

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: P912493

Luminaire Tested: DFN2DIP-TR2F0-040D040US850-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P912493
REPORT IS A COMBINATION OF REPORTS P901765 AND P897145
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR2F0-040D040US850-FLLONL
Description: 2 foot, Triangle Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

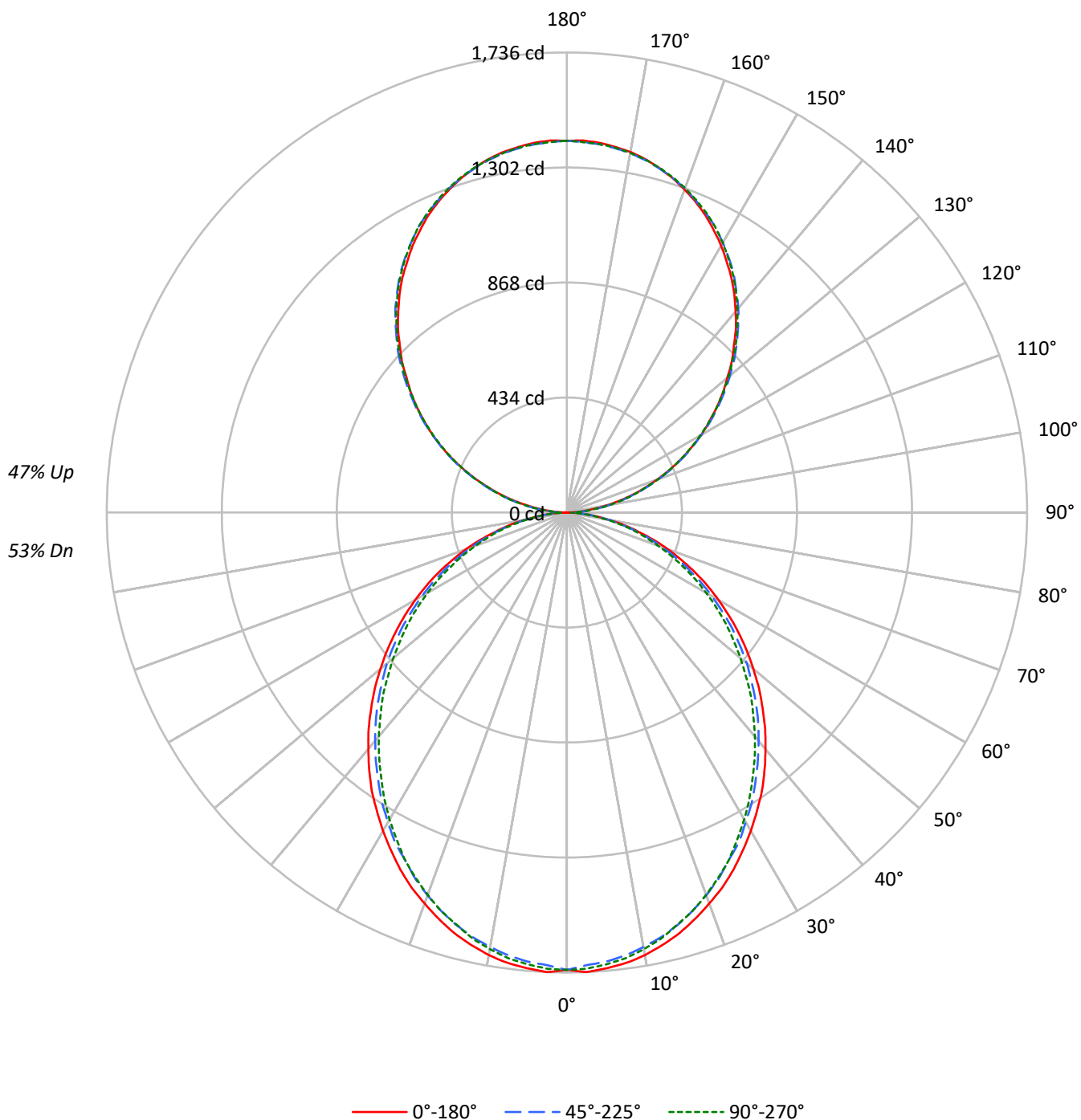
Lumens per Lamp: N/A
Luminaire Lumens: 8317.5 lumens
Efficiency: N/A
Efficacy: 127.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.04' x L: 2.36' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 65.4
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9933
Total Harmonic Distortion (THDi): 0.066
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	108	108	108	108	100	100	100	100	85	85	85	71	71	71	59	59	59
1	98	94	90	87	91	87	84	81	74	72	70	63	61	59	52	51	50
2	90	82	76	71	83	76	71	66	65	61	58	55	52	50	46	44	42
3	82	72	65	59	75	67	61	55	58	53	49	49	45	42	41	38	36
4	75	64	56	50	69	60	52	47	51	46	41	43	39	36	36	33	31
5	69	57	49	43	63	53	46	40	46	40	36	39	35	31	33	29	27
6	63	51	43	37	58	48	40	35	41	36	31	35	31	27	30	26	24
7	59	46	38	33	54	43	36	31	37	32	28	32	28	24	27	24	21
8	54	42	34	29	50	39	32	27	34	29	24	29	25	22	25	21	19
9	51	38	31	26	47	36	29	24	31	26	22	27	23	19	23	20	17
10	47	35	28	23	44	33	26	22	29	23	20	25	21	18	21	18	15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3850	3850	3850
5°	3850	3788	3815
10°	3813	3728	3757
15°	3752	3658	3670
20°	3670	3564	3581
25°	3589	3454	3479
30°	3488	3350	3351
35°	3393	3230	3216
40°	3276	3108	3087
45°	3159	2985	2955
50°	3032	2856	2802
55°	2898	2707	2661
60°	2745	2531	2498
65°	2578	2347	2308
70°	2366	2124	2099
75°	2075	1856	1899
80°	1719	1513	1535
85°	1173	954	954

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3159 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	162.5	2.0
10°-20°	457.1	5.5
20°-30°	671.7	8.1
30°-40°	780.2	9.4
40°-50°	779.2	9.4
50°-60°	679.5	8.2
60°-70°	502.3	6.0
70°-80°	284.2	3.4
80°-90°	79.0	0.9
90°-100°	86.8	1.0
100°-110°	275.8	3.3
110°-120°	472.0	5.7
120°-130°	620.8	7.5
130°-140°	696.8	8.4
140°-150°	683.3	8.2
150°-160°	573.2	6.9
160°-170°	380.1	4.6
170°-180°	132.9	1.6
0°-30°	1291.3	15.5
0°-40°	2071.5	24.9
0°-60°	3530.2	42.4
0°-90°	4395.6	52.8
90°-120°	834.7	10.0
90°-150°	2835.6	34.1
90°-180°	3922.0	47.2
0°-180°	8317.5	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°	1	15	42	39	40	8
95°	62	74	76	76	74	69
105°	255	258	260	263	263	269
115°	474	480	478	477	474	469
125°	689	700	696	692	691	616
135°	891	904	907	906	902	689
145°	1082	1090	1097	1098	1094	676
155°	1237	1240	1244	1250	1246	569
165°	1346	1345	1345	1353	1347	380
175°	1400	1397	1394	1403	1396	133
180°	1403	1403	1403	1403	1403	

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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°	1.2	15.2	41.5	38.9	40.1
92.5°	26.2	35.5	36.8	38.0	38.0
95°	61.8	73.6	75.7	75.7	73.6
97.5°	102.8	113.8	118.4	118.4	118.4
100°	150.2	159.9	163.2	163.2	162.0
102.5°	200.1	207.3	211.9	213.1	211.9
105°	254.6	258.0	260.5	262.6	262.6
107.5°	308.7	313.8	313.8	314.6	308.7
110°	361.2	368.0	368.0	368.0	364.6

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	417.9	425.1	423.7	420.4	417.9
115°	473.7	480.5	478.3	477.1	473.7
117.5°	529.1	538.4	532.5	529.1	525.8
120°	585.0	594.2	585.0	585.0	581.1
122.5°	635.7	647.5	641.7	638.2	635.7
125°	689.0	699.6	696.2	692.3	691.1
127.5°	741.0	754.1	749.5	744.4	741.0
130°	789.6	804.9	802.8	800.3	795.6
132.5°	844.2	856.0	856.9	850.9	847.6
135°	891.2	904.3	906.8	905.5	902.2
137.5°	943.6	954.2	956.3	955.4	950.4
140°	989.7	1000.3	1006.2	1006.2	1001.5
142.5°	1037.1	1047.7	1051.0	1052.3	1047.7
145°	1081.9	1090.4	1097.1	1098.5	1093.8
147.5°	1122.1	1132.6	1137.7	1139.8	1135.2
150°	1163.6	1170.8	1175.4	1179.2	1175.4
152.5°	1200.4	1207.5	1213.5	1218.1	1213.5
155°	1237.1	1240.5	1244.3	1250.3	1246.4
157.5°	1268.9	1271.4	1273.5	1282.0	1276.0
160°	1297.2	1299.7	1301.0	1308.2	1303.1
162.5°	1323.4	1323.4	1324.7	1332.7	1326.8
165°	1345.9	1344.6	1344.6	1353.0	1347.1
167.5°	1366.2	1362.3	1362.3	1370.8	1364.8
170°	1381.4	1377.9	1376.7	1385.1	1377.9
172.5°	1391.9	1388.6	1387.2	1395.8	1388.6
175°	1400.4	1397.0	1394.5	1402.9	1395.8
177.5°	1405.1	1401.7	1399.1	1406.3	1399.1
180°	1402.9	1402.9	1402.9	1402.9	1402.9

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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	12.09	12.97	13.02	13.92	15.15	11.66	12.55	12.59	13.50	14.73
	3H	13.72	14.52	14.67	15.48	16.73	13.26	14.06	14.21	15.02	16.27
	4H	14.30	15.05	15.26	16.01	17.28	13.84	14.59	14.80	15.55	16.82
	6H	14.68	15.37	15.65	16.34	17.62	14.22	14.91	15.19	15.88	17.16
	8H	14.78	15.44	15.75	16.42	17.70	14.32	14.98	15.29	15.96	17.24
	12H	14.82	15.45	15.80	16.43	17.72	14.35	14.98	15.34	15.96	17.26
4H	2H	12.54	13.29	13.50	14.26	15.52	12.20	12.96	13.17	13.92	15.18
	3H	14.38	15.01	15.36	16.00	17.28	14.00	14.63	14.97	15.62	16.90
	4H	15.08	15.65	16.06	16.64	17.94	14.68	15.26	15.67	16.25	17.55
	6H	15.57	16.07	16.57	17.08	18.38	15.18	15.67	16.17	16.68	17.98
	8H	15.71	16.17	16.71	17.18	18.49	15.31	15.78	16.31	16.78	18.09
	12H	15.78	16.19	16.79	17.21	18.53	15.37	15.79	16.38	16.81	18.13
8H	4H	15.27	15.73	16.26	16.73	18.05	14.92	15.38	15.91	16.38	17.69
	6H	15.87	16.25	16.89	17.30	18.61	15.52	15.90	16.54	16.95	18.26
	8H	16.08	16.41	17.11	17.45	18.78	15.72	16.06	16.75	17.09	18.42
	12H	16.19	16.49	17.23	17.52	18.89	15.82	16.12	16.86	17.15	18.52
12H	4H	15.25	15.67	16.27	16.69	18.01	14.91	15.33	15.92	16.34	17.66
	6H	15.90	16.23	16.93	17.27	18.60	15.56	15.89	16.58	16.93	18.25
	8H	16.12	16.42	17.16	17.45	18.82	15.78	16.07	16.81	17.10	18.47