

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: P919548

Luminaire Tested: DFN2DIP-PN4F0-050D040US935-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P919548
REPORT IS A COMBINATION OF REPORTS P899611 AND P896497
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-050D040US935-FLLFLL
Description: 4 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

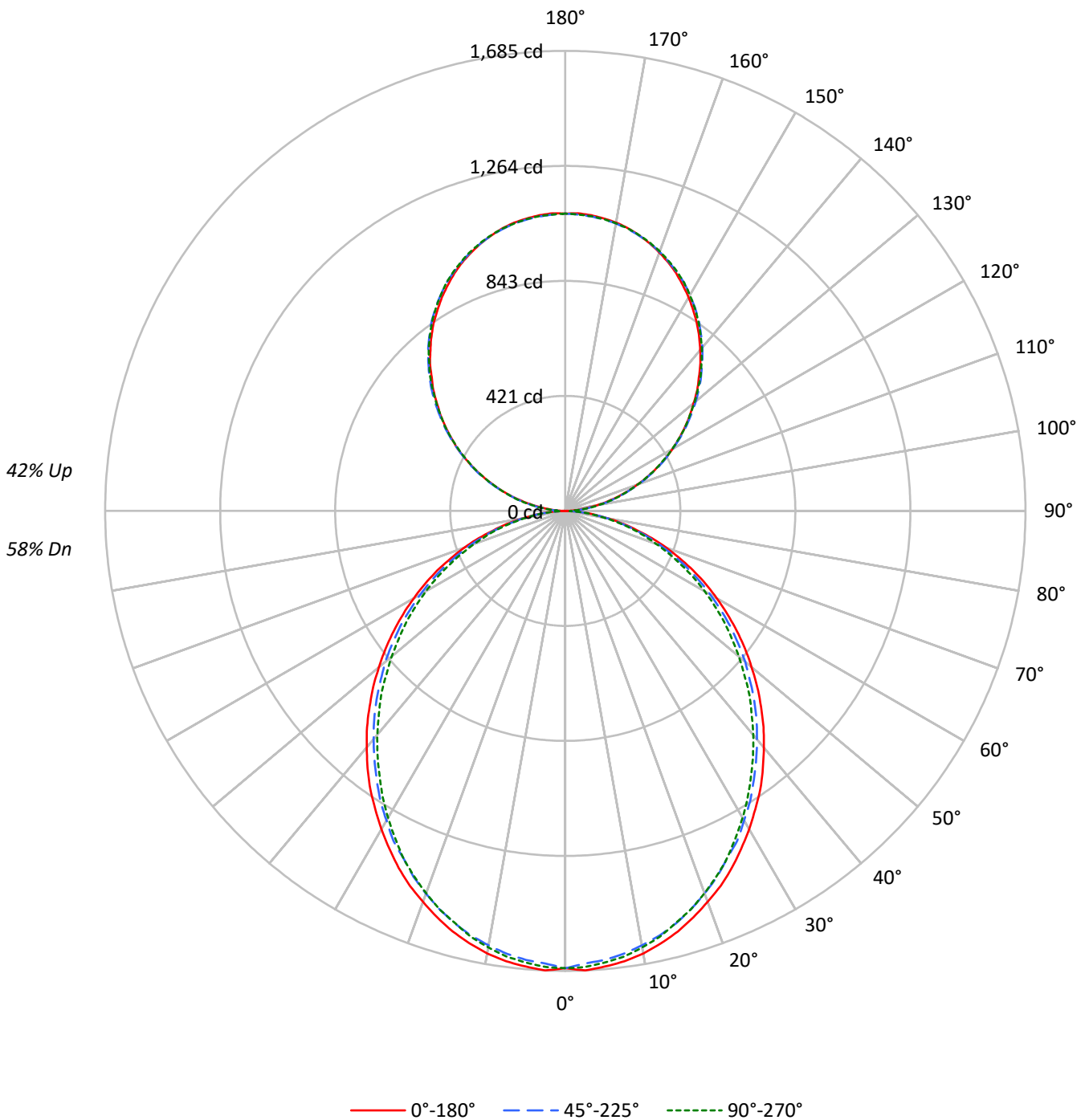
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7309.9 lumens
Efficiency: N/A
Efficacy: 98.3 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: General Diffuse

Input Watts (W): 74.4
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9951
Total Harmonic Distortion (THDi): 0.07
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			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	109	109	109	109	102	102	102	102	88	88	88	75	75	75	64	64	64	64	64	64	58
1	100	95	91	88	93	89	86	82	77	75	72	66	65	63	56	55	54	54	54	54	49
2	91	83	77	72	84	78	72	68	68	64	60	58	55	52	50	47	45	45	45	45	41
3	83	73	66	60	77	69	62	57	60	55	50	52	48	44	44	41	39	39	39	39	35
4	76	65	57	51	70	61	54	48	53	47	43	46	42	38	39	36	33	33	33	33	30
5	70	58	50	43	65	54	47	41	48	42	37	41	37	33	35	32	29	29	29	29	26
6	64	52	44	38	60	49	41	36	43	37	32	37	33	29	32	29	26	26	26	26	23
7	59	47	39	33	55	44	37	32	39	33	29	34	29	26	29	26	23	23	23	23	20
8	55	43	35	29	51	40	33	28	36	30	26	31	26	23	27	23	20	20	20	20	18
9	51	39	31	26	48	37	30	25	33	27	23	29	24	21	25	21	18	18	18	18	16
10	48	36	28	24	45	34	27	23	30	25	21	27	22	19	23	19	17	17	17	17	15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1223	1223	1223
5°	1225	1206	1214
10°	1215	1190	1198
15°	1197	1170	1172
20°	1173	1143	1146
25°	1149	1111	1116
30°	1119	1081	1078
35°	1090	1045	1037
40°	1055	1009	998
45°	1020	973	959
50°	982	936	913
55°	942	892	871
60°	896	840	823
65°	847	786	766
70°	784	721	705
75°	697	643	649
80°	592	543	541
85°	428	371	362

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 1020 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	157.7	2.2
10°-20°	443.6	6.1
20°-30°	651.9	8.9
30°-40°	757.2	10.4
40°-50°	756.2	10.3
50°-60°	659.4	9.0
60°-70°	487.4	6.7
70°-80°	275.8	3.8
80°-90°	75.9	1.0
90°-100°	67.4	0.9
100°-110°	214.2	2.9
110°-120°	366.5	5.0
120°-130°	482.0	6.6
130°-140°	541.0	7.4
140°-150°	530.5	7.3
150°-160°	445.0	6.1
160°-170°	295.1	4.0
170°-180°	103.2	1.4
0°-30°	1253.2	17.1
0°-40°	2010.3	27.5
0°-60°	3425.9	46.9
0°-90°	4265.0	58.3
90°-120°	648.0	8.9
90°-150°	2201.5	30.1
90°-180°	3045.0	41.7
0°-180°	7309.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1675	1675	1675	1675	1675	
5°	1675	1669	1651	1664	1661	159
15°	1595	1585	1564	1570	1562	449
25°	1443	1430	1403	1406	1403	664
35°	1245	1229	1203	1194	1186	778
45°	1013	1002	978	960	954	782
55°	767	757	738	718	710	686
65°	517	507	491	477	469	511
75°	270	267	259	250	253	289
85°	66	64	63	58	56	74
90°	1	12	32	30	31	7
95°	48	57	59	59	57	53
105°	198	200	202	204	204	209
115°	368	373	371	370	368	364
125°	535	543	540	538	537	478
135°	692	702	704	703	700	535
145°	840	846	852	853	849	525
155°	960	963	966	971	968	442
165°	1045	1044	1044	1050	1046	295
175°	1087	1085	1083	1089	1084	103
180°	1089	1089	1089	1089	1089	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1675.1	1675.1	1675.1	1675.1	1675.1
2.5°	1684.8	1676.8	1659.1	1675.1	1672.1
5°	1675.1	1668.8	1651.0	1663.8	1660.8
7.5°	1663.8	1654.2	1636.5	1649.5	1646.2
10°	1646.2	1634.9	1615.7	1628.4	1623.7
12.5°	1621.9	1612.4	1593.1	1601.1	1597.8
15°	1594.6	1585.0	1564.0	1570.5	1562.5
17.5°	1560.7	1551.2	1530.2	1538.2	1530.2
20°	1523.7	1514.2	1491.6	1496.3	1490.0
22.5°	1486.8	1472.2	1451.2	1451.2	1447.9
25°	1443.2	1430.4	1403.0	1406.1	1403.0
27.5°	1394.8	1383.5	1362.7	1357.9	1349.9
30°	1346.6	1333.7	1309.6	1304.8	1298.3
32.5°	1295.0	1285.5	1259.6	1249.9	1243.5
35°	1245.1	1229.1	1203.2	1193.5	1185.5
37.5°	1188.7	1174.2	1148.4	1137.1	1129.1
40°	1130.8	1117.8	1092.0	1077.6	1071.2
42.5°	1074.4	1061.4	1035.8	1019.5	1010.0
45°	1013.2	1001.9	977.7	960.1	953.6
47.5°	953.6	942.3	916.5	898.7	889.2
50°	890.7	882.7	860.1	837.6	829.5
52.5°	829.5	818.2	797.4	779.6	768.4
55°	766.8	757.1	737.7	718.4	710.4
57.5°	703.9	695.9	674.9	655.6	649.0
60°	641.0	634.7	612.2	594.3	589.6
62.5°	579.9	568.6	552.5	536.4	529.9
65°	517.1	507.4	491.3	476.8	468.7
67.5°	452.7	444.5	430.2	418.9	412.3
70°	393.0	386.6	372.0	360.8	354.5
72.5°	331.9	325.4	317.4	306.1	301.3
75°	270.5	267.4	259.2	249.7	253.0
77.5°	215.9	209.3	206.1	201.3	196.6
80°	161.2	159.5	156.2	151.4	148.2
82.5°	109.5	109.5	108.0	101.5	101.5
85°	66.0	64.4	62.9	57.9	56.4
87.5°	29.0	25.8	22.6	17.7	16.1
90°	0.9	11.8	32.2	30.2	31.2
92.5°	20.3	27.6	28.6	29.5	29.5
95°	48.0	57.2	58.8	58.8	57.2
97.5°	79.8	88.3	92.0	92.0	92.0
100°	116.6	124.2	126.7	126.7	125.8
102.5°	155.3	160.9	164.5	165.5	164.5
105°	197.7	200.3	202.2	203.9	203.9
107.5°	239.7	243.7	243.7	244.3	239.7
110°	280.4	285.7	285.7	285.7	283.1



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	324.4	330.0	329.0	326.4	324.4
115°	367.7	373.1	371.3	370.4	367.7
117.5°	410.8	418.0	413.5	410.8	408.2
120°	454.2	461.3	454.2	454.2	451.2
122.5°	493.5	502.7	498.2	495.5	493.5
125°	534.9	543.1	540.5	537.5	536.6
127.5°	575.3	585.5	581.9	577.9	575.3
130°	613.0	624.9	623.3	621.3	617.7
132.5°	655.4	664.6	665.3	660.6	658.1
135°	691.9	702.1	704.0	703.0	700.4
137.5°	732.6	740.8	742.4	741.7	737.9
140°	768.4	776.6	781.2	781.2	777.6
142.5°	805.2	813.4	816.0	817.0	813.4
145°	840.0	846.5	851.8	852.8	849.2
147.5°	871.2	879.3	883.3	884.9	881.3
150°	903.4	909.0	912.6	915.5	912.6
152.5°	931.9	937.5	942.1	945.7	942.1
155°	960.4	963.1	966.0	970.7	967.7
157.5°	985.2	987.0	988.7	995.3	990.7
160°	1007.1	1009.1	1010.0	1015.6	1011.7
162.5°	1027.4	1027.4	1028.5	1034.7	1030.1
165°	1044.9	1043.9	1043.9	1050.4	1045.9
167.5°	1060.7	1057.6	1057.6	1064.3	1059.6
170°	1072.5	1069.8	1068.8	1075.4	1069.8
172.5°	1080.6	1078.1	1077.0	1083.7	1078.1
175°	1087.3	1084.6	1082.6	1089.2	1083.7
177.5°	1090.9	1088.2	1086.2	1091.8	1086.2
180°	1089.2	1089.2	1089.2	1089.2	1089.2



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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	8.71	9.65	9.60	10.56	11.70	8.27	9.21	9.16	10.12	11.26
	3H	10.38	11.23	11.28	12.14	13.31	9.90	10.74	10.79	11.66	12.83
	4H	10.98	11.77	11.88	12.69	13.87	10.49	11.29	11.40	12.21	13.39
	6H	11.38	12.12	12.30	13.04	14.24	10.89	11.63	11.81	12.55	13.75
	8H	11.49	12.19	12.42	13.13	14.33	11.00	11.70	11.93	12.64	13.83
	12H	11.54	12.21	12.48	13.15	14.37	11.04	11.71	11.98	12.65	13.87
4H	2H	9.18	9.98	10.10	10.90	12.08	8.83	9.63	9.75	10.55	11.73
	3H	11.06	11.73	11.99	12.68	13.87	10.66	11.33	11.58	12.27	13.47
	4H	11.78	12.39	12.72	13.33	14.55	11.36	11.97	12.30	12.92	14.14
	6H	12.30	12.83	13.25	13.80	15.02	11.88	12.40	12.83	13.37	14.59
	8H	12.46	12.95	13.41	13.91	15.14	12.03	12.52	12.98	13.48	14.72
	12H	12.53	12.98	13.51	13.96	15.20	12.09	12.54	13.07	13.52	14.76
8H	4H	11.98	12.47	12.94	13.44	14.67	11.61	12.10	12.56	13.07	14.30
	6H	12.62	13.03	13.60	14.03	15.27	12.25	12.65	13.22	13.66	14.89
	8H	12.85	13.20	13.83	14.20	15.45	12.46	12.82	13.45	13.81	15.06
	12H	12.98	13.30	13.97	14.28	15.58	12.58	12.90	13.57	13.88	15.18
12H	4H	11.97	12.42	12.94	13.40	14.64	11.61	12.05	12.58	13.03	14.27
	6H	12.65	13.01	13.64	14.00	15.26	12.29	12.65	13.27	13.64	14.89
	8H	12.90	13.22	13.89	14.20	15.50	12.53	12.84	13.52	13.83	15.13