

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: P913191

Luminaire Tested: DFN2DIP-4P4F0-030D040US927-FLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P913191
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-4P4F0-030D040US927-FLLONL
Description: 4 foot, 90deg - 4way Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

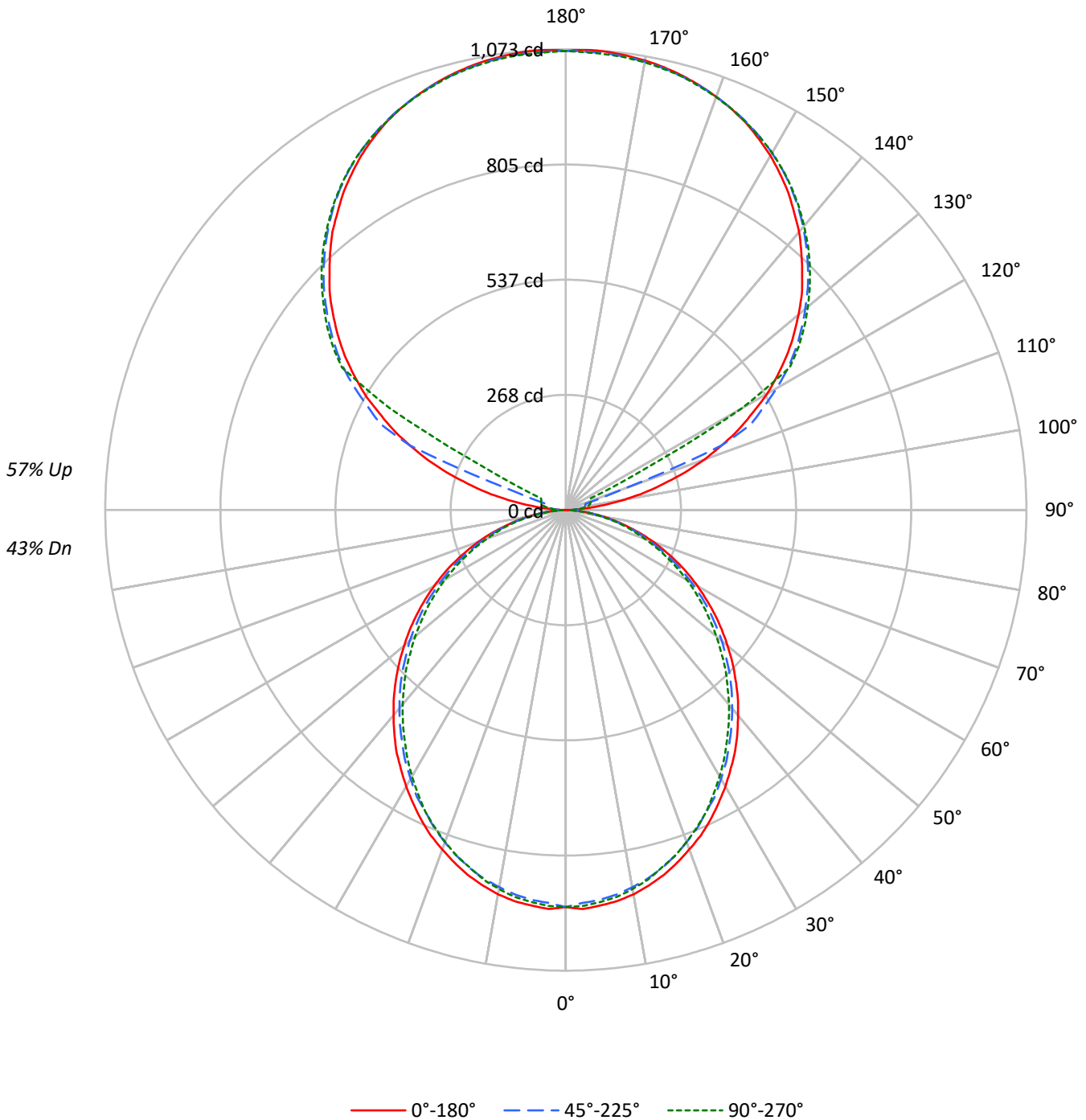
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5489.8 lumens
Efficiency: N/A
Efficacy: 93.8 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°	600	600	600
5°	601	592	596
10°	596	584	588
15°	587	575	575
20°	576	561	563
25°	564	546	548
30°	549	531	529
35°	535	514	510
40°	518	496	491
45°	501	479	471
50°	482	460	449
55°	463	439	429
60°	440	414	405
65°	416	387	377
70°	386	356	348
75°	343	318	321
80°	292	269	268
85°	212	185	181

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 90°
 Luminance: 550 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	87.0	1.6
10°-20°	244.9	4.5
20°-30°	359.9	6.6
30°-40°	418.0	7.6
40°-50°	417.5	7.6
50°-60°	364.0	6.6
60°-70°	269.1	4.9
70°-80°	152.3	2.8
80°-90°	42.1	0.8
90°-100°	35.2	0.6
100°-110°	131.5	2.4
110°-120°	348.6	6.4
120°-130°	578.2	10.5
130°-140°	614.2	11.2
140°-150°	570.9	10.4
150°-160°	458.9	8.4
160°-170°	295.7	5.4
170°-180°	101.8	1.9
0°-30°	691.8	12.6
0°-40°	1109.8	20.2
0°-60°	1891.3	34.5
0°-90°	2354.7	42.9
90°-120°	515.3	9.4
90°-150°	2278.7	41.5
90°-180°	3135.0	57.1
0°-180°	5489.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	925	925	925	925	925	
5°	925	921	911	918	917	88
15°	880	875	863	867	862	248
25°	797	790	774	776	774	367
35°	687	678	664	659	654	429
45°	559	553	540	530	526	432
55°	423	418	407	397	392	378
65°	286	280	271	263	259	282
75°	149	148	143	138	140	159
85°	36	36	35	32	31	41
90°	1	9	15	19	21	5
95°	50	25	30	34	33	60
105°	235	258	47	56	59	251
115°	445	458	477	119	64	438
125°	629	639	654	659	662	561
135°	778	791	798	806	804	601
145°	903	902	915	921	917	565
155°	994	988	997	1001	995	458
165°	1048	1043	1045	1051	1045	296
175°	1072	1066	1068	1073	1066	102
180°	1069	1069	1069	1069	1069	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	924.7	924.7	924.7	924.7	924.7
2.5°	930.1	925.7	915.8	924.7	923.0
5°	924.7	921.2	911.4	918.5	916.8
7.5°	918.5	913.2	903.4	910.6	908.8
10°	908.8	902.5	891.9	899.0	896.4
12.5°	895.4	890.1	879.5	883.8	882.1
15°	880.3	875.0	863.4	867.0	862.5
17.5°	861.6	856.3	844.7	849.1	844.7
20°	841.1	835.8	823.4	826.0	822.5
22.5°	820.8	812.8	801.1	801.1	799.3
25°	796.7	789.6	774.5	776.3	774.5
27.5°	770.0	763.7	752.3	749.6	745.2
30°	743.4	736.3	722.9	720.3	716.7
32.5°	714.9	709.6	695.4	690.0	686.4
35°	687.4	678.5	664.2	658.9	654.4
37.5°	656.2	648.2	634.0	627.7	623.3
40°	624.2	617.1	602.8	594.9	591.4
42.5°	593.1	586.0	571.8	562.8	557.5
45°	559.4	553.1	539.7	530.0	526.4
47.5°	526.4	520.2	506.0	496.1	490.8
50°	491.7	487.3	474.8	462.4	458.0
52.5°	458.0	451.7	440.2	430.4	424.1
55°	423.3	418.0	407.3	396.6	392.2
57.5°	388.6	384.1	372.6	361.9	358.3
60°	353.9	350.4	337.9	328.1	325.5
62.5°	320.1	313.9	305.0	296.1	292.6
65°	285.5	280.1	271.2	263.2	258.8
67.5°	249.9	245.4	237.4	231.2	227.7
70°	217.0	213.4	205.4	199.2	195.7
72.5°	183.2	179.6	175.2	169.0	166.4
75°	149.3	147.7	143.1	137.8	139.7
77.5°	119.1	115.6	113.8	111.1	108.5
80°	89.0	88.0	86.2	83.6	81.8
82.5°	60.4	60.4	59.7	56.0	56.0
85°	36.4	35.6	34.7	32.0	31.1
87.5°	16.0	14.3	12.4	9.8	8.9
90°	0.7	9.3	15.4	19.4	20.8
92.5°	19.4	16.2	18.5	20.1	20.8
95°	50.2	24.7	30.1	34.1	33.3
97.5°	90.5	27.1	39.5	41.8	42.5
100°	137.0	31.0	44.1	50.2	51.8
102.5°	188.0	186.6	45.6	54.1	56.5
105°	235.2	258.5	47.2	55.7	58.8
107.5°	290.2	309.5	48.8	57.3	60.4
110°	342.9	359.0	135.5	58.1	61.1



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	392.4	406.2	393.1	59.6	61.9
115°	444.9	458.0	477.4	119.1	63.5
117.5°	490.6	506.0	519.3	408.5	205.8
120°	541.7	553.3	567.2	576.5	472.1
122.5°	584.9	597.4	612.9	617.5	618.3
125°	629.1	639.2	653.9	659.3	661.6
127.5°	669.3	680.2	691.8	699.6	700.3
130°	707.3	719.7	728.1	736.6	735.9
132.5°	745.9	756.1	764.5	771.5	770.8
135°	778.5	790.9	797.8	805.6	804.1
137.5°	812.5	821.7	829.6	837.3	835.0
140°	845.7	852.0	860.5	867.4	863.6
142.5°	873.7	879.1	889.1	895.2	891.4
145°	903.1	902.3	915.4	920.8	916.9
147.5°	928.5	926.2	939.4	943.3	940.2
150°	953.3	947.9	960.4	965.0	961.1
152.5°	974.2	968.0	979.6	984.3	978.9
155°	994.3	987.5	996.7	1001.3	995.1
157.5°	1010.6	1004.4	1011.5	1016.8	1010.6
160°	1024.5	1019.9	1024.5	1029.1	1023.7
162.5°	1036.9	1032.3	1036.2	1041.6	1034.6
165°	1047.7	1043.1	1045.4	1050.8	1045.4
167.5°	1056.3	1051.5	1054.0	1059.4	1052.4
170°	1063.3	1058.6	1060.1	1065.6	1058.6
172.5°	1067.9	1063.3	1064.8	1070.2	1063.3
175°	1071.7	1066.3	1067.9	1073.2	1065.6
177.5°	1073.2	1067.9	1068.7	1074.1	1067.1
180°	1069.4	1069.4	1069.4	1069.4	1069.4



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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	4.82	5.62	5.84	6.65	8.02	4.38	5.18	5.39	6.20	7.57
	3H	6.48	7.20	7.51	8.23	9.62	5.99	6.71	7.02	7.74	9.13
	4H	7.07	7.75	8.11	8.79	10.18	6.58	7.26	7.62	8.29	9.69
	6H	7.47	8.10	8.52	9.14	10.55	6.97	7.60	8.02	8.64	10.05
	8H	7.58	8.17	8.63	9.23	10.63	7.08	7.67	8.13	8.73	10.13
	12H	7.63	8.19	8.68	9.24	10.67	7.12	7.68	8.17	8.73	10.16
4H	2H	5.27	5.96	6.32	6.99	8.39	4.92	5.60	5.97	6.64	8.03
	3H	7.14	7.71	8.19	8.77	10.18	6.74	7.30	7.79	8.37	9.78
	4H	7.86	8.38	8.92	9.43	10.87	7.44	7.96	8.49	9.01	10.44
	6H	8.38	8.82	9.44	9.90	11.33	7.94	8.39	9.01	9.47	10.90
	8H	8.53	8.94	9.60	10.02	11.46	8.09	8.51	9.16	9.58	11.02
	12H	8.60	8.98	9.69	10.06	11.51	8.15	8.53	9.24	9.61	11.06
8H	4H	8.05	8.47	9.12	9.54	10.98	7.68	8.09	8.74	9.16	10.61
	6H	8.69	9.03	9.78	10.14	11.58	8.30	8.65	9.40	9.76	11.20
	8H	8.91	9.21	10.01	10.31	11.77	8.52	8.82	9.62	9.92	11.38
	12H	9.04	9.31	10.15	10.40	11.90	8.63	8.90	9.74	9.99	11.49
12H	4H	8.03	8.41	9.12	9.50	10.94	7.67	8.04	8.75	9.13	10.58
	6H	8.72	9.02	9.82	10.12	11.57	8.35	8.65	9.44	9.74	11.20
	8H	8.96	9.23	10.06	10.32	11.82	8.58	8.85	9.68	9.94	11.44