

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: P913148

Luminaire Tested: DFN2DIP-4P3F0-050D020US927-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P913148
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-4P3F0-050D020US927-RLLFLL
Description: 3 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

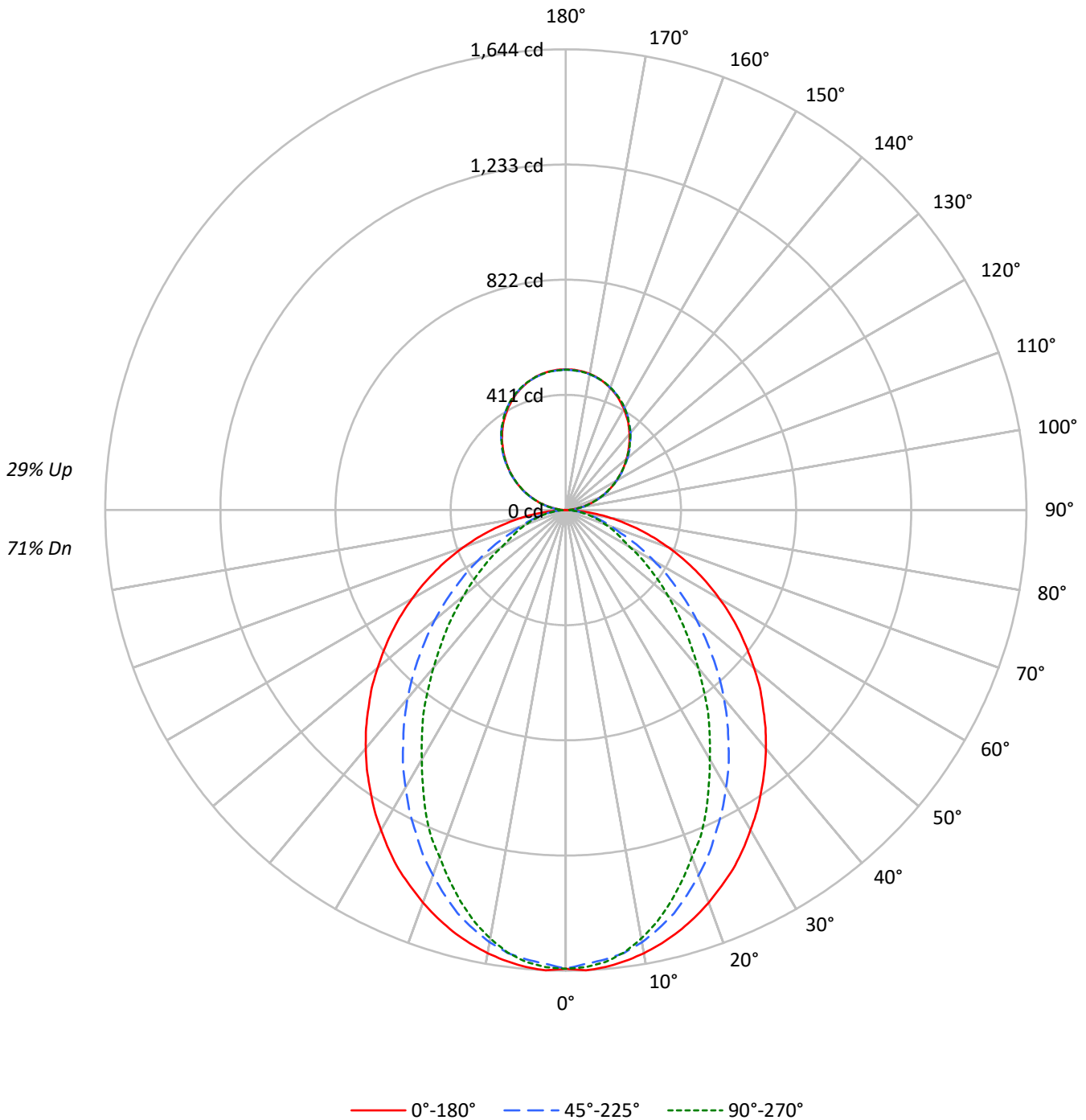
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4768.9 lumens
Efficiency: N/A
Efficacy: 74.3 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			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	112	112	112	112	106	106	106	106	95	95	95	85	85	85	75	75	75	75	75	75	71
1	103	99	95	92	97	94	90	88	84	82	79	76	74	72	67	66	65	65	65	65	61
2	94	87	81	76	89	83	78	73	75	71	67	67	64	61	60	58	56	56	56	56	52
3	87	77	70	64	82	74	67	62	67	61	57	60	56	53	54	51	48	48	48	48	45
4	80	69	61	55	75	66	59	53	60	54	49	54	49	46	49	45	42	42	42	42	39
5	74	62	54	48	69	59	52	46	54	48	43	49	44	40	44	40	37	37	37	37	34
6	68	56	48	42	64	54	46	41	49	43	38	44	39	36	40	36	33	33	33	33	31
7	63	51	43	37	60	49	41	36	45	38	34	41	36	32	37	33	30	30	30	30	27
8	59	47	39	33	56	45	37	32	41	35	31	37	32	29	34	30	27	27	27	27	25
9	55	43	35	30	52	41	34	29	38	32	28	35	30	26	32	28	24	24	24	24	22
10	52	39	32	27	49	38	31	27	35	29	25	32	27	24	30	25	22	22	22	22	21

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1866	1866	1866
5°	1867	1835	1847
10°	1848	1798	1786
15°	1821	1737	1693
20°	1786	1654	1578
25°	1751	1561	1468
30°	1703	1466	1328
35°	1656	1364	1205
40°	1609	1258	1064
45°	1554	1141	936
50°	1497	1023	812
55°	1437	897	692
60°	1368	766	569
65°	1288	633	512
70°	1192	508	462
75°	1070	445	419
80°	894	370	361
85°	607	241	268

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 1554 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	153.4	3.2
10°-20°	421.2	8.8
20°-30°	591.3	12.4
30°-40°	644.6	13.5
40°-50°	592.4	12.4
50°-60°	465.3	9.8
60°-70°	302.9	6.4
70°-80°	155.9	3.3
80°-90°	41.2	0.9
90°-100°	31.0	0.7
100°-110°	98.5	2.1
110°-120°	168.6	3.5
120°-130°	221.7	4.6
130°-140°	248.9	5.2
140°-150°	244.1	5.1
150°-160°	204.7	4.3
160°-170°	135.8	2.8
170°-180°	47.5	1.0
0°-30°	1165.9	24.4
0°-40°	1810.5	38.0
0°-60°	2868.2	60.1
0°-90°	3368.2	70.6
90°-120°	298.1	6.3
90°-150°	1012.8	21.2
90°-180°	1401.0	29.4
0°-180°	4768.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1637	1637	1637	1637	1637	
5°	1637	1630	1610	1624	1619	155
15°	1557	1541	1490	1462	1448	439
25°	1413	1366	1268	1207	1185	650
35°	1218	1142	1012	918	886	762
45°	996	896	741	636	600	769
55°	757	641	481	393	364	676
65°	511	391	258	208	203	507
75°	273	169	118	108	107	288
85°	64	33	28	28	28	73
90°	0	6	15	14	14	5
95°	22	26	27	27	26	25
105°	91	92	93	94	94	96
115°	169	172	171	170	169	167
125°	246	250	249	247	247	220
135°	318	323	324	323	322	246
145°	386	389	392	392	391	241
155°	442	443	444	447	445	203
165°	481	480	480	483	481	136
175°	500	499	498	501	498	48
180°	501	501	501	501	501	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1637.0	1637.0	1637.0	1637.0	1637.0
2.5°	1644.4	1637.0	1620.7	1635.6	1632.6
5°	1637.0	1629.7	1610.3	1623.7	1619.3
7.5°	1623.7	1614.9	1594.1	1600.0	1592.5
10°	1605.9	1595.5	1566.0	1561.5	1552.6
12.5°	1583.7	1570.4	1530.3	1521.5	1505.1
15°	1557.0	1540.7	1490.4	1462.3	1447.5
17.5°	1525.9	1502.2	1439.9	1407.4	1383.6
20°	1490.4	1460.7	1386.6	1349.7	1317.0
22.5°	1451.9	1417.8	1331.8	1281.5	1259.3
25°	1413.3	1365.9	1268.1	1207.4	1185.1
27.5°	1367.5	1317.0	1208.9	1139.2	1105.2
30°	1318.6	1262.2	1143.7	1068.2	1028.1
32.5°	1271.1	1202.9	1081.6	992.6	955.5
35°	1217.8	1142.2	1011.9	918.5	885.9
37.5°	1165.9	1084.4	946.7	844.4	807.5
40°	1111.1	1022.3	878.4	773.3	734.8
42.5°	1054.9	960.0	810.4	700.7	663.8
45°	995.6	896.3	740.8	635.5	599.9
47.5°	939.3	834.2	674.1	568.9	536.3
50°	877.1	771.9	608.9	506.6	475.6
52.5°	816.3	705.1	546.7	448.9	420.8
55°	757.0	641.4	481.4	392.6	364.5
57.5°	696.3	577.8	423.7	340.8	317.0
60°	634.1	515.6	362.9	287.5	263.7
62.5°	573.4	454.9	311.1	240.0	228.2
65°	511.1	391.1	257.8	207.5	203.0
67.5°	451.9	331.8	207.5	182.2	177.8
70°	389.7	274.1	171.8	157.0	151.1
72.5°	330.4	220.7	143.7	131.9	128.9
75°	272.6	168.8	118.5	108.1	106.7
77.5°	214.8	119.9	93.4	87.4	84.4
80°	161.4	86.0	71.1	65.2	65.2
82.5°	112.6	57.8	48.9	45.9	45.9
85°	63.7	32.6	28.1	28.1	28.1
87.5°	23.8	11.8	11.8	10.4	10.4
90°	0.5	5.5	14.8	13.9	14.3
92.5°	9.3	12.7	13.2	13.6	13.6
95°	22.0	26.3	27.0	27.0	26.3
97.5°	36.7	40.6	42.3	42.3	42.3
100°	53.6	57.1	58.3	58.3	57.8
102.5°	71.5	74.0	75.7	76.1	75.7
105°	90.9	92.1	93.1	93.8	93.8
107.5°	110.3	112.1	112.1	112.4	110.3
110°	129.0	131.4	131.4	131.4	130.2



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	149.2	151.8	151.4	150.1	149.2
115°	169.2	171.6	170.9	170.4	169.2
117.5°	189.0	192.3	190.2	189.0	187.7
120°	208.9	212.2	208.9	208.9	207.6
122.5°	227.0	231.2	229.2	228.0	227.0
125°	246.1	249.9	248.7	247.3	246.8
127.5°	264.7	269.3	267.7	265.9	264.7
130°	282.0	287.5	286.7	285.8	284.2
132.5°	301.5	305.8	306.0	304.0	302.7
135°	318.3	323.0	323.8	323.4	322.2
137.5°	337.0	340.8	341.6	341.3	339.4
140°	353.5	357.3	359.4	359.4	357.7
142.5°	370.4	374.1	375.4	375.8	374.1
145°	386.4	389.4	391.9	392.3	390.6
147.5°	400.8	404.6	406.4	407.1	405.4
150°	415.6	418.1	419.8	421.1	419.8
152.5°	428.7	431.3	433.4	435.1	433.4
155°	441.9	443.1	444.4	446.6	445.2
157.5°	453.2	454.1	454.9	457.9	455.7
160°	463.3	464.2	464.7	467.2	465.4
162.5°	472.7	472.7	473.1	476.0	473.9
165°	480.7	480.2	480.2	483.2	481.2
167.5°	487.9	486.6	486.6	489.6	487.5
170°	493.4	492.2	491.7	494.7	492.2
172.5°	497.2	495.9	495.5	498.5	495.9
175°	500.2	499.0	498.0	501.1	498.5
177.5°	501.8	500.7	499.7	502.2	499.7
180°	501.1	501.1	501.1	501.1	501.1



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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	11.02	12.05	11.79	12.83	13.78	6.98	8.01	7.75	8.80	9.74
	3H	12.71	13.63	13.49	14.42	15.40	8.18	9.10	8.96	9.89	10.87
	4H	13.32	14.19	14.12	14.99	15.98	8.63	9.51	9.43	10.30	11.29
	6H	13.75	14.55	14.56	15.36	16.36	8.96	9.76	9.77	10.57	11.57
	8H	13.88	14.65	14.70	15.47	16.47	9.05	9.82	9.87	10.64	11.65
	12H	13.95	14.68	14.77	15.50	16.52	9.10	9.83	9.92	10.65	11.68
4H	2H	11.06	11.93	11.86	12.73	13.72	7.60	8.47	8.40	9.27	10.26
	3H	12.90	13.63	13.72	14.46	15.47	8.96	9.68	9.77	10.52	11.52
	4H	13.60	14.26	14.43	15.09	16.12	9.51	10.17	10.34	11.00	12.03
	6H	14.12	14.69	14.96	15.55	16.58	9.93	10.50	10.78	11.36	12.40
	8H	14.30	14.83	15.14	15.68	16.73	10.06	10.59	10.91	11.44	12.49
	12H	14.40	14.88	15.26	15.75	16.80	10.13	10.61	11.00	11.48	12.54
8H	4H	13.58	14.11	14.43	14.96	16.01	9.80	10.33	10.65	11.18	12.23
	6H	14.15	14.59	15.02	15.48	16.53	10.32	10.76	11.19	11.65	12.70
	8H	14.36	14.75	15.25	15.64	16.71	10.51	10.89	11.39	11.78	12.85
	12H	14.51	14.85	15.39	15.73	16.85	10.63	10.97	11.51	11.85	12.97
12H	4H	13.54	14.02	14.41	14.89	15.95	9.82	10.29	10.68	11.16	12.22
	6H	14.12	14.51	15.01	15.40	16.47	10.37	10.76	11.25	11.65	12.71
	8H	14.35	14.69	15.24	15.57	16.69	10.58	10.92	11.47	11.81	12.93