

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: P919232

Luminaire Tested: DFN2DIP-PN2F0-020D060US935-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P919232
REPORT IS A COMBINATION OF REPORTS P899501 AND P896349
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN2F0-020D060US935-FLLFLL
Description: 2 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

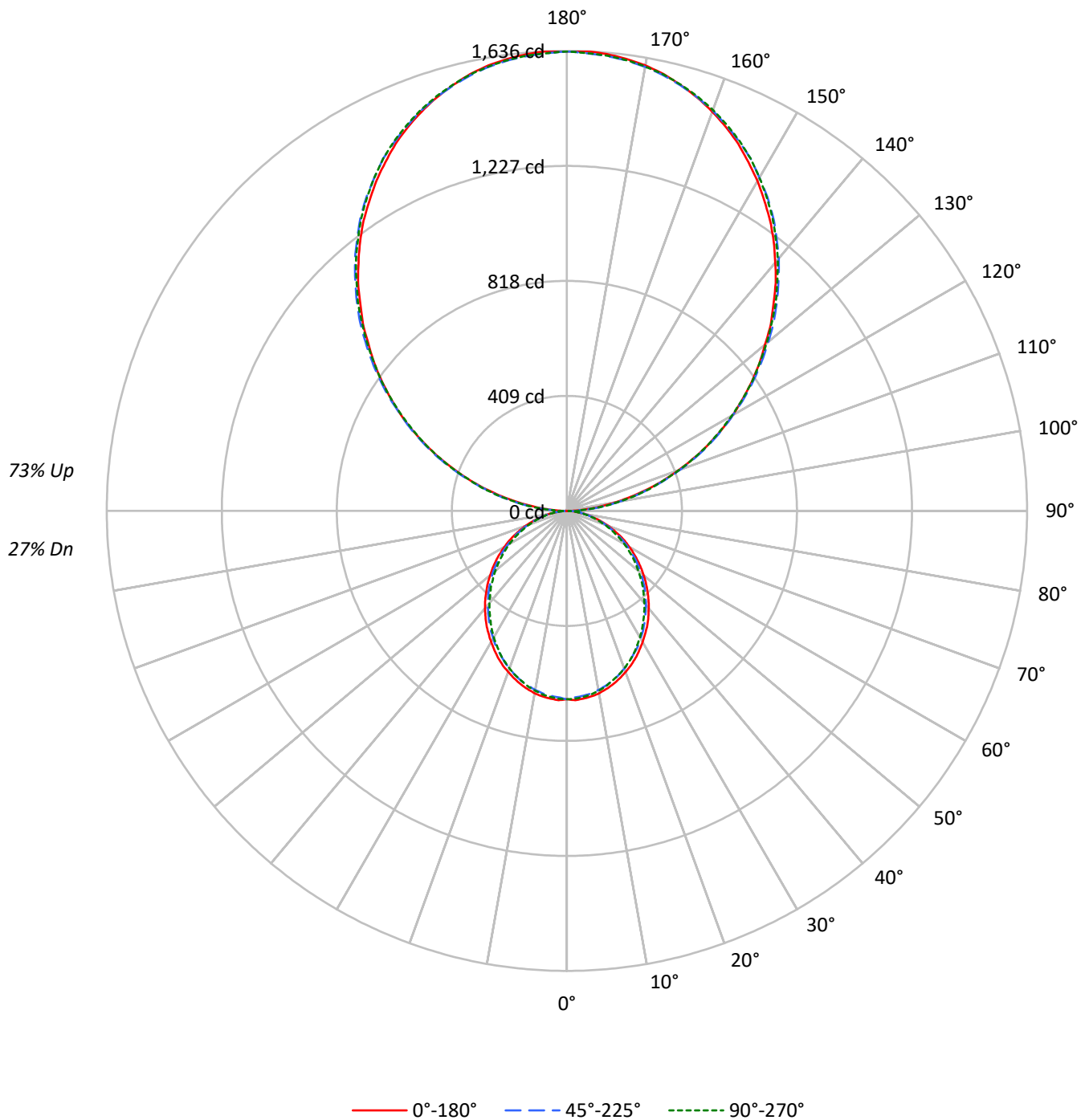
Lumens per Lamp: N/A
Luminaire Lumens: 6276.7 lumens
Efficiency: N/A
Efficacy: 91.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.17' x L: 2.29' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 69
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.099
Total Harmonic Distortion (THDi): 0.979
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P919232

CATALOG NUMBER: DFN2DIP-PN2F0-020D060US935-FLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P919232

CATALOG NUMBER: DFN2DIP-PN2F0-020D060US935-FLLFL

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	102	102	102	102	91	91	91	91	71	71	71	52	52	52	35	35	35
1	93	88	85	81	83	79	76	73	62	60	58	46	44	43	31	30	30
2	84	77	71	66	75	69	64	60	54	51	48	40	38	36	27	26	25
3	77	68	61	55	68	61	55	50	48	44	40	35	33	30	24	23	21
4	70	60	52	47	62	54	47	42	42	38	34	32	29	26	22	20	18
5	64	53	45	40	57	48	41	36	38	33	29	28	25	22	19	17	16
6	59	48	40	34	53	43	36	31	34	29	25	25	22	20	18	16	14
7	55	43	35	30	49	39	32	27	31	26	22	23	20	17	16	14	12
8	51	39	31	26	45	35	28	24	28	23	20	21	18	15	15	13	11
9	47	35	28	23	42	32	26	21	25	21	17	19	16	14	14	11	10
10	44	32	25	21	39	29	23	19	23	19	16	18	15	12	13	10	9

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1451	1451	1451
5°	1451	1428	1438
10°	1437	1406	1417
15°	1414	1379	1384
20°	1383	1344	1351
25°	1352	1303	1313
30°	1314	1264	1265
35°	1278	1218	1215
40°	1234	1173	1166
45°	1189	1126	1117
50°	1141	1078	1060
55°	1090	1022	1007
60°	1032	956	946
65°	969	887	875
70°	889	802	797
75°	778	702	723
80°	645	573	586
85°	436	362	368

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 2204 cd/sqm

TEST NUMBER: P919232

CATALOG NUMBER: DFN2DIP-PN2F0-020D060US935-FLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	63.1	1.0
10°-20°	177.4	2.8
20°-30°	260.8	4.2
30°-40°	302.9	4.8
40°-50°	302.5	4.8
50°-60°	263.8	4.2
60°-70°	195.0	3.1
70°-80°	110.3	1.8
80°-90°	33.7	0.5
90°-100°	101.1	1.6
100°-110°	321.2	5.1
110°-120°	549.7	8.8
120°-130°	723.0	11.5
130°-140°	811.5	12.9
140°-150°	795.8	12.7
150°-160°	667.5	10.6
160°-170°	442.7	7.1
170°-180°	154.7	2.5
0°-30°	501.3	8.0
0°-40°	804.1	12.8
0°-60°	1370.4	21.8
0°-90°	1709.4	27.2
90°-120°	972.0	15.5
90°-150°	3302.3	52.6
90°-180°	4567.0	72.8
0°-180°	6276.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	670	670	670	670	670	
5°	670	668	660	666	664	64
15°	638	634	626	628	625	180
25°	577	572	561	562	561	266
35°	498	492	481	477	474	311
45°	405	401	391	384	381	313
55°	307	303	295	287	284	274
65°	207	203	197	191	188	205
75°	108	107	104	100	101	116
85°	26	26	25	23	23	29
90°	2	18	48	45	47	6
95°	72	86	88	88	86	80
105°	296	300	303	306	306	313
115°	552	560	557	556	552	546
125°	802	815	811	806	805	717
135°	1038	1053	1056	1055	1051	802
145°	1260	1270	1278	1279	1274	787
155°	1441	1445	1449	1456	1452	663
165°	1567	1566	1566	1576	1569	442
175°	1631	1627	1624	1634	1625	155
180°	1634	1634	1634	1634	1634	

TEST NUMBER: P919232

CATALOG NUMBER: DFN2DIP-PN2F0-020D060US935-FLLFL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	670.0	670.0	670.0	670.0	670.0
2.5°	673.9	670.7	663.6	670.0	668.8
5°	670.0	667.5	660.4	665.6	664.3
7.5°	665.6	661.7	654.6	659.8	658.5
10°	658.5	654.0	646.3	651.3	649.5
12.5°	648.8	645.0	637.2	640.4	639.1
15°	637.8	634.0	625.6	628.2	625.0
17.5°	624.3	620.5	612.1	615.3	612.1
20°	609.5	605.6	596.6	598.6	596.0
22.5°	594.7	588.9	580.5	580.5	579.2
25°	577.3	572.1	561.2	562.4	561.2
27.5°	557.9	553.4	545.1	543.2	539.9
30°	538.6	533.5	523.8	521.9	519.3
32.5°	518.0	514.2	503.9	500.0	497.4
35°	498.1	491.6	481.3	477.4	474.2
37.5°	475.5	469.7	459.3	454.9	451.6
40°	452.3	447.1	436.8	431.1	428.4
42.5°	429.7	424.6	414.3	407.9	404.0
45°	405.3	400.8	391.1	384.0	381.4
47.5°	381.4	376.9	366.6	359.5	355.7
50°	356.3	353.1	344.1	335.0	331.8
52.5°	331.8	327.3	318.9	311.9	307.4
55°	306.7	302.8	295.1	287.4	284.1
57.5°	281.5	278.4	269.9	262.3	259.6
60°	256.4	253.9	244.9	237.7	235.8
62.5°	232.0	227.4	221.0	214.6	212.0
65°	206.8	202.9	196.6	190.7	187.5
67.5°	181.1	177.8	172.0	167.6	165.0
70°	157.2	154.6	148.8	144.3	141.8
72.5°	132.8	130.2	126.9	122.4	120.5
75°	108.2	107.0	103.7	99.9	101.2
77.5°	86.4	83.8	82.4	80.5	78.6
80°	64.5	63.8	62.5	60.5	59.2
82.5°	43.8	43.8	43.2	40.6	40.6
85°	26.3	25.7	25.1	23.2	22.6
87.5°	11.6	10.3	9.0	7.1	6.5
90°	1.5	17.7	48.3	45.3	46.8
92.5°	30.6	41.4	42.9	44.3	44.3
95°	71.9	85.7	88.2	88.2	85.7
97.5°	119.7	132.5	137.9	137.9	137.9
100°	174.9	186.1	190.1	190.1	188.6
102.5°	233.0	241.3	246.8	248.2	246.8
105°	296.5	300.5	303.4	305.9	305.9
107.5°	359.6	365.5	365.5	366.4	359.6
110°	420.7	428.5	428.5	428.5	424.6

TEST NUMBER: P919232

CATALOG NUMBER: DFN2DIP-PN2F0-020D060US935-FLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	486.6	495.0	493.5	489.6	486.6
115°	551.6	559.6	557.1	555.6	551.6
117.5°	616.2	627.1	620.1	616.2	612.3
120°	681.2	692.1	681.2	681.2	676.7
122.5°	740.3	754.1	747.2	743.3	740.3
125°	802.4	814.7	810.7	806.3	804.9
127.5°	863.0	878.2	872.8	866.9	863.0
130°	919.6	937.4	934.9	931.9	926.5
132.5°	983.2	996.9	997.9	991.0	987.0
135°	1037.8	1053.1	1056.0	1054.6	1050.6
137.5°	1098.9	1111.2	1113.7	1112.7	1106.8
140°	1152.6	1164.9	1171.8	1171.8	1166.4
142.5°	1207.7	1220.0	1224.0	1225.5	1220.0
145°	1260.0	1269.8	1277.7	1279.2	1273.8
147.5°	1306.7	1319.0	1325.0	1327.4	1322.0
150°	1355.0	1363.4	1368.8	1373.2	1368.8
152.5°	1397.8	1406.3	1413.2	1418.6	1413.2
155°	1440.7	1444.7	1449.1	1456.0	1451.6
157.5°	1477.6	1480.7	1483.1	1493.0	1486.1
160°	1510.7	1513.6	1515.1	1523.4	1517.6
162.5°	1541.2	1541.2	1542.6	1552.0	1545.1
165°	1567.3	1565.8	1565.8	1575.7	1568.8
167.5°	1591.0	1586.6	1586.6	1596.4	1589.5
170°	1608.7	1604.7	1603.3	1613.1	1604.7
172.5°	1621.0	1617.0	1615.6	1625.4	1617.0
175°	1630.8	1626.9	1623.9	1633.8	1625.4
177.5°	1636.2	1632.4	1629.4	1637.7	1629.4
180°	1633.8	1633.8	1633.8	1633.8	1633.8

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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	5.84	6.53	6.97	7.65	9.21	5.40	6.09	6.53	7.21	8.78
	3H	7.47	8.08	8.60	9.21	10.79	6.99	7.60	8.13	8.73	10.31
	4H	8.03	8.62	9.18	9.75	11.33	7.55	8.14	8.70	9.27	10.85
	6H	8.41	8.95	9.56	10.08	11.68	7.92	8.46	9.08	9.59	11.19
	8H	8.50	9.01	9.66	10.16	11.75	8.01	8.52	9.17	9.67	11.26
	12H	8.53	9.02	9.70	10.16	11.77	8.04	8.53	9.20	9.67	11.28
4H	2H	6.27	6.86	7.43	7.99	9.57	5.92	6.51	7.08	7.64	9.22
	3H	8.09	8.58	9.26	9.74	11.34	7.70	8.18	8.86	9.34	10.94
	4H	8.79	9.24	9.95	10.38	12.00	8.37	8.82	9.54	9.97	11.58
	6H	9.27	9.66	10.44	10.83	12.43	8.85	9.24	10.02	10.41	12.01
	8H	9.41	9.77	10.58	10.93	12.55	8.98	9.34	10.15	10.50	12.13
	12H	9.46	9.79	10.65	10.96	12.59	9.03	9.36	10.21	10.53	12.15
8H	4H	8.96	9.32	10.12	10.48	12.10	8.59	8.95	9.76	10.11	11.73
	6H	9.56	9.85	10.74	11.06	12.67	9.18	9.48	10.37	10.68	12.30
	8H	9.76	10.02	10.96	11.20	12.84	9.38	9.64	10.57	10.82	12.46
	12H	9.87	10.10	11.07	11.28	12.95	9.48	9.70	10.67	10.88	12.55
12H	4H	8.93	9.26	10.12	10.43	12.06	8.57	8.90	9.76	10.07	11.70
	6H	9.58	9.84	10.77	11.02	12.66	9.22	9.48	10.41	10.66	12.30
	8H	9.80	10.03	11.00	11.20	12.87	9.43	9.66	10.63	10.83	12.50

END OF REPORT