

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: P913063

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

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P913063
REPORT IS A COMBINATION OF REPORTS P900533 AND P897455
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P2F0-030D020US927-FLLONL
Description: 2 foot, 90deg - 4way Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

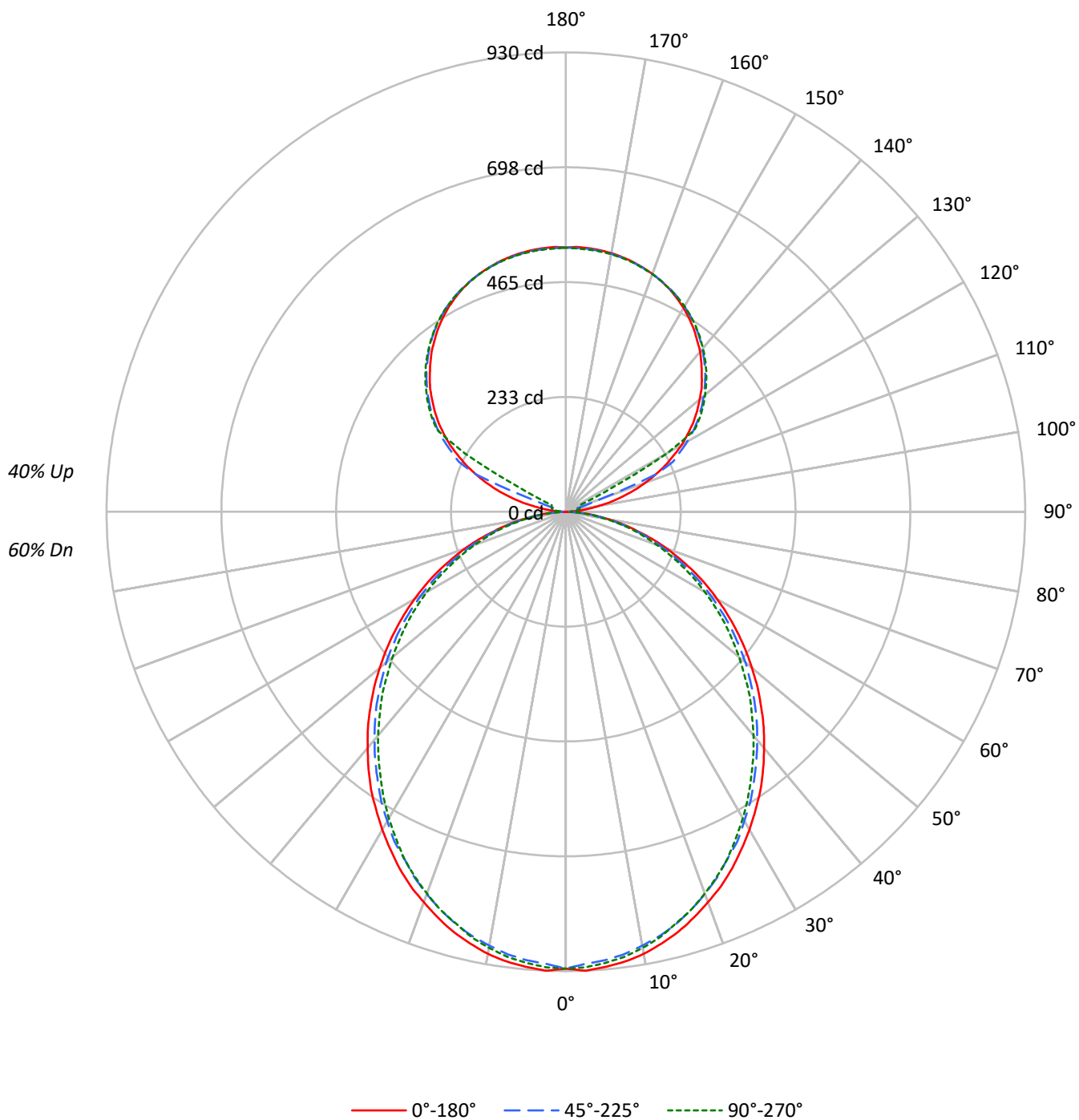
Lumens per Lamp: N/A
Luminaire Lumens: 3921.3 lumens
Efficiency: N/A
Efficacy: 90.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.07' x L: 2.07' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 43.3
Input Voltage (V): 120
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

TEST NUMBER: P913063

CATALOG NUMBER: DFN2DIP-4P2F0-030D020US927-FLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P913063

CATALOG NUMBER: DFN2DIP-4P2F0-030D020US927-FLLONL

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	102	102	102	102	89	89	89	77	77	77	65	65	65
1	100	96	92	88	93	90	86	83	78	75	73	67	66	64	58	56	55
2	91	84	77	72	85	78	73	68	68	64	61	59	56	53	51	49	47
3	83	73	66	60	77	69	62	57	60	55	51	52	48	45	45	42	40
4	76	65	57	51	71	61	54	48	54	48	44	47	42	39	40	37	34
5	70	58	50	44	65	55	47	42	48	42	38	42	37	34	36	33	30
6	64	52	44	38	60	49	42	36	43	37	33	38	33	30	33	29	26
7	60	47	39	33	56	44	37	32	39	33	29	35	30	26	30	26	23
8	55	43	35	30	52	40	33	28	36	30	26	32	27	23	28	24	21
9	52	39	32	26	48	37	30	25	33	27	23	29	24	21	26	22	19
10	48	36	29	24	45	34	27	23	30	25	21	27	22	19	24	20	17

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2315	2315	2315
5°	2315	2277	2295
10°	2291	2241	2260
15°	2253	2198	2207
20°	2203	2141	2154
25°	2153	2074	2093
30°	2091	2011	2016
35°	2033	1938	1935
40°	1961	1864	1858
45°	1890	1789	1778
50°	1811	1711	1687
55°	1729	1620	1602
60°	1636	1513	1504
65°	1533	1402	1390
70°	1403	1266	1265
75°	1224	1104	1145
80°	1008	896	926
85°	674	560	576

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 1890 cd/sqm

TEST NUMBER: P913063

CATALOG NUMBER: DFN2DIP-4P2F0-030D020US927-FLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	87.0	2.2
10°-20°	244.9	6.2
20°-30°	359.9	9.2
30°-40°	418.0	10.7
40°-50°	417.5	10.6
50°-60°	364.0	9.3
60°-70°	269.1	6.9
70°-80°	152.3	3.9
80°-90°	41.1	1.0
90°-100°	17.6	0.4
100°-110°	65.7	1.7
110°-120°	174.3	4.4
120°-130°	289.1	7.4
130°-140°	307.1	7.8
140°-150°	285.4	7.3
150°-160°	229.5	5.9
160°-170°	147.9	3.8
170°-180°	50.9	1.3
0°-30°	691.8	17.6
0°-40°	1109.8	28.3
0°-60°	1891.3	48.2
0°-90°	2353.7	60.0
90°-120°	257.7	6.6
90°-150°	1139.3	29.1
90°-180°	1568.0	40.0
0°-180°	3921.3	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	5	8	10	10	4
95°	25	12	15	17	17	30
105°	118	129	24	28	29	126
115°	222	229	239	60	32	219
125°	315	320	327	330	331	281
135°	389	396	399	403	402	301
145°	452	451	458	460	458	282
155°	497	494	498	501	498	229
165°	524	522	523	526	523	148
175°	536	533	534	537	533	51
180°	535	535	535	535	535	

TEST NUMBER: P913063

CATALOG NUMBER: DFN2DIP-4P2F0-030D020US927-FLLONL

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°	0.4	4.7	7.7	9.7	10.5
92.5°	9.7	8.2	9.3	10.1	10.5
95°	25.1	12.4	15.1	17.0	16.6
97.5°	45.2	13.5	19.7	20.9	21.3
100°	68.5	15.4	22.0	25.1	25.9
102.5°	94.0	93.2	22.8	27.1	28.3
105°	117.6	129.2	23.6	27.8	29.4
107.5°	145.1	154.7	24.4	28.6	30.2
110°	171.4	179.5	67.7	29.1	30.6

TEST NUMBER: P913063

CATALOG NUMBER: DFN2DIP-4P2F0-030D020US927-FLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	196.1	203.1	196.5	29.8	31.0
115°	222.4	229.0	238.8	59.6	31.8
117.5°	245.3	253.0	259.6	204.3	102.9
120°	270.8	276.6	283.6	288.3	236.0
122.5°	292.5	298.7	306.4	308.7	309.2
125°	314.6	319.6	326.9	329.6	330.8
127.5°	334.7	340.1	345.9	349.7	350.1
130°	353.6	359.8	364.1	368.4	368.0
132.5°	373.0	378.0	382.2	385.7	385.4
135°	389.3	395.5	398.9	402.8	402.0
137.5°	406.2	410.9	414.8	418.7	417.5
140°	422.9	426.0	430.2	433.7	431.8
142.5°	436.8	439.6	444.6	447.7	445.7
145°	451.5	451.1	457.7	460.4	458.5
147.5°	464.3	463.1	469.7	471.6	470.1
150°	476.7	474.0	480.1	482.4	480.5
152.5°	487.1	484.0	489.8	492.2	489.4
155°	497.2	493.7	498.4	500.7	497.6
157.5°	505.3	502.2	505.7	508.4	505.3
160°	512.3	509.9	512.3	514.6	511.9
162.5°	518.4	516.1	518.1	520.8	517.3
165°	523.9	521.6	522.7	525.5	522.7
167.5°	528.1	525.8	527.0	529.7	526.2
170°	531.6	529.3	530.0	532.7	529.3
172.5°	533.9	531.6	532.4	535.1	531.6
175°	535.8	533.1	533.9	536.6	532.7
177.5°	536.6	533.9	534.3	537.0	533.5
180°	534.7	534.7	534.7	534.7	534.7

TEST NUMBER: P913063

CATALOG NUMBER: DFN2DIP-4P2F0-030D020US927-FLONL

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	10.93	11.89	11.80	12.78	13.90	10.49	11.45	11.35	12.33	13.45
	3H	12.58	13.44	13.45	14.33	15.48	12.09	12.95	12.97	13.84	14.99
	4H	13.15	13.97	14.05	14.87	16.03	12.66	13.47	13.55	14.38	15.53
	6H	13.54	14.29	14.45	15.20	16.37	13.04	13.79	13.95	14.70	15.87
	8H	13.64	14.35	14.55	15.28	16.45	13.14	13.85	14.05	14.78	15.95
	12H	13.68	14.36	14.60	15.28	16.48	13.17	13.86	14.09	14.78	15.97
4H	2H	11.39	12.21	12.29	13.11	14.26	11.04	11.85	11.94	12.75	13.91
	3H	13.24	13.92	14.15	14.85	16.02	12.83	13.51	13.74	14.45	15.62
	4H	13.94	14.56	14.86	15.49	16.69	13.52	14.14	14.44	15.07	16.26
	6H	14.44	14.97	15.37	15.93	17.13	14.01	14.54	14.94	15.50	16.69
	8H	14.58	15.08	15.52	16.03	17.24	14.14	14.64	15.08	15.59	16.80
	12H	14.65	15.10	15.60	16.06	17.28	14.20	14.65	15.16	15.62	16.83
8H	4H	14.13	14.63	15.07	15.58	16.79	13.75	14.25	14.69	15.20	16.41
	6H	14.74	15.15	15.70	16.14	17.35	14.35	14.77	15.32	15.76	16.97
	8H	14.94	15.31	15.92	16.29	17.52	14.55	14.92	15.52	15.90	17.12
	12H	15.07	15.39	16.04	16.36	17.64	14.66	14.98	15.63	15.95	17.23
12H	4H	14.12	14.57	15.08	15.53	16.75	13.75	14.20	14.71	15.17	16.38
	6H	14.76	15.13	15.74	16.11	17.34	14.39	14.76	15.36	15.74	16.96
	8H	14.99	15.31	15.97	16.29	17.56	14.61	14.93	15.59	15.91	17.18

END OF REPORT