

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: P917915

Luminaire Tested: DFN2DIP-TR2F0-020D050US930-RLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P917915
REPORT IS A COMBINATION OF REPORTS P901772 AND P897145
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR2F0-020D050US930-RLLONL
Description: 2 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

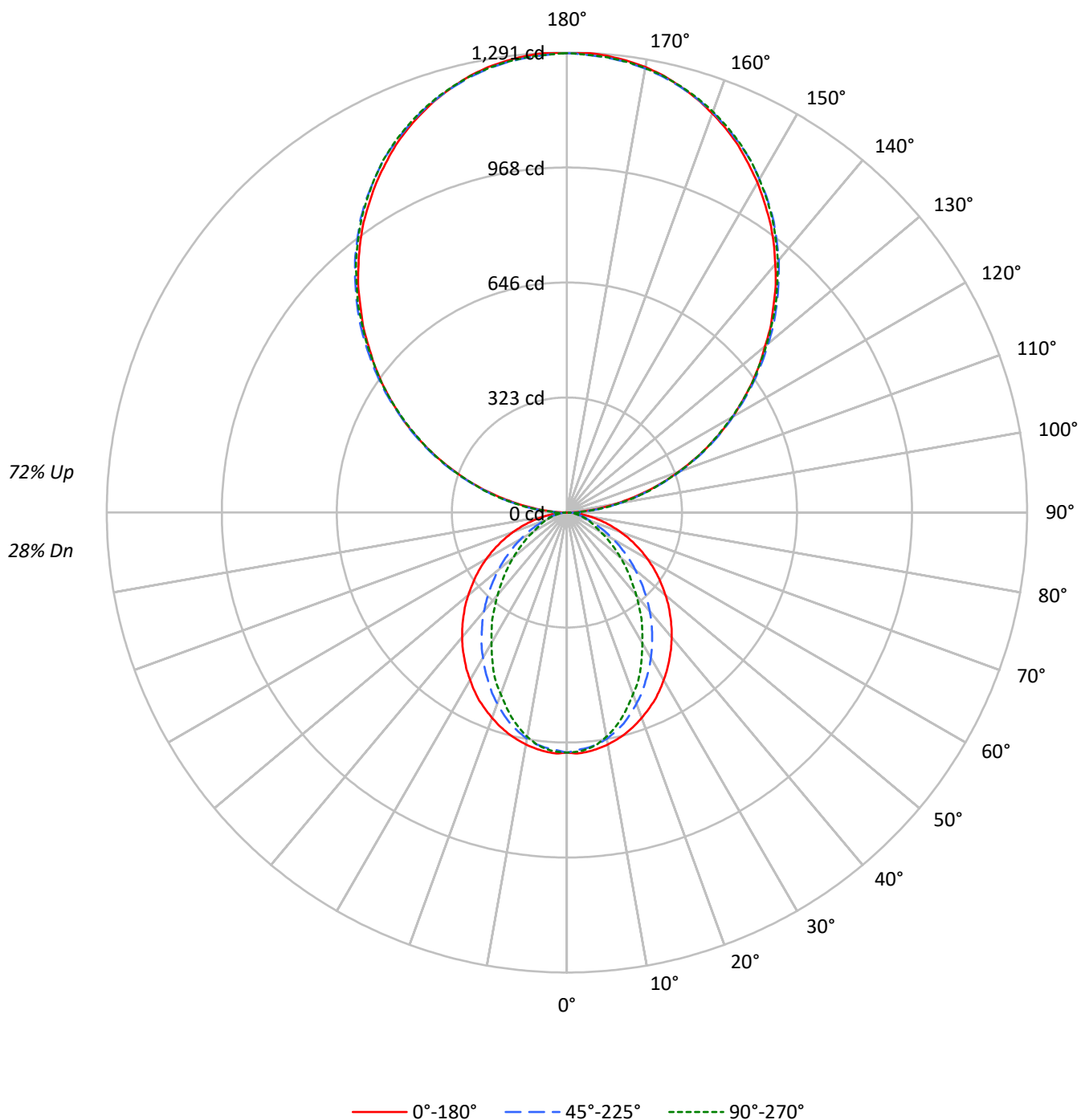
Lumens per Lamp: N/A
Luminaire Lumens: 4993.7 lumens
Efficiency: N/A
Efficacy: 93.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.04' x L: 2.36' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 53.7
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: P917915

CATALOG NUMBER: DFN2DIP-TR2F0-020D050US930-RLLONL

Luminous Intensity Polar Plot



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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	102	102	102	102	91	91	91	91	71	71	71	53	53	53	36	36	36
1	93	89	85	82	83	80	77	74	62	60	59	47	45	44	32	31	31
2	85	78	72	67	76	70	65	61	55	52	49	41	39	37	28	27	26
3	78	69	62	56	69	62	56	51	49	45	41	37	34	32	25	24	23
4	71	61	53	48	63	55	48	44	43	39	35	33	30	27	23	21	20
5	65	54	47	41	58	49	42	37	39	34	31	29	26	24	21	19	17
6	60	49	41	35	54	44	37	32	35	30	27	27	23	21	19	17	15
7	55	44	36	31	50	40	33	28	32	27	23	24	21	19	17	15	14
8	51	40	32	27	46	36	30	25	29	24	21	22	19	16	16	14	12
9	48	36	29	24	43	33	27	22	26	22	19	20	17	15	15	13	11
10	45	33	26	22	40	30	24	20	24	20	17	19	16	13	14	12	10

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: 1682 cd/sqm

TEST NUMBER: P917915

CATALOG NUMBER: DFN2DIP-TR2F0-020D050US930-RLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	63.2	1.3
10°-20°	173.4	3.5
20°-30°	243.4	4.9
30°-40°	265.4	5.3
40°-50°	243.9	4.9
50°-60°	191.5	3.8
60°-70°	124.7	2.5
70°-80°	64.2	1.3
80°-90°	20.0	0.4
90°-100°	79.8	1.6
100°-110°	253.5	5.1
110°-120°	433.8	8.7
120°-130°	570.5	11.4
130°-140°	640.4	12.8
140°-150°	627.9	12.6
150°-160°	526.8	10.5
160°-170°	349.3	7.0
170°-180°	122.1	2.4
0°-30°	480.0	9.6
0°-40°	745.3	14.9
0°-60°	1180.8	23.6
0°-90°	1389.7	27.8
90°-120°	767.0	15.4
90°-150°	2605.8	52.2
90°-180°	3604.0	72.2
0°-180°	4993.7	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	14	38	36	37	5
95°	57	68	70	70	68	63
105°	234	237	240	241	241	247
115°	435	442	440	438	435	431
125°	633	643	640	636	635	566
135°	819	831	833	832	829	633
145°	994	1002	1008	1009	1005	621
155°	1137	1140	1144	1149	1145	523
165°	1237	1236	1236	1243	1238	349
175°	1287	1284	1282	1289	1283	122
180°	1289	1289	1289	1289	1289	

TEST NUMBER: P917915

CATALOG NUMBER: DFN2DIP-TR2F0-020D050US930-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°	1.1	14.0	38.1	35.8	36.9
92.5°	24.1	32.6	33.8	35.0	35.0
95°	56.7	67.7	69.5	69.5	67.7
97.5°	94.4	104.5	108.8	108.8	108.8
100°	137.9	146.9	150.0	150.0	148.9
102.5°	183.8	190.5	194.7	195.9	194.7
105°	234.0	237.1	239.5	241.3	241.3
107.5°	283.7	288.4	288.4	289.2	283.7
110°	331.9	338.2	338.2	338.2	335.0

TEST NUMBER: P917915

CATALOG NUMBER: DFN2DIP-TR2F0-020D050US930-RLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	384.0	390.6	389.5	386.4	384.0
115°	435.3	441.6	439.6	438.5	435.3
117.5°	486.2	494.8	489.3	486.2	483.1
120°	537.5	546.1	537.5	537.5	534.0
122.5°	584.2	595.1	589.6	586.5	584.2
125°	633.2	642.9	639.8	636.3	635.1
127.5°	680.9	693.0	688.8	684.0	680.9
130°	725.7	739.6	737.7	735.4	731.1
132.5°	775.8	786.7	787.5	782.0	778.9
135°	819.0	831.0	833.3	832.2	829.1
137.5°	867.2	876.9	878.8	878.0	873.3
140°	909.5	919.2	924.6	924.6	920.4
142.5°	953.0	962.8	965.9	967.0	962.8
145°	994.3	1002.0	1008.2	1009.4	1005.1
147.5°	1031.2	1040.9	1045.5	1047.5	1043.2
150°	1069.3	1075.9	1080.1	1083.6	1080.1
152.5°	1103.1	1109.7	1115.1	1119.4	1115.1
155°	1136.9	1140.0	1143.5	1148.9	1145.4
157.5°	1166.0	1168.3	1170.3	1178.1	1172.6
160°	1192.0	1194.4	1195.6	1202.2	1197.5
162.5°	1216.2	1216.2	1217.3	1224.7	1219.3
165°	1236.8	1235.6	1235.6	1243.4	1237.9
167.5°	1255.4	1251.9	1251.9	1259.7	1254.3
170°	1269.4	1266.3	1265.2	1272.9	1266.3
172.5°	1279.1	1276.0	1274.9	1282.6	1276.0
175°	1286.9	1283.8	1281.5	1289.2	1282.6
177.5°	1291.2	1288.1	1285.7	1292.3	1285.7
180°	1289.2	1289.2	1289.2	1289.2	1289.2

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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	5.89	6.57	7.02	7.69	9.25	1.87	2.55	3.01	3.67	5.23
	3H	7.53	8.14	8.67	9.27	10.84	3.04	3.64	4.17	4.77	6.34
	4H	8.12	8.69	9.27	9.82	11.40	3.47	4.04	4.62	5.17	6.75
	6H	8.51	9.04	9.67	10.17	11.76	3.77	4.29	4.92	5.43	7.02
	8H	8.62	9.13	9.78	10.27	11.86	3.84	4.35	5.00	5.49	7.08
	12H	8.67	9.15	9.83	10.29	11.89	3.88	4.35	5.04	5.49	7.10
4H	2H	5.89	6.46	7.04	7.59	9.17	2.44	3.01	3.59	4.14	5.72
	3H	7.67	8.15	8.83	9.31	10.90	3.76	4.23	4.92	5.39	6.98
	4H	8.34	8.78	9.51	9.93	11.54	4.28	4.72	5.45	5.87	7.48
	6H	8.83	9.20	9.99	10.37	11.97	4.68	5.05	5.84	6.22	7.82
	8H	8.99	9.34	10.15	10.49	12.11	4.79	5.14	5.96	6.30	7.92
	12H	9.06	9.38	10.24	10.55	12.17	4.84	5.16	6.02	6.33	7.95
8H	4H	8.29	8.65	9.46	9.80	11.42	4.54	4.89	5.70	6.05	7.66
	6H	8.83	9.12	10.02	10.32	11.93	5.03	5.32	6.21	6.52	8.13
	8H	9.03	9.28	10.22	10.46	12.09	5.21	5.46	6.40	6.63	8.27
	12H	9.15	9.37	10.34	10.54	12.21	5.30	5.53	6.50	6.70	8.37
12H	4H	8.24	8.56	9.42	9.73	11.35	4.53	4.85	5.71	6.02	7.64
	6H	8.80	9.06	10.00	10.23	11.87	5.07	5.32	6.26	6.50	8.13
	8H	9.00	9.22	10.20	10.40	12.06	5.26	5.48	6.45	6.66	8.32

END OF REPORT