

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: P911357

Luminaire Tested: DFN2DIP-PN4F0-040D110US850-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P911357
REPORT IS A COMBINATION OF REPORTS P901255 AND P898053
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-040D110US850-FLLONL
Description: 4 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

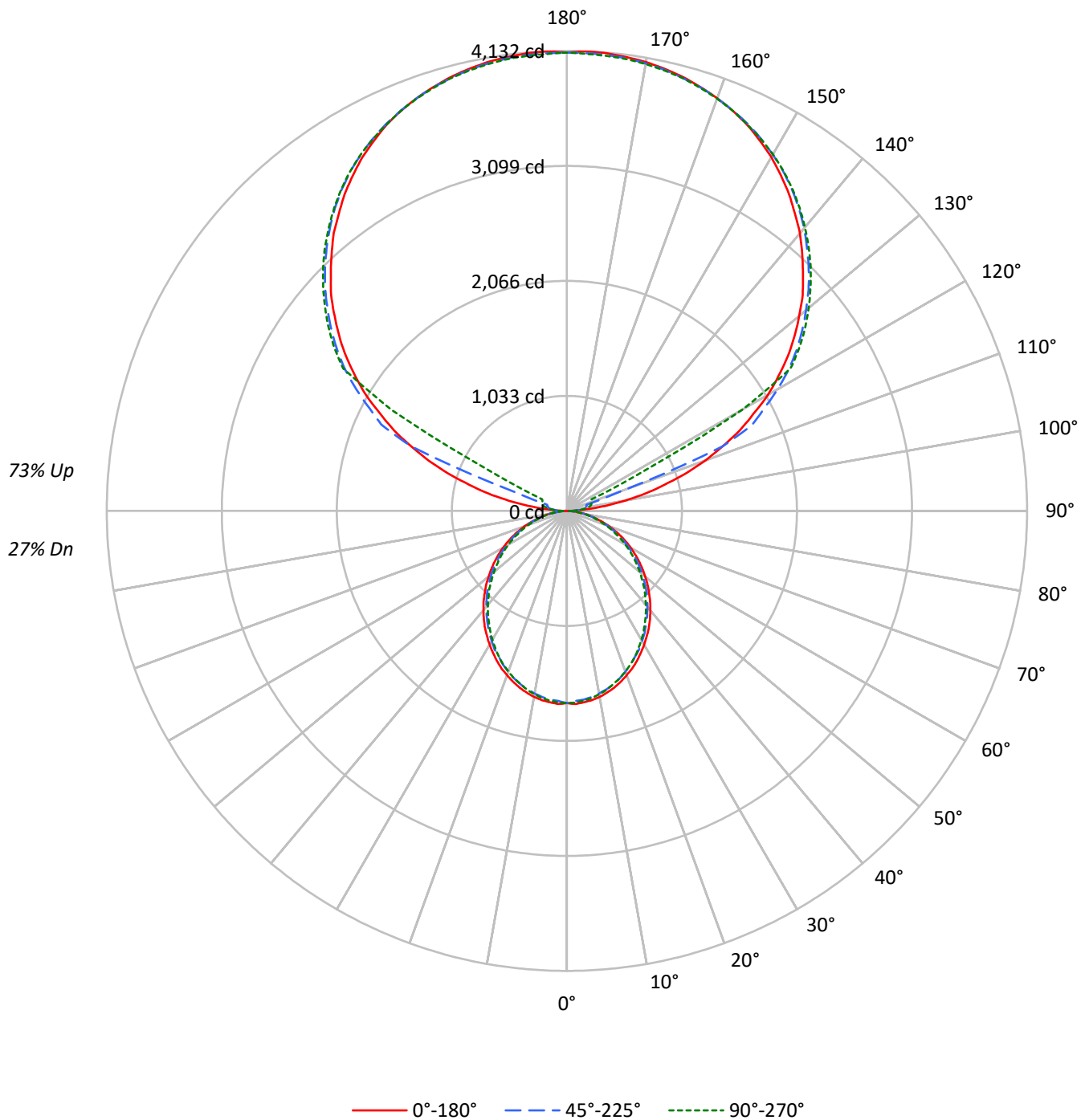
Lumens per Lamp: N/A
Luminaire Lumens: 16468.6 lumens
Efficiency: N/A
Efficacy: 131.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.74' x L: 3.94' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 125
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9968
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	70	70	70	52	52	52	35	35	35
1	93	88	85	81	82	79	76	73	62	59	58	45	44	43	31	30	29
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	47	43	40	35	33	30	24	22	21
4	70	60	52	46	62	54	47	42	42	38	34	31	28	26	21	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	19	17	15	14
7	55	43	35	30	49	39	32	27	30	26	22	23	20	17	16	14	12
8	50	39	31	26	45	35	28	24	28	23	19	21	18	15	15	12	11
9	47	35	28	23	42	32	25	21	25	21	17	19	16	14	13	11	10
10	44	32	25	21	39	29	23	19	23	19	15	18	14	12	12	10	9

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1260	1260	1260
5°	1262	1243	1251
10°	1252	1226	1234
15°	1233	1206	1208
20°	1208	1178	1181
25°	1184	1145	1150
30°	1153	1114	1110
35°	1123	1077	1069
40°	1087	1040	1029
45°	1051	1003	988
50°	1012	964	941
55°	970	919	897
60°	924	866	848
65°	873	810	789
70°	808	743	726
75°	718	663	668
80°	610	559	557
85°	441	382	373

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 2195 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	162.5	1.0
10°-20°	457.1	2.8
20°-30°	671.7	4.1
30°-40°	780.2	4.7
40°-50°	779.2	4.7
50°-60°	679.5	4.1
60°-70°	502.3	3.0
70°-80°	284.2	1.7
80°-90°	82.2	0.5
90°-100°	135.7	0.8
100°-110°	506.1	3.1
110°-120°	1342.2	8.1
120°-130°	2226.1	13.5
130°-140°	2364.7	14.4
140°-150°	2197.7	13.3
150°-160°	1766.9	10.7
160°-170°	1138.5	6.9
170°-180°	391.9	2.4
0°-30°	1291.3	7.8
0°-40°	2071.5	12.6
0°-60°	3530.2	21.4
0°-90°	4398.9	26.7
90°-120°	1984.0	12.0
90°-150°	8772.5	53.3
90°-180°	12070.0	73.3
0°-180°	16468.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1726	1726	1726	1726	1726	
5°	1726	1720	1701	1714	1711	164
15°	1643	1633	1612	1618	1610	463
25°	1487	1474	1446	1449	1446	684
35°	1283	1266	1240	1230	1222	801
45°	1044	1032	1007	989	983	806
55°	790	780	760	740	732	706
65°	533	523	506	491	483	527
75°	279	276	267	257	261	298
85°	68	66	65	60	58	76
90°	3	36	59	75	80	15
95°	194	95	116	131	128	229
105°	906	995	182	214	226	968
115°	1713	1763	1838	459	244	1686
125°	2422	2461	2517	2538	2547	2160
135°	2997	3045	3071	3101	3095	2315
145°	3477	3474	3524	3545	3530	2174
155°	3828	3801	3837	3855	3831	1764
165°	4034	4016	4025	4046	4025	1140
175°	4126	4105	4111	4132	4102	393
180°	4117	4117	4117	4117	4117	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1726.0	1726.0	1726.0	1726.0	1726.0
2.5°	1736.1	1727.8	1709.5	1726.0	1722.9
5°	1726.0	1719.5	1701.2	1714.4	1711.3
7.5°	1714.4	1704.5	1686.2	1699.7	1696.3
10°	1696.3	1684.7	1664.8	1678.0	1673.0
12.5°	1671.3	1661.4	1641.5	1649.9	1646.4
15°	1643.1	1633.2	1611.6	1618.3	1610.0
17.5°	1608.3	1598.4	1576.8	1585.0	1576.8
20°	1570.0	1560.1	1537.0	1541.8	1535.4
22.5°	1532.0	1517.0	1495.4	1495.4	1492.0
25°	1487.1	1473.9	1445.7	1448.9	1445.7
27.5°	1437.3	1425.6	1404.2	1399.2	1391.0
30°	1387.6	1374.3	1349.4	1344.4	1337.8
32.5°	1334.5	1324.6	1298.0	1288.0	1281.2
35°	1283.0	1266.5	1239.9	1229.9	1221.6
37.5°	1224.9	1209.9	1183.3	1171.8	1163.5
40°	1165.2	1151.8	1125.2	1110.4	1103.8
42.5°	1107.1	1093.7	1067.3	1050.6	1040.7
45°	1044.0	1032.5	1007.4	989.3	982.6
47.5°	982.6	970.9	944.4	926.1	916.3
50°	917.8	909.5	886.3	863.0	854.7
52.5°	854.7	843.2	821.7	803.4	791.7
55°	790.2	780.1	760.2	740.3	732.1
57.5°	725.3	717.1	695.3	675.5	668.8
60°	660.5	654.0	630.8	612.5	607.5
62.5°	597.5	585.9	569.4	552.7	546.1
65°	532.9	522.8	506.3	491.3	483.1
67.5°	466.4	458.0	443.3	431.6	425.0
70°	405.0	398.4	383.4	371.7	365.2
72.5°	342.0	335.3	327.0	315.4	310.4
75°	278.8	275.6	267.2	257.3	260.6
77.5°	222.4	215.7	212.4	207.4	202.5
80°	166.0	164.2	160.9	156.0	152.7
82.5°	112.9	112.9	111.3	104.6	104.6
85°	68.0	66.4	64.8	59.7	58.1
87.5°	29.9	26.6	23.3	18.3	16.5
90°	2.9	35.7	59.4	74.6	80.3
92.5°	74.6	62.7	71.4	77.5	80.3
95°	193.5	95.2	116.0	131.2	128.1
97.5°	348.4	104.4	151.7	160.9	163.8
100°	527.4	119.2	169.8	193.5	199.5
102.5°	723.7	718.1	175.8	208.4	217.6
105°	905.6	995.1	181.9	214.4	226.5
107.5°	1117.2	1191.4	187.9	220.4	232.4
110°	1319.8	1382.1	521.5	223.6	235.2

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1510.6	1563.9	1513.3	229.2	238.4
115°	1712.9	1763.4	1838.2	458.8	244.4
117.5°	1888.7	1948.2	1999.1	1572.8	792.4
120°	2085.4	2129.9	2183.7	2219.4	1817.2
122.5°	2252.0	2299.7	2359.5	2377.3	2380.5
125°	2421.8	2460.8	2517.3	2538.2	2547.0
127.5°	2576.8	2618.5	2663.4	2693.1	2696.0
130°	2722.8	2770.6	2803.1	2836.0	2833.3
132.5°	2871.8	2910.7	2943.3	2970.1	2967.4
135°	2997.1	3044.8	3071.3	3101.4	3095.3
137.5°	3127.9	3163.6	3193.7	3223.4	3214.5
140°	3256.0	3280.0	3312.6	3339.4	3324.6
142.5°	3363.5	3384.3	3422.9	3446.7	3431.8
145°	3476.7	3473.5	3524.1	3545.0	3530.2
147.5°	3574.8	3565.9	3616.4	3631.3	3619.7
150°	3670.2	3649.4	3697.1	3714.8	3700.0
152.5°	3750.5	3726.8	3771.4	3789.5	3768.6
155°	3828.0	3801.4	3837.1	3854.9	3831.2
157.5°	3890.6	3866.9	3893.8	3914.7	3890.6
160°	3944.4	3926.3	3944.4	3962.0	3941.2
162.5°	3991.7	3974.1	3989.0	4009.8	3983.0
165°	4033.5	4015.8	4024.7	4045.5	4024.7
167.5°	4066.4	4048.4	4057.6	4078.5	4051.6
170°	4093.3	4075.2	4081.2	4102.2	4075.2
172.5°	4111.0	4093.3	4099.3	4120.2	4093.3
175°	4125.8	4105.0	4111.0	4131.9	4102.2
177.5°	4131.9	4111.0	4114.2	4135.0	4108.2
180°	4117.1	4117.1	4117.1	4117.1	4117.1

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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	5.40	6.08	6.53	7.21	8.78	4.96	5.64	6.09	6.77	8.34
	3H	7.05	7.66	8.19	8.79	10.38	6.56	7.18	7.70	8.31	9.89
	4H	7.63	8.21	8.78	9.34	10.93	7.14	7.72	8.29	8.86	10.45
	6H	8.02	8.56	9.18	9.69	11.29	7.53	8.06	8.69	9.20	10.80
	8H	8.12	8.63	9.28	9.78	11.38	7.63	8.14	8.79	9.29	10.88
	12H	8.17	8.65	9.33	9.79	11.41	7.67	8.15	8.83	9.29	10.91
4H	2H	5.84	6.42	7.00	7.55	9.14	5.49	6.07	6.64	7.20	8.79
	3H	7.69	8.18	8.85	9.34	10.94	7.29	7.77	8.45	8.93	10.53
	4H	8.40	8.85	9.57	9.99	11.62	7.98	8.43	9.15	9.58	11.20
	6H	8.91	9.29	10.08	10.46	12.07	8.48	8.87	9.65	10.04	11.65
	8H	9.05	9.41	10.22	10.57	12.20	8.62	8.98	9.80	10.14	11.77
	12H	9.12	9.44	10.31	10.62	12.25	8.68	9.00	9.87	10.18	11.81
8H	4H	8.58	8.94	9.75	10.10	11.73	8.21	8.57	9.38	9.73	11.36
	6H	9.21	9.50	10.40	10.71	12.33	8.83	9.13	10.02	10.33	11.96
	8H	9.43	9.69	10.62	10.87	12.51	9.04	9.30	10.24	10.48	12.13
	12H	9.55	9.78	10.75	10.96	12.64	9.15	9.38	10.35	10.56	12.24
12H	4H	8.56	8.88	9.75	10.06	11.69	8.20	8.52	9.38	9.69	11.33
	6H	9.24	9.49	10.43	10.68	12.32	8.87	9.13	10.07	10.31	11.96
	8H	9.47	9.70	10.67	10.88	12.56	9.10	9.33	10.30	10.51	12.18

END OF REPORT