

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: P918705

Luminaire Tested: DFN2DIP-4P4F0-050D060US935-RLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P918705
REPORT IS A COMBINATION OF REPORTS P900640 AND P897523
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P4F0-050D060US935-RLLONL
Description: 4 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

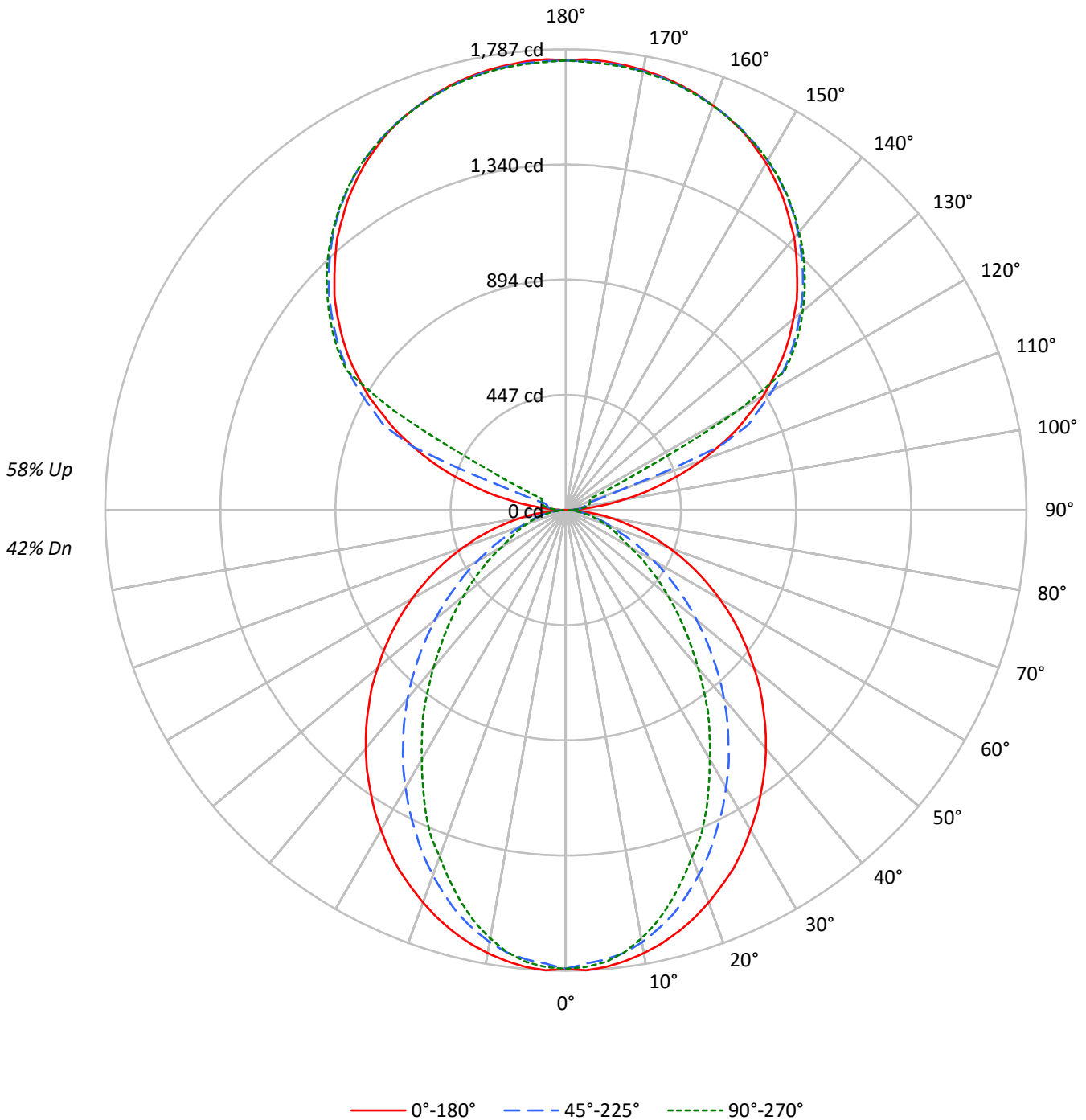
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 8773.6 lumens
Efficiency: N/A
Efficacy: 87.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 4.07' x L: 4.07' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 100.4
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	105	105	105	105	96	96	96	96	79	79	79	63	63	63	49	49	49	49	49	49	42
1	96	92	89	85	88	84	81	78	70	67	65	56	55	53	43	43	42	43	43	42	36
2	88	81	75	70	80	74	69	65	61	58	55	50	47	45	39	37	36	39	37	36	31
3	81	72	65	59	73	66	60	55	55	50	46	44	41	39	35	33	31	35	33	31	27
4	74	64	56	50	67	58	52	47	49	44	40	40	36	33	31	29	27	31	29	27	23
5	68	57	49	43	62	52	45	40	44	39	35	36	32	29	28	26	24	28	26	24	20
6	63	51	43	38	57	47	40	35	39	34	30	32	29	26	26	23	21	26	23	21	18
7	58	46	38	33	53	43	36	31	36	31	27	30	26	23	24	21	19	24	21	19	16
8	54	42	34	29	49	39	32	27	33	28	24	27	23	20	22	19	17	22	19	17	15
9	50	38	31	26	46	35	29	25	30	25	22	25	21	18	20	17	15	20	17	15	13
10	47	35	28	23	43	33	26	22	28	23	19	23	19	17	19	16	14	19	16	14	12

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1154	1154	1154
5°	1156	1136	1144
10°	1145	1114	1107
15°	1129	1078	1050
20°	1108	1027	979
25°	1087	971	912
30°	1059	913	825
35°	1031	850	750
40°	1002	786	663
45°	969	714	584
50°	935	641	507
55°	899	564	433
60°	858	483	357
65°	810	400	322
70°	753	323	292
75°	680	286	266
80°	576	241	233
85°	402	163	178

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 969 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	166.8	1.9
10°-20°	457.8	5.2
20°-30°	642.7	7.3
30°-40°	700.6	8.0
40°-50°	643.9	7.3
50°-60°	505.7	5.8
60°-70°	329.2	3.8
70°-80°	169.5	1.9
80°-90°	46.3	0.5
90°-100°	57.5	0.7
100°-110°	214.3	2.4
110°-120°	568.4	6.5
120°-130°	942.7	10.7
130°-140°	1001.4	11.4
140°-150°	930.7	10.6
150°-160°	748.2	8.5
160°-170°	482.1	5.5
170°-180°	165.9	1.9
0°-30°	1267.2	14.4
0°-40°	1967.8	22.4
0°-60°	3117.4	35.5
0°-90°	3662.3	41.7
90°-120°	840.2	9.6
90°-150°	3714.9	42.3
90°-180°	5111.0	58.3
0°-180°	8773.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1779	1779	1779	1779	1779	
5°	1779	1771	1750	1765	1760	169
15°	1692	1675	1620	1589	1573	477
25°	1536	1484	1378	1312	1288	706
35°	1324	1242	1100	998	963	828
45°	1082	974	805	691	652	836
55°	823	697	523	427	396	735
65°	556	425	280	226	221	551
75°	296	184	129	118	116	313
85°	69	35	31	31	31	79
90°	1	15	25	32	34	8
95°	82	40	49	56	54	97
105°	384	421	77	91	96	410
115°	725	747	778	194	104	714
125°	1026	1042	1066	1075	1079	915
135°	1269	1289	1301	1313	1311	980
145°	1472	1471	1492	1501	1495	921
155°	1621	1610	1625	1632	1622	747
165°	1708	1701	1704	1713	1704	483
175°	1747	1738	1741	1750	1737	166
180°	1743	1743	1743	1743	1743	



TEST NUMBER: P918705

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1779.3	1779.3	1779.3	1779.3	1779.3
2.5°	1787.3	1779.3	1761.5	1777.7	1774.4
5°	1779.3	1771.2	1750.2	1764.7	1760.0
7.5°	1764.7	1755.1	1732.6	1739.0	1730.9
10°	1745.4	1734.1	1702.0	1697.1	1687.5
12.5°	1721.3	1706.8	1663.3	1653.7	1635.9
15°	1692.3	1674.6	1619.9	1589.3	1573.2
17.5°	1658.5	1632.7	1565.0	1529.6	1503.8
20°	1619.9	1587.6	1507.1	1467.0	1431.4
22.5°	1578.0	1540.9	1447.5	1392.8	1368.7
25°	1536.1	1484.5	1378.3	1312.3	1288.1
27.5°	1486.3	1431.4	1313.9	1238.2	1201.2
30°	1433.1	1371.8	1243.0	1161.0	1117.4
32.5°	1381.6	1307.4	1175.5	1078.8	1038.5
35°	1323.6	1241.5	1099.8	998.3	962.9
37.5°	1267.2	1178.6	1029.0	917.7	877.6
40°	1207.6	1111.1	954.8	840.5	798.7
42.5°	1146.5	1043.4	880.8	761.6	721.4
45°	1082.1	974.1	805.1	690.7	652.0
47.5°	1020.9	906.6	732.7	618.3	582.9
50°	953.3	839.0	661.8	550.6	516.9
52.5°	887.2	766.4	594.2	487.9	457.4
55°	822.8	697.1	523.2	426.7	396.1
57.5°	756.8	628.0	460.5	370.4	344.6
60°	689.1	560.3	394.4	312.5	286.6
62.5°	623.2	494.4	338.1	260.9	248.1
65°	555.5	425.1	280.2	225.5	220.6
67.5°	491.1	360.7	225.5	198.0	193.2
70°	423.5	297.9	186.8	170.6	164.2
72.5°	359.1	239.9	156.2	143.4	140.1
75°	296.3	183.5	128.8	117.5	116.0
77.5°	233.5	130.4	101.5	95.0	91.7
80°	175.5	93.4	77.2	70.9	70.9
82.5°	122.3	62.9	53.1	49.9	49.9
85°	69.2	35.4	30.6	30.6	30.6
87.5°	25.8	12.8	12.8	11.3	11.3
90°	1.2	15.2	25.1	31.6	34.0
92.5°	31.6	26.5	30.2	32.8	34.0
95°	82.0	40.3	49.2	55.6	54.2
97.5°	147.6	44.2	64.2	68.2	69.4
100°	223.3	50.5	71.9	82.0	84.5
102.5°	306.5	304.1	74.5	88.3	92.1
105°	383.5	421.4	77.0	90.7	95.9
107.5°	473.1	504.5	79.6	93.3	98.4
110°	559.0	585.3	220.8	94.7	99.6



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	639.6	662.3	640.8	97.0	101.0
115°	725.4	746.8	778.4	194.3	103.5
117.5°	799.8	825.0	846.5	666.1	335.5
120°	883.1	902.0	924.8	939.9	769.6
122.5°	953.6	973.9	999.2	1006.7	1008.1
125°	1025.6	1042.1	1066.0	1074.9	1078.6
127.5°	1091.2	1108.9	1127.9	1140.5	1141.7
130°	1153.0	1173.3	1187.1	1201.0	1199.8
132.5°	1216.2	1232.6	1246.4	1257.7	1256.5
135°	1269.2	1289.4	1300.6	1313.4	1310.8
137.5°	1324.6	1339.7	1352.5	1365.0	1361.3
140°	1378.8	1389.0	1402.8	1414.2	1407.9
142.5°	1424.3	1433.2	1449.6	1459.6	1453.3
145°	1472.3	1470.9	1492.4	1501.2	1495.0
147.5°	1513.8	1510.0	1531.5	1537.7	1532.8
150°	1554.3	1545.4	1565.6	1573.1	1566.8
152.5°	1588.3	1578.2	1597.1	1604.7	1595.9
155°	1621.1	1609.8	1625.0	1632.5	1622.4
157.5°	1647.6	1637.5	1648.9	1657.8	1647.6
160°	1670.3	1662.7	1670.3	1677.8	1669.0
162.5°	1690.4	1682.9	1689.2	1698.1	1686.7
165°	1708.1	1700.6	1704.3	1713.2	1704.3
167.5°	1722.0	1714.4	1718.3	1727.2	1715.7
170°	1733.4	1725.8	1728.4	1737.1	1725.8
172.5°	1740.9	1733.4	1735.9	1744.8	1733.4
175°	1747.2	1738.4	1740.9	1749.7	1737.1
177.5°	1749.7	1740.9	1742.2	1751.1	1739.7
180°	1743.4	1743.4	1743.4	1743.4	1743.4



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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	6.84	7.61	7.87	8.64	10.03	2.80	3.57	3.83	4.60	5.99
	3H	8.52	9.21	9.56	10.25	11.66	3.99	4.67	5.03	5.72	7.12
	4H	9.13	9.78	10.18	10.82	12.24	4.44	5.09	5.49	6.13	7.55
	6H	9.55	10.15	10.62	11.20	12.63	4.76	5.35	5.82	6.40	7.83
	8H	9.68	10.25	10.75	11.31	12.73	4.85	5.41	5.91	6.48	7.90
	12H	9.74	10.28	10.81	11.34	12.79	4.89	5.43	5.96	6.49	7.93
4H	2H	6.85	7.50	7.91	8.55	9.96	3.39	4.04	4.45	5.09	6.50
	3H	8.68	9.22	9.75	10.30	11.72	4.74	5.28	5.81	6.35	7.78
	4H	9.38	9.87	10.45	10.94	12.38	5.29	5.78	6.36	6.85	8.29
	6H	9.89	10.32	10.98	11.41	12.85	5.70	6.13	6.79	7.22	8.66
	8H	10.07	10.47	11.15	11.55	13.00	5.83	6.23	6.92	7.31	8.77
	12H	10.17	10.52	11.27	11.62	13.08	5.90	6.25	7.00	7.35	8.81
8H	4H	9.34	9.74	10.42	10.82	12.27	5.57	5.96	6.65	7.04	8.50
	6H	9.91	10.24	11.01	11.36	12.81	6.08	6.41	7.19	7.53	8.99
	8H	10.13	10.42	11.24	11.52	13.00	6.28	6.56	7.39	7.67	9.14
	12H	10.27	10.52	11.38	11.62	13.14	6.40	6.65	7.51	7.75	9.26
12H	4H	9.29	9.65	10.39	10.74	12.20	5.57	5.93	6.67	7.02	8.48
	6H	9.89	10.17	11.00	11.28	12.75	6.14	6.42	7.25	7.53	9.00
	8H	10.11	10.36	11.22	11.46	12.97	6.35	6.60	7.46	7.70	9.21