

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: P915843

Luminaire Tested: DFN2DIP-4P3F0-030D040US930-FLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P915843
REPORT IS A COMBINATION OF REPORTS P900571 AND P897473
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P3F0-030D040US930-FLLONL
Description: 3 foot, 90deg - 4way Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

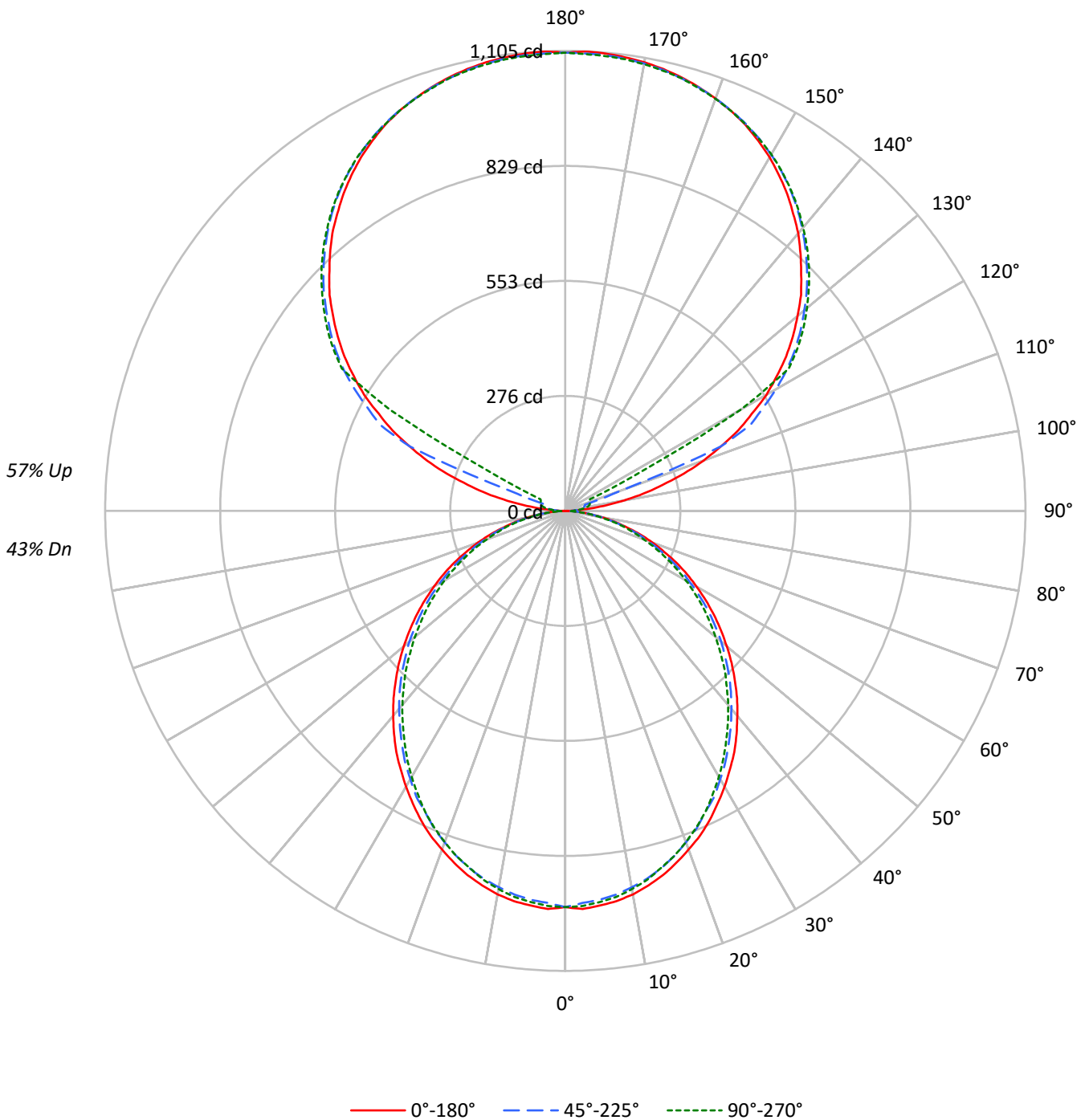
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5650.0 lumens
Efficiency: N/A
Efficacy: 101.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.07' x L: 3.07' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 55.7
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9933
Total Harmonic Distortion (THDi): 0.066
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	105	105	105	105	96	96	96	96	79	79	79	64	64	64	50	50	50	43				43
1	96	92	88	85	88	84	81	78	70	67	65	56	55	53	44	43	42	36				36
2	88	80	74	69	80	74	68	64	61	57	54	49	47	44	39	37	35	30				30
3	80	71	63	58	73	65	58	53	54	49	45	44	40	38	34	32	30	26				26
4	73	62	55	49	66	57	50	45	48	43	39	39	35	32	31	28	26	22				22
5	67	56	48	42	61	51	44	39	43	37	33	35	31	28	28	25	23	19				19
6	62	50	42	36	56	46	39	34	38	33	29	31	27	24	25	22	20	17				17
7	57	45	37	32	52	41	34	29	35	29	25	29	25	22	23	20	18	15				15
8	53	41	33	28	48	38	31	26	32	26	23	26	22	19	21	18	16	13				13
9	49	37	30	25	45	34	28	23	29	24	20	24	20	17	19	16	14	12				12
10	46	34	27	22	42	31	25	21	27	22	18	22	18	16	18	15	13	11				11

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1085	1085	1085
5°	1086	1069	1076
10°	1076	1054	1061
15°	1060	1036	1038
20°	1038	1011	1015
25°	1016	981	987
30°	988	954	953
35°	962	921	916
40°	930	889	881
45°	899	856	846
50°	864	821	804
55°	827	781	766
60°	786	734	723
65°	741	685	671
70°	683	625	616
75°	603	554	564
80°	507	462	466
85°	357	306	305

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 899 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	89.6	1.6
10°-20°	252.0	4.5
20°-30°	370.4	6.6
30°-40°	430.2	7.6
40°-50°	429.7	7.6
50°-60°	374.6	6.6
60°-70°	277.0	4.9
70°-80°	156.7	2.8
80°-90°	43.3	0.8
90°-100°	36.3	0.6
100°-110°	135.3	2.4
110°-120°	358.8	6.4
120°-130°	595.1	10.5
130°-140°	632.1	11.2
140°-150°	587.5	10.4
150°-160°	472.3	8.4
160°-170°	304.4	5.4
170°-180°	104.8	1.9
0°-30°	712.0	12.6
0°-40°	1142.2	20.2
0°-60°	1946.5	34.5
0°-90°	2423.4	42.9
90°-120°	530.4	9.4
90°-150°	2345.2	41.5
90°-180°	3227.0	57.1
0°-180°	5650.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	952	952	952	952	952	
5°	952	948	938	945	944	90
15°	906	901	889	892	888	255
25°	820	813	797	799	797	377
35°	707	698	684	678	674	442
45°	576	569	556	545	542	444
55°	436	430	419	408	404	390
65°	294	288	279	271	266	290
75°	154	152	147	142	144	164
85°	38	37	36	33	32	42
90°	1	10	16	20	21	5
95°	52	25	31	35	34	61
105°	242	266	49	57	60	259
115°	458	471	491	123	65	451
125°	647	658	673	679	681	577
135°	801	814	821	829	828	619
145°	929	929	942	948	944	581
155°	1023	1016	1026	1030	1024	472
165°	1078	1074	1076	1082	1076	305
175°	1103	1097	1099	1105	1097	105
180°	1101	1101	1101	1101	1101	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	951.7	951.7	951.7	951.7	951.7
2.5°	957.2	952.7	942.6	951.7	950.0
5°	951.7	948.1	938.0	945.3	943.5
7.5°	945.3	939.9	929.8	937.2	935.3
10°	935.3	928.9	917.9	925.2	922.5
12.5°	921.5	916.1	905.1	909.6	907.8
15°	906.0	900.6	888.6	892.3	887.7
17.5°	886.7	881.3	869.4	873.9	869.4
20°	865.7	860.2	847.4	850.1	846.5
22.5°	844.7	836.5	824.5	824.5	822.6
25°	819.9	812.7	797.1	798.9	797.1
27.5°	792.5	786.0	774.2	771.5	767.0
30°	765.1	757.7	744.0	741.3	737.6
32.5°	735.8	730.3	715.7	710.1	706.5
35°	707.4	698.3	683.6	678.1	673.5
37.5°	675.4	667.2	652.5	646.0	641.5
40°	642.5	635.1	620.4	612.3	608.6
42.5°	610.4	603.1	588.5	579.3	573.8
45°	575.7	569.2	555.5	545.4	541.8
47.5°	541.8	535.4	520.7	510.6	505.2
50°	506.1	501.5	488.7	475.9	471.3
52.5°	471.3	464.9	453.1	443.0	436.5
55°	435.7	430.2	419.1	408.2	403.7
57.5°	399.9	395.3	383.4	372.4	368.8
60°	364.2	360.6	347.8	337.7	335.0
62.5°	329.5	323.0	313.9	304.8	301.1
65°	293.8	288.3	279.2	270.9	266.4
67.5°	257.2	252.6	244.3	238.0	234.3
70°	223.3	219.6	211.4	205.0	201.4
72.5°	188.6	184.8	180.3	173.9	171.2
75°	153.7	152.0	147.3	141.9	143.7
77.5°	122.6	119.0	117.1	114.4	111.7
80°	91.6	90.6	88.7	86.0	84.2
82.5°	62.2	62.2	61.4	57.6	57.6
85°	37.5	36.6	35.7	32.9	32.0
87.5°	16.5	14.7	12.8	10.1	9.1
90°	0.7	9.5	15.9	20.0	21.4
92.5°	20.0	16.7	19.1	20.7	21.4
95°	51.7	25.4	31.0	35.1	34.2
97.5°	93.2	27.9	40.6	43.0	43.8
100°	141.0	31.9	45.4	51.7	53.3
102.5°	193.5	192.0	47.0	55.7	58.1
105°	242.1	266.0	48.6	57.3	60.5
107.5°	298.6	318.5	50.2	58.9	62.1
110°	352.9	369.5	139.4	59.8	62.9



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	403.8	418.1	404.6	61.3	63.8
115°	457.9	471.4	491.4	122.6	65.4
117.5°	504.9	520.8	534.4	420.4	211.8
120°	557.5	569.4	583.8	593.4	485.8
122.5°	602.0	614.8	630.8	635.5	636.3
125°	647.4	657.9	672.9	678.6	680.9
127.5°	688.8	700.0	712.0	720.0	720.7
130°	727.9	740.7	749.3	758.1	757.4
132.5°	767.7	778.1	786.8	794.0	793.3
135°	801.2	814.0	821.1	829.1	827.5
137.5°	836.2	845.7	853.8	861.7	859.3
140°	870.4	876.9	885.6	892.8	888.8
142.5°	899.2	904.7	915.1	921.4	917.5
145°	929.4	928.6	942.1	947.7	943.7
147.5°	955.6	953.2	966.8	970.8	967.7
150°	981.1	975.6	988.4	993.1	989.1
152.5°	1002.7	996.3	1008.2	1013.0	1007.5
155°	1023.4	1016.3	1025.8	1030.5	1024.2
157.5°	1040.1	1033.7	1041.0	1046.5	1040.1
160°	1054.4	1049.6	1054.4	1059.2	1053.6
162.5°	1067.1	1062.4	1066.4	1072.0	1064.8
165°	1078.3	1073.6	1075.9	1081.5	1075.9
167.5°	1087.1	1082.2	1084.8	1090.3	1083.1
170°	1094.3	1089.5	1091.0	1096.7	1089.5
172.5°	1099.0	1094.3	1095.9	1101.5	1094.3
175°	1102.9	1097.4	1099.0	1104.6	1096.7
177.5°	1104.6	1099.0	1099.8	1105.5	1098.3
180°	1100.7	1100.7	1100.7	1100.7	1100.7



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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	6.82	7.63	7.84	8.65	10.02	6.38	7.18	7.40	8.21	9.58
	3H	8.48	9.19	9.50	10.23	11.62	7.99	8.70	9.01	9.74	11.13
	4H	9.06	9.74	10.10	10.78	12.17	8.57	9.25	9.60	10.28	11.68
	6H	9.45	10.08	10.50	11.12	12.53	8.95	9.58	10.00	10.62	12.03
	8H	9.55	10.15	10.61	11.21	12.61	9.05	9.65	10.11	10.71	12.11
	12H	9.60	10.16	10.66	11.22	12.64	9.09	9.66	10.15	10.71	12.13
4H	2H	7.28	7.96	8.32	8.99	10.39	6.92	7.60	7.97	8.64	10.03
	3H	9.13	9.70	10.18	10.76	12.17	8.72	9.29	9.78	10.36	11.77
	4H	9.84	10.36	10.90	11.41	12.85	9.42	9.94	10.47	10.99	12.42
	6H	10.35	10.79	11.42	11.87	13.30	9.91	10.36	10.98	11.44	12.87
	8H	10.49	10.91	11.56	11.98	13.42	10.06	10.47	11.12	11.54	12.99
	12H	10.56	10.94	11.65	12.02	13.47	10.11	10.49	11.20	11.57	13.02
8H	4H	10.03	10.44	11.10	11.52	12.96	9.65	10.07	10.72	11.14	12.58
	6H	10.65	10.99	11.74	12.11	13.55	10.27	10.61	11.36	11.72	13.16
	8H	10.87	11.17	11.97	12.27	13.72	10.47	10.78	11.57	11.87	13.33
	12H	10.99	11.26	12.09	12.35	13.85	10.58	10.85	11.68	11.94	13.44
12H	4H	10.01	10.39	11.10	11.47	12.92	9.64	10.02	10.73	11.10	12.55
	6H	10.68	10.98	11.78	12.08	13.54	10.30	10.61	11.40	11.70	13.16
	8H	10.91	11.18	12.02	12.27	13.77	10.53	10.80	11.63	11.89	13.39