

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: P902193

Luminaire Tested: DFN2DIP-4P3F0-020D060US830-RLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P902193
REPORT IS A COMBINATION OF REPORTS P900590 AND P897473
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P3F0-020D060US830-RLLONL
Description: 3 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

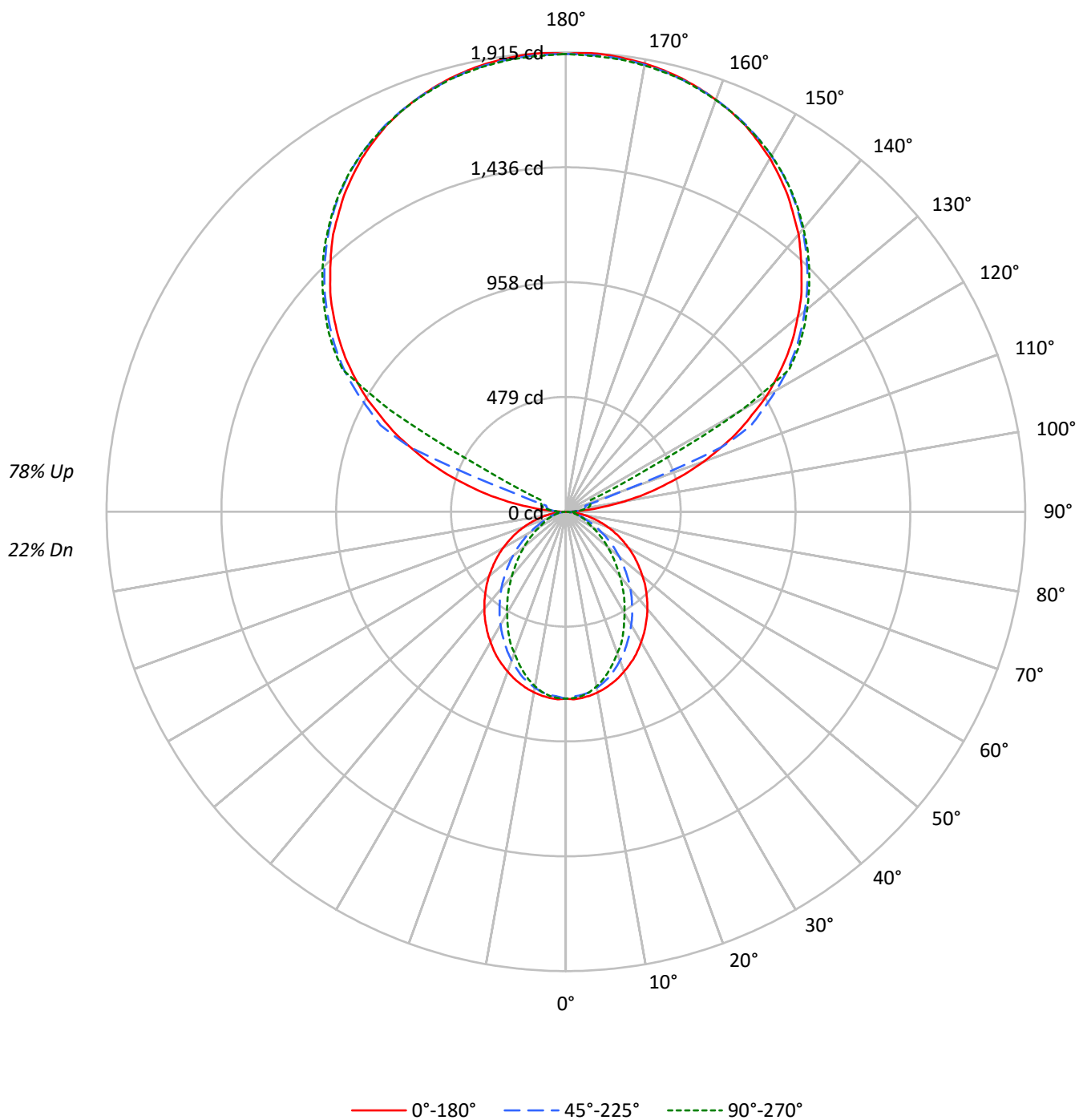
Lumens per Lamp: N/A
Luminaire Lumens: 7201.0 lumens
Efficiency: N/A
Efficacy: 114.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.07' x L: 3.07' x H: 0.1')
CIE Type: Semi-Indirect

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

TEST NUMBER: P902193

CATALOG NUMBER: DFN2DIP-4P3F0-020D060US830-RLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P902193

CATALOG NUMBER: DFN2DIP-4P3F0-020D060US830-RLONL

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	50	30	10
RCR																				
0	101	101	101	101	89	89	89	89	68	68	68	49	49	49	31	31	31			22
1	92	88	84	81	81	78	75	72	60	58	56	43	42	41	27	27	26			19
2	84	77	71	66	74	68	64	60	52	49	47	38	36	34	24	23	22			16
3	76	68	61	55	68	60	55	50	46	43	39	34	31	29	22	20	19			14
4	70	60	52	47	62	53	47	42	41	37	34	30	27	25	20	18	17			12
5	64	53	46	40	57	48	41	36	37	32	29	27	24	22	18	16	15			11
6	59	48	40	35	52	43	36	31	33	29	25	24	21	19	16	14	13			10
7	54	43	35	30	48	38	32	27	30	25	22	22	19	17	15	13	12			9
8	50	39	32	27	45	35	29	24	27	23	20	20	17	15	14	12	10			8
9	47	35	28	23	42	32	26	21	25	20	17	19	16	13	12	11	9			7
10	44	32	25	21	39	29	23	19	23	19	16	17	14	12	12	10	9			6

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	888	888	888
5°	889	873	879
10°	879	856	850
15°	867	827	806
20°	850	787	751
25°	833	743	699
30°	810	698	632
35°	788	649	573
40°	766	599	506
45°	740	543	446
50°	713	487	386
55°	684	427	329
60°	651	365	271
65°	613	301	243
70°	567	242	220
75°	509	212	199
80°	425	176	172
85°	289	115	128

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1303 cd/sqm

TEST NUMBER: P902193

CATALOG NUMBER: DFN2DIP-4P3F0-020D060US830-RLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	73.0	1.0
10°-20°	200.4	2.8
20°-30°	281.4	3.9
30°-40°	306.8	4.3
40°-50°	282.0	3.9
50°-60°	221.4	3.1
60°-70°	144.1	2.0
70°-80°	74.2	1.0
80°-90°	22.3	0.3
90°-100°	62.9	0.9
100°-110°	234.6	3.3
110°-120°	622.2	8.6
120°-130°	1032.0	14.3
130°-140°	1096.2	15.2
140°-150°	1018.8	14.1
150°-160°	819.1	11.4
160°-170°	527.8	7.3
170°-180°	181.7	2.5
0°-30°	554.9	7.7
0°-40°	861.7	12.0
0°-60°	1365.1	19.0
0°-90°	1605.7	22.3
90°-120°	919.8	12.8
90°-150°	4066.8	56.5
90°-180°	5595.0	77.7
0°-180°	7201.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	779	779	779	779	779	
5°	779	776	766	773	771	74
15°	741	733	709	696	689	209
25°	673	650	604	575	564	309
35°	580	544	482	437	422	363
45°	474	426	353	302	286	366
55°	360	305	229	187	173	322
65°	243	186	123	99	97	241
75°	130	80	56	52	51	137
85°	30	16	13	13	13	35
90°	1	17	28	35	37	7
95°	90	44	54	61	59	106
105°	420	461	84	99	105	449
115°	794	818	852	213	113	782
125°	1123	1141	1167	1177	1181	1001
135°	1389	1412	1424	1438	1435	1073
145°	1612	1610	1634	1643	1636	1008
155°	1775	1762	1779	1787	1776	818
165°	1870	1862	1866	1876	1866	528
175°	1913	1903	1906	1915	1902	182
180°	1909	1909	1909	1909	1909	

TEST NUMBER: P902193

CATALOG NUMBER: DFN2DIP-4P3F0-020D060US830-RLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	779.1	779.1	779.1	779.1	779.1
2.5°	782.6	779.1	771.3	778.4	777.0
5°	779.1	775.6	766.4	772.8	770.6
7.5°	772.8	768.5	758.7	761.5	757.9
10°	764.3	759.3	745.3	743.1	739.0
12.5°	753.8	747.3	728.3	724.2	716.3
15°	741.0	733.2	709.3	695.9	688.9
17.5°	726.2	714.9	685.3	669.8	658.6
20°	709.3	695.1	660.0	642.3	626.8
22.5°	691.0	674.8	633.9	609.9	599.4
25°	672.7	650.1	603.5	574.7	564.0
27.5°	650.8	626.8	575.3	542.2	525.9
30°	627.5	600.7	544.3	508.4	489.3
32.5°	604.9	572.5	514.7	472.4	454.8
35°	579.6	543.7	481.6	437.2	421.6
37.5°	554.9	516.0	450.5	401.9	384.3
40°	528.8	486.5	418.1	368.1	349.7
42.5°	502.0	456.9	385.7	333.5	315.9
45°	473.8	426.5	352.6	302.5	285.5
47.5°	447.0	397.0	320.8	270.7	255.2
50°	417.5	367.4	289.8	241.1	226.4
52.5°	388.4	335.5	260.1	213.7	200.3
55°	360.2	305.3	229.1	186.9	173.4
57.5°	331.4	274.9	201.7	162.2	150.9
60°	301.8	245.3	172.8	136.9	125.5
62.5°	272.9	216.5	148.1	114.2	108.6
65°	243.3	186.2	122.7	98.8	96.6
67.5°	215.1	157.9	98.8	86.7	84.6
70°	185.4	130.4	81.7	74.7	71.9
72.5°	157.2	105.0	68.3	62.8	61.4
75°	129.7	80.3	56.4	51.5	50.8
77.5°	102.3	57.1	44.4	41.6	40.2
80°	76.8	40.9	33.8	31.0	31.0
82.5°	53.5	27.5	23.3	21.9	21.9
85°	30.3	15.5	13.4	13.4	13.4
87.5°	11.3	5.7	5.7	4.9	4.9
90°	1.3	16.6	27.5	34.6	37.2
92.5°	34.6	29.0	33.1	35.9	37.2
95°	89.7	44.1	53.8	60.9	59.4
97.5°	161.6	48.4	70.3	74.6	76.0
100°	244.5	55.2	78.7	89.7	92.5
102.5°	335.5	332.9	81.5	96.6	100.9
105°	419.8	461.3	84.3	99.3	105.0
107.5°	517.9	552.3	87.1	102.2	107.7
110°	611.9	640.7	241.8	103.7	109.1

TEST NUMBER: P902193

CATALOG NUMBER: DFN2DIP-4P3F0-020D060US830-RLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	700.2	725.0	701.5	106.2	110.6
115°	794.1	817.6	852.2	212.7	113.3
117.5°	875.5	903.1	926.7	729.2	367.3
120°	966.8	987.4	1012.4	1028.9	842.4
122.5°	1044.0	1066.1	1093.8	1102.0	1103.5
125°	1122.8	1140.8	1167.0	1176.7	1180.7
127.5°	1194.6	1213.9	1234.7	1248.5	1249.8
130°	1262.3	1284.4	1299.5	1314.8	1313.4
132.5°	1331.3	1349.3	1364.4	1376.9	1375.5
135°	1389.4	1411.6	1423.8	1437.8	1434.9
137.5°	1450.0	1466.6	1480.5	1494.3	1490.3
140°	1509.4	1520.6	1535.7	1548.1	1541.2
142.5°	1559.2	1569.0	1586.9	1597.8	1590.9
145°	1611.7	1610.2	1633.7	1643.4	1636.5
147.5°	1657.2	1653.0	1676.5	1683.4	1678.0
150°	1701.5	1691.8	1713.9	1722.1	1715.2
152.5°	1738.7	1727.7	1748.3	1756.7	1747.0
155°	1774.6	1762.3	1778.9	1787.1	1776.0
157.5°	1803.6	1792.6	1805.1	1814.8	1803.6
160°	1828.5	1820.1	1828.5	1836.7	1827.1
162.5°	1850.5	1842.3	1849.2	1858.9	1846.4
165°	1869.9	1861.7	1865.8	1875.5	1865.8
167.5°	1885.1	1876.8	1881.0	1890.7	1878.2
170°	1897.6	1889.2	1892.1	1901.7	1889.2
172.5°	1905.8	1897.6	1900.4	1910.1	1897.6
175°	1912.7	1903.0	1905.8	1915.4	1901.7
177.5°	1915.4	1905.8	1907.2	1916.9	1904.5
180°	1908.6	1908.6	1908.6	1908.6	1908.6

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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	3.27	3.92	4.44	5.07	6.69	0.00	0.00	0.40	1.03	2.65
	3H	4.93	5.51	6.11	6.67	8.30	0.40	0.98	1.58	2.14	3.77
	4H	5.53	6.08	6.71	7.24	8.87	0.84	1.39	2.02	2.55	4.19
	6H	5.94	6.44	7.13	7.60	9.25	1.15	1.65	2.34	2.81	4.46
	8H	6.06	6.54	7.25	7.71	9.35	1.23	1.71	2.42	2.88	4.53
	12H	6.11	6.57	7.31	7.73	9.40	1.26	1.72	2.46	2.89	4.55
4H	2H	3.27	3.82	4.46	4.97	6.61	0.00	0.36	1.00	1.51	3.15
	3H	5.07	5.53	6.27	6.71	8.36	1.13	1.59	2.33	2.77	4.42
	4H	5.76	6.18	6.95	7.35	9.02	1.67	2.09	2.86	3.26	4.93
	6H	6.26	6.62	7.46	7.81	9.47	2.07	2.43	3.27	3.62	5.28
	8H	6.42	6.76	7.62	7.94	9.62	2.19	2.53	3.39	3.71	5.39
	12H	6.51	6.81	7.72	8.01	9.69	2.24	2.55	3.46	3.74	5.42
8H	4H	5.71	6.04	6.91	7.23	8.90	1.93	2.27	3.13	3.45	5.13
	6H	6.26	6.54	7.48	7.77	9.44	2.43	2.71	3.65	3.94	5.61
	8H	6.47	6.71	7.70	7.92	9.61	2.62	2.86	3.84	4.06	5.76
	12H	6.60	6.81	7.83	8.01	9.74	2.73	2.94	3.95	4.14	5.86
12H	4H	5.65	5.96	6.86	7.15	8.83	1.93	2.23	3.14	3.43	5.11
	6H	6.24	6.48	7.46	7.68	9.37	2.48	2.72	3.70	3.92	5.62
	8H	6.44	6.66	7.67	7.86	9.58	2.68	2.89	3.90	4.09	5.81

END OF REPORT