

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: P920639

Luminaire Tested: DFN2DIP-TR2F0-020D040US935-RLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P920639
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-TR2F0-020D040US935-RLLONL
Description: 2 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

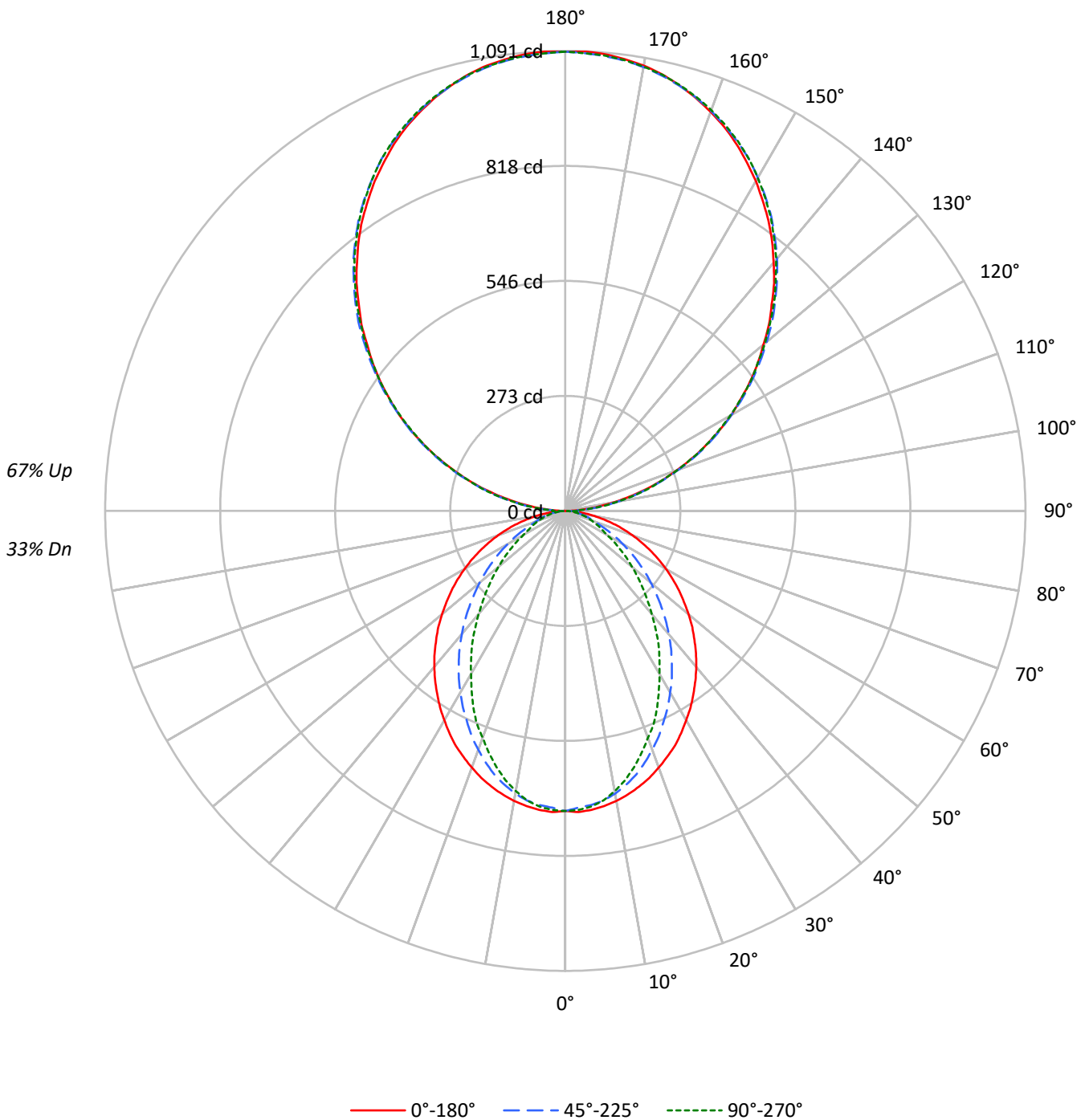
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4511.6 lumens
Efficiency: N/A
Efficacy: 101.2 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: P920639
CATALOG NUMBER: DFN2DIP-TR2F0-020D040US935-RLLONL

Luminous Intensity Polar Plot





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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°	1587	1587	1587
5°	1588	1559	1570
10°	1570	1525	1516
15°	1545	1471	1434
20°	1514	1398	1335
25°	1483	1317	1240
30°	1441	1235	1119
35°	1400	1146	1014
40°	1358	1055	893
45°	1310	954	784
50°	1260	853	678
55°	1207	745	576
60°	1146	633	472
65°	1075	520	422
70°	990	413	378
75°	882	358	338
80°	727	291	285
85°	476	180	200

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 90°
 Luminance: 1423 cd/sqm



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CATALOG NUMBER: DFN2DIP-TR2F0-020D040US935-RLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	66.7	1.5
10°-20°	183.1	4.1
20°-30°	257.1	5.7
30°-40°	280.2	6.2
40°-50°	257.6	5.7
50°-60°	202.3	4.5
60°-70°	131.7	2.9
70°-80°	67.8	1.5
80°-90°	20.4	0.5
90°-100°	67.4	1.5
100°-110°	214.2	4.7
110°-120°	366.5	8.1
120°-130°	482.0	10.7
130°-140°	541.0	12.0
140°-150°	530.5	11.8
150°-160°	445.0	9.9
160°-170°	295.1	6.5
170°-180°	103.2	2.3
0°-30°	506.9	11.2
0°-40°	787.1	17.4
0°-60°	1247.0	27.6
0°-90°	1466.8	32.5
90°-120°	648.0	14.4
90°-150°	2201.5	48.8
90°-180°	3045.0	67.5
0°-180°	4511.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	712	712	712	712	712	
5°	712	708	700	706	704	67
15°	677	670	648	636	629	191
25°	614	594	551	525	515	283
35°	529	497	440	399	385	331
45°	433	390	322	276	261	334
55°	329	279	209	171	158	294
65°	222	170	112	90	88	220
75°	118	73	52	47	46	125
85°	28	14	12	12	12	32
90°	1	12	32	30	31	4
95°	48	57	59	59	57	53
105°	198	200	202	204	204	209
115°	368	373	371	370	368	364
125°	535	543	540	538	537	478
135°	692	702	704	703	700	535
145°	840	846	852	853	849	525
155°	960	963	966	971	968	442
165°	1045	1044	1044	1050	1046	295
175°	1087	1085	1083	1089	1084	103
180°	1089	1089	1089	1089	1089	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	711.7	711.7	711.7	711.7	711.7
2.5°	714.9	711.7	704.6	711.1	709.8
5°	711.7	708.5	700.1	705.9	704.0
7.5°	705.9	702.1	693.0	695.6	692.3
10°	698.2	693.6	680.8	678.8	675.0
12.5°	688.5	682.7	665.3	661.5	654.4
15°	676.9	669.8	647.9	635.7	629.3
17.5°	663.4	653.1	626.0	611.8	601.6
20°	647.9	635.0	602.9	586.8	572.6
22.5°	631.2	616.4	579.0	557.2	547.5
25°	614.5	593.8	551.3	525.0	515.2
27.5°	594.5	572.6	525.6	495.2	480.4
30°	573.3	548.7	497.2	464.4	446.9
32.5°	552.6	523.0	470.2	431.5	415.4
35°	529.4	496.6	440.0	399.3	385.1
37.5°	506.9	471.4	411.6	367.1	351.0
40°	483.0	444.4	381.9	336.2	319.4
42.5°	458.6	417.4	352.3	304.6	288.6
45°	432.8	389.6	322.1	276.3	260.8
47.5°	408.4	362.7	293.1	247.3	233.2
50°	381.3	335.6	264.8	220.2	206.8
52.5°	354.8	306.5	237.6	195.2	183.0
55°	329.1	278.9	209.3	170.7	158.4
57.5°	302.7	251.2	184.3	148.2	137.8
60°	275.7	224.1	157.8	125.0	114.7
62.5°	249.3	197.8	135.3	104.4	99.2
65°	222.2	170.0	112.1	90.2	88.3
67.5°	196.5	144.2	90.2	79.2	77.3
70°	169.4	119.2	74.6	68.3	65.7
72.5°	143.6	95.9	62.4	57.3	56.1
75°	118.5	73.4	51.5	47.0	46.4
77.5°	93.4	52.2	40.6	38.0	36.7
80°	70.2	37.4	30.9	28.3	28.3
82.5°	48.9	25.1	21.3	20.0	20.0
85°	27.6	14.1	12.2	12.2	12.2
87.5°	10.3	5.2	5.2	4.5	4.5
90°	0.9	11.8	32.2	30.2	31.2
92.5°	20.3	27.6	28.6	29.5	29.5
95°	48.0	57.2	58.8	58.8	57.2
97.5°	79.8	88.3	92.0	92.0	92.0
100°	116.6	124.2	126.7	126.7	125.8
102.5°	155.3	160.9	164.5	165.5	164.5
105°	197.7	200.3	202.2	203.9	203.9
107.5°	239.7	243.7	243.7	244.3	239.7
110°	280.4	285.7	285.7	285.7	283.1



TEST NUMBER: P920639

CATALOG NUMBER: DFN2DIP-TR2F0-020D040US935-RLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	324.4	330.0	329.0	326.4	324.4
115°	367.7	373.1	371.3	370.4	367.7
117.5°	410.8	418.0	413.5	410.8	408.2
120°	454.2	461.3	454.2	454.2	451.2
122.5°	493.5	502.7	498.2	495.5	493.5
125°	534.9	543.1	540.5	537.5	536.6
127.5°	575.3	585.5	581.9	577.9	575.3
130°	613.0	624.9	623.3	621.3	617.7
132.5°	655.4	664.6	665.3	660.6	658.1
135°	691.9	702.1	704.0	703.0	700.4
137.5°	732.6	740.8	742.4	741.7	737.9
140°	768.4	776.6	781.2	781.2	777.6
142.5°	805.2	813.4	816.0	817.0	813.4
145°	840.0	846.5	851.8	852.8	849.2
147.5°	871.2	879.3	883.3	884.9	881.3
150°	903.4	909.0	912.6	915.5	912.6
152.5°	931.9	937.5	942.1	945.7	942.1
155°	960.4	963.1	966.0	970.7	967.7
157.5°	985.2	987.0	988.7	995.3	990.7
160°	1007.1	1009.1	1010.0	1015.6	1011.7
162.5°	1027.4	1027.4	1028.5	1034.7	1030.1
165°	1044.9	1043.9	1043.9	1050.4	1045.9
167.5°	1060.7	1057.6	1057.6	1064.3	1059.6
170°	1072.5	1069.8	1068.8	1075.4	1069.8
172.5°	1080.6	1078.1	1077.0	1083.7	1078.1
175°	1087.3	1084.6	1082.6	1089.2	1083.7
177.5°	1090.9	1088.2	1086.2	1091.8	1086.2
180°	1089.2	1089.2	1089.2	1089.2	1089.2



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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	6.72	7.43	7.82	8.52	10.02	2.71	3.41	3.81	4.50	6.01
	3H	8.37	9.00	9.47	10.10	11.62	3.87	4.50	4.98	5.60	7.12
	4H	8.95	9.55	10.07	10.65	12.18	4.30	4.90	5.42	6.00	7.53
	6H	9.35	9.90	10.48	11.01	12.54	4.60	5.15	5.73	6.26	7.80
	8H	9.46	9.99	10.59	11.11	12.64	4.68	5.21	5.81	6.33	7.86
	12H	9.51	10.01	10.64	11.12	12.67	4.72	5.21	5.85	6.33	7.88
4H	2H	6.72	7.32	7.85	8.42	9.95	3.27	3.87	4.40	4.97	6.50
	3H	8.51	9.01	9.64	10.14	11.68	4.59	5.09	5.72	6.22	7.76
	4H	9.18	9.64	10.32	10.76	12.31	5.12	5.58	6.26	6.70	8.26
	6H	9.67	10.06	10.81	11.20	12.75	5.52	5.91	6.66	7.05	8.60
	8H	9.83	10.19	10.97	11.32	12.89	5.63	6.00	6.77	7.13	8.70
	12H	9.90	10.23	11.06	11.38	12.95	5.68	6.02	6.84	7.16	8.73
8H	4H	9.14	9.50	10.28	10.63	12.20	5.38	5.74	6.52	6.88	8.44
	6H	9.67	9.97	10.83	11.15	12.71	5.87	6.17	7.03	7.35	8.91
	8H	9.87	10.14	11.04	11.29	12.87	6.05	6.31	7.21	7.47	9.05
	12H	9.99	10.22	11.16	11.37	12.99	6.15	6.38	7.32	7.53	9.15
12H	4H	9.08	9.41	10.24	10.56	12.13	5.37	5.70	6.53	6.85	8.42
	6H	9.65	9.91	10.81	11.06	12.65	5.91	6.18	7.08	7.33	8.91
	8H	9.84	10.08	11.01	11.23	12.84	6.10	6.33	7.27	7.49	9.10