

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: P902236

Luminaire Tested: DFN2DIP-4P3F0-050D020US830-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P902236
REPORT IS A COMBINATION OF REPORTS P899036 AND P895917
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P3F0-050D020US830-RLLFLL
Description: 3 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

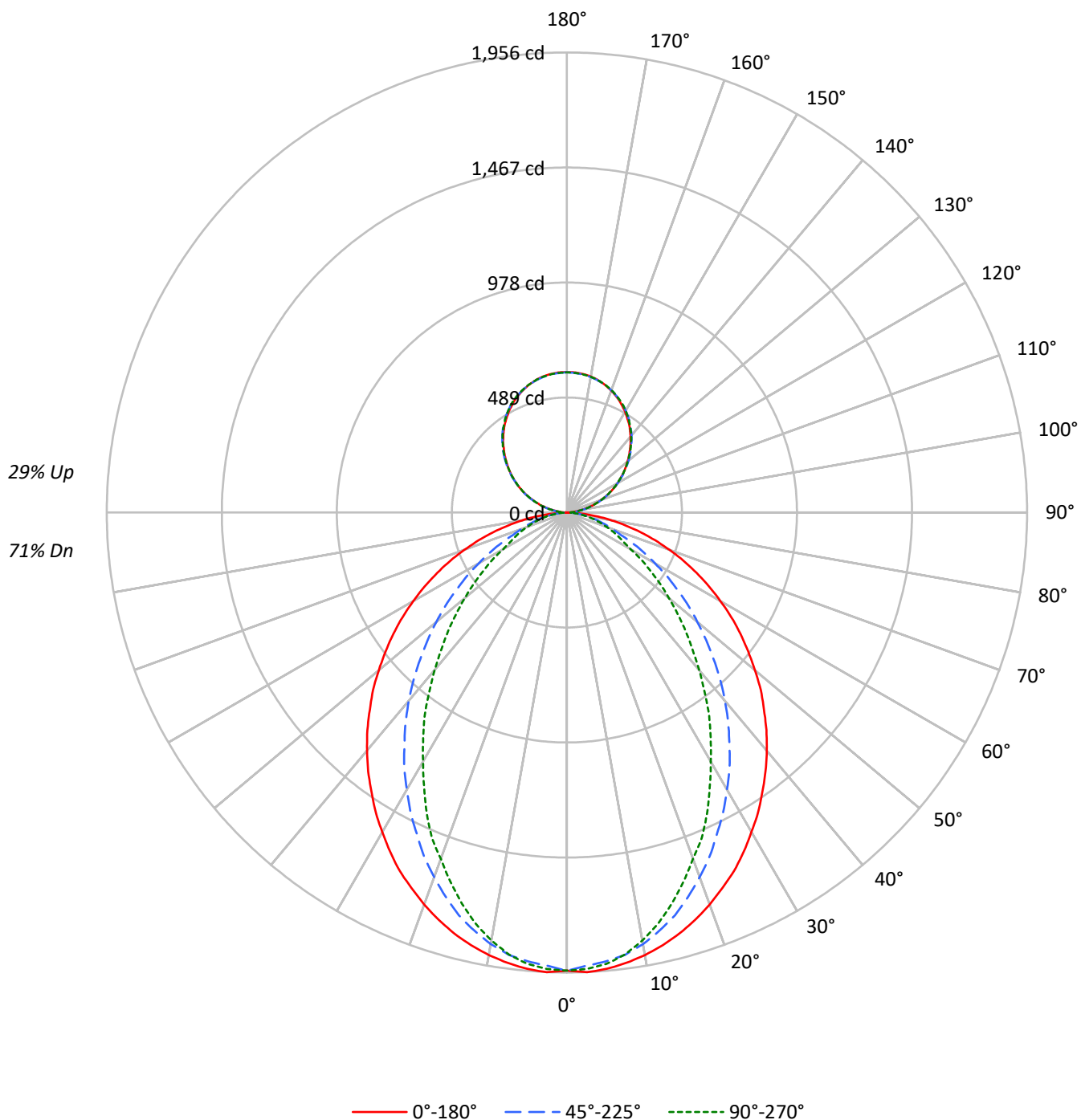
Lumens per Lamp: N/A
Luminaire Lumens: 5674.1 lumens
Efficiency: N/A
Efficacy: 88.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.07' x L: 3.07' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 64.2
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9971
Total Harmonic Distortion (THDi): 0.049
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P902236

CATALOG NUMBER: DFN2DIP-4P3F0-050D020US830-RLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P902236

CATALOG NUMBER: DFN2DIP-4P3F0-050D020US830-RLLFLL

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	112	112	112	112	106	106	106	106	95	95	95	85	85	85	75	75	75
1	103	99	95	92	97	94	90	88	84	82	79	76	74	72	67	66	65
2	94	87	81	76	89	83	78	73	75	71	67	67	64	61	60	58	56
3	87	77	70	64	82	74	67	62	67	61	57	60	56	53	54	51	48
4	80	69	61	55	75	66	59	53	60	54	49	54	49	46	49	45	42
5	74	62	54	48	69	59	52	46	54	48	43	49	44	40	44	40	37
6	68	56	48	42	64	54	46	41	49	43	38	44	39	36	40	36	33
7	63	51	43	37	60	49	41	36	45	38	34	41	36	32	37	33	30
8	59	47	39	33	56	45	37	32	41	35	31	37	32	29	34	30	27
9	55	43	35	30	52	41	34	29	38	32	28	35	30	26	32	28	24
10	52	39	32	27	49	38	31	27	35	29	25	32	27	24	30	25	22

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2220	2220	2220
5°	2222	2183	2198
10°	2198	2139	2125
15°	2167	2067	2014
20°	2125	1968	1878
25°	2083	1857	1746
30°	2026	1744	1580
35°	1971	1623	1434
40°	1914	1497	1266
45°	1849	1358	1114
50°	1781	1218	966
55°	1710	1068	823
60°	1628	912	677
65°	1533	753	609
70°	1418	605	550
75°	1273	530	499
80°	1064	440	430
85°	722	287	319

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1849 cd/sqm

TEST NUMBER: P902236

CATALOG NUMBER: DFN2DIP-4P3F0-050D020US830-RLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	182.5	3.2
10°-20°	501.1	8.8
20°-30°	703.6	12.4
30°-40°	766.9	13.5
40°-50°	704.9	12.4
50°-60°	553.6	9.8
60°-70°	360.3	6.4
70°-80°	185.5	3.3
80°-90°	49.0	0.9
90°-100°	36.9	0.6
100°-110°	117.2	2.1
110°-120°	200.6	3.5
120°-130°	263.8	4.6
130°-140°	296.1	5.2
140°-150°	290.4	5.1
150°-160°	243.6	4.3
160°-170°	161.5	2.8
170°-180°	56.5	1.0
0°-30°	1387.2	24.4
0°-40°	2154.2	38.0
0°-60°	3412.7	60.1
0°-90°	4007.5	70.6
90°-120°	354.7	6.3
90°-150°	1205.0	21.2
90°-180°	1667.0	29.4
0°-180°	5674.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1948	1948	1948	1948	1948	
5°	1948	1939	1916	1932	1927	185
15°	1853	1833	1773	1740	1722	522
25°	1682	1625	1509	1437	1410	773
35°	1449	1359	1204	1093	1054	907
45°	1185	1066	881	756	714	915
55°	901	763	573	467	434	805
65°	608	465	307	247	242	603
75°	324	201	141	129	127	343
85°	76	39	34	34	34	87
90°	1	6	18	16	17	6
95°	26	31	32	32	31	29
105°	108	110	111	112	112	114
115°	201	204	203	203	201	199
125°	293	297	296	294	294	262
135°	379	384	385	385	383	293
145°	460	463	466	467	465	287
155°	526	527	529	531	530	242
165°	572	571	571	575	572	161
175°	595	594	593	596	593	57
180°	596	596	596	596	596	

TEST NUMBER: P902236

CATALOG NUMBER: DFN2DIP-4P3F0-050D020US830-RLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1947.8	1947.8	1947.8	1947.8	1947.8
2.5°	1956.5	1947.8	1928.3	1946.1	1942.5
5°	1947.8	1939.0	1916.0	1931.8	1926.7
7.5°	1931.8	1921.4	1896.7	1903.7	1894.8
10°	1910.7	1898.4	1863.2	1857.8	1847.3
12.5°	1884.3	1868.5	1820.8	1810.3	1790.8
15°	1852.6	1833.2	1773.3	1739.8	1722.2
17.5°	1815.5	1787.3	1713.3	1674.5	1646.2
20°	1773.3	1738.0	1649.8	1605.9	1567.0
22.5°	1727.5	1686.9	1584.6	1524.8	1498.4
25°	1681.6	1625.1	1508.8	1436.6	1410.0
27.5°	1627.0	1567.0	1438.3	1355.5	1314.9
30°	1568.9	1501.8	1360.7	1270.9	1223.2
32.5°	1512.4	1431.3	1286.9	1181.0	1136.9
35°	1449.0	1359.1	1204.0	1092.9	1054.0
37.5°	1387.2	1290.2	1126.4	1004.7	960.7
40°	1322.0	1216.4	1045.2	920.1	874.3
42.5°	1255.1	1142.3	964.2	833.7	789.8
45°	1184.6	1066.4	881.4	756.1	713.8
47.5°	1117.6	992.5	802.1	676.8	638.1
50°	1043.6	918.4	724.5	602.8	565.9
52.5°	971.2	839.0	650.4	534.1	500.7
55°	900.7	763.2	572.8	467.1	433.7
57.5°	828.5	687.5	504.2	405.5	377.2
60°	754.4	613.4	431.8	342.0	313.8
62.5°	682.2	541.2	370.1	285.6	271.5
65°	608.1	465.3	306.7	246.9	241.5
67.5°	537.6	394.8	246.9	216.8	211.5
70°	463.6	326.1	204.4	186.8	179.7
72.5°	393.1	262.6	171.0	156.9	153.4
75°	324.3	200.9	141.0	128.7	127.0
77.5°	255.6	142.7	111.1	104.0	100.4
80°	192.1	102.3	84.5	77.6	77.6
82.5°	133.9	68.8	58.2	54.6	54.6
85°	75.8	38.7	33.5	33.5	33.5
87.5°	28.3	14.0	14.0	12.3	12.3
90°	0.6	6.5	17.6	16.5	17.1
92.5°	11.1	15.1	15.6	16.2	16.2
95°	26.2	31.3	32.1	32.1	31.3
97.5°	43.6	48.4	50.3	50.3	50.3
100°	63.8	68.0	69.4	69.4	68.8
102.5°	85.0	88.0	90.0	90.6	90.0
105°	108.2	109.6	110.7	111.6	111.6
107.5°	131.2	133.4	133.4	133.7	131.2
110°	153.5	156.4	156.4	156.4	155.0

TEST NUMBER: P902236

CATALOG NUMBER: DFN2DIP-4P3F0-050D020US830-RLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	177.6	180.6	180.1	178.6	177.6
115°	201.3	204.2	203.3	202.7	201.3
117.5°	224.9	228.8	226.3	224.9	223.4
120°	248.5	252.5	248.5	248.5	246.9
122.5°	270.1	275.1	272.7	271.3	270.1
125°	292.8	297.3	295.9	294.3	293.7
127.5°	314.9	320.5	318.5	316.3	314.9
130°	335.5	342.0	341.1	340.1	338.1
132.5°	358.7	363.8	364.1	361.7	360.1
135°	378.7	384.3	385.3	384.8	383.3
137.5°	401.0	405.5	406.4	406.0	403.9
140°	420.6	425.1	427.6	427.6	425.7
142.5°	440.7	445.2	446.7	447.1	445.2
145°	459.8	463.4	466.3	466.7	464.8
147.5°	476.8	481.4	483.5	484.4	482.4
150°	494.5	497.5	499.5	501.1	499.5
152.5°	510.1	513.1	515.7	517.6	515.7
155°	525.8	527.2	528.8	531.3	529.7
157.5°	539.2	540.3	541.2	544.8	542.2
160°	551.3	552.3	552.9	555.9	553.7
162.5°	562.4	562.4	562.9	566.4	563.8
165°	571.9	571.4	571.4	575.0	572.5
167.5°	580.5	578.9	578.9	582.5	580.0
170°	587.0	585.6	585.0	588.6	585.6
172.5°	591.5	590.0	589.6	593.1	590.0
175°	595.1	593.7	592.6	596.2	593.1
177.5°	597.1	595.7	594.6	597.6	594.6
180°	596.2	596.2	596.2	596.2	596.2

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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	11.62	12.66	12.39	13.44	14.38	7.59	8.62	8.35	9.40	10.35
	3H	13.31	14.24	14.09	15.03	16.00	8.78	9.71	9.56	10.50	11.47
	4H	13.93	14.80	14.72	15.60	16.59	9.24	10.11	10.03	10.91	11.90
	6H	14.36	15.16	15.16	15.97	16.97	9.56	10.37	10.37	11.17	12.18
	8H	14.49	15.25	15.30	16.08	17.08	9.66	10.42	10.47	11.25	12.25
	12H	14.55	15.28	15.38	16.10	17.13	9.70	10.43	10.53	11.25	12.28
4H	2H	11.67	12.54	12.47	13.34	14.32	8.20	9.07	9.00	9.87	10.86
	3H	13.51	14.23	14.32	15.07	16.07	9.56	10.29	10.38	11.12	12.13
	4H	14.20	14.86	15.03	15.69	16.73	10.12	10.77	10.94	11.60	12.64
	6H	14.73	15.29	15.57	16.15	17.19	10.54	11.10	11.38	11.96	13.00
	8H	14.90	15.43	15.75	16.28	17.33	10.67	11.20	11.51	12.05	13.10
	12H	15.00	15.48	15.87	16.35	17.41	10.74	11.21	11.60	12.09	13.14
8H	4H	14.19	14.71	15.03	15.57	16.62	10.41	10.94	11.25	11.79	12.84
	6H	14.75	15.19	15.63	16.09	17.13	10.92	11.36	11.80	12.26	13.31
	8H	14.97	15.36	15.85	16.25	17.31	11.11	11.50	12.00	12.39	13.46
	12H	15.11	15.45	16.00	16.33	17.46	11.23	11.58	12.12	12.46	13.58
12H	4H	14.15	14.62	15.01	15.49	16.55	10.42	10.90	11.28	11.77	12.82
	6H	14.73	15.12	15.61	16.01	17.07	10.97	11.36	11.86	12.25	13.32
	8H	14.95	15.30	15.84	16.18	17.30	11.19	11.53	12.07	12.41	13.53