

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: P915967

Luminaire Tested: DFN2DIP-4P4F0-050D040US930-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P915967
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-4P4F0-050D040US930-FLLONL
Description: 4 foot, 90deg - 4way Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

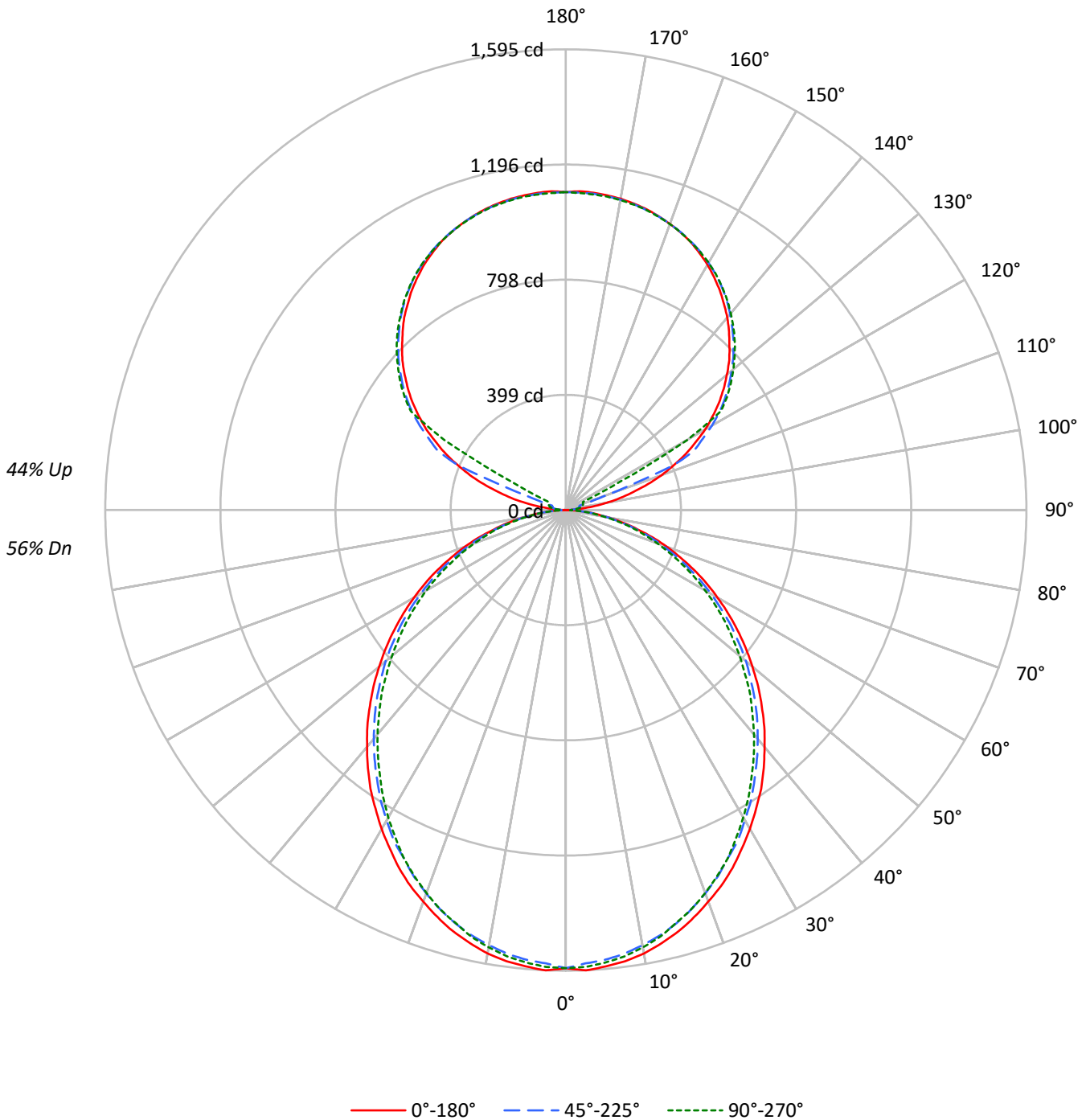
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7264.3 lumens
Efficiency: N/A
Efficacy: 89.8 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): 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





TEST NUMBER: P915967
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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	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	108	108	108	108	101	101	101	101	86	86	86	73	73	73	61	61	61	56			56
1	99	95	91	87	92	88	85	82	76	73	71	65	63	61	54	53	52	47			47
2	90	83	76	71	84	77	72	67	66	62	59	57	54	51	48	46	44	39			39
3	82	73	65	59	76	68	61	56	59	54	50	50	46	43	42	39	37	33			33
4	75	64	56	50	70	60	53	48	52	47	42	45	40	37	38	35	32	29			29
5	69	57	49	43	64	54	46	41	47	41	36	40	36	32	34	31	28	25			25
6	64	52	43	37	59	48	41	36	42	36	32	36	32	28	31	27	25	22			22
7	59	47	39	33	55	44	36	31	38	32	28	33	28	25	28	25	22	19			19
8	55	42	34	29	51	40	33	28	35	29	25	30	26	22	26	22	20	17			17
9	51	39	31	26	47	36	29	25	32	26	22	28	23	20	24	20	18	16			16
10	48	35	28	23	44	33	27	22	29	24	20	26	21	18	22	19	16	14			14

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1029	1029	1029
5°	1031	1015	1022
10°	1022	1002	1008
15°	1007	986	987
20°	987	963	965
25°	967	936	940
30°	942	911	908
35°	918	881	874
40°	889	851	842
45°	859	821	809
50°	827	789	770
55°	793	753	735
60°	755	709	695
65°	714	665	647
70°	661	610	597
75°	588	545	550
80°	500	462	460
85°	363	317	310

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 859 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	149.3	2.1
10°-20°	420.0	5.8
20°-30°	617.3	8.5
30°-40°	717.0	9.9
40°-50°	716.1	9.9
50°-60°	624.4	8.6
60°-70°	461.6	6.4
70°-80°	261.1	3.6
80°-90°	70.9	1.0
90°-100°	36.3	0.5
100°-110°	135.3	1.9
110°-120°	358.8	4.9
120°-130°	595.1	8.2
130°-140°	632.1	8.7
140°-150°	587.5	8.1
150°-160°	472.3	6.5
160°-170°	304.4	4.2
170°-180°	104.8	1.4
0°-30°	1186.6	16.3
0°-40°	1903.6	26.2
0°-60°	3244.1	44.7
0°-90°	4037.7	55.6
90°-120°	530.4	7.3
90°-150°	2345.2	32.3
90°-180°	3227.0	44.4
0°-180°	7264.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1586	1586	1586	1586	1586	
5°	1586	1580	1563	1576	1573	151
15°	1510	1501	1481	1487	1480	425
25°	1367	1354	1328	1332	1328	629
35°	1179	1164	1139	1130	1123	736
45°	959	949	926	909	903	740
55°	726	717	698	680	673	649
65°	490	480	465	452	444	484
75°	256	253	246	236	240	273
85°	62	61	60	55	53	70
90°	1	10	16	20	21	7
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°	1586.2	1586.2	1586.2	1586.2	1586.2
2.5°	1595.4	1587.8	1571.0	1586.2	1583.3
5°	1586.2	1580.2	1563.3	1575.5	1572.6
7.5°	1575.5	1566.4	1549.6	1561.9	1558.9
10°	1558.9	1548.2	1529.9	1542.0	1537.5
12.5°	1535.9	1526.8	1508.5	1516.1	1513.0
15°	1509.9	1500.9	1481.0	1487.2	1479.5
17.5°	1477.9	1468.8	1448.9	1456.5	1448.9
20°	1442.8	1433.8	1412.4	1416.9	1411.0
22.5°	1407.9	1394.1	1374.2	1374.2	1371.1
25°	1366.6	1354.5	1328.5	1331.5	1328.5
27.5°	1320.8	1310.1	1290.4	1285.8	1278.2
30°	1275.1	1262.9	1240.1	1235.5	1229.4
32.5°	1226.3	1217.2	1192.8	1183.6	1177.5
35°	1179.0	1163.8	1139.4	1130.2	1122.6
37.5°	1125.6	1111.9	1087.4	1076.8	1069.2
40°	1070.8	1058.5	1034.0	1020.4	1014.3
42.5°	1017.4	1005.1	980.8	965.4	956.3
45°	959.4	948.8	925.8	909.1	902.9
47.5°	902.9	892.3	867.9	851.0	842.0
50°	843.4	835.8	814.5	793.1	785.5
52.5°	785.5	774.8	755.0	738.3	727.6
55°	726.1	716.9	698.5	680.3	672.7
57.5°	666.5	658.9	639.0	620.8	614.6
60°	607.0	601.0	579.7	562.8	558.3
62.5°	549.1	538.4	523.2	507.9	501.8
65°	489.7	480.5	465.2	451.5	443.8
67.5°	428.7	420.9	407.3	396.6	390.4
70°	372.2	366.1	352.3	341.6	335.7
72.5°	314.3	308.1	300.5	289.8	285.3
75°	256.2	253.2	245.5	236.4	239.5
77.5°	204.4	198.2	195.2	190.6	186.1
80°	152.6	151.0	147.9	143.4	140.3
82.5°	103.7	103.7	102.2	96.1	96.1
85°	62.5	61.0	59.5	54.9	53.4
87.5°	27.5	24.5	21.4	16.8	15.2
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	7.89	8.80	8.80	9.73	10.92	7.45	8.36	8.35	9.29	10.48
	3H	9.56	10.38	10.48	11.32	12.53	9.07	9.89	9.99	10.83	12.04
	4H	10.15	10.93	11.09	11.87	13.09	9.66	10.44	10.59	11.38	12.60
	6H	10.56	11.28	11.51	12.22	13.46	10.06	10.78	11.01	11.72	12.96
	8H	10.67	11.35	11.62	12.32	13.55	10.17	10.85	11.12	11.81	13.05
	12H	10.72	11.37	11.68	12.33	13.59	10.21	10.86	11.17	11.82	13.08
4H	2H	8.36	9.13	9.30	10.08	11.30	8.00	8.78	8.94	9.72	10.94
	3H	10.24	10.88	11.19	11.86	13.09	9.83	10.48	10.78	11.45	12.68
	4H	10.96	11.55	11.92	12.51	13.78	10.53	11.12	11.49	12.09	13.35
	6H	11.48	11.99	12.45	12.98	14.24	11.05	11.56	12.02	12.55	13.81
	8H	11.63	12.11	12.61	13.09	14.37	11.20	11.67	12.17	12.66	13.93
	12H	11.71	12.14	12.71	13.14	14.42	11.26	11.69	12.26	12.69	13.97
8H	4H	11.16	11.64	12.13	12.62	13.89	10.78	11.26	11.76	12.24	13.52
	6H	11.80	12.19	12.80	13.22	14.49	11.42	11.81	12.42	12.83	14.11
	8H	12.02	12.37	13.03	13.38	14.68	11.63	11.98	12.64	12.99	14.28
	12H	12.16	12.47	13.17	13.47	14.81	11.75	12.06	12.76	13.06	14.40
12H	4H	11.15	11.58	12.14	12.58	13.86	10.78	11.21	11.77	12.21	13.49
	6H	11.83	12.18	12.84	13.19	14.48	11.46	11.81	12.47	12.82	14.11
	8H	12.08	12.38	13.09	13.39	14.73	11.70	12.00	12.71	13.01	14.35