

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: P915919

Luminaire Tested: DFN2DIP-4P4F0-030D040US930-FLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P915919
REPORT IS A COMBINATION OF REPORTS P900611 AND P897523
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P4F0-030D040US930-FLLONL
Description: 4 foot, 90deg - 4way Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

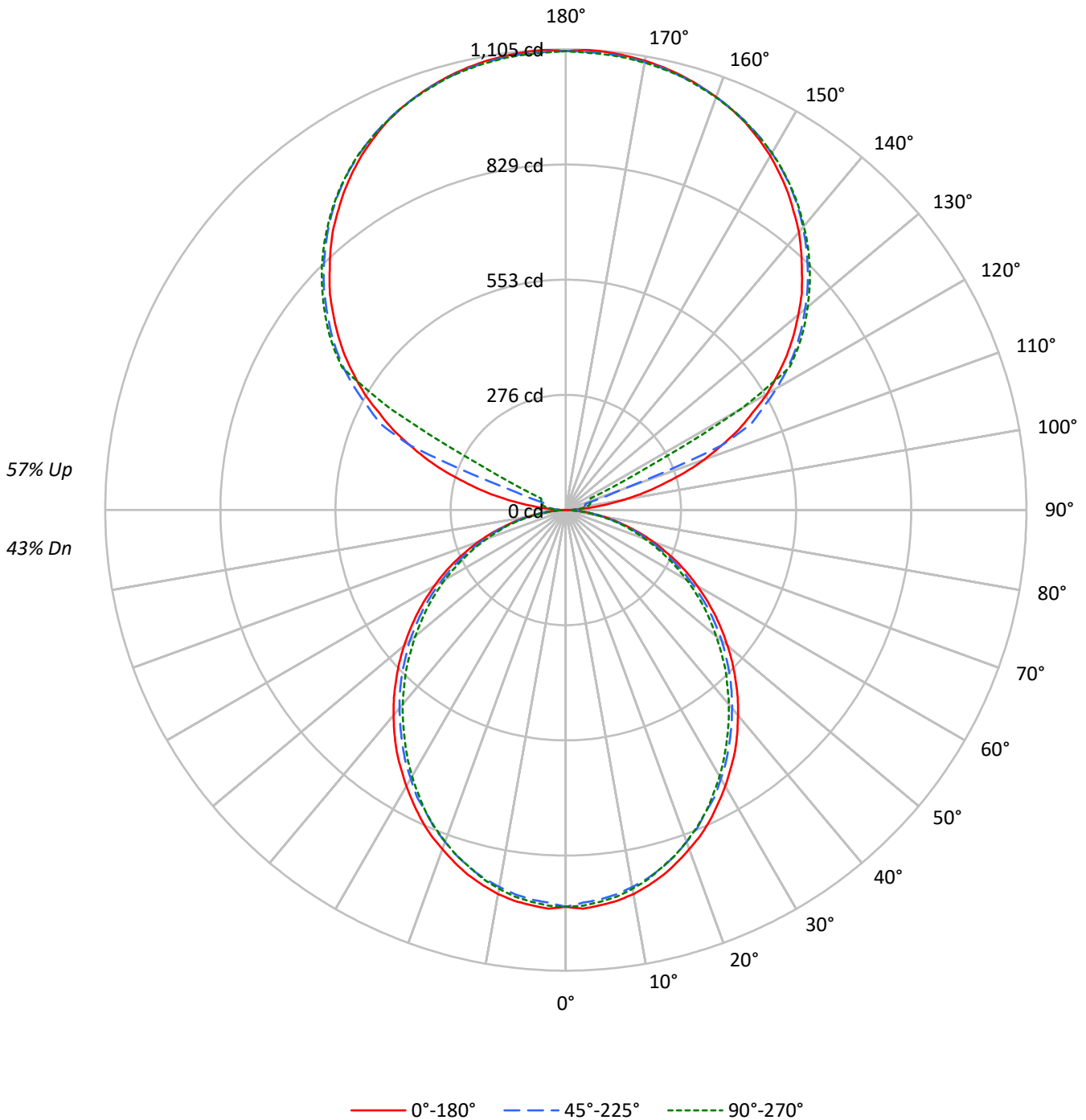
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5650.0 lumens
Efficiency: N/A
Efficacy: 96.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 4.07' x L: 4.07' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 58.5
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.983
Total Harmonic Distortion (THDi): 0.073
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°	617	617	617
5°	618	609	613
10°	613	601	605
15°	605	591	592
20°	592	578	579
25°	580	561	564
30°	565	546	545
35°	551	529	524
40°	533	511	505
45°	516	493	485
50°	496	474	462
55°	476	452	441
60°	453	426	417
65°	428	399	388
70°	397	366	358
75°	353	327	330
80°	300	277	276
85°	218	190	186

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 90°
 Luminance: 566 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	4.92	5.72	5.94	6.75	8.11	4.48	5.28	5.49	6.30	7.67
	3H	6.58	7.30	7.61	8.33	9.72	6.09	6.81	7.12	7.84	9.23
	4H	7.17	7.85	8.21	8.89	10.28	6.68	7.36	7.72	8.39	9.79
	6H	7.57	8.20	8.62	9.24	10.65	7.07	7.70	8.12	8.74	10.15
	8H	7.68	8.27	8.73	9.33	10.73	7.18	7.77	8.23	8.83	10.23
	12H	7.73	8.29	8.78	9.34	10.77	7.22	7.78	8.27	8.83	10.26
4H	2H	5.38	6.06	6.42	7.09	8.49	5.02	5.70	6.07	6.74	8.13
	3H	7.24	7.81	8.29	8.87	10.28	6.83	7.40	7.89	8.47	9.88
	4H	7.96	8.48	9.02	9.53	10.97	7.53	8.06	8.59	9.11	10.54
	6H	8.48	8.92	9.54	10.00	11.43	8.04	8.49	9.11	9.57	11.00
	8H	8.63	9.04	9.70	10.12	11.56	8.19	8.61	9.26	9.68	11.12
	12H	8.70	9.08	9.79	10.16	11.61	8.25	8.63	9.34	9.71	11.16
8H	4H	8.15	8.57	9.22	9.64	11.08	7.78	8.19	8.84	9.26	10.71
	6H	8.79	9.13	9.88	10.25	11.68	8.40	8.75	9.50	9.86	11.30
	8H	9.01	9.31	10.11	10.41	11.87	8.62	8.92	9.72	10.02	11.48
	12H	9.14	9.41	10.25	10.50	12.00	8.73	9.00	9.83	10.09	11.59
12H	4H	8.13	8.51	9.22	9.60	11.04	7.77	8.14	8.85	9.23	10.68
	6H	8.82	9.12	9.92	10.22	11.67	8.45	8.75	9.54	9.84	11.30
	8H	9.06	9.33	10.16	10.42	11.92	8.68	8.95	9.78	10.04	11.54