

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: P915876

Luminaire Tested: DFN2DIP-4P3F0-050D020US930-RLFL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P915876
REPORT IS A COMBINATION OF REPORTS P899036 AND P895917
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P3F0-050D020US930-RLLFLL
Description: 3 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

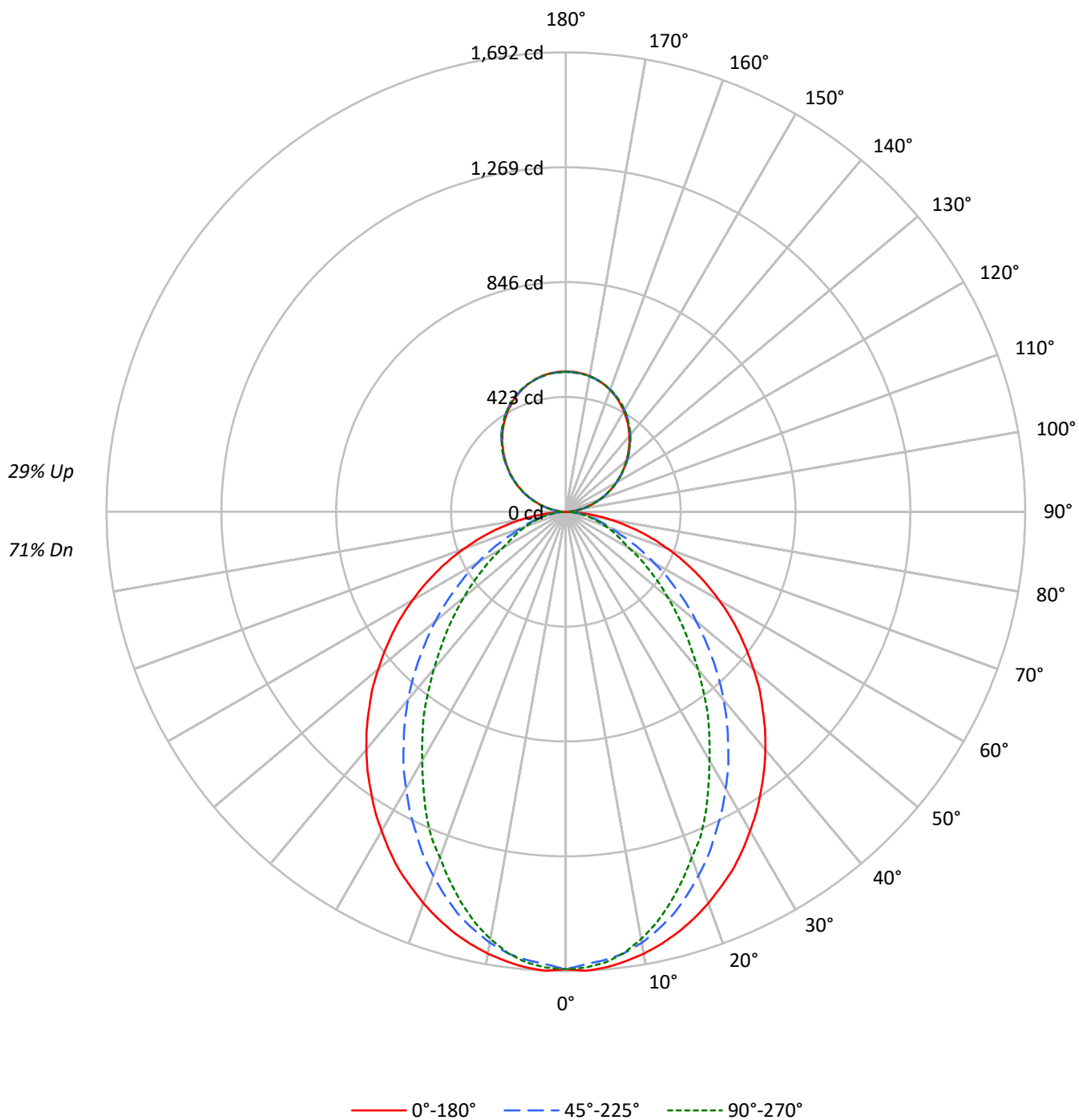
Lumens per Lamp: N/A
Luminaire Lumens: 4908.1 lumens
Efficiency: N/A
Efficacy: 76.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.07' x L: 3.07' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 64.2
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9971
Total Harmonic Distortion (THDi): 0.049
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	112	112	112	112	106	106	106	106	95	95	95	85	85	85	75	75	75
1	103	99	95	92	97	94	90	88	84	82	79	76	74	72	67	66	65
2	94	87	81	76	89	83	78	73	75	71	67	67	64	61	60	58	56
3	87	77	70	64	82	74	67	62	67	61	57	60	56	53	54	51	48
4	80	69	61	55	75	66	59	53	60	54	49	54	49	46	49	45	42
5	74	62	54	48	69	59	52	46	54	48	43	49	44	40	44	40	37
6	68	56	48	42	64	54	46	41	49	43	38	44	39	36	40	36	33
7	63	51	43	37	60	49	41	36	45	38	34	41	36	32	37	33	30
8	59	47	39	33	56	45	37	32	41	35	31	37	32	29	34	30	27
9	55	43	35	30	52	41	34	29	38	32	28	35	30	26	32	28	24
10	52	39	32	27	49	38	31	27	35	29	25	32	27	24	30	25	22

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1920	1920	1920
5°	1922	1888	1901
10°	1902	1850	1839
15°	1874	1788	1742
20°	1838	1702	1624
25°	1802	1607	1511
30°	1753	1509	1367
35°	1705	1404	1240
40°	1656	1295	1095
45°	1599	1175	964
50°	1541	1053	835
55°	1479	924	712
60°	1408	788	586
65°	1326	651	527
70°	1226	523	476
75°	1101	458	431
80°	921	380	372
85°	624	248	275

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1599 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	157.9	3.2
10°-20°	433.5	8.8
20°-30°	608.6	12.4
30°-40°	663.4	13.5
40°-50°	609.7	12.4
50°-60°	478.8	9.8
60°-70°	311.7	6.4
70°-80°	160.4	3.3
80°-90°	42.4	0.9
90°-100°	31.9	0.6
100°-110°	101.4	2.1
110°-120°	173.5	3.5
120°-130°	228.2	4.6
130°-140°	256.1	5.2
140°-150°	251.2	5.1
150°-160°	210.7	4.3
160°-170°	139.7	2.8
170°-180°	48.8	1.0
0°-30°	1200.0	24.4
0°-40°	1863.4	38.0
0°-60°	2951.9	60.1
0°-90°	3466.5	70.6
90°-120°	306.8	6.3
90°-150°	1042.3	21.2
90°-180°	1442.0	29.4
0°-180°	4908.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1685	1685	1685	1685	1685	
5°	1685	1677	1657	1671	1667	160
15°	1602	1586	1534	1505	1490	452
25°	1455	1406	1305	1243	1220	669
35°	1253	1176	1042	945	912	784
45°	1025	922	762	654	617	791
55°	779	660	496	404	375	696
65°	526	402	265	214	209	521
75°	280	174	122	111	110	297
85°	66	34	29	29	29	75
90°	0	6	15	14	15	5
95°	23	27	28	28	27	25
105°	94	95	96	96	96	99
115°	174	177	176	175	174	172
125°	253	257	256	254	254	226
135°	328	332	333	333	332	253
145°	398	401	403	404	402	248
155°	455	456	457	460	458	209
165°	495	494	494	497	495	140
175°	515	514	513	516	513	49
180°	516	516	516	516	516	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1684.8	1684.8	1684.8	1684.8	1684.8
2.5°	1692.4	1684.8	1668.0	1683.3	1680.2
5°	1684.8	1677.2	1657.3	1671.0	1666.6
7.5°	1671.0	1662.0	1640.6	1646.7	1639.0
10°	1652.8	1642.1	1611.7	1607.0	1597.9
12.5°	1629.9	1616.2	1575.0	1565.9	1549.1
15°	1602.5	1585.7	1533.9	1505.0	1489.7
17.5°	1570.4	1546.1	1482.0	1448.5	1424.0
20°	1533.9	1503.3	1427.1	1389.1	1355.4
22.5°	1494.3	1459.1	1370.7	1318.9	1296.1
25°	1454.6	1405.7	1305.1	1242.7	1219.7
27.5°	1407.4	1355.4	1244.1	1172.5	1137.4
30°	1357.1	1299.0	1177.0	1099.3	1058.1
32.5°	1308.2	1238.0	1113.1	1021.6	983.4
35°	1253.4	1175.6	1041.5	945.3	911.7
37.5°	1200.0	1116.1	974.4	869.0	831.0
40°	1143.5	1052.1	904.1	795.9	756.3
42.5°	1085.7	988.1	834.1	721.1	683.1
45°	1024.7	922.4	762.4	654.0	617.4
47.5°	966.7	858.5	693.8	585.5	552.0
50°	902.7	794.4	626.7	521.4	489.5
52.5°	840.1	725.7	562.6	462.0	433.1
55°	779.1	660.1	495.5	404.1	375.1
57.5°	716.6	594.7	436.1	350.7	326.3
60°	652.6	530.6	373.5	295.9	271.4
62.5°	590.1	468.1	320.2	247.0	234.9
65°	526.0	402.5	265.3	213.5	208.9
67.5°	465.0	341.5	213.5	187.5	183.0
70°	401.0	282.1	176.8	161.6	155.5
72.5°	340.1	227.1	147.9	135.7	132.6
75°	280.5	173.7	122.0	111.3	109.8
77.5°	221.1	123.4	96.1	89.9	86.8
80°	166.2	88.5	73.1	67.1	67.1
82.5°	115.9	59.5	50.3	47.2	47.2
85°	65.5	33.5	28.9	28.9	28.9
87.5°	24.5	12.1	12.1	10.7	10.7
90°	0.5	5.6	15.2	14.3	14.8
92.5°	9.6	13.0	13.5	14.0	14.0
95°	22.7	27.1	27.8	27.8	27.1
97.5°	37.7	41.8	43.5	43.5	43.5
100°	55.2	58.8	60.0	60.0	59.5
102.5°	73.5	76.1	77.9	78.4	77.9
105°	93.6	94.8	95.8	96.5	96.5
107.5°	113.5	115.4	115.4	115.7	113.5
110°	132.8	135.3	135.3	135.3	134.0



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	153.6	156.2	155.8	154.5	153.6
115°	174.1	176.6	175.9	175.4	174.1
117.5°	194.5	198.0	195.8	194.5	193.2
120°	215.0	218.4	215.0	215.0	213.6
122.5°	233.7	238.0	235.9	234.6	233.7
125°	253.2	257.1	255.9	254.5	254.0
127.5°	272.4	277.2	275.5	273.6	272.4
130°	290.2	295.9	295.1	294.2	292.4
132.5°	310.3	314.7	314.9	312.8	311.5
135°	327.6	332.4	333.3	332.9	331.6
137.5°	346.8	350.7	351.6	351.2	349.4
140°	363.8	367.7	369.9	369.9	368.2
142.5°	381.2	385.1	386.4	386.8	385.1
145°	397.7	400.8	403.3	403.7	402.0
147.5°	412.5	416.4	418.2	419.0	417.3
150°	427.7	430.3	432.0	433.4	432.0
152.5°	441.2	443.8	446.0	447.8	446.0
155°	454.8	456.0	457.4	459.6	458.2
157.5°	466.4	467.3	468.1	471.2	469.0
160°	476.9	477.8	478.3	480.9	479.0
162.5°	486.5	486.5	486.9	489.9	487.7
165°	494.7	494.2	494.2	497.3	495.2
167.5°	502.1	500.8	500.8	503.9	501.7
170°	507.8	506.5	506.1	509.2	506.5
172.5°	511.7	510.4	510.0	513.1	510.4
175°	514.8	513.6	512.6	515.7	513.1
177.5°	516.5	515.3	514.3	516.9	514.3
180°	515.7	515.7	515.7	515.7	515.7

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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	11.12	12.15	11.89	12.94	13.88	7.08	8.11	7.85	8.90	9.84
	3H	12.81	13.73	13.59	14.52	15.50	8.28	9.20	9.06	9.99	10.97
	4H	13.42	14.29	14.22	15.09	16.08	8.73	9.60	9.53	10.40	11.39
	6H	13.85	14.65	14.66	15.46	16.46	9.06	9.86	9.87	10.67	11.67
	8H	13.98	14.75	14.80	15.57	16.57	9.15	9.92	9.97	10.74	11.74
	12H	14.05	14.78	14.87	15.60	16.62	9.20	9.93	10.02	10.75	11.77
4H	2H	11.16	12.03	11.96	12.83	13.82	7.70	8.57	8.50	9.37	10.36
	3H	13.00	13.73	13.82	14.56	15.56	9.06	9.78	9.87	10.62	11.62
	4H	13.70	14.36	14.53	15.19	16.22	9.61	10.27	10.44	11.10	12.13
	6H	14.22	14.79	15.06	15.65	16.68	10.03	10.60	10.88	11.46	12.49
	8H	14.40	14.93	15.24	15.78	16.83	10.16	10.69	11.01	11.54	12.59
	12H	14.50	14.98	15.36	15.85	16.90	10.23	10.71	11.10	11.58	12.64
8H	4H	13.68	14.21	14.53	15.06	16.11	9.90	10.43	10.75	11.28	12.33
	6H	14.25	14.69	15.12	15.58	16.63	10.42	10.86	11.29	11.75	12.80
	8H	14.46	14.85	15.35	15.74	16.81	10.61	10.99	11.49	11.88	12.95
	12H	14.61	14.95	15.49	15.83	16.95	10.73	11.07	11.61	11.95	13.07
12H	4H	13.64	14.12	14.51	14.99	16.04	9.92	10.39	10.78	11.26	12.32
	6H	14.22	14.61	15.11	15.50	16.57	10.47	10.86	11.35	11.75	12.81
	8H	14.45	14.79	15.34	15.67	16.79	10.68	11.02	11.57	11.90	13.03