

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: P904271

Luminaire Tested: DFN2DIP-TR2F0-020D040US830-RLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P904271
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-TR2F0-020D040US830-RLLONL
Description: 2 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

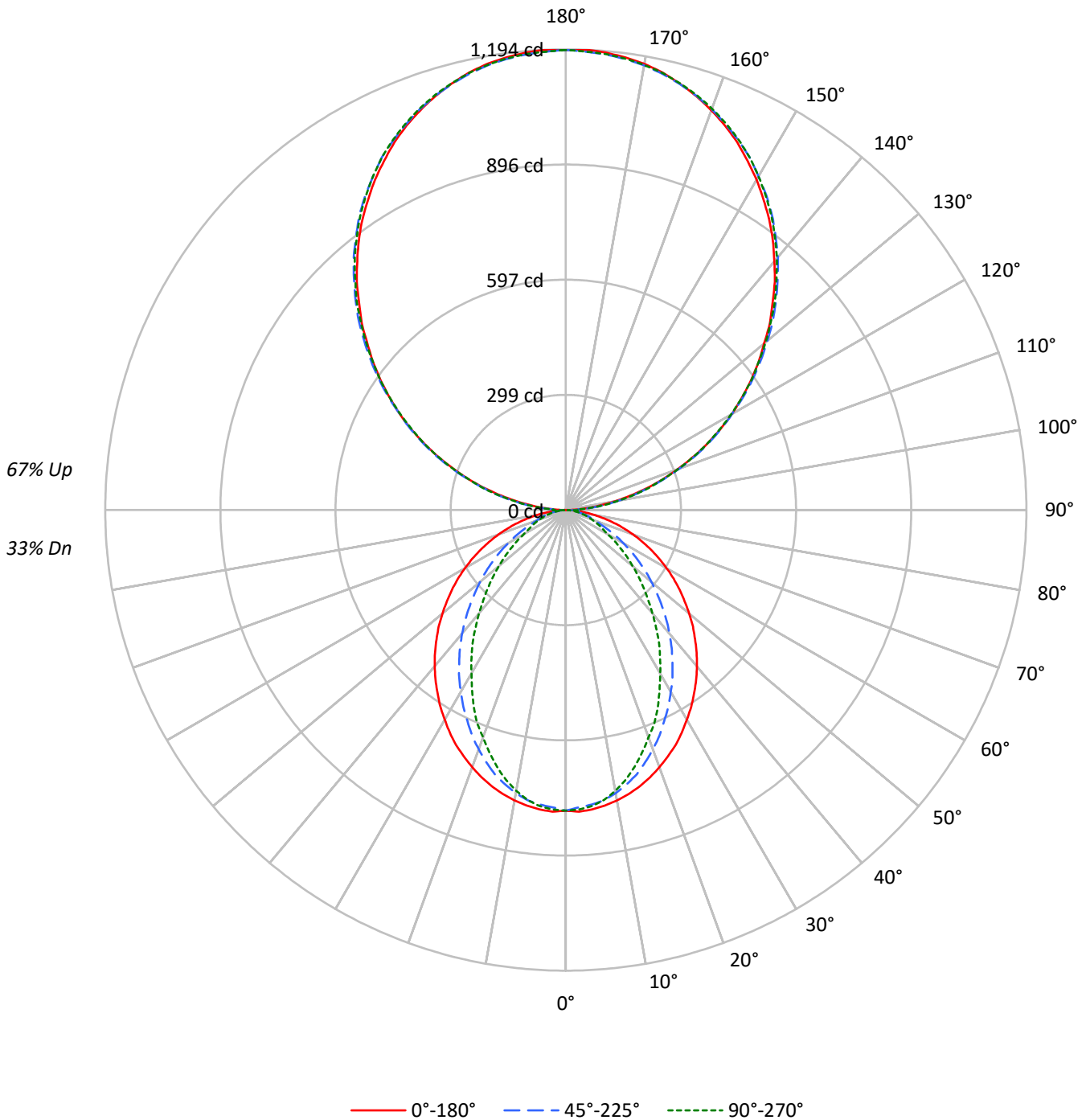
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4938.9 lumens
Efficiency: N/A
Efficacy: 110.7 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

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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	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°	1738	1738	1738
5°	1738	1706	1718
10°	1718	1669	1659
15°	1692	1610	1570
20°	1658	1531	1462
25°	1623	1442	1357
30°	1578	1351	1226
35°	1533	1255	1110
40°	1487	1155	978
45°	1434	1045	859
50°	1379	934	742
55°	1321	816	630
60°	1254	693	516
65°	1177	569	461
70°	1083	453	413
75°	965	392	370
80°	795	318	312
85°	522	197	220

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 90°
 Luminance: 1555 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	73.0	1.5
10°-20°	200.4	4.1
20°-30°	281.4	5.7
30°-40°	306.8	6.2
40°-50°	282.0	5.7
50°-60°	221.4	4.5
60°-70°	144.1	2.9
70°-80°	74.2	1.5
80°-90°	22.3	0.5
90°-100°	73.8	1.5
100°-110°	234.4	4.7
110°-120°	401.2	8.1
120°-130°	527.6	10.7
130°-140°	592.2	12.0
140°-150°	580.8	11.8
150°-160°	487.2	9.9
160°-170°	323.1	6.5
170°-180°	112.9	2.3
0°-30°	554.9	11.2
0°-40°	861.7	17.4
0°-60°	1365.1	27.6
0°-90°	1605.7	32.5
90°-120°	709.4	14.4
90°-150°	2410.0	48.8
90°-180°	3333.0	67.5
0°-180°	4938.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	779	779	779	779	779	
5°	779	776	766	773	771	74
15°	741	733	709	696	689	209
25°	673	650	604	575	564	309
35°	580	544	482	437	422	363
45°	474	426	353	302	286	366
55°	360	305	229	187	173	322
65°	243	186	123	99	97	241
75°	130	80	56	52	51	137
85°	30	16	13	13	13	35
90°	1	13	35	33	34	5
95°	52	63	64	64	63	58
105°	216	219	221	223	223	228
115°	403	408	406	406	403	398
125°	586	595	592	588	587	523
135°	757	768	771	770	767	585
145°	920	927	932	934	930	575
155°	1051	1054	1058	1063	1059	484
165°	1144	1143	1143	1150	1145	323
175°	1190	1187	1185	1192	1186	113
180°	1192	1192	1192	1192	1192	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	779.1	779.1	779.1	779.1	779.1
2.5°	782.6	779.1	771.3	778.4	777.0
5°	779.1	775.6	766.4	772.8	770.6
7.5°	772.8	768.5	758.7	761.5	757.9
10°	764.3	759.3	745.3	743.1	739.0
12.5°	753.8	747.3	728.3	724.2	716.3
15°	741.0	733.2	709.3	695.9	688.9
17.5°	726.2	714.9	685.3	669.8	658.6
20°	709.3	695.1	660.0	642.3	626.8
22.5°	691.0	674.8	633.9	609.9	599.4
25°	672.7	650.1	603.5	574.7	564.0
27.5°	650.8	626.8	575.3	542.2	525.9
30°	627.5	600.7	544.3	508.4	489.3
32.5°	604.9	572.5	514.7	472.4	454.8
35°	579.6	543.7	481.6	437.2	421.6
37.5°	554.9	516.0	450.5	401.9	384.3
40°	528.8	486.5	418.1	368.1	349.7
42.5°	502.0	456.9	385.7	333.5	315.9
45°	473.8	426.5	352.6	302.5	285.5
47.5°	447.0	397.0	320.8	270.7	255.2
50°	417.5	367.4	289.8	241.1	226.4
52.5°	388.4	335.5	260.1	213.7	200.3
55°	360.2	305.3	229.1	186.9	173.4
57.5°	331.4	274.9	201.7	162.2	150.9
60°	301.8	245.3	172.8	136.9	125.5
62.5°	272.9	216.5	148.1	114.2	108.6
65°	243.3	186.2	122.7	98.8	96.6
67.5°	215.1	157.9	98.8	86.7	84.6
70°	185.4	130.4	81.7	74.7	71.9
72.5°	157.2	105.0	68.3	62.8	61.4
75°	129.7	80.3	56.4	51.5	50.8
77.5°	102.3	57.1	44.4	41.6	40.2
80°	76.8	40.9	33.8	31.0	31.0
82.5°	53.5	27.5	23.3	21.9	21.9
85°	30.3	15.5	13.4	13.4	13.4
87.5°	11.3	5.7	5.7	4.9	4.9
90°	1.0	12.9	35.3	33.1	34.1
92.5°	22.2	30.2	31.3	32.3	32.3
95°	52.5	62.6	64.4	64.4	62.6
97.5°	87.4	96.7	100.7	100.7	100.7
100°	127.6	135.9	138.7	138.7	137.7
102.5°	170.0	176.2	180.1	181.2	180.1
105°	216.4	219.2	221.4	223.2	223.2
107.5°	262.4	266.7	266.7	267.4	262.4
110°	307.0	312.7	312.7	312.7	309.9



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	355.1	361.3	360.1	357.3	355.1
115°	402.6	408.4	406.5	405.5	402.6
117.5°	449.7	457.6	452.6	449.7	446.9
120°	497.2	505.0	497.2	497.2	493.9
122.5°	540.3	550.4	545.4	542.4	540.3
125°	585.6	594.6	591.7	588.4	587.4
127.5°	629.8	640.9	637.0	632.6	629.8
130°	671.1	684.1	682.3	680.1	676.2
132.5°	717.5	727.5	728.3	723.2	720.4
135°	757.4	768.5	770.7	769.6	766.8
137.5°	802.0	811.0	812.8	812.0	807.8
140°	841.1	850.2	855.2	855.2	851.2
142.5°	881.5	890.4	893.2	894.4	890.4
145°	919.5	926.7	932.5	933.6	929.6
147.5°	953.7	962.6	967.0	968.7	964.8
150°	988.9	995.0	999.0	1002.2	999.0
152.5°	1020.2	1026.2	1031.3	1035.3	1031.3
155°	1051.4	1054.3	1057.5	1062.6	1059.3
157.5°	1078.5	1080.5	1082.3	1089.6	1084.5
160°	1102.5	1104.7	1105.7	1111.8	1107.5
162.5°	1124.7	1124.7	1125.9	1132.7	1127.7
165°	1143.9	1142.7	1142.7	1149.9	1144.9
167.5°	1161.1	1157.8	1157.8	1165.1	1160.0
170°	1174.0	1171.1	1170.1	1177.2	1171.1
172.5°	1183.0	1180.2	1179.0	1186.3	1180.2
175°	1190.2	1187.3	1185.2	1192.3	1186.3
177.5°	1194.2	1191.3	1189.1	1195.2	1189.1
180°	1192.3	1192.3	1192.3	1192.3	1192.3



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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	7.04	7.74	8.14	8.83	10.34	3.02	3.73	4.12	4.82	6.32
	3H	8.68	9.31	9.79	10.41	11.93	4.18	4.81	5.29	5.92	7.43
	4H	9.27	9.86	10.38	10.97	12.49	4.62	5.21	5.73	6.32	7.84
	6H	9.66	10.21	10.79	11.32	12.86	4.92	5.47	6.04	6.57	8.11
	8H	9.78	10.30	10.90	11.42	12.95	5.00	5.52	6.13	6.64	8.17
	12H	9.82	10.32	10.96	11.43	12.99	5.03	5.53	6.16	6.64	8.19
4H	2H	7.03	7.63	8.16	8.74	10.26	3.59	4.19	4.71	5.29	6.81
	3H	8.83	9.32	9.96	10.45	11.99	4.91	5.40	6.04	6.53	8.07
	4H	9.49	9.95	10.63	11.07	12.63	5.44	5.89	6.57	7.01	8.57
	6H	9.98	10.37	11.12	11.51	13.06	5.83	6.22	6.97	7.36	8.91
	8H	10.14	10.50	11.28	11.64	13.20	5.95	6.31	7.09	7.45	9.01
	12H	10.22	10.55	11.37	11.69	13.26	6.00	6.33	7.16	7.48	9.05
8H	4H	9.45	9.81	10.59	10.95	12.51	5.69	6.06	6.83	7.19	8.76
	6H	9.99	10.29	11.15	11.46	13.02	6.18	6.49	7.34	7.66	9.22
	8H	10.19	10.45	11.35	11.60	13.19	6.36	6.63	7.53	7.78	9.36
	12H	10.30	10.53	11.47	11.68	13.30	6.46	6.69	7.63	7.85	9.46
12H	4H	9.39	9.73	10.55	10.87	12.44	5.69	6.02	6.84	7.16	8.73
	6H	9.96	10.22	11.12	11.38	12.96	6.23	6.49	7.39	7.64	9.23
	8H	10.16	10.39	11.33	11.54	13.16	6.42	6.65	7.59	7.80	9.42