

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: P913064

Luminaire Tested: DFN2DIP-4P2F0-030D020US927-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P913064
REPORT IS A COMBINATION OF REPORTS P899014 AND P895899
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P2F0-030D020US927-RLLFLL
Description: 2 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

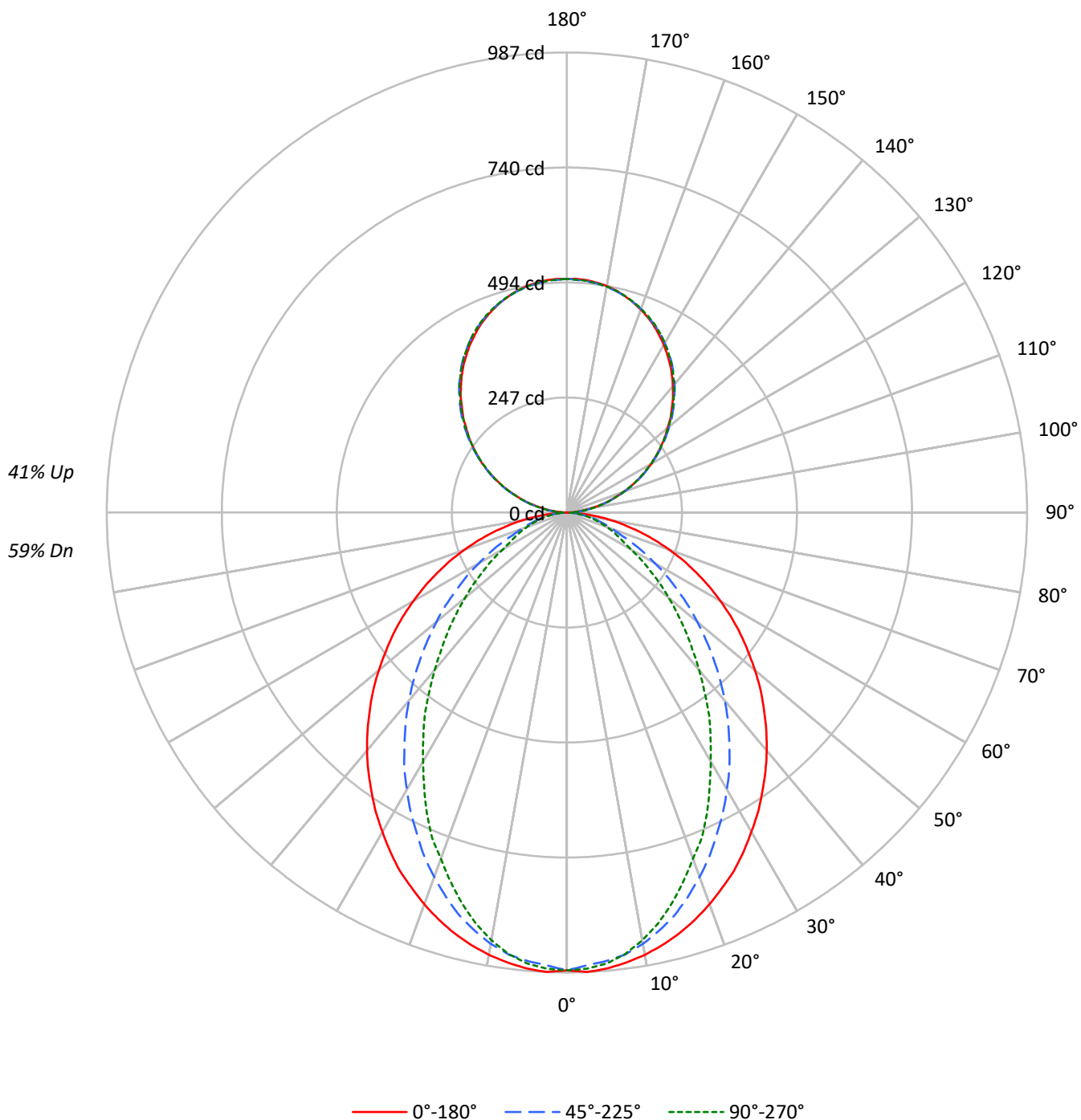
Lumens per Lamp: N/A
Luminaire Lumens: 3422.2 lumens
Efficiency: N/A
Efficacy: 79.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.07' x L: 2.07' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 43.3
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9954
Total Harmonic Distortion (THDi): 0.076
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
RCR																	
0	109	109	109	109	102	102	102	102	88	88	88		76	76	76		64
1	100	96	92	89	94	90	87	84	78	76	74		68	66	64		58
2	92	85	79	74	86	79	74	70	69	65	62		60	57	55		52
3	84	75	68	62	78	70	64	59	62	57	53		54	50	47		46
4	77	67	59	53	72	63	56	51	55	50	46		48	44	41		42
5	71	60	52	46	66	56	49	44	50	44	40		44	39	36		38
6	66	54	46	40	61	51	44	39	45	39	35		40	35	32		35
7	61	49	41	36	57	46	39	34	41	35	31		36	32	28		32
8	57	45	37	32	53	42	35	30	38	32	28		33	29	25		29
9	53	41	34	29	50	39	32	27	35	29	25		31	26	23		27
10	50	38	31	26	47	36	29	25	32	27	23		29	24	21		25

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2459	2459	2459
5°	2458	2414	2432
10°	2429	2361	2349
15°	2391	2276	2223
20°	2342	2163	2069
25°	2291	2037	1921
30°	2226	1909	1735
35°	2161	1771	1572
40°	2094	1630	1385
45°	2018	1474	1216
50°	1938	1316	1051
55°	1855	1149	893
60°	1758	975	732
65°	1647	799	654
70°	1511	636	586
75°	1341	548	525
80°	1097	443	443
85°	707	273	313

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2018 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	92.1	2.7
10°-20°	252.7	7.4
20°-30°	354.8	10.4
30°-40°	386.8	11.3
40°-50°	355.5	10.4
50°-60°	279.2	8.2
60°-70°	181.7	5.3
70°-80°	93.5	2.7
80°-90°	25.3	0.7
90°-100°	31.0	0.9
100°-110°	98.5	2.9
110°-120°	168.6	4.9
120°-130°	221.7	6.5
130°-140°	248.9	7.3
140°-150°	244.1	7.1
150°-160°	204.7	6.0
160°-170°	135.8	4.0
170°-180°	47.5	1.4
0°-30°	699.6	20.4
0°-40°	1086.3	31.7
0°-60°	1720.9	50.3
0°-90°	2021.5	59.1
90°-120°	298.1	8.7
90°-150°	1012.8	29.6
90°-180°	1401.0	40.9
0°-180°	3422.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	982	982	982	982	982	
5°	982	978	966	974	972	93
15°	934	924	894	877	868	263
25°	848	820	761	724	711	390
35°	731	685	607	551	532	457
45°	597	538	444	381	360	461
55°	454	385	289	236	219	406
65°	307	235	155	124	122	304
75°	164	101	71	65	64	173
85°	38	20	17	17	17	44
90°	0	6	15	14	14	3
95°	22	26	27	27	26	25
105°	91	92	93	94	94	96
115°	169	172	171	170	169	167
125°	246	250	249	247	247	220
135°	318	323	324	323	322	246
145°	386	389	392	392	391	241
155°	442	443	444	447	445	203
165°	481	480	480	483	481	136
175°	500	499	498	501	498	48
180°	501	501	501	501	501	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	982.2	982.2	982.2	982.2	982.2
2.5°	986.7	982.2	972.4	981.4	979.6
5°	982.2	977.8	966.2	974.2	971.5
7.5°	974.2	968.9	956.5	960.0	955.5
10°	963.5	957.4	939.6	936.8	931.6
12.5°	950.2	942.2	918.2	912.9	903.1
15°	934.2	924.4	894.2	877.3	868.5
17.5°	915.5	901.3	864.0	844.5	830.2
20°	894.2	876.4	831.9	809.8	790.2
22.5°	871.2	850.6	799.1	768.9	755.6
25°	848.0	819.5	760.9	724.4	711.1
27.5°	820.5	790.2	725.3	683.6	663.1
30°	791.2	757.3	686.2	641.0	616.9
32.5°	762.6	721.8	649.0	595.6	573.3
35°	730.7	685.3	607.1	551.1	531.6
37.5°	699.6	650.6	568.0	506.6	484.5
40°	666.7	613.4	527.1	464.0	440.9
42.5°	632.9	576.1	486.2	420.4	398.2
45°	597.4	537.7	444.5	381.3	360.0
47.5°	563.6	500.5	404.5	341.3	321.8
50°	526.2	463.1	365.4	304.0	285.3
52.5°	489.7	423.1	328.0	269.3	252.5
55°	454.2	384.8	288.8	235.6	218.7
57.5°	417.8	346.7	254.3	204.5	190.2
60°	380.4	309.3	217.8	172.5	158.3
62.5°	344.0	272.9	186.6	144.0	137.0
65°	306.7	234.6	154.6	124.5	121.8
67.5°	271.2	199.1	124.5	109.3	106.6
70°	233.8	164.5	103.1	94.2	90.6
72.5°	198.2	132.4	86.2	79.1	77.3
75°	163.5	101.3	71.1	64.9	64.0
77.5°	128.9	71.9	56.0	52.4	50.6
80°	96.9	51.6	42.6	39.1	39.1
82.5°	67.5	34.7	29.3	27.6	27.6
85°	38.2	19.5	16.9	16.9	16.9
87.5°	14.3	7.1	7.1	6.3	6.3
90°	0.5	5.5	14.8	13.9	14.3
92.5°	9.3	12.7	13.2	13.6	13.6
95°	22.0	26.3	27.0	27.0	26.3
97.5°	36.7	40.6	42.3	42.3	42.3
100°	53.6	57.1	58.3	58.3	57.8
102.5°	71.5	74.0	75.7	76.1	75.7
105°	90.9	92.1	93.1	93.8	93.8
107.5°	110.3	112.1	112.1	112.4	110.3
110°	129.0	131.4	131.4	131.4	130.2



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	149.2	151.8	151.4	150.1	149.2
115°	169.2	171.6	170.9	170.4	169.2
117.5°	189.0	192.3	190.2	189.0	187.7
120°	208.9	212.2	208.9	208.9	207.6
122.5°	227.0	231.2	229.2	228.0	227.0
125°	246.1	249.9	248.7	247.3	246.8
127.5°	264.7	269.3	267.7	265.9	264.7
130°	282.0	287.5	286.7	285.8	284.2
132.5°	301.5	305.8	306.0	304.0	302.7
135°	318.3	323.0	323.8	323.4	322.2
137.5°	337.0	340.8	341.6	341.3	339.4
140°	353.5	357.3	359.4	359.4	357.7
142.5°	370.4	374.1	375.4	375.8	374.1
145°	386.4	389.4	391.9	392.3	390.6
147.5°	400.8	404.6	406.4	407.1	405.4
150°	415.6	418.1	419.8	421.1	419.8
152.5°	428.7	431.3	433.4	435.1	433.4
155°	441.9	443.1	444.4	446.6	445.2
157.5°	453.2	454.1	454.9	457.9	455.7
160°	463.3	464.2	464.7	467.2	465.4
162.5°	472.7	472.7	473.1	476.0	473.9
165°	480.7	480.2	480.2	483.2	481.2
167.5°	487.9	486.6	486.6	489.6	487.5
170°	493.4	492.2	491.7	494.7	492.2
172.5°	497.2	495.9	495.5	498.5	495.9
175°	500.2	499.0	498.0	501.1	498.5
177.5°	501.8	500.7	499.7	502.2	499.7
180°	501.1	501.1	501.1	501.1	501.1

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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	10.95	11.86	11.83	12.75	13.89	6.91	7.82	7.79	8.72	9.85
	3H	12.61	13.42	13.50	14.33	15.49	8.08	8.89	8.97	9.80	10.97
	4H	13.20	13.97	14.11	14.88	16.06	8.52	9.29	9.43	10.20	11.37
	6H	13.61	14.32	14.53	15.24	16.42	8.82	9.53	9.75	10.45	11.64
	8H	13.73	14.40	14.66	15.34	16.52	8.91	9.58	9.84	10.52	11.70
	12H	13.78	14.42	14.72	15.35	16.56	8.95	9.59	9.88	10.52	11.73
4H	2H	10.97	11.74	11.88	12.65	13.82	7.50	8.27	8.41	9.18	10.35
	3H	12.78	13.42	13.70	14.36	15.55	8.83	9.47	9.76	10.41	11.60
	4H	13.46	14.04	14.39	14.98	16.19	9.36	9.95	10.30	10.89	12.10
	6H	13.95	14.45	14.90	15.42	16.63	9.77	10.27	10.71	11.23	12.44
	8H	14.12	14.58	15.07	15.54	16.77	9.88	10.35	10.84	11.31	12.54
	12H	14.20	14.62	15.17	15.60	16.83	9.94	10.36	10.91	11.34	12.57
8H	4H	13.42	13.89	14.38	14.85	16.08	9.64	10.10	10.59	11.06	12.29
	6H	13.97	14.35	14.94	15.35	16.58	10.13	10.52	11.11	11.51	12.74
	8H	14.17	14.51	15.16	15.50	16.74	10.31	10.65	11.29	11.63	12.88
	12H	14.29	14.60	15.28	15.58	16.87	10.41	10.71	11.40	11.69	12.99
12H	4H	13.38	13.80	14.35	14.77	16.01	9.64	10.06	10.61	11.04	12.27
	6H	13.94	14.28	14.93	15.27	16.52	10.17	10.51	11.16	11.50	12.75
	8H	14.15	14.45	15.14	15.43	16.72	10.37	10.67	11.36	11.65	12.94