

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: P912520

Luminaire Tested: DFN2DIP-TR2F0-050D060US850-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P912520
REPORT IS A COMBINATION OF REPORTS P900267 AND P897145
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR2F0-050D060US850-FLLFLL
Description: 2 foot, Triangle Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

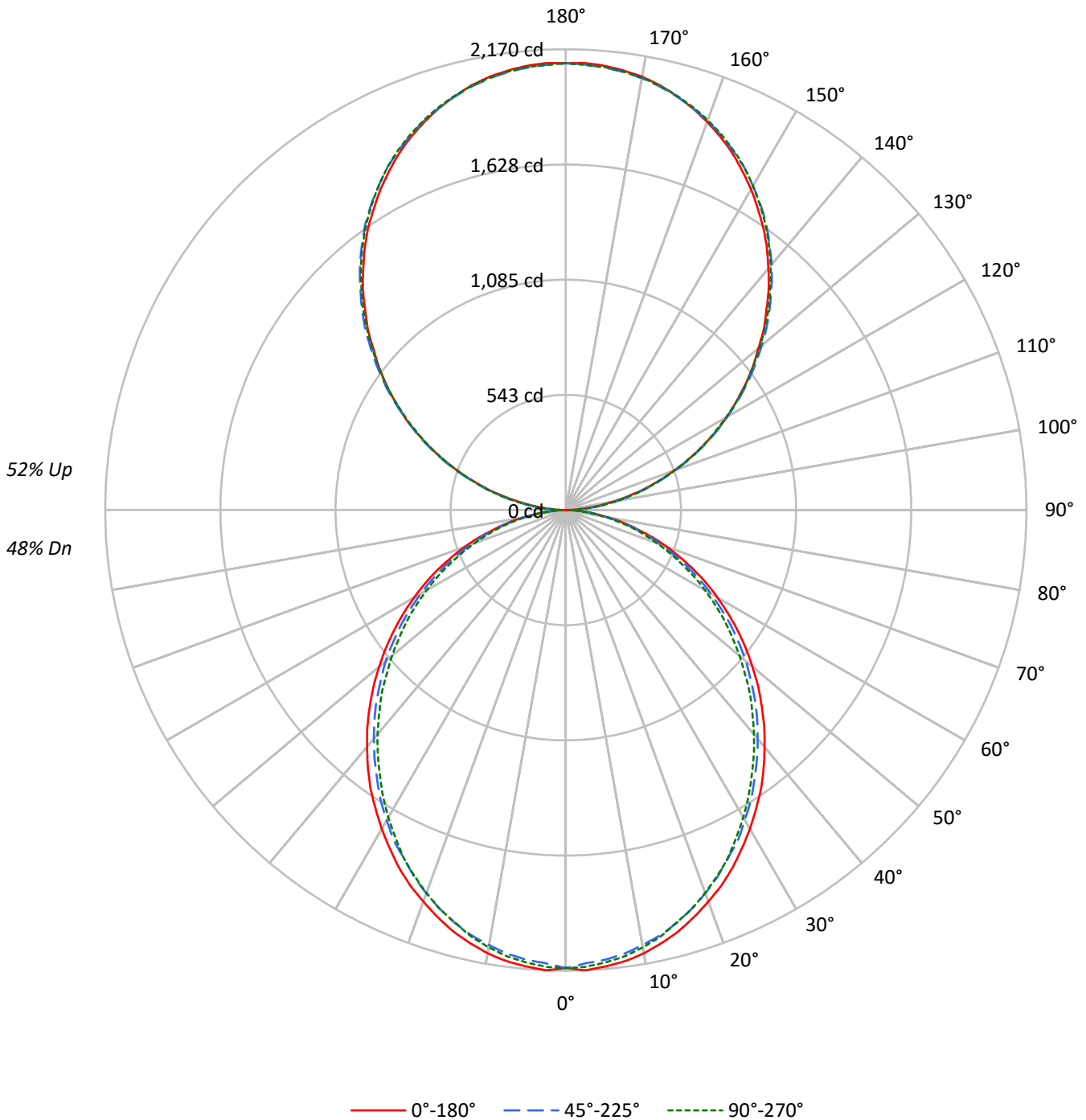
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 11378.4 lumens
Efficiency: N/A
Efficacy: 118.6 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): 95.9
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9789
Total Harmonic Distortion (THDi): 0.074
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	107	107	107	107	98	98	98	98	82	82	82	68	68	68	55	55	55	48	48	48	48
1	97	93	89	86	89	86	82	79	72	70	68	60	58	57	48	47	46	41	41	41	41
2	89	81	75	70	81	75	70	65	63	59	56	52	50	47	42	41	39	34	34	34	34
3	81	71	64	58	74	66	60	54	56	51	47	46	43	40	38	35	33	29	29	29	29
4	74	63	55	49	68	59	52	46	50	44	40	41	37	34	34	31	28	25	25	25	25
5	68	56	48	42	62	52	45	40	44	39	35	37	33	30	30	27	25	22	22	22	22
6	63	51	42	37	57	47	40	34	40	34	30	34	29	26	27	24	22	19	19	19	19
7	58	46	38	32	53	42	35	30	36	31	27	30	26	23	25	22	19	17	17	17	17
8	54	41	34	28	49	39	32	27	33	28	24	28	24	20	23	20	17	15	15	15	15
9	50	38	30	25	46	35	28	24	30	25	21	26	21	18	21	18	16	14	14	14	14
10	47	35	27	23	43	32	26	21	28	23	19	24	20	17	20	17	14	12	12	12	12

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4812	4812	4812
5°	4813	4734	4769
10°	4767	4660	4696
15°	4689	4573	4587
20°	4588	4455	4476
25°	4486	4317	4348
30°	4361	4188	4189
35°	4241	4037	4020
40°	4096	3885	3859
45°	3949	3731	3693
50°	3790	3570	3503
55°	3622	3383	3326
60°	3432	3164	3123
65°	3223	2934	2884
70°	2958	2654	2625
75°	2593	2319	2374
80°	2150	1892	1919
85°	1464	1193	1192

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 3949 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	203.1	1.8
10°-20°	571.4	5.0
20°-30°	839.7	7.4
30°-40°	975.2	8.6
40°-50°	974.0	8.6
50°-60°	849.3	7.5
60°-70°	627.9	5.5
70°-80°	355.2	3.1
80°-90°	99.7	0.9
90°-100°	130.2	1.1
100°-110°	413.7	3.6
110°-120°	708.0	6.2
120°-130°	931.2	8.2
130°-140°	1045.3	9.2
140°-150°	1025.0	9.0
150°-160°	859.8	7.6
160°-170°	570.2	5.0
170°-180°	199.3	1.8
0°-30°	1614.1	14.2
0°-40°	2589.4	22.8
0°-60°	4412.7	38.8
0°-90°	5495.5	48.3
90°-120°	1252.0	11.0
90°-150°	4253.5	37.4
90°-180°	5883.0	51.7
0°-180°	11378.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2158	2158	2158	2158	2158	
5°	2158	2150	2126	2143	2139	205
15°	2054	2042	2014	2023	2012	578
25°	1859	1842	1807	1811	1807	855
35°	1604	1583	1550	1537	1527	1001
45°	1305	1290	1259	1237	1228	1007
55°	988	975	950	925	915	883
65°	666	654	633	614	604	659
75°	348	344	334	322	326	372
85°	85	83	81	75	73	95
90°	2	23	62	58	60	11
95°	93	110	114	114	110	103
105°	382	387	391	394	394	403
115°	710	721	718	716	710	703
125°	1034	1049	1044	1039	1037	924
135°	1337	1356	1360	1358	1353	1033
145°	1623	1636	1646	1648	1641	1014
155°	1856	1861	1866	1875	1870	854
165°	2019	2017	2017	2030	2021	569
175°	2101	2096	2092	2104	2094	200
180°	2104	2104	2104	2104	2104	



TEST NUMBER: P912520

CATALOG NUMBER: DFN2DIP-TR2FO-050D060US850-FLLFL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2157.6	2157.6	2157.6	2157.6	2157.6
2.5°	2170.1	2159.8	2136.9	2157.6	2153.7
5°	2157.6	2149.5	2126.5	2143.0	2139.2
7.5°	2143.0	2130.7	2107.9	2124.6	2120.4
10°	2120.4	2105.9	2081.0	2097.5	2091.4
12.5°	2089.1	2076.8	2052.0	2062.3	2058.1
15°	2053.9	2041.6	2014.5	2022.9	2012.5
17.5°	2010.3	1998.0	1970.9	1981.2	1970.9
20°	1962.6	1950.3	1921.2	1927.3	1919.2
22.5°	1915.0	1896.3	1869.2	1869.2	1865.0
25°	1858.9	1842.4	1807.1	1811.1	1807.1
27.5°	1796.6	1782.1	1755.2	1749.0	1738.7
30°	1734.5	1717.8	1686.8	1680.6	1672.3
32.5°	1668.0	1655.7	1622.5	1609.9	1601.6
35°	1603.7	1583.1	1549.8	1537.3	1527.0
37.5°	1531.1	1512.5	1479.2	1464.7	1454.3
40°	1456.6	1439.8	1406.5	1388.0	1379.7
42.5°	1383.9	1367.2	1334.1	1313.2	1300.9
45°	1305.1	1290.5	1259.3	1236.6	1228.2
47.5°	1228.2	1213.7	1180.5	1157.6	1145.3
50°	1147.3	1136.9	1107.9	1078.8	1068.4
52.5°	1068.4	1053.9	1027.0	1004.2	989.7
55°	987.7	975.1	950.2	925.3	915.0
57.5°	906.6	896.3	869.2	844.4	836.0
60°	825.7	817.6	788.5	765.5	759.4
62.5°	746.9	732.4	711.6	690.9	682.6
65°	666.1	653.5	632.8	614.2	603.7
67.5°	583.1	572.6	554.1	539.5	531.1
70°	506.3	497.9	479.2	464.7	456.6
72.5°	427.5	419.1	408.8	394.2	388.0
75°	348.4	344.5	333.9	321.6	325.8
77.5°	278.0	269.6	265.5	259.3	253.2
80°	207.6	205.4	201.2	195.1	190.9
82.5°	141.1	141.1	139.1	130.8	130.8
85°	84.9	83.0	81.0	74.6	72.6
87.5°	37.4	33.3	29.1	22.8	20.7
90°	1.9	22.8	62.2	58.3	60.2
92.5°	39.4	53.3	55.2	57.1	57.1
95°	92.6	110.3	113.6	113.6	110.3
97.5°	154.2	170.7	177.7	177.7	177.7
100°	225.2	239.8	244.9	244.9	243.0
102.5°	300.1	310.9	317.8	319.7	317.8
105°	381.9	387.0	390.8	394.0	394.0
107.5°	463.1	470.8	470.8	472.0	463.1
110°	541.9	551.9	551.9	551.9	546.8



TEST NUMBER: P912520

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	626.8	637.6	635.7	630.6	626.8
115°	710.5	720.7	717.5	715.6	710.5
117.5°	793.7	807.7	798.7	793.7	788.6
120°	877.4	891.4	877.4	877.4	871.7
122.5°	953.5	971.3	962.4	957.4	953.5
125°	1033.5	1049.3	1044.2	1038.6	1036.7
127.5°	1111.6	1131.2	1124.2	1116.7	1111.6
130°	1184.5	1207.4	1204.2	1200.4	1193.4
132.5°	1266.4	1284.1	1285.3	1276.5	1271.4
135°	1336.8	1356.4	1360.2	1358.3	1353.2
137.5°	1415.4	1431.3	1434.5	1433.2	1425.6
140°	1484.6	1500.5	1509.3	1509.3	1502.4
142.5°	1555.6	1571.5	1576.6	1578.4	1571.5
145°	1622.9	1635.6	1645.8	1647.6	1640.7
147.5°	1683.1	1699.0	1706.6	1709.7	1702.8
150°	1745.3	1756.1	1763.1	1768.7	1763.1
152.5°	1800.5	1811.3	1820.2	1827.2	1820.2
155°	1855.7	1860.8	1866.4	1875.4	1869.7
157.5°	1903.3	1907.1	1910.3	1923.0	1914.1
160°	1945.9	1949.6	1951.5	1962.3	1954.7
162.5°	1985.1	1985.1	1987.0	1999.1	1990.2
165°	2018.7	2016.8	2016.8	2029.6	2020.7
167.5°	2049.2	2043.6	2043.6	2056.2	2047.3
170°	2072.1	2067.0	2065.1	2077.7	2067.0
172.5°	2087.9	2082.8	2080.9	2093.6	2082.8
175°	2100.6	2095.6	2091.7	2104.4	2093.6
177.5°	2107.5	2102.6	2098.7	2109.4	2098.7
180°	2104.4	2104.4	2104.4	2104.4	2104.4



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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	12.44	13.29	13.41	14.27	15.57	12.02	12.86	12.99	13.85	15.14
	3H	14.08	14.84	15.06	15.83	17.15	13.62	14.37	14.60	15.37	16.69
	4H	14.65	15.37	15.64	16.36	17.69	14.19	14.91	15.18	15.90	17.23
	6H	15.03	15.69	16.04	16.69	18.03	14.57	15.23	15.58	16.23	17.57
	8H	15.12	15.75	16.14	16.77	18.11	14.67	15.30	15.68	16.32	17.65
	12H	15.16	15.76	16.18	16.78	18.14	14.70	15.30	15.72	16.31	17.67
4H	2H	12.89	13.61	13.89	14.61	15.93	12.55	13.27	13.55	14.27	15.59
	3H	14.73	15.33	15.74	16.36	17.69	14.34	14.94	15.36	15.97	17.31
	4H	15.42	15.97	16.44	16.99	18.35	15.03	15.58	16.05	16.60	17.96
	6H	15.92	16.39	16.95	17.43	18.79	15.52	15.99	16.55	17.04	18.39
	8H	16.05	16.49	17.08	17.53	18.90	15.66	16.10	16.69	17.13	18.51
	12H	16.11	16.51	17.16	17.56	18.94	15.71	16.11	16.76	17.16	18.54
8H	4H	15.61	16.05	16.64	17.09	18.46	15.26	15.70	16.29	16.73	18.11
	6H	16.21	16.58	17.27	17.65	19.03	15.86	16.23	16.91	17.30	18.67
	8H	16.42	16.74	17.48	17.80	19.19	16.06	16.38	17.12	17.44	18.83
	12H	16.53	16.81	17.60	17.87	19.30	16.16	16.45	17.23	17.50	18.94
12H	4H	15.59	15.99	16.64	17.04	18.42	15.25	15.65	16.30	16.70	18.08
	6H	16.24	16.56	17.30	17.62	19.01	15.90	16.22	16.96	17.28	18.67
	8H	16.46	16.74	17.53	17.80	19.23	16.12	16.40	17.18	17.46	18.89