

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: P910376

Luminaire Tested: DFN2DIP-4P3F0-020D060US850-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P910376
REPORT IS A COMBINATION OF REPORTS P899070 AND P895917
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P3F0-020D060US850-RLLFLL
Description: 3 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

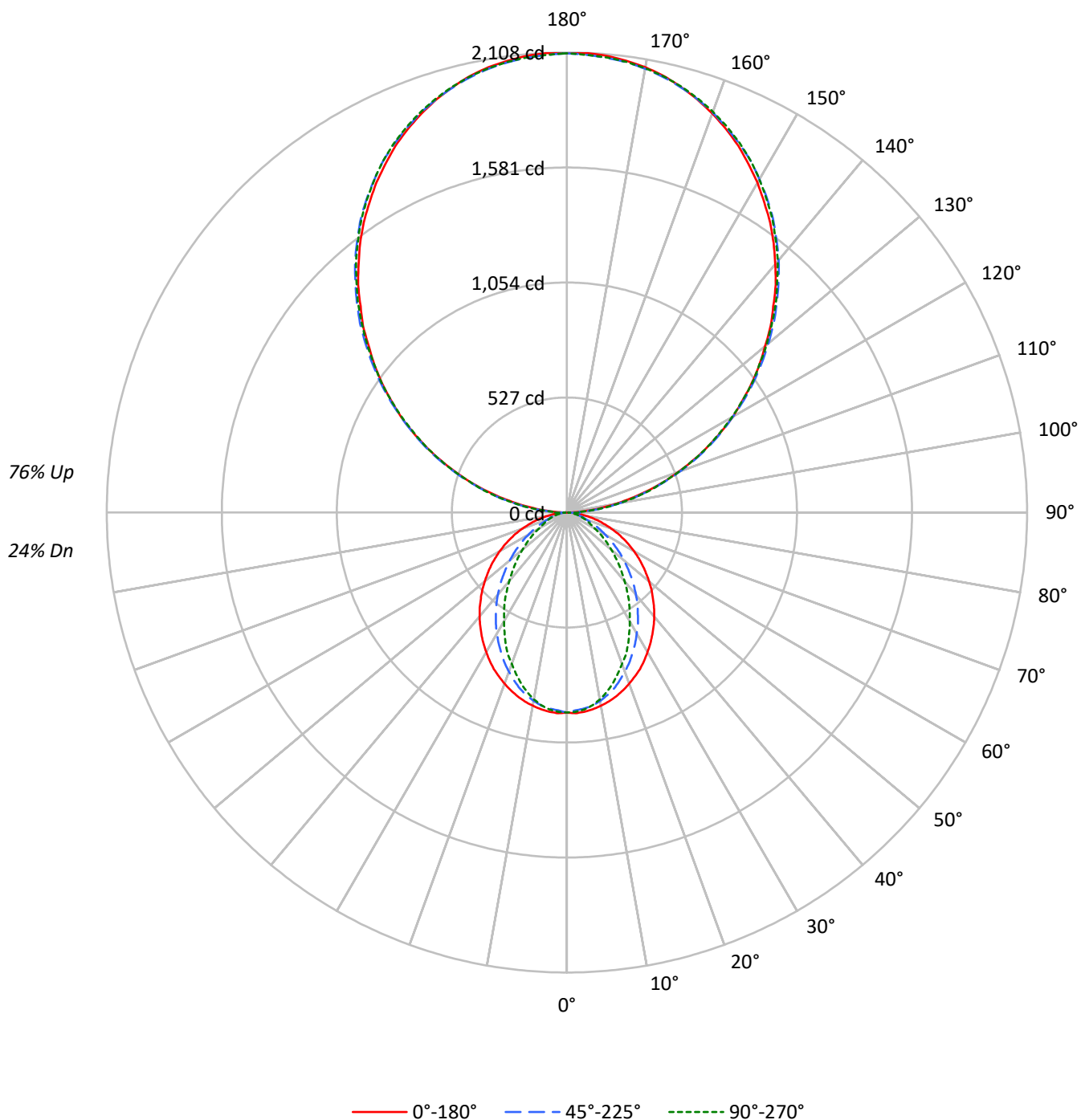
Lumens per Lamp: N/A
Luminaire Lumens: 7774.1 lumens
Efficiency: N/A
Efficacy: 123.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.07' x L: 3.07' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 62.8
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	101	101	101	101	90	90	90	90	69	69	69	50	50	50	33	33	33
1	92	88	85	81	82	79	76	73	61	59	57	44	43	42	29	28	28
2	84	77	71	67	75	69	64	60	53	50	47	39	37	35	26	25	24
3	77	68	61	56	68	61	55	50	47	43	40	35	32	30	23	22	20
4	70	60	53	47	62	54	48	43	42	38	34	31	28	26	21	19	18
5	64	54	46	40	57	48	42	37	38	33	29	28	25	22	19	17	16
6	59	48	40	35	53	43	37	32	34	29	26	25	22	20	17	15	14
7	55	43	36	30	49	39	32	28	31	26	23	23	20	17	16	14	12
8	51	39	32	27	45	35	29	24	28	23	20	21	18	16	14	12	11
9	47	36	29	24	42	32	26	22	25	21	18	19	16	14	13	11	10
10	44	33	26	21	39	29	23	19	23	19	16	18	15	13	12	10	9

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1045	1045	1045
5°	1046	1027	1034
10°	1035	1007	1000
15°	1020	973	948
20°	1000	926	884
25°	980	874	822
30°	954	821	744
35°	928	764	675
40°	901	705	596
45°	870	639	524
50°	838	573	455
55°	805	503	388
60°	766	429	319
65°	721	354	287
70°	667	285	259
75°	599	249	235
80°	501	207	202
85°	339	135	150

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 2108 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	85.9	1.1
10°-20°	235.8	3.0
20°-30°	331.1	4.3
30°-40°	361.0	4.6
40°-50°	331.8	4.3
50°-60°	260.6	3.4
60°-70°	169.6	2.2
70°-80°	87.3	1.1
80°-90°	28.3	0.4
90°-100°	130.2	1.7
100°-110°	413.7	5.3
110°-120°	708.0	9.1
120°-130°	931.2	12.0
130°-140°	1045.3	13.4
140°-150°	1025.0	13.2
150°-160°	859.8	11.1
160°-170°	570.2	7.3
170°-180°	199.3	2.6
0°-30°	652.9	8.4
0°-40°	1013.8	13.0
0°-60°	1606.2	20.7
0°-90°	1891.3	24.3
90°-120°	1252.0	16.1
90°-150°	4253.5	54.7
90°-180°	5883.0	75.7
0°-180°	7774.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	917	917	917	917	917	
5°	917	913	902	909	907	87
15°	872	863	834	819	811	246
25°	792	765	710	676	664	364
35°	682	640	567	514	496	427
45°	558	502	415	356	336	431
55°	424	359	270	220	204	379
65°	286	219	144	116	114	284
75°	153	94	66	61	60	161
85°	36	18	16	16	16	41
90°	2	23	62	58	60	8
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	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	916.7	916.7	916.7	916.7	916.7
2.5°	920.8	916.7	907.5	915.9	914.3
5°	916.7	912.6	901.7	909.3	906.7
7.5°	909.3	904.3	892.6	896.0	891.7
10°	899.3	893.4	876.9	874.3	869.5
12.5°	886.9	879.3	856.9	852.0	842.8
15°	871.9	862.7	834.5	818.8	810.6
17.5°	854.5	841.2	806.4	788.1	774.9
20°	834.5	817.9	776.5	755.8	737.5
22.5°	813.0	793.9	745.8	717.6	705.2
25°	791.5	764.9	710.1	676.2	663.6
27.5°	765.8	737.5	676.9	637.9	618.8
30°	738.4	706.8	640.4	598.2	575.7
32.5°	711.8	673.6	605.6	555.8	535.1
35°	681.9	639.7	566.7	514.4	496.1
37.5°	652.9	607.2	530.1	472.9	452.1
40°	622.1	572.5	492.0	433.1	411.4
42.5°	590.7	537.6	453.8	392.4	371.7
45°	557.5	501.8	414.9	355.9	335.9
47.5°	526.0	467.1	377.5	318.5	300.3
50°	491.2	432.3	341.0	283.7	266.4
52.5°	457.0	394.8	306.1	251.4	235.7
55°	423.9	359.2	269.6	219.9	204.1
57.5°	389.9	323.5	237.3	190.9	177.6
60°	355.1	288.7	203.3	161.0	147.7
62.5°	321.1	254.7	174.2	134.4	127.8
65°	286.2	219.0	144.4	116.2	113.7
67.5°	253.1	185.8	116.2	102.0	99.6
70°	218.1	153.5	96.2	87.9	84.6
72.5°	185.0	123.5	80.4	73.9	72.2
75°	152.6	94.5	66.3	60.6	59.8
77.5°	120.3	67.2	52.2	48.9	47.2
80°	90.4	48.1	39.8	36.5	36.5
82.5°	63.0	32.4	27.4	25.7	25.7
85°	35.6	18.2	15.7	15.7	15.7
87.5°	13.3	6.7	6.7	5.8	5.8
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

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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	4.18	4.84	5.33	5.98	7.57	0.14	0.80	1.30	1.94	3.54
	3H	5.84	6.43	7.00	7.57	9.19	1.31	1.90	2.47	3.05	4.66
	4H	6.44	6.99	7.61	8.14	9.76	1.75	2.31	2.92	3.46	5.07
	6H	6.85	7.36	8.02	8.51	10.14	2.06	2.57	3.23	3.72	5.35
	8H	6.97	7.45	8.15	8.62	10.24	2.14	2.63	3.32	3.79	5.41
	12H	7.02	7.48	8.20	8.64	10.28	2.17	2.63	3.36	3.79	5.43
4H	2H	4.17	4.73	5.35	5.88	7.50	0.72	1.27	1.89	2.42	4.04
	3H	5.98	6.45	7.16	7.62	9.25	2.04	2.51	3.22	3.68	5.31
	4H	6.66	7.09	7.85	8.25	9.90	2.58	3.01	3.76	4.17	5.81
	6H	7.17	7.53	8.35	8.71	10.35	2.98	3.34	4.17	4.53	6.17
	8H	7.33	7.68	8.52	8.85	10.50	3.10	3.44	4.29	4.62	6.27
	12H	7.42	7.73	8.62	8.91	10.57	3.15	3.46	4.36	4.65	6.31
8H	4H	6.62	6.96	7.80	8.13	9.79	2.84	3.18	4.03	4.36	6.01
	6H	7.17	7.45	8.38	8.67	10.32	3.34	3.62	4.55	4.84	6.49
	8H	7.38	7.63	8.60	8.82	10.49	3.53	3.77	4.74	4.97	6.64
	12H	7.51	7.73	8.73	8.92	10.62	3.63	3.85	4.85	5.04	6.74
12H	4H	6.56	6.87	7.76	8.06	9.71	2.84	3.15	4.04	4.33	5.99
	6H	7.15	7.39	8.36	8.59	10.26	3.39	3.64	4.60	4.83	6.50
	8H	7.36	7.57	8.57	8.76	10.46	3.59	3.80	4.80	4.99	6.70

END OF REPORT