

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: P913106

Luminaire Tested: DFN2DIP-4P3F0-030D020US927-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P913106
REPORT IS A COMBINATION OF REPORTS P899031 AND P895917
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P3F0-030D020US927-FLLFLL
Description: 3 foot, 90deg - 4way Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

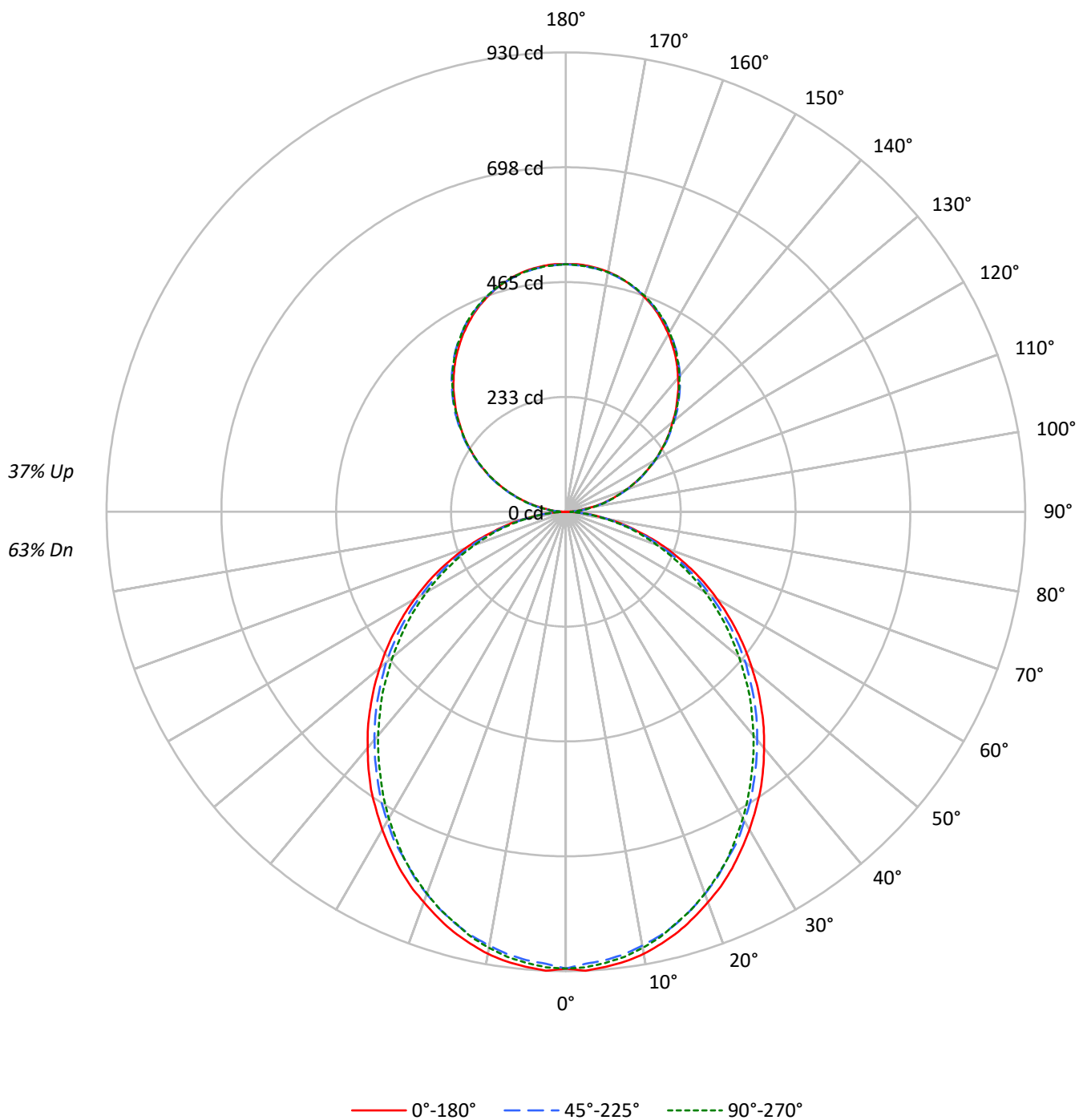
Lumens per Lamp: N/A
Luminaire Lumens: 3754.9 lumens
Efficiency: N/A
Efficacy: 90.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.07' x L: 3.07' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 41.3
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9933
Total Harmonic Distortion (THDi): 0.066
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P913106

CATALOG NUMBER: DFN2DIP-4P3F0-030D020US927-FLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P913106

CATALOG NUMBER: DFN2DIP-4P3F0-030D020US927-FLLFLL

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	110	110	110	110	103	103	103	103	90	90	90	79	79	79	68	68	68
1	101	96	92	89	94	90	87	84	79	77	74	69	67	66	60	59	57
2	92	84	78	72	86	79	73	69	70	65	62	61	58	55	53	50	48
3	84	74	66	60	78	70	63	58	61	56	52	54	50	46	47	44	41
4	77	66	57	51	71	62	54	49	55	49	44	48	43	40	42	38	35
5	70	58	50	44	66	55	48	42	49	43	38	43	38	35	38	34	31
6	65	53	44	38	61	50	42	37	44	38	33	39	34	30	34	30	27
7	60	48	39	34	56	45	38	32	40	34	30	36	31	27	31	27	24
8	56	43	35	30	52	41	34	29	37	31	26	33	28	24	29	25	22
9	52	40	32	27	49	38	30	26	34	28	24	30	25	22	27	23	20
10	49	36	29	24	46	35	28	23	31	25	21	28	23	20	25	21	18

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1054	1054	1054
5°	1055	1038	1046
10°	1046	1024	1031
15°	1030	1006	1009
20°	1008	982	986
25°	987	953	959
30°	960	927	926
35°	935	895	890
40°	904	863	856
45°	873	832	822
50°	839	798	782
55°	804	759	745
60°	764	713	702
65°	720	666	652
70°	664	608	599
75°	586	538	549
80°	493	449	453
85°	347	297	296

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 873 cd/sqm

TEST NUMBER: P913106

CATALOG NUMBER: DFN2DIP-4P3F0-030D020US927-FLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	87.0	2.3
10°-20°	244.9	6.5
20°-30°	359.9	9.6
30°-40°	418.0	11.1
40°-50°	417.5	11.1
50°-60°	364.0	9.7
60°-70°	269.1	7.2
70°-80°	152.3	4.1
80°-90°	41.6	1.1
90°-100°	31.0	0.8
100°-110°	98.5	2.6
110°-120°	168.6	4.5
120°-130°	221.7	5.9
130°-140°	248.9	6.6
140°-150°	244.1	6.5
150°-160°	204.7	5.5
160°-170°	135.8	3.6
170°-180°	47.5	1.3
0°-30°	691.8	18.4
0°-40°	1109.8	29.6
0°-60°	1891.3	50.4
0°-90°	2354.2	62.7
90°-120°	298.1	7.9
90°-150°	1012.8	27.0
90°-180°	1401.0	37.3
0°-180°	3754.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	925	925	925	925	925	
5°	925	921	911	918	917	88
15°	880	875	863	867	862	248
25°	797	790	774	776	774	367
35°	687	678	664	659	654	429
45°	559	553	540	530	526	432
55°	423	418	407	397	392	378
65°	286	280	271	263	259	282
75°	149	148	143	138	140	159
85°	36	36	35	32	31	41
90°	0	6	15	14	14	4
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	

TEST NUMBER: P913106

CATALOG NUMBER: DFN2DIP-4P3F0-030D020US927-FLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	924.7	924.7	924.7	924.7	924.7
2.5°	930.1	925.7	915.8	924.7	923.0
5°	924.7	921.2	911.4	918.5	916.8
7.5°	918.5	913.2	903.4	910.6	908.8
10°	908.8	902.5	891.9	899.0	896.4
12.5°	895.4	890.1	879.5	883.8	882.1
15°	880.3	875.0	863.4	867.0	862.5
17.5°	861.6	856.3	844.7	849.1	844.7
20°	841.1	835.8	823.4	826.0	822.5
22.5°	820.8	812.8	801.1	801.1	799.3
25°	796.7	789.6	774.5	776.3	774.5
27.5°	770.0	763.7	752.3	749.6	745.2
30°	743.4	736.3	722.9	720.3	716.7
32.5°	714.9	709.6	695.4	690.0	686.4
35°	687.4	678.5	664.2	658.9	654.4
37.5°	656.2	648.2	634.0	627.7	623.3
40°	624.2	617.1	602.8	594.9	591.4
42.5°	593.1	586.0	571.8	562.8	557.5
45°	559.4	553.1	539.7	530.0	526.4
47.5°	526.4	520.2	506.0	496.1	490.8
50°	491.7	487.3	474.8	462.4	458.0
52.5°	458.0	451.7	440.2	430.4	424.1
55°	423.3	418.0	407.3	396.6	392.2
57.5°	388.6	384.1	372.6	361.9	358.3
60°	353.9	350.4	337.9	328.1	325.5
62.5°	320.1	313.9	305.0	296.1	292.6
65°	285.5	280.1	271.2	263.2	258.8
67.5°	249.9	245.4	237.4	231.2	227.7
70°	217.0	213.4	205.4	199.2	195.7
72.5°	183.2	179.6	175.2	169.0	166.4
75°	149.3	147.7	143.1	137.8	139.7
77.5°	119.1	115.6	113.8	111.1	108.5
80°	89.0	88.0	86.2	83.6	81.8
82.5°	60.4	60.4	59.7	56.0	56.0
85°	36.4	35.6	34.7	32.0	31.1
87.5°	16.0	14.3	12.4	9.8	8.9
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



TEST NUMBER: P913106

CATALOG NUMBER: DFN2DIP-4P3F0-030D020US927-FLLFLL

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

TEST NUMBER: P913106

CATALOG NUMBER: DFN2DIP-4P3F0-030D020US927-FLLFLL

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	8.51	9.50	9.35	10.36	11.44	8.07	9.06	8.91	9.92	11.00
	3H	10.18	11.07	11.03	11.94	13.04	9.69	10.58	10.54	11.45	12.55
	4H	10.77	11.61	11.64	12.49	13.60	10.28	11.12	11.15	11.99	13.11
	6H	11.17	11.95	12.05	12.83	13.96	10.67	11.45	11.56	12.33	13.46
	8H	11.28	12.02	12.17	12.92	14.05	10.78	11.52	11.67	12.42	13.55
	12H	11.33	12.03	12.23	12.93	14.08	10.82	11.52	11.72	12.42	13.58
4H	2H	8.99	9.83	9.86	10.70	11.82	8.63	9.47	9.51	10.35	11.46
	3H	10.86	11.56	11.74	12.47	13.60	10.45	11.15	11.34	12.06	13.19
	4H	11.58	12.21	12.47	13.12	14.28	11.15	11.79	12.05	12.70	13.85
	6H	12.09	12.64	13.00	13.58	14.73	11.66	12.21	12.57	13.14	14.30
	8H	12.24	12.76	13.16	13.68	14.86	11.81	12.32	12.72	13.25	14.42
	12H	12.32	12.78	13.25	13.73	14.91	11.87	12.34	12.81	13.28	14.46
8H	4H	11.78	12.29	12.69	13.22	14.39	11.40	11.92	12.32	12.84	14.01
	6H	12.41	12.84	13.35	13.80	14.97	12.02	12.45	12.97	13.42	14.59
	8H	12.63	13.00	13.58	13.96	15.15	12.23	12.61	13.18	13.57	14.76
	12H	12.76	13.09	13.71	14.04	15.28	12.35	12.68	13.30	13.63	14.87
12H	4H	11.77	12.23	12.70	13.18	14.35	11.40	11.87	12.33	12.81	13.99
	6H	12.44	12.82	13.39	13.77	14.96	12.07	12.44	13.02	13.40	14.59
	8H	12.68	13.01	13.64	13.96	15.20	12.30	12.63	13.26	13.58	14.82