

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: P915837

Luminaire Tested: DFN2DIP-4P3F0-030D020US930-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P915837
REPORT IS A COMBINATION OF REPORTS P900552 AND P897473
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P3F0-030D020US930-RLLONL
Description: 3 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

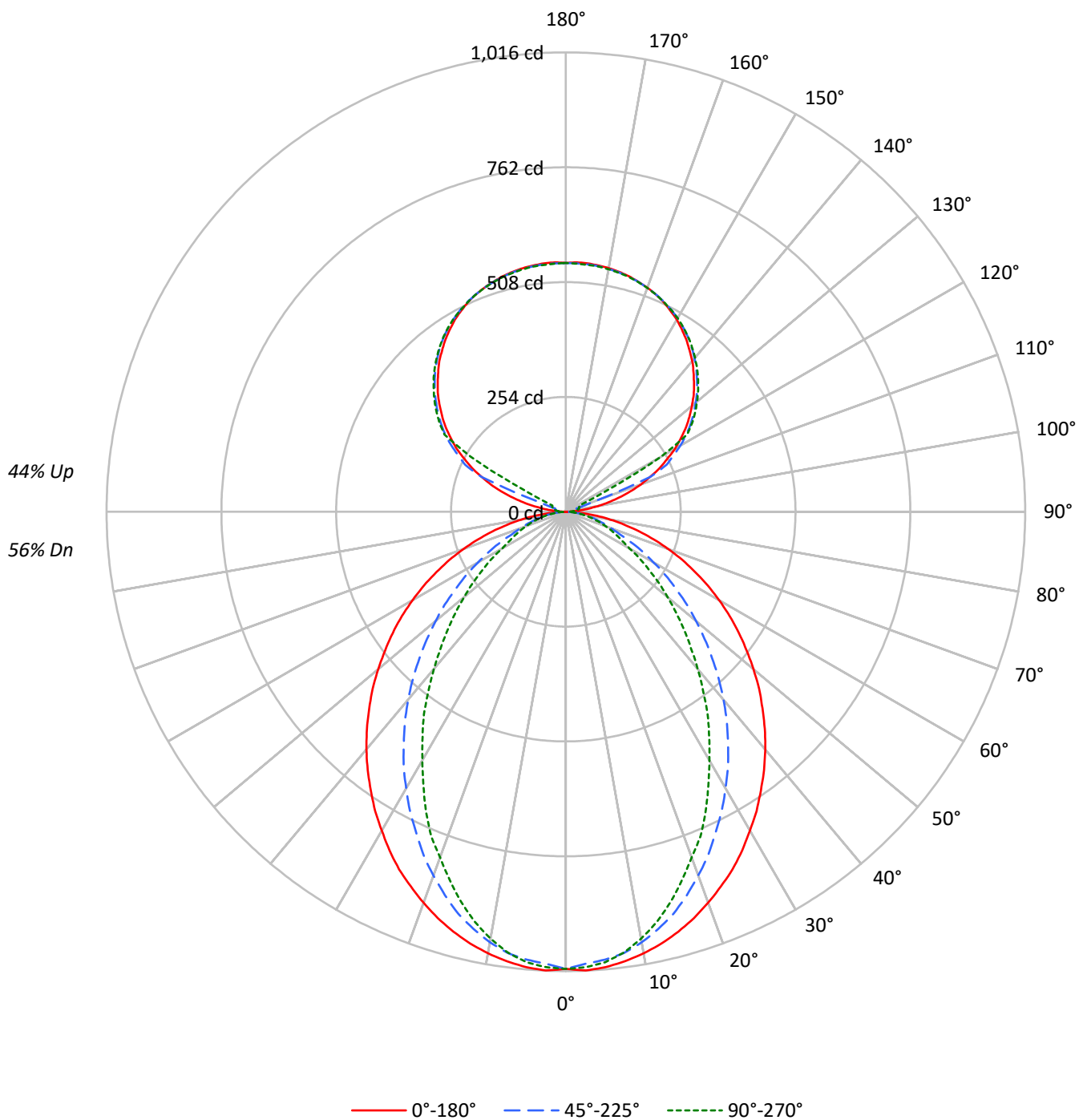
Lumens per Lamp: N/A
Luminaire Lumens: 3693.3 lumens
Efficiency: N/A
Efficacy: 89.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.07' x L: 3.07' x H: 0.1')
CIE Type: General Diffuse

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: P915837

CATALOG NUMBER: DFN2DIP-4P3F0-030D020US930-RLL0NL

Luminous Intensity Polar Plot



TEST NUMBER: P915837

CATALOG NUMBER: DFN2DIP-4P3F0-030D020US930-RLLONL

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	109	109	109	109	101	101	101	101	87	87	87	74	74	74	62	62	62
1	100	96	92	88	93	89	86	83	77	75	72	66	64	63	56	54	53
2	91	84	78	73	85	79	73	69	68	64	61	58	56	53	50	48	46
3	84	74	67	62	78	70	63	58	61	56	52	52	49	46	44	42	40
4	77	66	59	53	71	62	55	50	54	49	45	47	43	40	40	37	35
5	71	59	51	46	66	56	49	43	49	43	39	42	38	35	36	33	31
6	65	54	46	40	61	50	43	38	44	39	34	39	34	31	33	30	27
7	61	49	41	35	56	46	39	34	40	35	30	35	31	27	30	27	24
8	56	44	37	31	52	42	35	30	37	31	27	32	28	25	28	25	22
9	53	41	33	28	49	38	32	27	34	28	25	30	25	22	26	23	20
10	49	37	30	25	46	35	29	24	31	26	22	28	23	20	24	21	18

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1152	1152	1152
5°	1153	1133	1141
10°	1141	1110	1103
15°	1125	1073	1045
20°	1103	1021	975
25°	1081	964	906
30°	1052	905	820
35°	1023	842	744
40°	994	777	657
45°	960	705	578
50°	924	632	501
55°	887	554	427
60°	845	473	351
65°	796	390	316
70°	736	314	285
75°	661	275	259
80°	552	228	223
85°	375	149	166

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 960 cd/sqm

TEST NUMBER: P915837

CATALOG NUMBER: DFN2DIP-4P3F0-030D020US930-RLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	94.7	2.6
10°-20°	260.1	7.0
20°-30°	365.1	9.9
30°-40°	398.0	10.8
40°-50°	365.8	9.9
50°-60°	287.3	7.8
60°-70°	187.0	5.1
70°-80°	96.3	2.6
80°-90°	25.6	0.7
90°-100°	18.1	0.5
100°-110°	67.6	1.8
110°-120°	179.4	4.9
120°-130°	297.6	8.1
130°-140°	316.1	8.6
140°-150°	293.8	8.0
150°-160°	236.2	6.4
160°-170°	152.2	4.1
170°-180°	52.4	1.4
0°-30°	720.0	19.5
0°-40°	1118.0	30.3
0°-60°	1771.2	48.0
0°-90°	2080.0	56.3
90°-120°	265.2	7.2
90°-150°	1172.6	31.7
90°-180°	1613.0	43.7
0°-180°	3693.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1011	1011	1011	1011	1011	
5°	1011	1006	994	1003	1000	96
15°	962	951	920	903	894	271
25°	873	843	783	746	732	401
35°	752	705	625	567	547	471
45°	615	553	458	392	370	475
55°	467	396	297	242	225	418
65°	316	242	159	128	125	313
75°	168	104	73	67	66	178
85°	39	20	17	17	17	45
90°	0	5	8	10	11	3
95°	26	13	16	18	17	31
105°	121	133	24	29	30	129
115°	229	236	246	61	33	225
125°	324	329	336	339	340	289
135°	401	407	410	415	414	309
145°	465	464	471	474	472	291
155°	512	508	513	515	512	236
165°	539	537	538	541	538	152
175°	552	549	550	552	548	52
180°	550	550	550	550	550	

TEST NUMBER: P915837

CATALOG NUMBER: DFN2DIP-4P3F0-030D020US930-RLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1010.9	1010.9	1010.9	1010.9	1010.9
2.5°	1015.5	1010.9	1000.8	1010.0	1008.2
5°	1010.9	1006.3	994.4	1002.7	999.9
7.5°	1002.7	997.2	984.4	988.0	983.4
10°	991.6	985.3	967.0	964.2	958.8
12.5°	978.0	969.7	945.0	939.5	929.4
15°	961.5	951.4	920.3	902.9	893.8
17.5°	942.2	927.6	889.2	869.1	854.4
20°	920.3	902.0	856.2	833.5	813.3
22.5°	896.6	875.5	822.4	791.3	777.6
25°	872.8	843.4	783.1	745.6	731.8
27.5°	844.4	813.3	746.5	703.5	682.4
30°	814.2	779.4	706.2	659.7	634.9
32.5°	784.9	742.8	667.9	612.9	590.0
35°	752.0	705.3	624.8	567.2	547.1
37.5°	720.0	669.6	584.6	521.4	498.6
40°	686.2	631.3	542.5	477.5	453.8
42.5°	651.3	592.9	500.4	432.7	409.9
45°	614.8	553.4	457.5	392.4	370.5
47.5°	580.0	515.1	416.3	351.2	331.2
50°	541.6	476.6	376.0	312.8	293.7
52.5°	504.0	435.5	337.6	277.2	259.8
55°	467.4	396.1	297.3	242.5	225.1
57.5°	430.0	356.8	261.7	210.4	195.8
60°	391.5	318.4	224.1	177.5	162.9
62.5°	354.1	280.9	192.1	148.2	141.0
65°	315.6	241.5	159.1	128.1	125.3
67.5°	279.1	204.9	128.1	112.5	109.7
70°	240.6	169.3	106.1	96.9	93.3
72.5°	204.0	136.2	88.7	81.4	79.6
75°	168.3	104.3	73.2	66.8	65.9
77.5°	132.6	74.0	57.6	54.0	52.1
80°	99.7	53.1	43.9	40.3	40.3
82.5°	69.5	35.7	30.2	28.4	28.4
85°	39.3	20.1	17.4	17.4	17.4
87.5°	14.7	7.3	7.3	6.4	6.4
90°	0.4	4.8	7.9	9.9	10.8
92.5°	9.9	8.4	9.5	10.4	10.8
95°	25.8	12.7	15.5	17.5	17.1
97.5°	46.6	13.9	20.3	21.5	21.9
100°	70.5	15.9	22.7	25.8	26.7
102.5°	96.8	96.0	23.5	27.9	29.1
105°	121.1	133.0	24.3	28.6	30.2
107.5°	149.4	159.2	25.1	29.4	31.1
110°	176.4	184.7	69.7	29.9	31.5

TEST NUMBER: P915837

CATALOG NUMBER: DFN2DIP-4P3F0-030D020US930-RLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	201.9	209.0	202.3	30.7	31.9
115°	228.9	235.7	245.7	61.3	32.7
117.5°	252.4	260.4	267.2	210.3	105.9
120°	278.8	284.7	291.9	296.7	242.9
122.5°	301.0	307.4	315.4	317.7	318.2
125°	323.8	328.9	336.5	339.2	340.5
127.5°	344.5	350.0	356.0	360.0	360.4
130°	363.9	370.3	374.7	379.1	378.7
132.5°	383.8	389.1	393.4	397.0	396.6
135°	400.6	407.0	410.5	414.6	413.8
137.5°	418.1	422.9	426.9	430.9	429.7
140°	435.2	438.5	442.8	446.4	444.4
142.5°	449.6	452.4	457.5	460.7	458.7
145°	464.7	464.3	471.1	473.9	471.9
147.5°	477.8	476.6	483.4	485.3	483.8
150°	490.6	487.8	494.2	496.5	494.6
152.5°	501.3	498.1	504.1	506.5	503.7
155°	511.7	508.1	512.9	515.3	512.1
157.5°	520.1	516.9	520.5	523.3	520.1
160°	527.3	524.8	527.3	529.6	526.8
162.5°	533.5	531.2	533.2	536.0	532.4
165°	539.2	536.8	537.9	540.8	537.9
167.5°	543.6	541.1	542.3	545.2	541.5
170°	547.1	544.7	545.5	548.3	544.7
172.5°	549.5	547.1	548.0	550.7	547.1
175°	551.5	548.7	549.5	552.3	548.3
177.5°	552.3	549.5	549.9	552.7	549.1
180°	550.3	550.3	550.3	550.3	550.3

TEST NUMBER: P915837

CATALOG NUMBER: DFN2DIP-4P3F0-030D020US930-RLONL

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	8.18	9.06	9.08	9.98	11.16	4.14	5.02	5.04	5.94	7.12
	3H	9.85	10.64	10.77	11.58	12.78	5.32	6.11	6.24	7.04	8.25
	4H	10.46	11.21	11.40	12.15	13.36	5.77	6.52	6.71	7.45	8.67
	6H	10.88	11.57	11.83	12.51	13.74	6.09	6.78	7.04	7.72	8.95
	8H	11.01	11.66	11.96	12.62	13.85	6.18	6.83	7.13	7.79	9.02
	12H	11.07	11.69	12.03	12.65	13.90	6.22	6.84	7.18	7.80	9.05
4H	2H	8.20	8.95	9.14	9.88	11.10	4.74	5.48	5.68	6.42	7.63
	3H	10.03	10.65	10.98	11.62	12.85	6.08	6.70	7.03	7.67	8.90
	4H	10.72	11.28	11.68	12.25	13.50	6.63	7.19	7.59	8.16	9.41
	6H	11.23	11.72	12.20	12.70	13.96	7.04	7.53	8.02	8.52	9.77
	8H	11.41	11.86	12.38	12.84	14.11	7.17	7.63	8.15	8.60	9.87
	12H	11.50	11.91	12.49	12.91	14.18	7.23	7.64	8.23	8.64	9.91
8H	4H	10.69	11.14	11.66	12.12	13.39	6.91	7.36	7.88	8.34	9.61
	6H	11.25	11.63	12.25	12.65	13.91	7.42	7.80	8.42	8.82	10.08
	8H	11.47	11.80	12.47	12.80	14.09	7.61	7.94	8.62	8.95	10.23
	12H	11.60	11.89	12.61	12.90	14.23	7.73	8.02	8.74	9.02	10.35
12H	4H	10.64	11.05	11.64	12.05	13.32	6.92	7.33	7.91	8.32	9.59
	6H	11.23	11.56	12.23	12.57	13.85	7.47	7.80	8.48	8.81	10.09
	8H	11.45	11.74	12.46	12.74	14.07	7.68	7.97	8.69	8.97	10.30