

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: P917903

Luminaire Tested: DFN2DIP-TR2F0-020D020US930-RLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P917903
REPORT IS A COMBINATION OF REPORTS P901742 AND P897145
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR2F0-020D020US930-RLLONL
Description: 2 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

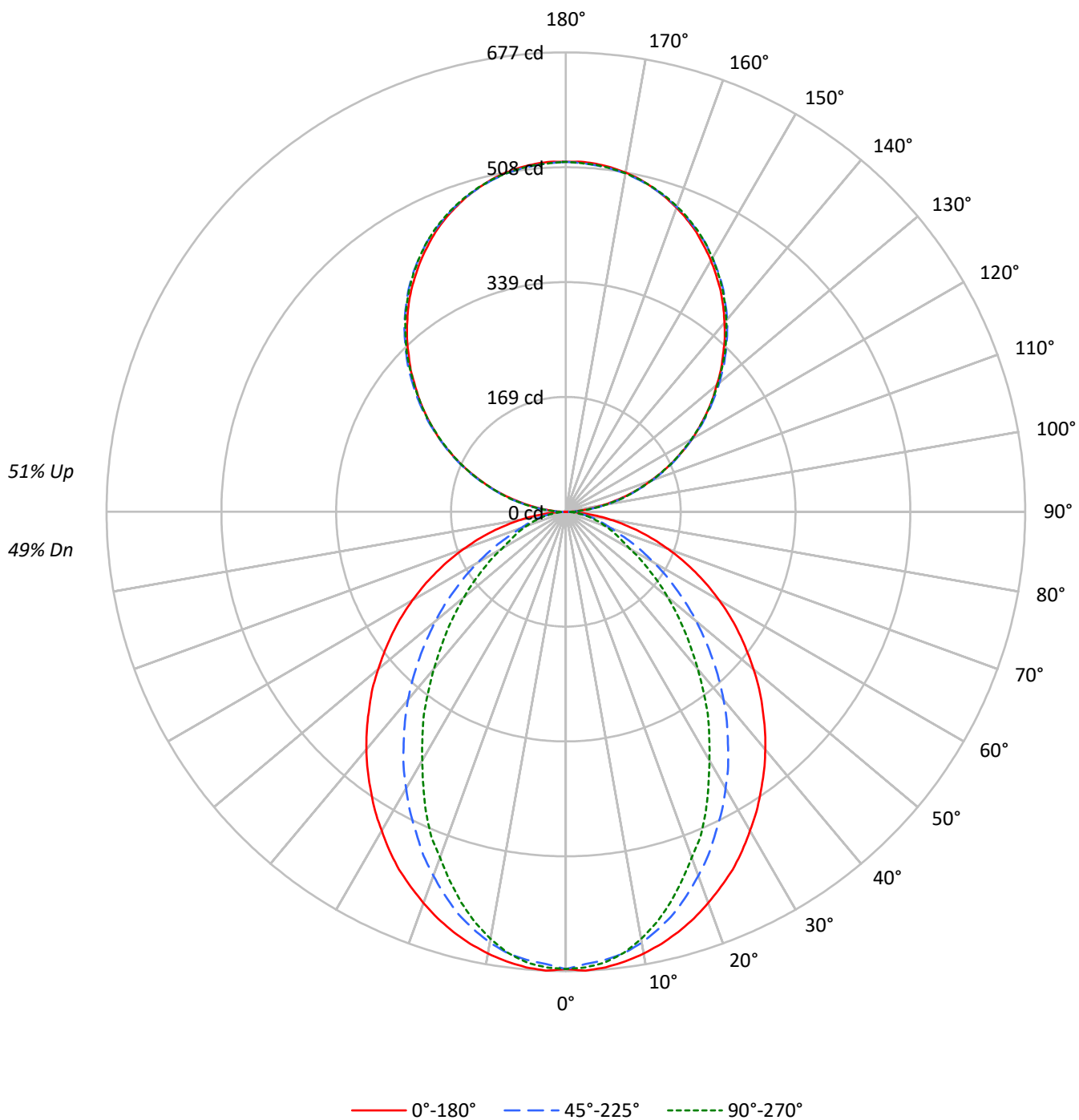
Lumens per Lamp: N/A
Luminaire Lumens: 2829.1 lumens
Efficiency: N/A
Efficacy: 92.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.04' x L: 2.36' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 30.5
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: P917903

CATALOG NUMBER: DFN2DIP-TR2F0-020D020US930-RLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P917903

CATALOG NUMBER: DFN2DIP-TR2F0-020D020US930-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	107	107	107	107	99	99	99	99	83	83	83	68	68	68	55	55	55
1	98	94	90	87	90	87	84	81	73	71	69	61	59	58	50	49	48
2	90	83	77	72	82	76	71	67	65	61	58	54	51	49	44	42	41
3	82	73	66	60	75	68	61	57	58	53	49	48	45	42	40	37	35
4	75	65	57	51	69	60	54	48	51	46	42	43	40	36	36	33	31
5	69	58	50	44	64	54	47	42	46	41	37	39	35	32	32	29	27
6	64	52	44	39	59	49	42	37	42	36	32	35	31	28	30	26	24
7	59	47	40	34	55	44	37	32	38	33	29	32	28	25	27	24	22
8	55	43	36	30	51	40	33	29	35	29	26	30	26	23	25	22	20
9	51	39	32	27	47	37	30	26	32	27	23	27	23	20	23	20	18
10	48	36	29	24	44	34	28	23	30	24	21	25	21	19	22	18	16

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: 0°

Vertical Angle: 45°

Luminance: 1240 cd/sqm

TEST NUMBER: P917903

CATALOG NUMBER: DFN2DIP-TR2F0-020D020US930-RLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	63.2	2.2
10°-20°	173.4	6.1
20°-30°	243.4	8.6
30°-40°	265.4	9.4
40°-50°	243.9	8.6
50°-60°	191.5	6.8
60°-70°	124.7	4.4
70°-80°	64.2	2.3
80°-90°	17.8	0.6
90°-100°	31.9	1.1
100°-110°	101.4	3.6
110°-120°	173.5	6.1
120°-130°	228.2	8.1
130°-140°	256.1	9.1
140°-150°	251.2	8.9
150°-160°	210.7	7.4
160°-170°	139.7	4.9
170°-180°	48.8	1.7
0°-30°	480.0	17.0
0°-40°	745.3	26.3
0°-60°	1180.8	41.7
0°-90°	1387.5	49.0
90°-120°	306.8	10.8
90°-150°	1042.3	36.8
90°-180°	1442.0	51.0
0°-180°	2829.1	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°	0	6	15	14	15	3
95°	23	27	28	28	27	25
105°	94	95	96	96	96	99
115°	174	177	176	175	174	172
125°	253	257	256	254	254	226
135°	328	332	333	333	332	253
145°	398	401	403	404	402	248
155°	455	456	457	460	458	209
165°	495	494	494	497	495	140
175°	515	514	513	516	513	49
180°	516	516	516	516	516	

TEST NUMBER: P917903

CATALOG NUMBER: DFN2DIP-TR2F0-020D020US930-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°	0.5	5.6	15.2	14.3	14.8
92.5°	9.6	13.0	13.5	14.0	14.0
95°	22.7	27.1	27.8	27.8	27.1
97.5°	37.7	41.8	43.5	43.5	43.5
100°	55.2	58.8	60.0	60.0	59.5
102.5°	73.5	76.1	77.9	78.4	77.9
105°	93.6	94.8	95.8	96.5	96.5
107.5°	113.5	115.4	115.4	115.7	113.5
110°	132.8	135.3	135.3	135.3	134.0



TEST NUMBER: P917903

CATALOG NUMBER: DFN2DIP-TR2F0-020D020US930-RLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	153.6	156.2	155.8	154.5	153.6
115°	174.1	176.6	175.9	175.4	174.1
117.5°	194.5	198.0	195.8	194.5	193.2
120°	215.0	218.4	215.0	215.0	213.6
122.5°	233.7	238.0	235.9	234.6	233.7
125°	253.2	257.1	255.9	254.5	254.0
127.5°	272.4	277.2	275.5	273.6	272.4
130°	290.2	295.9	295.1	294.2	292.4
132.5°	310.3	314.7	314.9	312.8	311.5
135°	327.6	332.4	333.3	332.9	331.6
137.5°	346.8	350.7	351.6	351.2	349.4
140°	363.8	367.7	369.9	369.9	368.2
142.5°	381.2	385.1	386.4	386.8	385.1
145°	397.7	400.8	403.3	403.7	402.0
147.5°	412.5	416.4	418.2	419.0	417.3
150°	427.7	430.3	432.0	433.4	432.0
152.5°	441.2	443.8	446.0	447.8	446.0
155°	454.8	456.0	457.4	459.6	458.2
157.5°	466.4	467.3	468.1	471.2	469.0
160°	476.9	477.8	478.3	480.9	479.0
162.5°	486.5	486.5	486.9	489.9	487.7
165°	494.7	494.2	494.2	497.3	495.2
167.5°	502.1	500.8	500.8	503.9	501.7
170°	507.8	506.5	506.1	509.2	506.5
172.5°	511.7	510.4	510.0	513.1	510.4
175°	514.8	513.6	512.6	515.7	513.1
177.5°	516.5	515.3	514.3	516.9	514.3
180°	515.7	515.7	515.7	515.7	515.7

TEST NUMBER: P917903

CATALOG NUMBER: DFN2DIP-TR2F0-020D020US930-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	8.34	9.16	9.31	10.15	11.43	4.32	5.15	5.30	6.13	7.42
	3H	10.00	10.73	10.98	11.72	13.03	5.50	6.23	6.48	7.22	8.53
	4H	10.59	11.28	11.58	12.28	13.59	5.94	6.63	6.93	7.63	8.94
	6H	10.99	11.63	12.00	12.63	13.96	6.24	6.88	7.25	7.88	9.21
	8H	11.11	11.71	12.12	12.73	14.06	6.33	6.93	7.34	7.95	9.28
	12H	11.16	11.74	12.17	12.74	14.10	6.36	6.94	7.38	7.95	9.30
4H	2H	8.36	9.05	9.36	10.04	11.36	4.91	5.60	5.91	6.60	7.91
	3H	10.16	10.74	11.17	11.76	13.09	6.24	6.82	7.25	7.84	9.17
	4H	10.83	11.36	11.85	12.37	13.73	6.77	7.30	7.79	8.32	9.67
	6H	11.32	11.78	12.35	12.82	14.17	7.17	7.63	8.20	8.67	10.02
	8H	11.48	11.91	12.52	12.94	14.31	7.29	7.72	8.32	8.75	10.11
	12H	11.57	11.95	12.61	13.00	14.37	7.35	7.73	8.40	8.78	10.15
8H	4H	10.79	11.22	11.82	12.25	13.62	7.04	7.46	8.07	8.49	9.86
	6H	11.33	11.68	12.39	12.76	14.12	7.53	7.88	8.59	8.96	10.32
	8H	11.54	11.84	12.60	12.90	14.28	7.71	8.02	8.77	9.08	10.46
	12H	11.66	11.93	12.72	12.98	14.41	7.82	8.09	8.88	9.14	10.57
12H	4H	10.74	11.13	11.79	12.17	13.54	7.04	7.42	8.09	8.47	9.84
	6H	11.31	11.62	12.37	12.68	14.06	7.58	7.88	8.64	8.94	10.32
	8H	11.51	11.78	12.58	12.84	14.26	7.77	8.04	8.84	9.09	10.52