

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: P926513

Luminaire Tested: DFN2DIP-TR4F0-080D040US950-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P926513
REPORT IS A COMBINATION OF REPORTS P901898 AND P898849
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR4F0-080D040US950-RLLONL
Description: 4 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

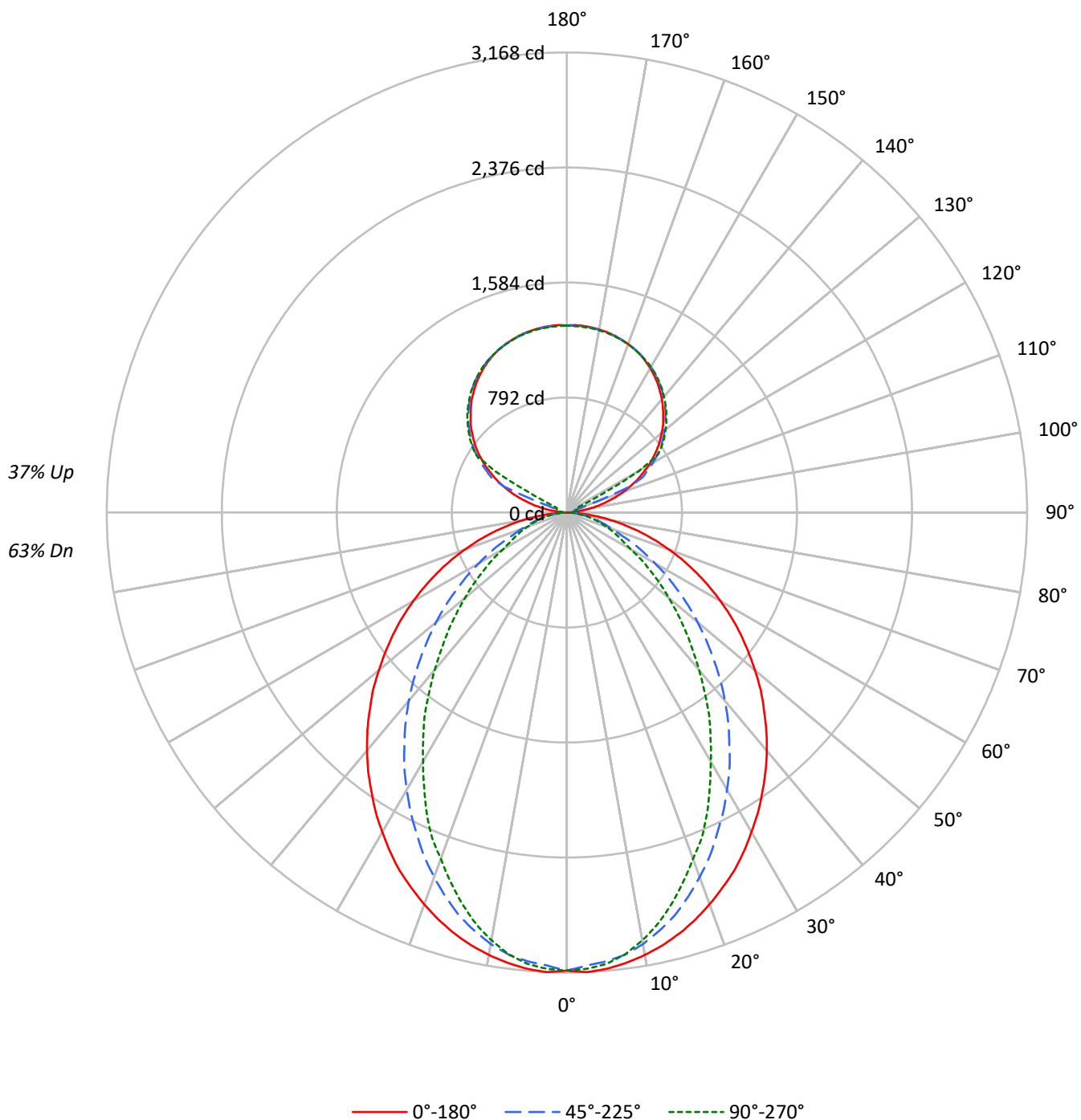
Lumens per Lamp: N/A
Luminaire Lumens: 10265.0 lumens
Efficiency: N/A
Efficacy: 97.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.43' x L: 3.96' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 105.4
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9957
Total Harmonic Distortion (THDi): 0.049
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	110	110	110	110	103	103	103	103	91	91	91	79	79	79	68	68	68
1	101	97	93	90	95	91	88	85	80	78	76	71	69	67	61	60	59
2	93	86	80	75	87	81	75	71	71	67	64	63	60	57	55	52	51
3	85	76	69	63	80	72	65	60	63	58	54	56	52	49	49	46	44
4	78	68	60	54	73	64	57	52	57	51	47	50	46	43	44	41	38
5	72	61	53	47	67	57	50	45	51	45	41	46	41	37	40	37	34
6	67	55	47	41	62	52	45	39	46	41	36	41	37	33	37	33	30
7	62	50	42	36	58	47	40	35	42	36	32	38	33	30	34	30	27
8	58	45	38	32	54	43	36	31	39	33	29	35	30	27	31	27	24
9	54	42	34	29	51	40	33	28	36	30	26	32	27	24	29	25	22
10	50	38	31	26	47	37	30	25	33	28	24	30	25	22	27	23	20

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2506	2506	2506
5°	2510	2466	2482
10°	2485	2418	2401
15°	2451	2338	2276
20°	2406	2228	2123
25°	2359	2104	1975
30°	2297	1977	1787
35°	2236	1841	1622
40°	2174	1700	1433
45°	2102	1544	1262
50°	2027	1386	1095
55°	1950	1218	934
60°	1860	1042	769
65°	1756	862	692
70°	1631	695	626
75°	1473	613	569
80°	1244	514	493
85°	868	343	370

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 2102 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	295.6	2.9
10°-20°	811.5	7.9
20°-30°	1139.4	11.1
30°-40°	1242.0	12.1
40°-50°	1141.5	11.1
50°-60°	896.5	8.7
60°-70°	583.5	5.7
70°-80°	300.4	2.9
80°-90°	78.9	0.8
90°-100°	42.5	0.4
100°-110°	158.3	1.5
110°-120°	419.9	4.1
120°-130°	696.4	6.8
130°-140°	739.7	7.2
140°-150°	687.5	6.7
150°-160°	552.7	5.4
160°-170°	356.1	3.5
170°-180°	122.6	1.2
0°-30°	2246.6	21.9
0°-40°	3488.6	34.0
0°-60°	5526.6	53.8
0°-90°	6489.5	63.2
90°-120°	620.6	6.0
90°-150°	2744.1	26.7
90°-180°	3776.0	36.8
0°-180°	10265.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3154	3154	3154	3154	3154	
5°	3154	3140	3103	3128	3120	299
15°	3000	2969	2872	2818	2789	845
25°	2723	2632	2444	2327	2284	1252
35°	2347	2201	1950	1770	1707	1469
45°	1918	1727	1427	1224	1156	1481
55°	1459	1236	928	756	702	1303
65°	985	754	497	400	391	976
75°	525	325	228	208	206	555
85°	123	63	54	54	54	141
90°	1	11	19	23	25	10
95°	60	30	36	41	40	72
105°	283	311	57	67	71	303
115°	536	552	575	144	76	527
125°	758	770	787	794	797	676
135°	938	952	961	970	968	724
145°	1088	1087	1102	1109	1104	680
155°	1198	1189	1200	1206	1198	552
165°	1262	1256	1259	1266	1259	356
175°	1291	1284	1286	1292	1283	123
180°	1288	1288	1288	1288	1288	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3154.3	3154.3	3154.3	3154.3	3154.3
2.5°	3168.5	3154.3	3122.8	3151.5	3145.8
5°	3154.3	3140.1	3102.8	3128.5	3120.1
7.5°	3128.5	3111.6	3071.6	3082.9	3068.5
10°	3094.3	3074.4	3017.4	3008.6	2991.6
12.5°	3051.7	3025.9	2948.6	2931.6	2900.2
15°	3000.1	2968.7	2871.7	2817.5	2789.0
17.5°	2940.1	2894.4	2774.5	2711.8	2666.0
20°	2871.7	2814.5	2671.9	2600.7	2537.6
22.5°	2797.5	2731.8	2566.2	2469.2	2426.5
25°	2723.3	2631.9	2443.5	2326.6	2283.6
27.5°	2634.9	2537.6	2329.3	2195.2	2129.4
30°	2540.7	2431.9	2203.6	2058.3	1981.0
32.5°	2449.2	2317.8	2084.0	1912.6	1841.1
35°	2346.6	2200.9	1949.8	1770.0	1706.9
37.5°	2246.6	2089.5	1824.1	1627.0	1555.8
40°	2141.0	1969.8	1692.7	1490.1	1415.8
42.5°	2032.5	1849.9	1561.5	1350.2	1278.9
45°	1918.3	1726.9	1427.4	1224.5	1156.1
47.5°	1809.9	1607.3	1299.0	1096.1	1033.4
50°	1689.9	1487.4	1173.3	976.1	916.4
52.5°	1572.8	1358.6	1053.3	865.0	810.8
55°	1458.6	1236.0	927.7	756.5	702.3
57.5°	1341.7	1113.3	816.5	656.6	610.8
60°	1221.7	993.4	699.3	553.9	508.2
62.5°	1104.8	876.4	599.4	462.5	439.8
65°	984.9	753.5	496.7	399.8	390.9
67.5°	870.7	639.4	399.8	351.0	342.6
70°	750.8	528.2	331.0	302.5	291.1
72.5°	636.6	425.2	276.9	254.1	248.3
75°	525.2	325.3	228.4	208.4	205.7
77.5°	414.0	231.1	179.9	168.4	162.7
80°	311.0	165.7	136.9	125.6	125.6
82.5°	216.8	111.4	94.2	88.4	88.4
85°	122.7	62.7	54.2	54.2	54.2
87.5°	45.7	22.7	22.7	20.0	20.0
90°	0.9	11.2	18.6	23.4	25.1
92.5°	23.4	19.6	22.3	24.2	25.1
95°	60.5	29.8	36.3	41.0	40.1
97.5°	109.0	32.6	47.5	50.4	51.2
100°	164.9	37.3	53.1	60.5	62.4
102.5°	226.4	224.7	55.0	65.2	68.0
105°	283.2	311.3	56.9	67.1	70.8
107.5°	349.5	372.7	58.8	69.0	72.7
110°	412.9	432.4	163.1	69.9	73.6



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	472.5	489.2	473.4	71.7	74.6
115°	535.8	551.6	575.0	143.5	76.5
117.5°	590.8	609.4	625.3	492.0	247.8
120°	652.3	666.3	683.1	694.3	568.5
122.5°	704.4	719.4	738.1	743.6	744.6
125°	757.6	769.8	787.4	794.0	796.8
127.5°	806.0	819.1	833.1	842.5	843.3
130°	851.7	866.7	876.8	887.1	886.3
132.5°	898.3	910.5	920.7	929.1	928.2
135°	937.5	952.5	960.8	970.1	968.3
137.5°	978.4	989.6	999.0	1008.3	1005.5
140°	1018.5	1026.0	1036.2	1044.6	1040.0
142.5°	1052.2	1058.7	1070.8	1078.1	1073.5
145°	1087.6	1086.6	1102.3	1108.9	1104.3
147.5°	1118.2	1115.4	1131.3	1135.9	1132.3
150°	1148.0	1141.6	1156.5	1162.1	1157.4
152.5°	1173.2	1165.8	1179.7	1185.3	1178.9
155°	1197.5	1189.2	1200.3	1205.9	1198.4
157.5°	1217.0	1209.6	1218.1	1224.6	1217.0
160°	1233.8	1228.2	1233.8	1239.3	1232.9
162.5°	1248.7	1243.2	1247.8	1254.3	1245.9
165°	1261.8	1256.2	1259.0	1265.5	1259.0
167.5°	1272.1	1266.3	1269.3	1275.8	1267.4
170°	1280.5	1274.8	1276.6	1283.2	1274.8
172.5°	1286.0	1280.5	1282.4	1288.9	1280.5
175°	1290.6	1284.1	1286.0	1292.5	1283.2
177.5°	1292.5	1286.0	1286.9	1293.5	1285.1
180°	1287.9	1287.9	1287.9	1287.9	1287.9

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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	11.49	12.44	12.33	13.30	14.37	7.46	8.41	8.30	9.27	10.34
	3H	13.17	14.02	14.03	14.89	15.99	8.66	9.51	9.51	10.38	11.48
	4H	13.79	14.59	14.66	15.46	16.57	9.11	9.92	9.99	10.79	11.90
	6H	14.21	14.95	15.10	15.84	16.96	9.44	10.18	10.33	11.06	12.19
	8H	14.34	15.05	15.24	15.95	17.07	9.54	10.24	10.43	11.14	12.26
	12H	14.41	15.08	15.31	15.97	17.12	9.59	10.25	10.48	11.15	12.30
4H	2H	11.52	12.32	12.40	13.20	14.31	8.07	8.87	8.95	9.75	10.86
	3H	13.36	14.03	14.25	14.93	16.06	9.43	10.10	10.32	11.01	12.13
	4H	14.06	14.66	14.95	15.57	16.72	9.99	10.59	10.88	11.50	12.65
	6H	14.58	15.10	15.49	16.03	17.18	10.41	10.93	11.32	11.86	13.02
	8H	14.75	15.24	15.67	16.16	17.33	10.54	11.03	11.46	11.95	13.12
	12H	14.86	15.29	15.79	16.23	17.41	10.61	11.05	11.55	11.99	13.17
8H	4H	14.03	14.52	14.95	15.44	16.61	10.27	10.76	11.19	11.68	12.85
	6H	14.60	15.01	15.54	15.97	17.14	10.80	11.20	11.74	12.16	13.33
	8H	14.82	15.18	15.77	16.13	17.31	10.99	11.35	11.94	12.30	13.48
	12H	14.96	15.28	15.92	16.22	17.46	11.11	11.43	12.07	12.38	13.61
12H	4H	13.99	14.43	14.92	15.37	16.54	10.28	10.72	11.22	11.66	12.84
	6H	14.58	14.94	15.53	15.89	17.07	10.85	11.20	11.80	12.16	13.34
	8H	14.80	15.12	15.76	16.07	17.30	11.06	11.38	12.02	12.33	13.56