

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: P915181

Luminaire Tested: DFN2DIP-TR2F0-020D040US927-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P915181
REPORT IS A COMBINATION OF REPORTS P901761 AND P897145
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR2F0-020D040US927-FLLONL
Description: 2 foot, Triangle Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

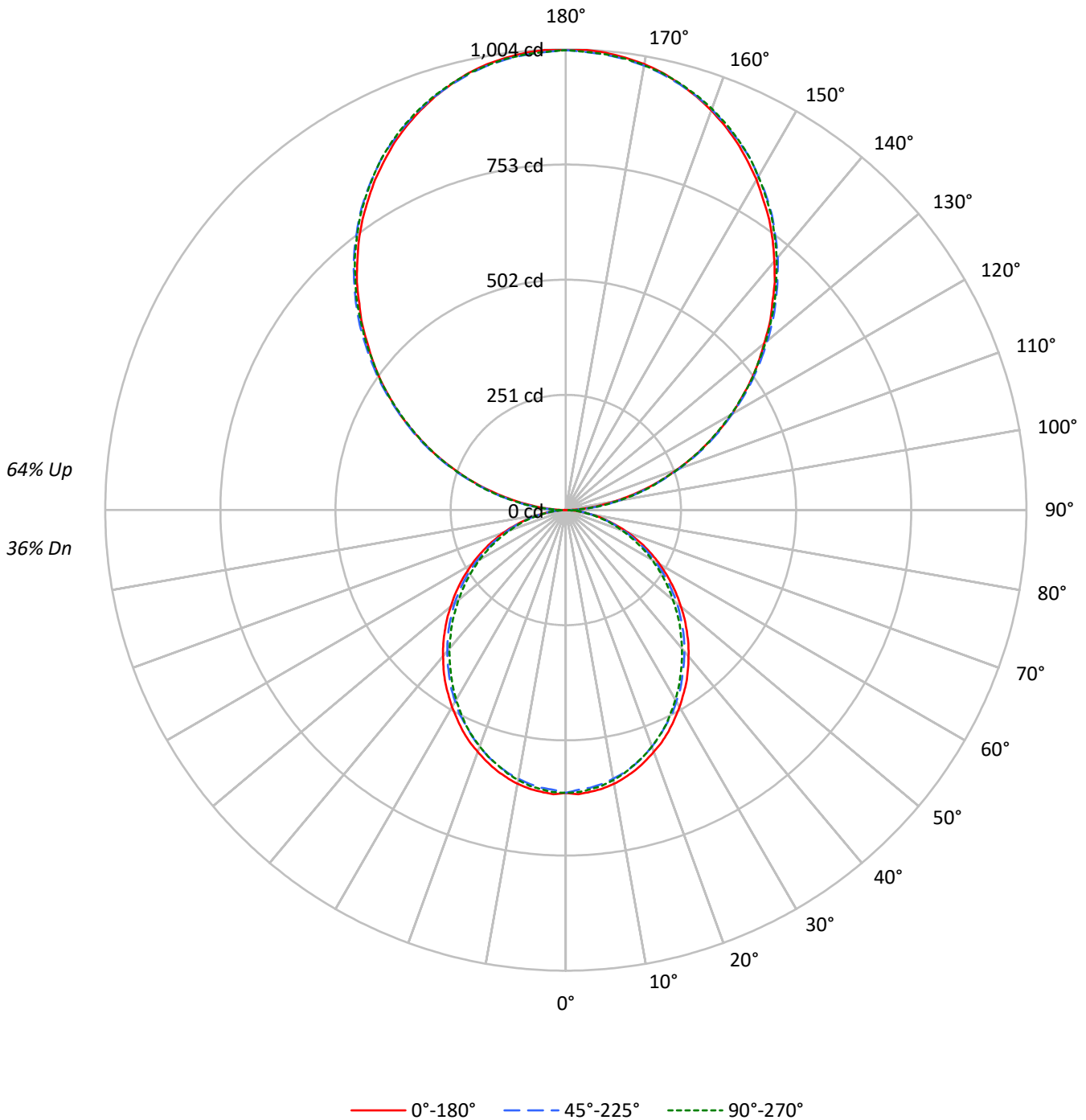
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4372.9 lumens
Efficiency: N/A
Efficacy: 98.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
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): 120
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

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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	104	104	104	104	94	94	94	94	76	76	76	59	59	59	43	43	43	36				36
1	95	90	87	83	85	82	79	76	66	64	62	52	50	49	38	37	36	30				30
2	86	79	73	68	78	72	66	62	58	54	51	45	43	41	34	32	31	25				25
3	79	69	62	56	71	63	57	52	51	47	43	40	37	34	30	28	26	21				21
4	72	61	54	48	65	56	49	44	45	40	37	36	32	29	27	24	22	18				18
5	66	54	47	41	59	50	43	38	40	35	31	32	28	25	24	22	20	16				16
6	61	49	41	35	55	45	38	33	36	31	27	29	25	22	22	19	17	14				14
7	56	44	36	31	50	40	33	28	33	28	24	26	22	20	20	17	15	12				12
8	52	40	32	27	47	36	30	25	30	25	21	24	20	17	18	16	14	11				11
9	48	36	29	24	44	33	27	22	27	22	19	22	18	16	17	14	12	10				10
10	45	33	26	21	41	30	24	20	25	20	17	20	17	14	16	13	11	9				9

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1375	1375	1375
5°	1375	1353	1363
10°	1362	1332	1342
15°	1340	1307	1311
20°	1311	1273	1279
25°	1282	1233	1242
30°	1246	1197	1197
35°	1212	1154	1149
40°	1170	1110	1103
45°	1128	1066	1055
50°	1083	1020	1001
55°	1035	967	950
60°	980	904	892
65°	921	839	824
70°	845	758	750
75°	741	663	678
80°	614	541	548
85°	417	340	341

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 90°
 Luminance: 1309 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	58.0	1.3
10°-20°	163.3	3.7
20°-30°	239.9	5.5
30°-40°	278.7	6.4
40°-50°	278.3	6.4
50°-60°	242.7	5.5
60°-70°	179.4	4.1
70°-80°	101.5	2.3
80°-90°	29.6	0.7
90°-100°	62.0	1.4
100°-110°	197.0	4.5
110°-120°	337.2	7.7
120°-130°	443.5	10.1
130°-140°	497.8	11.4
140°-150°	488.1	11.2
150°-160°	409.5	9.4
160°-170°	271.5	6.2
170°-180°	94.9	2.2
0°-30°	461.2	10.5
0°-40°	739.9	16.9
0°-60°	1260.8	28.8
0°-90°	1571.4	35.9
90°-120°	596.2	13.6
90°-150°	2025.6	46.3
90°-180°	2801.0	64.1
0°-180°	4372.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	616	616	616	616	616	
5°	616	614	608	612	611	59
15°	587	583	576	578	575	165
25°	531	526	516	518	516	244
35°	458	452	443	439	436	286
45°	373	369	360	353	351	288
55°	282	279	272	264	261	252
65°	190	187	181	176	172	188
75°	100	98	95	92	93	106
85°	24	24	23	21	21	27
90°	1	11	30	28	29	4
95°	44	53	54	54	53	49
105°	182	184	186	188	188	192
115°	338	343	342	341	338	335
125°	492	500	497	495	494	440
135°	637	646	648	647	644	492
145°	773	779	784	785	781	483
155°	884	886	889	893	890	407
165°	961	960	960	966	962	271
175°	1000	998	996	1002	997	95
180°	1002	1002	1002	1002	1002	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	616.5	616.5	616.5	616.5	616.5
2.5°	620.0	617.1	610.5	616.5	615.4
5°	616.5	614.2	607.6	612.4	611.2
7.5°	612.4	608.8	602.3	607.0	605.9
10°	605.9	601.7	594.6	599.3	597.5
12.5°	596.9	593.4	586.3	589.2	588.0
15°	586.8	583.4	575.6	578.0	575.0
17.5°	574.4	570.9	563.2	566.1	563.2
20°	560.8	557.2	548.9	550.7	548.3
22.5°	547.2	541.9	534.1	534.1	532.9
25°	531.2	526.4	516.3	517.5	516.3
27.5°	513.3	509.2	501.5	499.8	496.8
30°	495.6	490.8	482.0	480.2	477.8
32.5°	476.6	473.1	463.6	460.0	457.6
35°	458.3	452.3	442.8	439.3	436.3
37.5°	437.5	432.1	422.6	418.5	415.5
40°	416.1	411.4	401.9	396.6	394.2
42.5°	395.4	390.6	381.2	375.3	371.7
45°	372.9	368.8	359.8	353.3	350.9
47.5°	350.9	346.8	337.3	330.7	327.3
50°	327.8	324.9	316.6	308.2	305.3
52.5°	305.3	301.1	293.4	286.9	282.8
55°	282.2	278.6	271.5	264.4	261.4
57.5°	259.0	256.1	248.3	241.3	238.8
60°	235.9	233.6	225.3	218.7	217.0
62.5°	213.4	209.2	203.4	197.4	195.0
65°	190.3	186.7	180.9	175.5	172.5
67.5°	166.6	163.6	158.3	154.2	151.8
70°	144.7	142.3	136.9	132.8	130.5
72.5°	122.2	119.8	116.8	112.6	110.9
75°	99.6	98.5	95.4	91.9	93.1
77.5°	79.5	77.1	75.8	74.1	72.3
80°	59.3	58.7	57.5	55.7	54.5
82.5°	40.3	40.3	39.8	37.4	37.4
85°	24.2	23.7	23.1	21.3	20.8
87.5°	10.7	9.5	8.3	6.6	5.9
90°	0.9	10.9	29.6	27.8	28.7
92.5°	18.7	25.3	26.3	27.2	27.2
95°	44.1	52.6	54.1	54.1	52.6
97.5°	73.4	81.3	84.6	84.6	84.6
100°	107.3	114.2	116.6	116.6	115.7
102.5°	142.9	148.1	151.4	152.3	151.4
105°	181.9	184.3	186.1	187.6	187.6
107.5°	220.5	224.2	224.2	224.7	220.5
110°	258.0	262.8	262.8	262.8	260.5



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	298.5	303.6	302.7	300.3	298.5
115°	338.3	343.3	341.7	340.8	338.3
117.5°	377.9	384.6	380.4	377.9	375.6
120°	417.9	424.5	417.9	417.9	415.1
122.5°	454.1	462.6	458.4	455.9	454.1
125°	492.2	499.7	497.3	494.6	493.7
127.5°	529.3	538.7	535.4	531.7	529.3
130°	564.0	575.0	573.5	571.6	568.3
132.5°	603.0	611.5	612.1	607.8	605.5
135°	636.6	645.9	647.8	646.8	644.4
137.5°	674.1	681.6	683.1	682.5	678.9
140°	706.9	714.5	718.7	718.7	715.4
142.5°	740.8	748.4	750.8	751.7	748.4
145°	772.9	778.9	783.7	784.7	781.3
147.5°	801.5	809.1	812.7	814.2	810.9
150°	831.2	836.3	839.6	842.3	839.6
152.5°	857.5	862.5	866.8	870.1	866.8
155°	883.7	886.1	888.8	893.1	890.3
157.5°	906.4	908.2	909.7	915.8	911.5
160°	926.6	928.4	929.3	934.5	930.8
162.5°	945.3	945.3	946.3	952.0	947.8
165°	961.4	960.4	960.4	966.5	962.3
167.5°	975.9	973.1	973.1	979.2	974.9
170°	986.7	984.3	983.4	989.4	984.3
172.5°	994.3	991.9	990.9	997.0	991.9
175°	1000.4	997.9	996.1	1002.1	997.0
177.5°	1003.7	1001.2	999.4	1004.6	999.4
180°	1002.1	1002.1	1002.1	1002.1	1002.1



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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	6.79	7.53	7.85	8.60	10.06	6.36	7.11	7.43	8.18	9.64
	3H	8.41	9.08	9.49	10.16	11.64	7.95	8.62	9.03	9.70	11.18
	4H	8.98	9.62	10.07	10.70	12.18	8.52	9.16	9.61	10.24	11.72
	6H	9.36	9.94	10.46	11.03	12.52	8.90	9.48	9.99	10.57	12.06
	8H	9.45	10.01	10.55	11.11	12.60	8.99	9.55	10.09	10.65	12.14
	12H	9.48	10.01	10.59	11.11	12.62	9.02	9.55	10.13	10.64	12.16
4H	2H	7.22	7.86	8.32	8.94	10.42	6.89	7.52	7.98	8.60	10.09
	3H	9.05	9.58	10.16	10.69	12.19	8.67	9.20	9.77	10.31	11.80
	4H	9.74	10.23	10.85	11.33	12.85	9.35	9.84	10.46	10.93	12.45
	6H	10.23	10.65	11.35	11.77	13.28	9.83	10.25	10.95	11.37	12.88
	8H	10.37	10.76	11.48	11.87	13.40	9.97	10.36	11.08	11.47	13.00
	12H	10.42	10.78	11.55	11.90	13.43	10.02	10.37	11.15	11.50	13.03
8H	4H	9.92	10.31	11.04	11.42	12.95	9.57	9.96	10.68	11.07	12.60
	6H	10.52	10.84	11.66	12.00	13.52	10.17	10.49	11.30	11.64	13.17
	8H	10.72	11.01	11.87	12.14	13.68	10.37	10.65	11.51	11.78	13.33
	12H	10.83	11.08	11.98	12.21	13.79	10.47	10.71	11.61	11.85	13.42
12H	4H	9.90	10.25	11.03	11.38	12.91	9.55	9.91	10.69	11.03	12.56
	6H	10.54	10.83	11.69	11.96	13.50	10.20	10.48	11.34	11.62	13.16
	8H	10.76	11.01	11.91	12.14	13.72	10.42	10.67	11.56	11.80	13.38