

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: P916498

Luminaire Tested: DFN2DIP-PN2F0-020D040US930-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P916498
REPORT IS A COMBINATION OF REPORTS P899482 AND P896349
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN2F0-020D040US930-RLLFLL
Description: 2 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

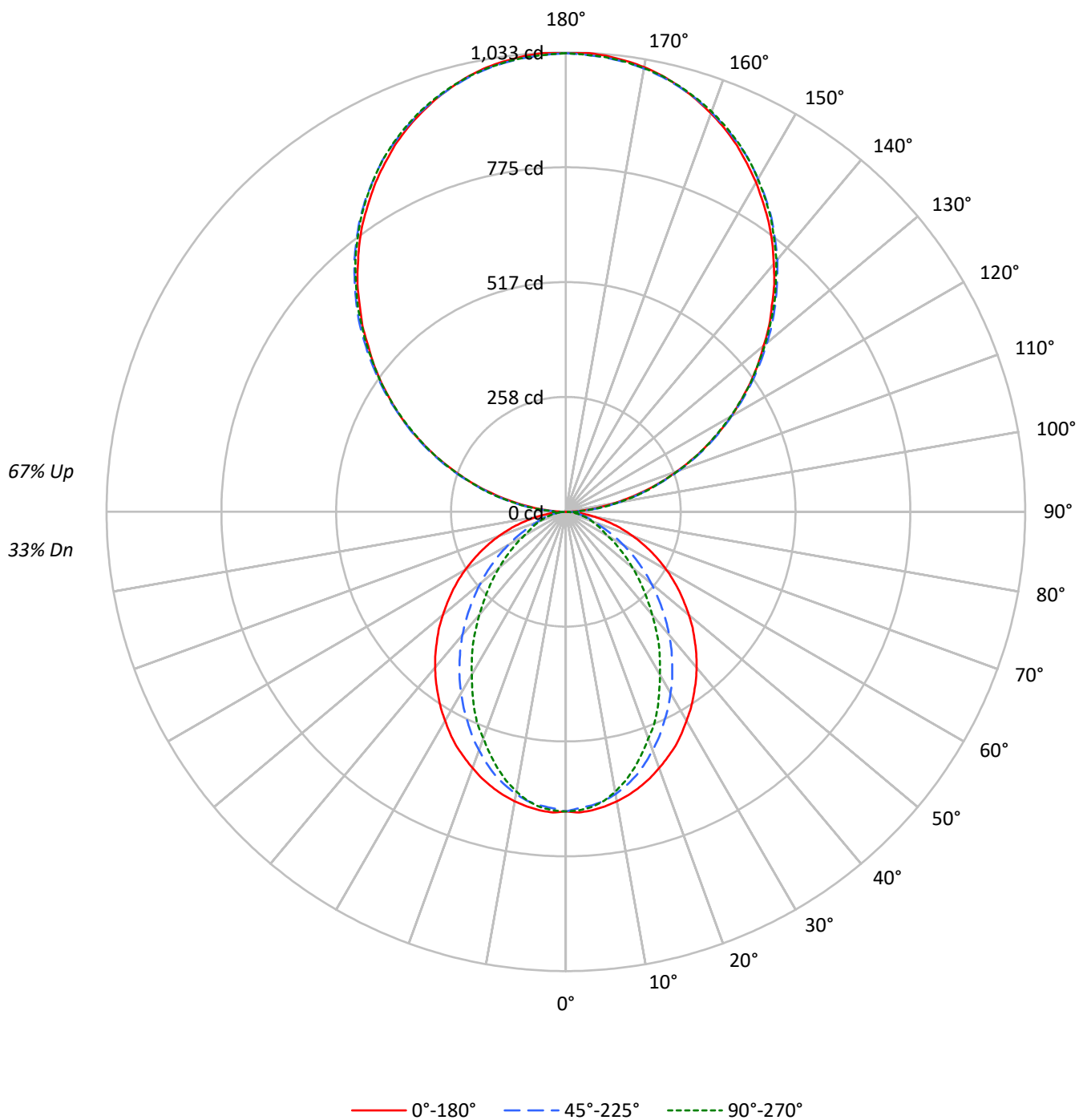
Lumens per Lamp: N/A
Luminaire Lumens: 4272.2 lumens
Efficiency: N/A
Efficacy: 90.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.17' x L: 2.29' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 47.3
Input Voltage (V):
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: P916498

CATALOG NUMBER: DFN2DIP-PN2F0-020D040US930-RLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P916498

CATALOG NUMBER: DFN2DIP-PN2F0-020D040US930-RLLFLL

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	103	103	103	103	93	93	93	93	74	74	74	56	56	56	40	40	40
1	94	90	86	83	85	81	78	75	65	63	61	50	48	47	36	35	34
2	86	79	73	68	77	71	67	62	57	54	51	44	42	40	32	31	29
3	79	70	63	57	71	63	57	52	51	46	43	39	36	34	29	27	25
4	72	62	54	49	65	56	50	45	45	41	37	35	32	29	26	24	22
5	66	55	47	42	59	50	43	38	40	36	32	32	28	26	23	21	19
6	61	49	42	36	55	45	38	33	36	32	28	29	25	23	21	19	17
7	56	45	37	32	51	41	34	29	33	28	25	26	23	20	19	17	15
8	52	40	33	28	47	37	30	26	30	25	22	24	20	18	18	16	14
9	49	37	30	25	44	34	27	23	28	23	20	22	19	16	17	14	13
10	45	34	27	22	41	31	25	21	25	21	18	20	17	15	15	13	11

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1460	1460	1460
5°	1460	1433	1443
10°	1443	1402	1394
15°	1421	1353	1320
20°	1392	1286	1229
25°	1363	1212	1141
30°	1324	1136	1031
35°	1286	1055	934
40°	1247	971	823
45°	1203	878	723
50°	1156	785	625
55°	1107	686	531
60°	1051	583	436
65°	986	479	390
70°	907	381	350
75°	807	330	314
80°	664	269	265
85°	434	167	189

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1389 cd/sqm

TEST NUMBER: P916498

CATALOG NUMBER: DFN2DIP-PN2F0-020D040US930-RLFL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	63.2	1.5
10°-20°	173.4	4.1
20°-30°	243.4	5.7
30°-40°	265.4	6.2
40°-50°	243.9	5.7
50°-60°	191.5	4.5
60°-70°	124.7	2.9
70°-80°	64.2	1.5
80°-90°	19.3	0.5
90°-100°	63.8	1.5
100°-110°	202.8	4.7
110°-120°	347.0	8.1
120°-130°	456.4	10.7
130°-140°	512.3	12.0
140°-150°	502.4	11.8
150°-160°	421.4	9.9
160°-170°	279.5	6.5
170°-180°	97.7	2.3
0°-30°	480.0	11.2
0°-40°	745.3	17.4
0°-60°	1180.8	27.6
0°-90°	1389.0	32.5
90°-120°	613.6	14.4
90°-150°	2084.7	48.8
90°-180°	2883.0	67.5
0°-180°	4272.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	674	674	674	674	674	
5°	674	671	663	668	667	64
15°	641	634	614	602	596	181
25°	582	562	522	497	488	268
35°	501	470	417	378	365	314
45°	410	369	305	262	247	317
55°	312	264	198	162	150	278
65°	210	161	106	85	84	209
75°	112	70	49	44	44	119
85°	26	13	12	12	12	30
90°	1	11	30	29	30	4
95°	45	54	56	56	54	51
105°	187	190	192	193	193	198
115°	348	353	352	351	348	344
125°	506	514	512	509	508	453
135°	655	665	667	666	663	506
145°	795	802	807	808	804	497
155°	910	912	915	919	916	419
165°	989	988	988	995	990	279
175°	1030	1027	1025	1031	1026	98
180°	1031	1031	1031	1031	1031	

TEST NUMBER: P916498

CATALOG NUMBER: DFN2DIP-PN2F0-020D040US930-RLFL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	673.9	673.9	673.9	673.9	673.9
2.5°	676.9	673.9	667.2	673.4	672.1
5°	673.9	670.9	662.9	668.5	666.6
7.5°	668.5	664.8	656.2	658.7	655.6
10°	661.1	656.8	644.7	642.8	639.2
12.5°	652.0	646.4	630.0	626.4	619.6
15°	641.0	634.2	613.5	601.9	595.9
17.5°	628.2	618.4	592.8	579.4	569.6
20°	613.5	601.3	570.9	555.6	542.2
22.5°	597.7	583.7	548.3	527.6	518.4
25°	581.9	562.3	522.0	497.1	487.9
27.5°	563.0	542.2	497.7	469.0	454.9
30°	542.8	519.6	470.8	439.8	423.2
32.5°	523.3	495.2	445.2	408.6	393.4
35°	501.3	470.3	416.6	378.1	364.7
37.5°	480.0	446.4	389.7	347.6	332.4
40°	457.4	420.9	361.7	318.4	302.5
42.5°	434.2	395.3	333.6	288.5	273.3
45°	409.9	368.9	305.0	261.6	247.0
47.5°	386.7	343.4	277.5	234.2	220.8
50°	361.1	317.8	250.7	208.6	195.8
52.5°	336.0	290.2	225.0	184.8	173.3
55°	311.6	264.1	198.2	161.7	150.0
57.5°	286.7	237.8	174.5	140.3	130.5
60°	261.1	212.2	149.4	118.4	108.6
62.5°	236.0	187.3	128.1	98.8	93.9
65°	210.4	161.0	106.2	85.4	83.6
67.5°	186.1	136.6	85.4	75.0	73.2
70°	160.4	112.8	70.7	64.7	62.2
72.5°	136.0	90.8	59.1	54.3	53.1
75°	112.2	69.5	48.8	44.5	43.9
77.5°	88.5	49.4	38.4	36.0	34.7
80°	66.4	35.4	29.3	26.8	26.8
82.5°	46.3	23.8	20.1	18.9	18.9
85°	26.2	13.4	11.6	11.6	11.6
87.5°	9.8	4.9	4.9	4.2	4.2
90°	0.9	11.2	30.5	28.6	29.5
92.5°	19.2	26.1	27.1	28.0	28.0
95°	45.4	54.1	55.7	55.7	54.1
97.5°	75.6	83.6	87.1	87.1	87.1
100°	110.4	117.6	120.0	120.0	119.1
102.5°	147.1	152.4	155.8	156.7	155.8
105°	187.2	189.6	191.5	193.1	193.1
107.5°	227.0	230.7	230.7	231.3	227.0
110°	265.5	270.5	270.5	270.5	268.1

TEST NUMBER: P916498

CATALOG NUMBER: DFN2DIP-PN2F0-020D040US930-RLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	307.2	312.5	311.5	309.1	307.2
115°	348.2	353.3	351.6	350.7	348.2
117.5°	389.0	395.8	391.5	389.0	386.5
120°	430.1	436.8	430.1	430.1	427.2
122.5°	467.3	476.1	471.7	469.2	467.3
125°	506.5	514.3	511.8	509.0	508.1
127.5°	544.8	554.4	551.0	547.2	544.8
130°	580.5	591.7	590.2	588.3	584.9
132.5°	620.6	629.3	630.0	625.6	623.1
135°	655.2	664.8	666.7	665.7	663.2
137.5°	693.7	701.5	703.0	702.4	698.7
140°	727.6	735.4	739.7	739.7	736.3
142.5°	762.5	770.2	772.7	773.6	770.2
145°	795.4	801.6	806.6	807.6	804.1
147.5°	824.9	832.7	836.4	838.0	834.5
150°	855.4	860.7	864.1	866.9	864.1
152.5°	882.5	887.7	892.1	895.5	892.1
155°	909.5	912.0	914.8	919.2	916.3
157.5°	932.9	934.7	936.2	942.5	938.1
160°	953.7	955.5	956.4	961.7	958.0
162.5°	972.9	972.9	973.9	979.7	975.4
165°	989.4	988.5	988.5	994.7	990.3
167.5°	1004.4	1001.5	1001.5	1007.8	1003.4
170°	1015.5	1013.0	1012.1	1018.3	1013.0
172.5°	1023.3	1020.8	1019.9	1026.1	1020.8
175°	1029.6	1027.0	1025.2	1031.4	1026.1
177.5°	1033.0	1030.5	1028.6	1033.9	1028.6
180°	1031.4	1031.4	1031.4	1031.4	1031.4

TEST NUMBER: P916498

CATALOG NUMBER: DFN2DIP-PN2F0-020D040US930-RLLFLL

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	6.44	7.15	7.54	8.24	9.74	2.41	3.12	3.51	4.21	5.71
	3H	8.09	8.72	9.20	9.82	11.34	3.57	4.20	4.68	5.31	6.83
	4H	8.68	9.28	9.80	10.38	11.91	4.01	4.60	5.12	5.71	7.23
	6H	9.08	9.63	10.20	10.73	12.27	4.31	4.86	5.43	5.96	7.50
	8H	9.19	9.71	10.32	10.84	12.37	4.38	4.91	5.51	6.03	7.56
	12H	9.24	9.74	10.37	10.85	12.40	4.42	4.91	5.55	6.03	7.58
4H	2H	6.44	7.04	7.57	8.14	9.67	2.98	3.58	4.11	4.68	6.21
	3H	8.24	8.73	9.37	9.86	11.40	4.30	4.80	5.43	5.93	7.46
	4H	8.91	9.36	10.04	10.48	12.04	4.83	5.29	5.96	6.40	7.96
	6H	9.40	9.79	10.54	10.93	12.48	5.22	5.61	6.36	6.75	8.30
	8H	9.56	9.92	10.70	11.05	12.62	5.34	5.70	6.48	6.84	8.40
	12H	9.63	9.97	10.79	11.11	12.68	5.39	5.72	6.54	6.86	8.43
8H	4H	8.86	9.23	10.00	10.36	11.92	5.09	5.45	6.23	6.58	8.15
	6H	9.40	9.70	10.56	10.88	12.44	5.58	5.88	6.74	7.05	8.62
	8H	9.60	9.87	10.77	11.02	12.60	5.75	6.02	6.92	7.17	8.75
	12H	9.72	9.95	10.89	11.10	12.72	5.85	6.08	7.02	7.24	8.85
12H	4H	8.81	9.14	9.96	10.28	11.85	5.08	5.41	6.24	6.56	8.13
	6H	9.37	9.64	10.54	10.79	12.37	5.62	5.88	6.79	7.04	8.62
	8H	9.57	9.80	10.74	10.96	12.57	5.81	6.04	6.98	7.19	8.81