

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: P905040

Luminaire Tested: DFN2DIP-4P4F0-040D060US835-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P905040
REPORT IS A COMBINATION OF REPORTS P899118 AND P895967
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P4F0-040D060US835-RLLFLL
Description: 4 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

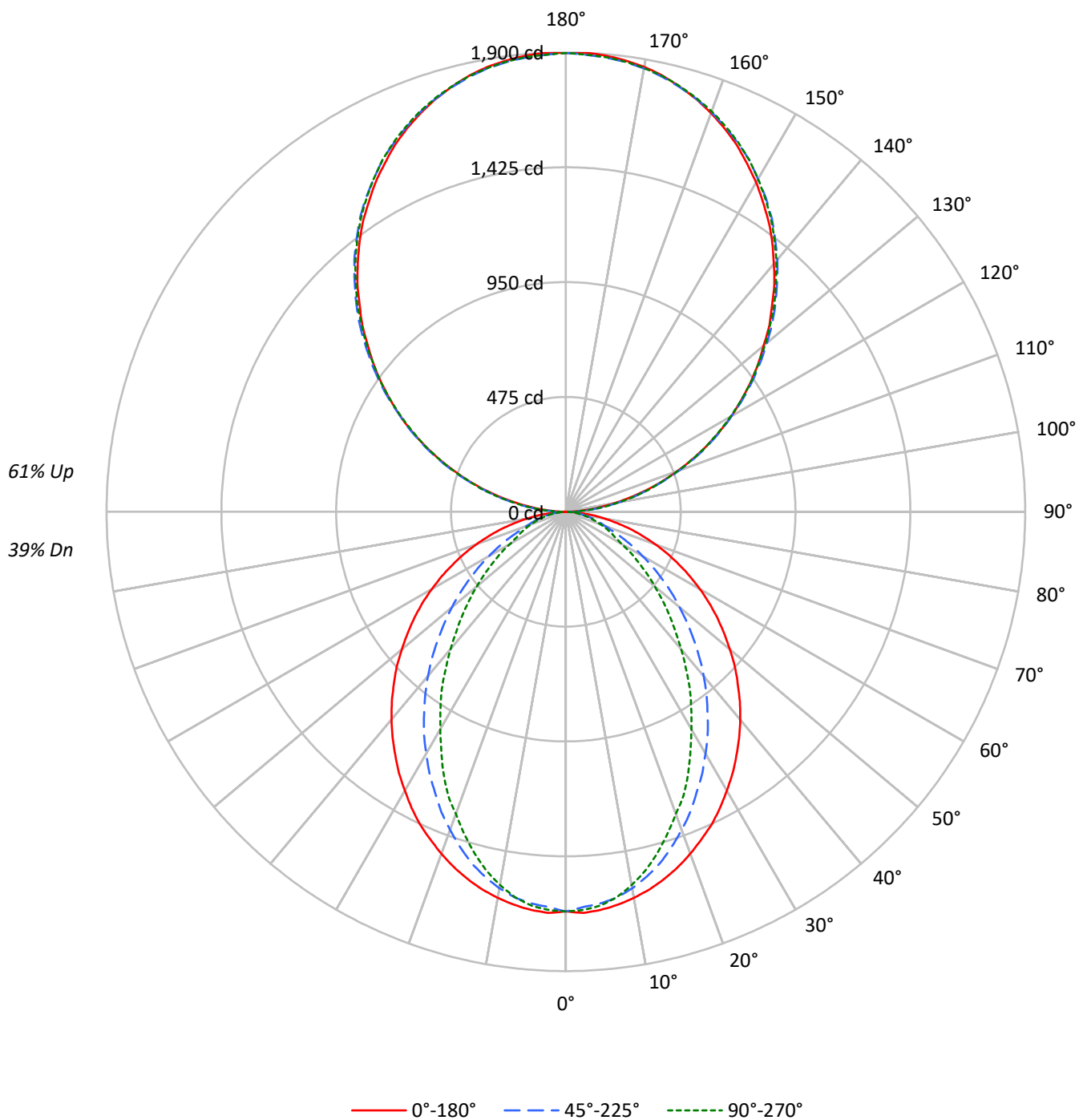
Lumens per Lamp: N/A
Luminaire Lumens: 8710.0 lumens
Efficiency: N/A
Efficacy: 97.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 4.07' x L: 4.07' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 89.1
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	105	105	105	105	95	95	95	95	77	77	77	61	61	61	46	46	46
1	96	92	88	85	87	83	80	78	68	66	64	54	53	51	41	40	40
2	87	80	75	70	79	73	68	64	60	57	54	48	46	44	37	35	34
3	80	71	64	58	73	65	59	54	53	49	46	43	40	37	33	31	29
4	73	63	55	50	66	58	51	46	48	43	39	38	35	32	30	27	26
5	67	56	48	43	61	52	45	40	43	38	34	35	31	28	27	24	22
6	62	51	43	37	56	46	40	35	39	33	30	31	28	25	25	22	20
7	57	46	38	33	52	42	35	30	35	30	26	29	25	22	22	20	18
8	53	41	34	29	49	38	32	27	32	27	23	26	22	20	21	18	16
9	50	38	31	26	45	35	29	24	29	24	21	24	20	18	19	17	15
10	46	35	28	23	42	32	26	22	27	22	19	22	19	16	18	15	13

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1072	1072	1072
5°	1074	1056	1063
10°	1064	1035	1028
15°	1049	1002	975
20°	1030	955	910
25°	1010	902	847
30°	984	848	767
35°	958	790	697
40°	931	730	616
45°	900	663	543
50°	868	596	471
55°	835	524	402
60°	797	449	332
65°	753	372	299
70°	699	300	271
75°	632	266	248
80°	535	224	216
85°	374	151	165

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1435 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	154.9	1.8
10°-20°	425.3	4.9
20°-30°	597.2	6.9
30°-40°	650.9	7.5
40°-50°	598.3	6.9
50°-60°	469.9	5.4
60°-70°	305.8	3.5
70°-80°	157.4	1.8
80°-90°	45.6	0.5
90°-100°	117.4	1.3
100°-110°	373.1	4.3
110°-120°	638.5	7.3
120°-130°	839.7	9.6
130°-140°	942.5	10.8
140°-150°	924.2	10.6
150°-160°	775.3	8.9
160°-170°	514.2	5.9
170°-180°	179.7	2.1
0°-30°	1177.4	13.5
0°-40°	1828.4	21.0
0°-60°	2896.5	33.3
0°-90°	3405.4	39.1
90°-120°	1129.0	13.0
90°-150°	3835.4	44.0
90°-180°	5305.0	60.9
0°-180°	8710.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1653	1653	1653	1653	1653	
5°	1653	1646	1626	1640	1635	157
15°	1572	1556	1505	1477	1462	443
25°	1427	1379	1281	1219	1197	656
35°	1230	1154	1022	928	895	770
45°	1005	905	748	642	606	776
55°	764	648	486	396	368	683
65°	516	395	260	210	205	512
75°	275	170	120	109	108	291
85°	64	33	28	28	28	74
90°	2	21	56	53	54	9
95°	84	100	102	102	100	93
105°	344	349	352	355	355	363
115°	641	650	647	645	641	634
125°	932	946	942	936	935	833
135°	1205	1223	1226	1225	1220	932
145°	1463	1475	1484	1486	1479	914
155°	1673	1678	1683	1691	1686	770
165°	1820	1819	1819	1830	1822	514
175°	1894	1890	1886	1898	1888	180
180°	1898	1898	1898	1898	1898	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1653.2	1653.2	1653.2	1653.2	1653.2
2.5°	1660.7	1653.2	1636.7	1651.8	1648.7
5°	1653.2	1645.7	1626.2	1639.7	1635.3
7.5°	1639.7	1630.8	1609.9	1615.7	1608.3
10°	1621.8	1611.3	1581.4	1576.8	1568.0
12.5°	1599.4	1585.9	1545.4	1536.5	1520.0
15°	1572.4	1555.9	1505.1	1476.7	1461.8
17.5°	1541.0	1517.0	1454.1	1421.3	1397.3
20°	1505.1	1475.1	1400.3	1363.0	1330.0
22.5°	1466.2	1431.8	1344.9	1294.1	1271.8
25°	1427.3	1379.4	1280.6	1219.4	1196.8
27.5°	1381.0	1330.0	1220.8	1150.5	1116.0
30°	1331.6	1274.6	1154.9	1078.7	1038.3
32.5°	1283.7	1214.8	1092.2	1002.4	964.9
35°	1229.9	1153.5	1021.9	927.6	894.6
37.5°	1177.5	1095.1	956.0	852.7	815.4
40°	1122.1	1032.4	887.2	781.0	742.1
42.5°	1065.2	969.5	818.4	707.6	670.3
45°	1005.4	905.1	748.1	641.8	605.9
47.5°	948.6	842.4	680.8	574.5	541.6
50°	885.7	779.5	614.9	511.6	480.3
52.5°	824.3	712.1	552.1	453.3	424.9
55°	764.5	647.8	486.2	396.5	368.1
57.5°	703.2	583.5	427.9	344.1	320.2
60°	640.3	520.6	366.5	290.3	266.4
62.5°	579.1	459.4	314.1	242.4	230.5
65°	516.2	394.9	260.3	209.5	204.9
67.5°	456.4	335.1	209.5	184.0	179.5
70°	393.5	276.8	173.5	158.6	152.5
72.5°	333.7	222.9	145.1	133.2	130.2
75°	275.2	170.5	119.7	109.2	107.8
77.5°	217.0	121.1	94.3	88.3	85.2
80°	163.0	86.8	71.7	65.9	65.9
82.5°	113.7	58.4	49.4	46.3	46.3
85°	64.3	32.9	28.4	28.4	28.4
87.5°	24.0	11.9	11.9	10.5	10.5
90°	1.7	20.6	56.1	52.6	54.3
92.5°	35.5	48.1	49.8	51.5	51.5
95°	83.5	99.5	102.4	102.4	99.5
97.5°	139.0	153.9	160.2	160.2	160.2
100°	203.1	216.2	220.8	220.8	219.1
102.5°	270.6	280.3	286.6	288.3	286.6
105°	344.4	349.0	352.4	355.3	355.3
107.5°	417.6	424.5	424.5	425.6	417.6
110°	488.6	497.7	497.7	497.7	493.1

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	565.2	574.9	573.2	568.6	565.2
115°	640.7	649.9	647.0	645.3	640.7
117.5°	715.7	728.3	720.2	715.7	711.1
120°	791.2	803.8	791.2	791.2	786.0
122.5°	859.8	875.8	867.8	863.3	859.8
125°	931.9	946.2	941.6	936.5	934.8
127.5°	1002.3	1020.0	1013.7	1006.9	1002.3
130°	1068.1	1088.7	1085.8	1082.4	1076.1
132.5°	1141.9	1157.9	1159.0	1151.0	1146.4
135°	1205.4	1223.1	1226.5	1224.8	1220.2
137.5°	1276.3	1290.6	1293.5	1292.3	1285.5
140°	1338.7	1353.0	1361.0	1361.0	1354.7
142.5°	1402.7	1417.0	1421.6	1423.3	1417.0
145°	1463.4	1474.8	1484.0	1485.7	1479.4
147.5°	1517.7	1532.0	1538.9	1541.7	1535.4
150°	1573.8	1583.5	1589.8	1594.9	1589.8
152.5°	1623.5	1633.3	1641.3	1647.6	1641.3
155°	1673.3	1677.9	1683.0	1691.1	1685.9
157.5°	1716.2	1719.7	1722.5	1734.0	1726.0
160°	1754.6	1758.0	1759.7	1769.4	1762.6
162.5°	1790.0	1790.0	1791.7	1802.6	1794.6
165°	1820.3	1818.6	1818.6	1830.1	1822.1
167.5°	1847.8	1842.7	1842.7	1854.1	1846.1
170°	1868.4	1863.8	1862.1	1873.5	1863.8
172.5°	1882.7	1878.1	1876.4	1887.8	1878.1
175°	1894.1	1889.6	1886.1	1897.6	1887.8
177.5°	1900.4	1895.9	1892.4	1902.1	1892.4
180°	1897.6	1897.6	1897.6	1897.6	1897.6

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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	6.30	7.04	7.35	8.10	9.52	2.26	3.01	3.31	4.06	5.48
	3H	7.97	8.64	9.03	9.70	11.14	3.44	4.11	4.50	5.17	6.61
	4H	8.58	9.22	9.65	10.28	11.73	3.89	4.52	4.96	5.58	7.03
	6H	9.00	9.59	10.09	10.65	12.11	4.21	4.79	5.29	5.86	7.31
	8H	9.13	9.69	10.22	10.77	12.22	4.30	4.85	5.38	5.93	7.39
	12H	9.19	9.72	10.28	10.79	12.27	4.34	4.86	5.43	5.94	7.42
4H	2H	6.30	6.94	7.38	8.00	9.45	2.84	3.48	3.92	4.54	5.99
	3H	8.13	8.66	9.22	9.75	11.21	4.19	4.72	5.28	5.81	7.27
	4H	8.83	9.31	9.92	10.39	11.87	4.74	5.22	5.83	6.30	7.78
	6H	9.34	9.76	10.44	10.86	12.33	5.15	5.57	6.25	6.67	8.15
	8H	9.52	9.91	10.62	11.00	12.49	5.28	5.67	6.38	6.76	8.25
	12H	9.61	9.96	10.73	11.07	12.57	5.34	5.69	6.46	6.80	8.30
8H	4H	8.79	9.17	9.89	10.27	11.76	5.01	5.40	6.11	6.50	7.99
	6H	9.36	9.68	10.48	10.81	12.30	5.53	5.85	6.65	6.99	8.48
	8H	9.58	9.86	10.70	10.98	12.48	5.72	6.00	6.85	7.12	8.63
	12H	9.72	9.96	10.85	11.08	12.62	5.84	6.09	6.97	7.20	8.75
12H	4H	8.74	9.09	9.85	10.19	11.69	5.02	5.37	6.13	6.47	7.97
	6H	9.33	9.61	10.46	10.73	12.24	5.58	5.86	6.71	6.98	8.49
	8H	9.55	9.80	10.68	10.91	12.46	5.79	6.04	6.92	7.15	8.70

END OF REPORT