	8.76	8.98	9.95	10.16	11.83
12H	4H	8.15	8.48	9.34	9.65	11.28	7.80	8.13	8.98	9.30	10.92
	6H	8.83	9.09	10.02	10.27	11.91	8.48	8.73	9.67	9.91	11.55
	8H	9.06	9.29	10.26	10.47	12.14	8.70	8.93	9.90	10.11	11.78

END OF REPORT