

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: P917911

Luminaire Tested: DFN2DIP-TR2F0-020D040US930-RLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P917911
REPORT IS A COMBINATION OF REPORTS P901762 AND P897145
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR2F0-020D040US930-RLLONL
Description: 2 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

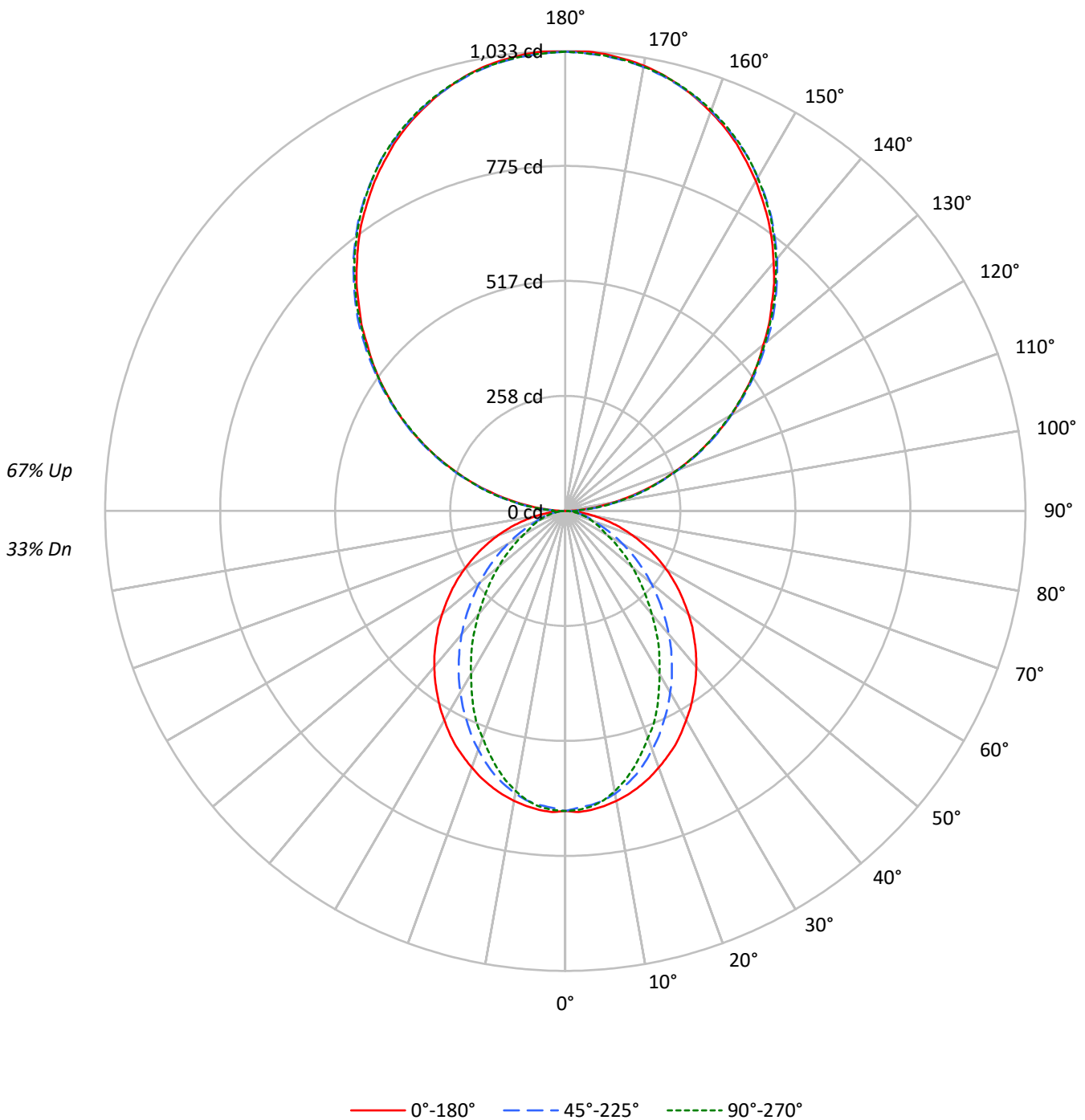
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4272.2 lumens
Efficiency: N/A
Efficacy: 95.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.04' x L: 2.36' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 44.6
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9968
Total Harmonic Distortion (THDi): 0.064
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P917911
CATALOG NUMBER: DFN2DIP-TR2F0-020D040US930-RLLONL

Luminous Intensity Polar Plot





TEST NUMBER: P917911

CATALOG NUMBER: DFN2DIP-TR2F0-020D040US930-RLLONL

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20				20	
RC	80				70				50				30				10				0	
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0	
RCR																						
0	103	103	103	103	93	93	93	93	74	74	74	56	56	56	40	40	40	33				33
1	94	90	86	83	85	81	78	75	65	63	61	50	48	47	36	35	34	28				28
2	86	79	73	68	77	71	67	62	57	54	51	44	42	40	32	31	29	24				24
3	79	70	63	57	71	63	57	52	51	46	43	39	36	34	29	27	25	21				21
4	72	62	54	49	65	56	50	45	45	41	37	35	32	29	26	24	22	18				18
5	66	55	47	42	59	50	43	38	40	36	32	32	28	26	23	21	19	16				16
6	61	49	42	36	55	45	38	33	36	32	28	29	25	23	21	19	17	14				14
7	56	45	37	32	51	41	34	29	33	28	25	26	23	20	19	17	15	13				13
8	52	40	33	28	47	37	30	26	30	25	22	24	20	18	18	16	14	11				11
9	49	37	30	25	44	34	27	23	28	23	20	22	19	16	17	14	13	10				10
10	45	34	27	22	41	31	25	21	25	21	18	20	17	15	15	13	11	9				9

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1503	1503	1503
5°	1503	1476	1486
10°	1486	1444	1435
15°	1464	1393	1358
20°	1434	1324	1264
25°	1404	1247	1174
30°	1365	1169	1060
35°	1326	1085	960
40°	1286	999	846
45°	1240	904	743
50°	1193	808	642
55°	1143	706	545
60°	1085	599	447
65°	1018	492	399
70°	937	392	358
75°	835	339	320
80°	688	276	269
85°	452	171	190

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 90°
 Luminance: 1345 cd/sqm



TEST NUMBER: P917911

CATALOG NUMBER: DFN2DIP-TR2F0-020D040US930-RLONL

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: P917911

CATALOG NUMBER: DFN2DIP-TR2F0-020D040US930-RLLONL

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: P917911

CATALOG NUMBER: DFN2DIP-TR2F0-020D040US930-RLLONL

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: P917911
 CATALOG NUMBER: DFN2DIP-TR2F0-020D040US930-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	6.53	7.24	7.63	8.33	9.83	2.52	3.22	3.61	4.31	5.82
	3H	8.18	8.81	9.28	9.91	11.43	3.68	4.31	4.79	5.41	6.93
	4H	8.76	9.36	9.88	10.46	11.99	4.11	4.71	5.23	5.81	7.34
	6H	9.16	9.71	10.29	10.82	12.35	4.41	4.96	5.54	6.07	7.61
	8H	9.27	9.79	10.40	10.92	12.45	4.49	5.02	5.62	6.14	7.67
	12H	9.32	9.82	10.45	10.93	12.48	4.52	5.02	5.66	6.14	7.69
4H	2H	6.53	7.13	7.66	8.23	9.76	3.08	3.68	4.21	4.78	6.31
	3H	8.32	8.82	9.45	9.95	11.49	4.40	4.90	5.53	6.03	7.57
	4H	8.99	9.45	10.13	10.57	12.13	4.93	5.39	6.07	6.51	8.07
	6H	9.48	9.87	10.62	11.01	12.56	5.33	5.72	6.47	6.86	8.41
	8H	9.64	10.00	10.78	11.13	12.70	5.44	5.81	6.58	6.94	8.51
	12H	9.71	10.04	10.87	11.19	12.76	5.49	5.83	6.65	6.97	8.54
8H	4H	8.95	9.31	10.09	10.44	12.01	5.19	5.55	6.33	6.69	8.25
	6H	9.48	9.78	10.64	10.96	12.52	5.68	5.98	6.84	7.16	8.72
	8H	9.68	9.95	10.85	11.10	12.68	5.86	6.12	7.02	7.28	8.86
	12H	9.80	10.03	10.97	11.18	12.80	5.96	6.19	7.13	7.34	8.96
12H	4H	8.89	9.22	10.05	10.37	11.94	5.18	5.52	6.34	6.66	8.23
	6H	9.46	9.72	10.62	10.87	12.46	5.72	5.99	6.89	7.14	8.72
	8H	9.65	9.89	10.82	11.04	12.65	5.91	6.14	7.08	7.30	8.91