

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: P902184

Luminaire Tested: DFN2DIP-4P3F0-020D040US830-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P902184
REPORT IS A COMBINATION OF REPORTS P899050 AND P895917
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P3F0-020D040US830-RLLFLL
Description: 3 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

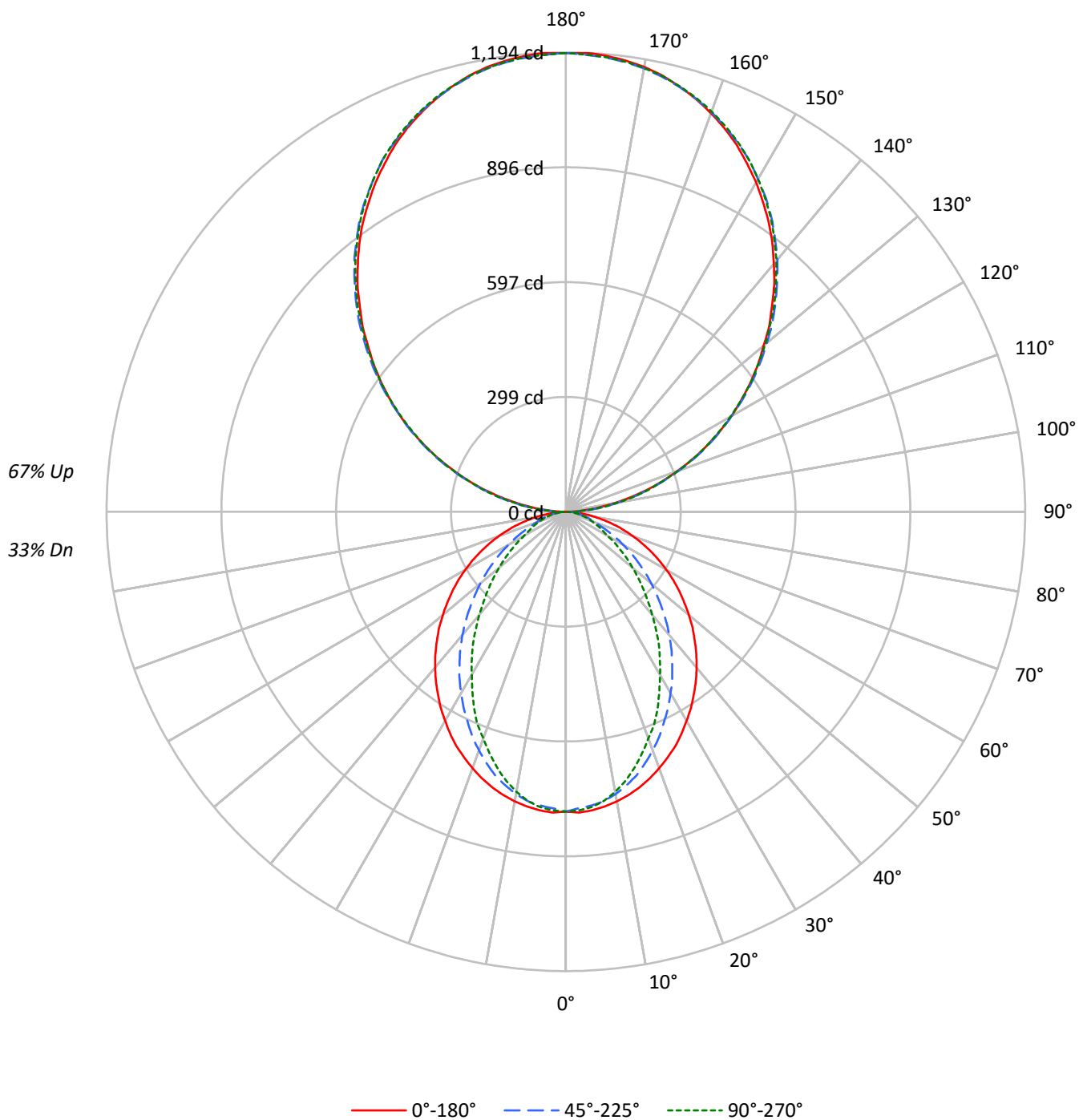
Lumens per Lamp: N/A
Luminaire Lumens: 4938.9 lumens
Efficiency: N/A
Efficacy: 108.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.07' x L: 3.07' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 45.4
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9951
Total Harmonic Distortion (THDi): 0.07
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
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	103	103	103	103	93	93	93	93	74	74	74	56	56	56	40	40	40
1	94	90	86	83	85	81	78	75	65	63	61	50	48	47	36	35	34
2	86	79	73	68	77	71	67	62	57	54	51	44	42	40	32	31	29
3	79	70	63	57	71	63	57	52	51	46	43	39	36	34	29	27	25
4	72	62	54	49	65	56	50	45	45	41	37	35	32	29	26	24	22
5	66	55	47	42	59	50	43	38	40	36	32	32	28	26	23	21	19
6	61	49	42	36	55	45	38	33	36	32	28	29	25	23	21	19	17
7	56	45	37	32	51	41	34	29	33	28	25	26	23	20	19	17	15
8	52	40	33	28	47	37	30	26	30	25	22	24	20	18	18	16	14
9	49	37	30	25	44	34	27	23	28	23	20	22	19	16	17	14	13
10	45	34	27	22	41	31	25	21	25	21	18	20	17	15	15	13	11

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	888	888	888
5°	889	873	879
10°	879	856	850
15°	867	827	806
20°	850	787	751
25°	833	743	699
30°	810	698	632
35°	788	649	573
40°	766	599	506
45°	740	543	446
50°	713	487	386
55°	684	427	329
60°	651	365	271
65°	613	301	243
70°	567	242	220
75°	509	212	199
80°	425	176	172
85°	289	115	128

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1194 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	4.80	5.50	5.90	6.60	8.10	0.76	1.47	1.86	2.56	4.06
	3H	6.46	7.09	7.57	8.19	9.71	1.93	2.56	3.04	3.67	5.18
	4H	7.06	7.66	8.18	8.76	10.29	2.37	2.97	3.49	4.07	5.60
	6H	7.47	8.02	8.60	9.13	10.67	2.68	3.23	3.81	4.34	5.87
	8H	7.59	8.12	8.72	9.24	10.77	2.77	3.29	3.90	4.41	5.94
	12H	7.65	8.15	8.78	9.26	10.81	2.80	3.30	3.94	4.41	5.97
4H	2H	4.80	5.40	5.92	6.50	8.03	1.34	1.94	2.46	3.04	4.56
	3H	6.61	7.11	7.74	8.24	9.78	2.67	3.17	3.80	4.30	5.83
	4H	7.29	7.75	8.43	8.87	10.43	3.21	3.66	4.34	4.78	6.34
	6H	7.80	8.19	8.94	9.33	10.88	3.61	4.00	4.75	5.15	6.69
	8H	7.97	8.33	9.11	9.47	11.03	3.74	4.10	4.88	5.23	6.80
	12H	8.06	8.39	9.21	9.53	11.10	3.79	4.12	4.95	5.27	6.84
8H	4H	7.25	7.62	8.39	8.75	10.32	3.47	3.84	4.62	4.97	6.54
	6H	7.81	8.11	8.97	9.28	10.85	3.98	4.28	5.14	5.46	7.02
	8H	8.02	8.28	9.19	9.44	11.02	4.17	4.43	5.33	5.58	7.17
	12H	8.15	8.38	9.32	9.53	11.15	4.28	4.51	5.44	5.66	7.27
12H	4H	7.20	7.53	8.35	8.67	10.24	3.47	3.80	4.63	4.95	6.52
	6H	7.78	8.05	8.95	9.20	10.78	4.03	4.29	5.19	5.44	7.03
	8H	7.99	8.22	9.16	9.38	10.99	4.23	4.46	5.40	5.61	7.23

END OF REPORT