

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: P913239

Luminaire Tested: DFN2DIP-4P4F0-050D040US927-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P913239
REPORT IS A COMBINATION OF REPORTS P900615 AND P897523
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P4F0-050D040US927-FLLONL
Description: 4 foot, 90deg - 4way Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

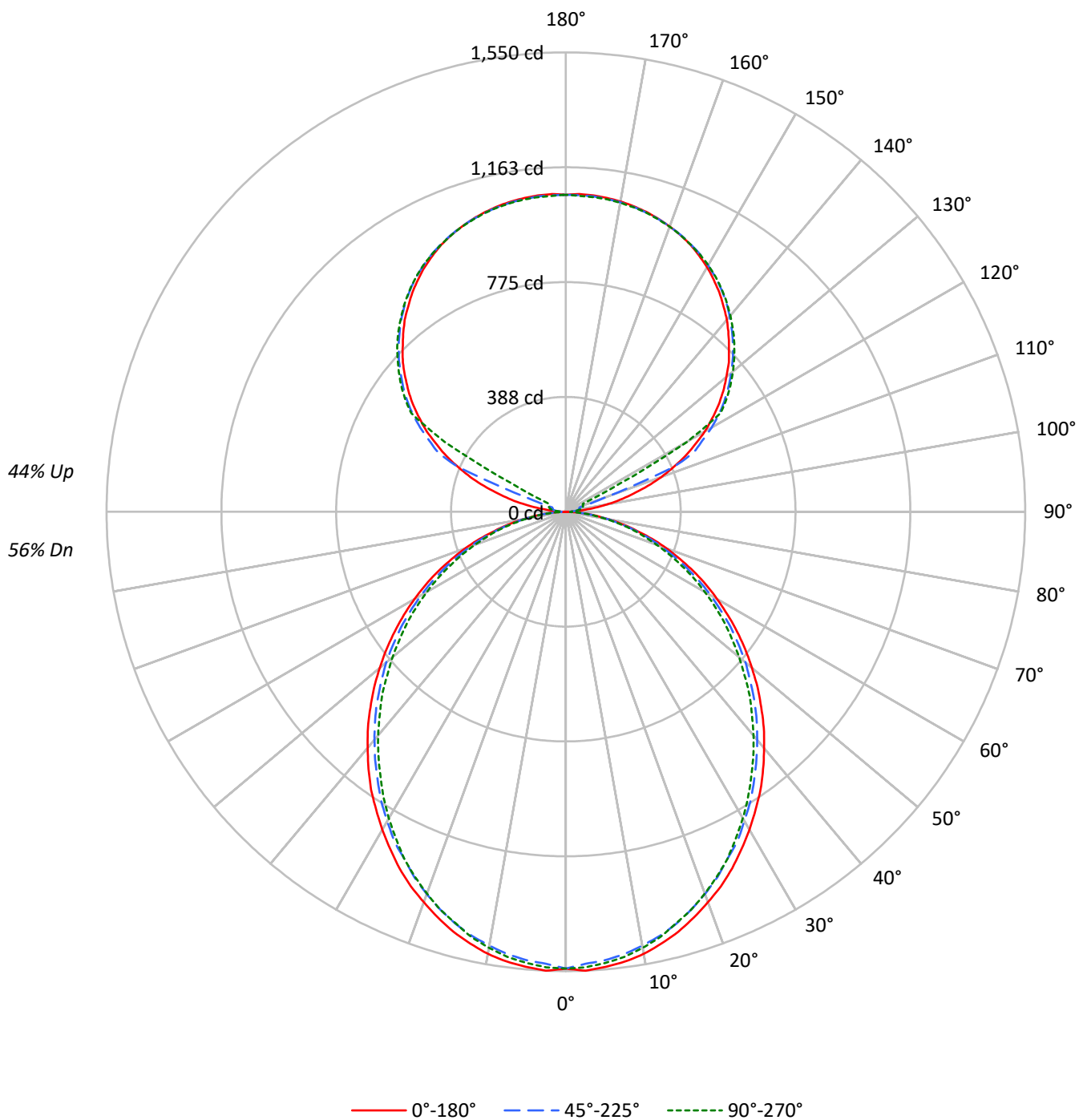
Lumens per Lamp: N/A
Luminaire Lumens: 7058.3 lumens
Efficiency: N/A
Efficacy: 87.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 4.07' x L: 4.07' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 80.9
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	108	108	108	108		101	101	101	101		86	86	86		73	73	73		61	61	61
1	99	95	91	87		92	88	85	82		76	73	71		65	63	61		54	53	52
2	90	83	76	71		84	77	72	67		66	62	59		57	54	51		48	46	44
3	82	73	65	59		76	68	61	56		59	54	50		50	46	43		42	39	37
4	75	64	56	50		70	60	53	48		52	47	42		45	40	37		38	35	32
5	69	57	49	43		64	54	46	41		47	41	36		40	36	32		34	31	28
6	64	52	43	37		59	48	41	36		42	36	32		36	32	28		31	27	25
7	59	47	39	33		55	44	36	31		38	32	28		33	28	25		28	25	22
8	55	42	34	29		51	40	33	28		35	29	25		30	26	22		26	22	20
9	51	39	31	26		47	36	29	25		32	26	22		28	23	20		24	20	18
10	48	35	28	23		44	33	27	22		29	24	20		26	21	18		22	19	16

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1000	1000	1000
5°	1002	986	993
10°	994	973	980
15°	979	958	959
20°	959	936	938
25°	940	909	914
30°	915	885	882
35°	892	856	849
40°	863	827	818
45°	835	798	786
50°	804	767	748
55°	771	731	714
60°	734	689	675
65°	694	646	629
70°	643	593	579
75°	572	529	534
80°	486	449	447
85°	353	308	302

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 835 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	145.1	2.1
10°-20°	408.1	5.8
20°-30°	599.8	8.5
30°-40°	696.6	9.9
40°-50°	695.8	9.9
50°-60°	606.7	8.6
60°-70°	448.5	6.4
70°-80°	253.7	3.6
80°-90°	68.8	1.0
90°-100°	35.2	0.5
100°-110°	131.5	1.9
110°-120°	348.6	4.9
120°-130°	578.2	8.2
130°-140°	614.2	8.7
140°-150°	570.9	8.1
150°-160°	458.9	6.5
160°-170°	295.7	4.2
170°-180°	101.8	1.4
0°-30°	1153.0	16.3
0°-40°	1849.6	26.2
0°-60°	3152.1	44.7
0°-90°	3923.2	55.6
90°-120°	515.3	7.3
90°-150°	2278.7	32.3
90°-180°	3135.0	44.4
0°-180°	7058.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1541	1541	1541	1541	1541	
5°	1541	1535	1519	1531	1528	146
15°	1467	1458	1439	1445	1438	413
25°	1328	1316	1291	1294	1291	611
35°	1146	1131	1107	1098	1091	715
45°	932	922	900	883	877	719
55°	706	697	679	661	654	631
65°	476	467	452	439	431	470
75°	249	246	238	230	233	266
85°	61	59	58	53	52	68
90°	1	9	15	19	21	7
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°	1541.2	1541.2	1541.2	1541.2	1541.2
2.5°	1550.1	1542.8	1526.5	1541.2	1538.4
5°	1541.2	1535.4	1519.0	1530.8	1528.0
7.5°	1530.8	1522.0	1505.7	1517.7	1514.7
10°	1514.7	1504.3	1486.5	1498.3	1493.9
12.5°	1492.3	1483.5	1465.8	1473.1	1470.1
15°	1467.1	1458.3	1439.0	1445.0	1437.6
17.5°	1436.0	1427.2	1407.9	1415.2	1407.9
20°	1401.9	1393.1	1372.4	1376.7	1370.9
22.5°	1367.9	1354.6	1335.2	1335.2	1332.2
25°	1327.9	1316.1	1290.9	1293.7	1290.9
27.5°	1283.3	1273.0	1253.8	1249.3	1242.0
30°	1239.0	1227.1	1204.9	1200.5	1194.5
32.5°	1191.5	1182.7	1159.0	1150.0	1144.1
35°	1145.6	1130.8	1107.1	1098.1	1090.8
37.5°	1093.7	1080.4	1056.6	1046.2	1038.9
40°	1040.5	1028.5	1004.7	991.5	985.6
42.5°	988.6	976.6	953.0	938.0	929.2
45°	932.2	921.9	899.5	883.4	877.3
47.5°	877.3	867.0	843.3	826.9	818.1
50°	819.5	812.1	791.4	770.6	763.2
52.5°	763.2	752.8	733.6	717.3	706.9
55°	705.5	696.6	678.7	661.0	653.6
57.5°	647.6	640.2	620.9	603.2	597.1
60°	589.8	584.0	563.2	546.8	542.5
62.5°	533.5	523.2	508.3	493.5	487.6
65°	475.8	466.8	452.0	438.7	431.3
67.5°	416.5	409.0	395.8	385.4	379.4
70°	361.6	355.7	342.3	331.9	326.1
72.5°	305.4	299.4	292.0	281.6	277.2
75°	248.9	246.1	238.5	229.7	232.7
77.5°	198.6	192.6	189.6	185.2	180.9
80°	148.3	146.7	143.7	139.3	136.3
82.5°	100.8	100.8	99.3	93.4	93.4
85°	60.7	59.3	57.8	53.3	51.9
87.5°	26.7	23.8	20.8	16.3	14.8
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	7.79	8.70	8.70	9.63	10.82	7.35	8.26	8.25	9.19	10.38
	3H	9.46	10.28	10.38	11.22	12.43	8.97	9.79	9.89	10.73	11.94
	4H	10.05	10.83	10.99	11.77	12.99	9.56	10.34	10.49	11.28	12.50
	6H	10.46	11.18	11.41	12.12	13.36	9.96	10.68	10.91	11.62	12.86
	8H	10.57	11.25	11.52	12.22	13.45	10.07	10.75	11.02	11.71	12.95
	12H	10.62	11.27	11.58	12.23	13.49	10.11	10.76	11.07	11.72	12.98
4H	2H	8.26	9.03	9.20	9.98	11.20	7.90	8.68	8.84	9.62	10.84
	3H	10.14	10.78	11.09	11.75	12.99	9.73	10.38	10.68	11.35	12.58
	4H	10.86	11.45	11.82	12.41	13.68	10.43	11.02	11.39	11.99	13.25
	6H	11.38	11.89	12.35	12.88	14.14	10.95	11.46	11.92	12.45	13.71
	8H	11.53	12.01	12.51	12.99	14.27	11.10	11.57	12.07	12.56	13.83
	12H	11.61	12.04	12.61	13.04	14.32	11.16	11.59	12.16	12.59	13.87
8H	4H	11.06	11.54	12.03	12.52	13.79	10.68	11.16	11.66	12.14	13.42
	6H	11.70	12.09	12.70	13.12	14.39	11.32	11.71	12.32	12.73	14.01
	8H	11.92	12.27	12.93	13.28	14.58	11.53	11.88	12.54	12.89	14.18
	12H	12.06	12.37	13.07	13.37	14.71	11.65	11.96	12.66	12.96	14.30
12H	4H	11.05	11.48	12.04	12.48	13.76	10.68	11.11	11.67	12.11	13.39
	6H	11.73	12.08	12.74	13.09	14.38	11.36	11.71	12.37	12.72	14.01
	8H	11.98	12.28	12.99	13.29	14.63	11.60	11.90	12.61	12.91	14.25