

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: P905061

Luminaire Tested: DFN2DIP-4P4F0-050D050US835-RLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P905061
REPORT IS A COMBINATION OF REPORTS P900628 AND P897523
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P4F0-050D050US835-RLLONL
Description: 4 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open
No Lens
Light Source: -
Ballast/Driver: -

Summary

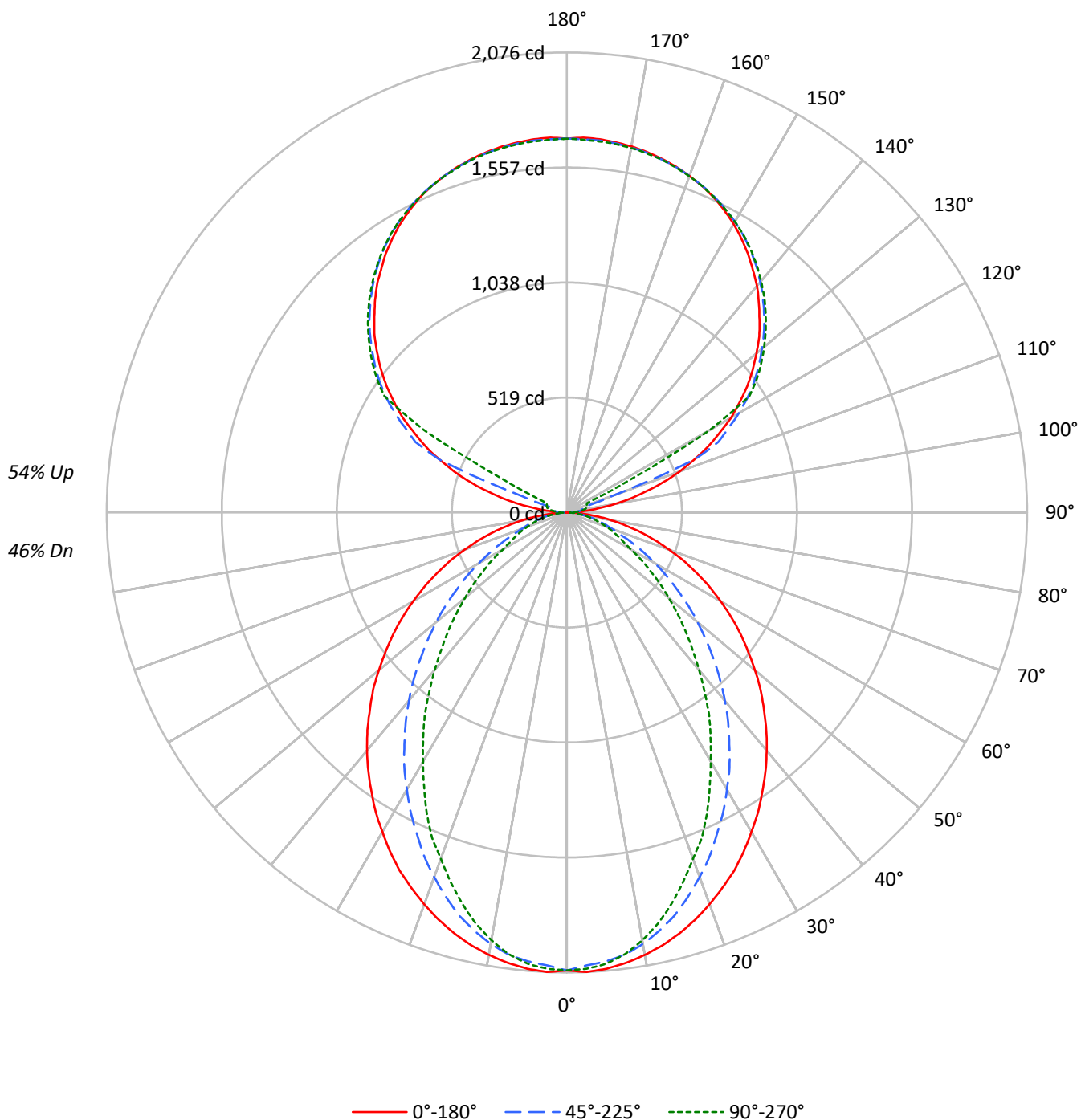
Lumens per Lamp: N/A
Luminaire Lumens: 9200.0 lumens
Efficiency: N/A
Efficacy: 101.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 4.07' x L: 4.07' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 90.3
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
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10
RCR																	
0	106	106	106	106	98	98	98	98	81	81	81	66	66	66	53	53	53
1	97	93	90	86	89	86	83	80	72	70	68	59	58	56	47	46	45
2	89	82	76	71	82	76	70	66	63	60	57	52	50	48	42	40	39
3	81	72	65	60	75	67	61	56	56	52	48	47	43	41	38	35	34
4	75	64	57	51	68	60	53	48	50	45	41	42	38	35	34	31	29
5	69	58	50	44	63	53	46	41	45	40	36	38	34	31	31	28	26
6	63	52	44	38	58	48	41	36	41	36	32	34	30	27	28	25	23
7	59	47	39	34	54	44	37	32	37	32	28	31	27	24	26	23	21
8	55	43	35	30	50	40	33	28	34	29	25	29	25	22	24	21	19
9	51	39	32	27	47	36	30	25	31	26	22	27	23	20	22	19	17
10	48	36	29	24	44	33	27	23	29	24	20	25	21	18	20	18	15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1341	1341	1341
5°	1343	1320	1328
10°	1330	1294	1286
15°	1311	1252	1219
20°	1287	1193	1138
25°	1263	1128	1059
30°	1229	1060	959
35°	1197	988	871
40°	1164	913	770
45°	1125	829	678
50°	1086	745	589
55°	1044	655	503
60°	996	561	414
65°	941	465	374
70°	874	376	339
75°	790	332	309
80°	668	280	270
85°	467	189	206

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1125 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	193.7	2.1
10°-20°	531.7	5.8
20°-30°	746.5	8.1
30°-40°	813.7	8.8
40°-50°	747.9	8.1
50°-60°	587.3	6.4
60°-70°	382.3	4.2
70°-80°	196.8	2.1
80°-90°	53.2	0.6
90°-100°	55.7	0.6
100°-110°	207.4	2.3
110°-120°	550.1	6.0
120°-130°	912.4	9.9
130°-140°	969.2	10.5
140°-150°	900.8	9.8
150°-160°	724.2	7.9
160°-170°	466.6	5.1
170°-180°	160.6	1.7
0°-30°	1471.8	16.0
0°-40°	2285.5	24.8
0°-60°	3620.7	39.4
0°-90°	4253.0	46.2
90°-120°	813.2	8.8
90°-150°	3595.6	39.1
90°-180°	4947.0	53.8
0°-180°	9200.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2066	2066	2066	2066	2066	
5°	2066	2057	2033	2050	2044	196
15°	1966	1945	1881	1846	1827	554
25°	1784	1724	1601	1524	1496	821
35°	1537	1442	1277	1160	1118	962
45°	1257	1131	935	802	757	971
55°	956	810	608	496	460	854
65°	645	494	325	262	256	640
75°	344	213	150	136	135	364
85°	80	41	36	36	36	92
90°	1	15	24	31	33	9
95°	79	39	48	54	52	94
105°	371	408	74	88	93	397
115°	702	723	753	188	100	691
125°	993	1009	1032	1040	1044	885
135°	1228	1248	1259	1271	1269	949
145°	1425	1424	1444	1453	1447	891
155°	1569	1558	1573	1580	1570	723
165°	1653	1646	1650	1658	1650	467
175°	1691	1682	1685	1694	1681	161
180°	1687	1687	1687	1687	1687	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2066.5	2066.5	2066.5	2066.5	2066.5
2.5°	2075.8	2066.5	2045.9	2064.7	2060.9
5°	2066.5	2057.2	2032.8	2049.6	2044.1
7.5°	2049.6	2038.5	2012.3	2019.7	2010.3
10°	2027.2	2014.1	1976.8	1971.1	1959.9
12.5°	1999.2	1982.4	1931.8	1920.7	1900.0
15°	1965.5	1944.9	1881.4	1845.9	1827.2
17.5°	1926.2	1896.3	1817.7	1776.6	1746.6
20°	1881.4	1843.9	1750.4	1703.8	1662.5
22.5°	1832.8	1789.7	1681.2	1617.7	1589.7
25°	1784.1	1724.2	1600.8	1524.2	1496.0
27.5°	1726.2	1662.5	1526.0	1438.1	1395.1
30°	1664.5	1593.3	1443.7	1348.4	1297.8
32.5°	1604.6	1518.5	1365.3	1253.0	1206.2
35°	1537.3	1441.9	1277.4	1159.5	1118.3
37.5°	1471.8	1368.9	1195.1	1065.9	1019.3
40°	1402.6	1290.5	1108.9	976.2	927.6
42.5°	1331.6	1211.9	1023.0	884.5	837.9
45°	1256.8	1131.4	935.1	802.2	757.3
47.5°	1185.7	1053.0	851.0	718.1	677.0
50°	1107.2	974.4	768.7	639.5	600.4
52.5°	1030.4	890.1	690.1	566.7	531.2
55°	955.6	809.7	607.7	495.6	460.1
57.5°	879.0	729.4	534.9	430.2	400.2
60°	800.4	650.8	458.1	362.9	332.9
62.5°	723.8	574.2	392.7	303.0	288.1
65°	645.2	493.7	325.4	261.9	256.2
67.5°	570.4	418.9	261.9	230.0	224.4
70°	491.9	346.0	216.9	198.2	190.7
72.5°	417.1	278.6	181.4	166.5	162.7
75°	344.1	213.1	149.6	136.5	134.7
77.5°	271.2	151.4	117.9	110.3	106.5
80°	203.8	108.5	89.7	82.3	82.3
82.5°	142.1	73.0	61.7	57.9	57.9
85°	80.4	41.1	35.5	35.5	35.5
87.5°	30.0	14.9	14.9	13.1	13.1
90°	1.2	14.6	24.4	30.6	32.9
92.5°	30.6	25.7	29.3	31.8	32.9
95°	79.3	39.0	47.6	53.8	52.5
97.5°	142.8	42.8	62.2	66.0	67.1
100°	216.2	48.9	69.6	79.3	81.8
102.5°	296.7	294.3	72.1	85.4	89.2
105°	371.2	407.9	74.5	87.9	92.8
107.5°	457.9	488.3	77.0	90.3	95.3
110°	541.0	566.5	213.7	91.6	96.4

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	619.1	641.0	620.3	94.0	97.7
115°	702.1	722.8	753.4	188.1	100.2
117.5°	774.1	798.5	819.4	644.6	324.8
120°	854.7	873.0	895.0	909.7	744.8
122.5°	923.0	942.6	967.1	974.4	975.7
125°	992.6	1008.6	1031.8	1040.3	1044.0
127.5°	1056.1	1073.2	1091.7	1103.8	1105.0
130°	1116.0	1135.6	1148.9	1162.4	1161.3
132.5°	1177.1	1193.0	1206.3	1217.4	1216.2
135°	1228.4	1248.0	1258.8	1271.2	1268.7
137.5°	1282.0	1296.7	1309.0	1321.2	1317.6
140°	1334.5	1344.4	1357.7	1368.7	1362.7
142.5°	1378.6	1387.2	1403.0	1412.7	1406.6
145°	1425.0	1423.7	1444.4	1453.0	1446.9
147.5°	1465.2	1461.5	1482.3	1488.4	1483.6
150°	1504.3	1495.8	1515.3	1522.6	1516.5
152.5°	1537.2	1527.5	1545.8	1553.2	1544.6
155°	1569.0	1558.1	1572.7	1580.0	1570.3
157.5°	1594.6	1584.9	1595.9	1604.5	1594.6
160°	1616.7	1609.3	1616.7	1623.9	1615.4
162.5°	1636.1	1628.9	1634.9	1643.5	1632.5
165°	1653.2	1646.0	1649.6	1658.1	1649.6
167.5°	1666.7	1659.3	1663.1	1671.6	1660.6
170°	1677.7	1670.3	1672.8	1681.3	1670.3
172.5°	1685.0	1677.7	1680.2	1688.7	1677.7
175°	1691.1	1682.5	1685.0	1693.5	1681.3
177.5°	1693.5	1685.0	1686.3	1694.8	1683.8
180°	1687.4	1687.4	1687.4	1687.4	1687.4

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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	7.82	8.62	8.82	9.62	10.95	3.78	4.58	4.78	5.59	6.91
	3H	9.50	10.22	10.51	11.23	12.58	4.97	5.69	5.98	6.70	8.05
	4H	10.11	10.79	11.13	11.81	13.16	5.42	6.10	6.44	7.11	8.47
	6H	10.54	11.16	11.57	12.18	13.55	5.74	6.36	6.77	7.38	8.75
	8H	10.67	11.26	11.70	12.29	13.66	5.83	6.42	6.87	7.46	8.82
	12H	10.73	11.29	11.77	12.32	13.71	5.87	6.44	6.91	7.47	8.85
4H	2H	7.84	8.51	8.86	9.53	10.88	4.38	5.05	5.40	6.07	7.42
	3H	9.67	10.23	10.70	11.27	12.64	5.73	6.29	6.76	7.33	8.70
	4H	10.36	10.88	11.40	11.91	13.31	6.28	6.79	7.32	7.82	9.22
	6H	10.88	11.33	11.93	12.38	13.77	6.69	7.14	7.74	8.19	9.58
	8H	11.06	11.47	12.11	12.52	13.93	6.82	7.24	7.87	8.29	9.69
	12H	11.16	11.53	12.23	12.60	14.00	6.89	7.26	7.96	8.33	9.73
8H	4H	10.33	10.74	11.38	11.79	13.20	6.56	6.97	7.61	8.02	9.42
	6H	10.90	11.24	11.98	12.33	13.73	7.08	7.42	8.15	8.51	9.91
	8H	11.12	11.42	12.20	12.50	13.92	7.27	7.57	8.35	8.64	10.06
	12H	11.26	11.53	12.35	12.60	14.06	7.39	7.65	8.47	8.72	10.18
12H	4H	10.28	10.65	11.35	11.72	13.13	6.56	6.93	7.63	8.00	9.41
	6H	10.88	11.18	11.96	12.25	13.67	7.13	7.43	8.21	8.50	9.92
	8H	11.10	11.36	12.18	12.44	13.90	7.34	7.60	8.42	8.67	10.13