

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: P913236

Luminaire Tested: DFN2DIP-4P4F0-050D030US927-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P913236
REPORT IS A COMBINATION OF REPORTS P899084 AND P895967
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P4F0-050D030US927-RLLFLL
Description: 4 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

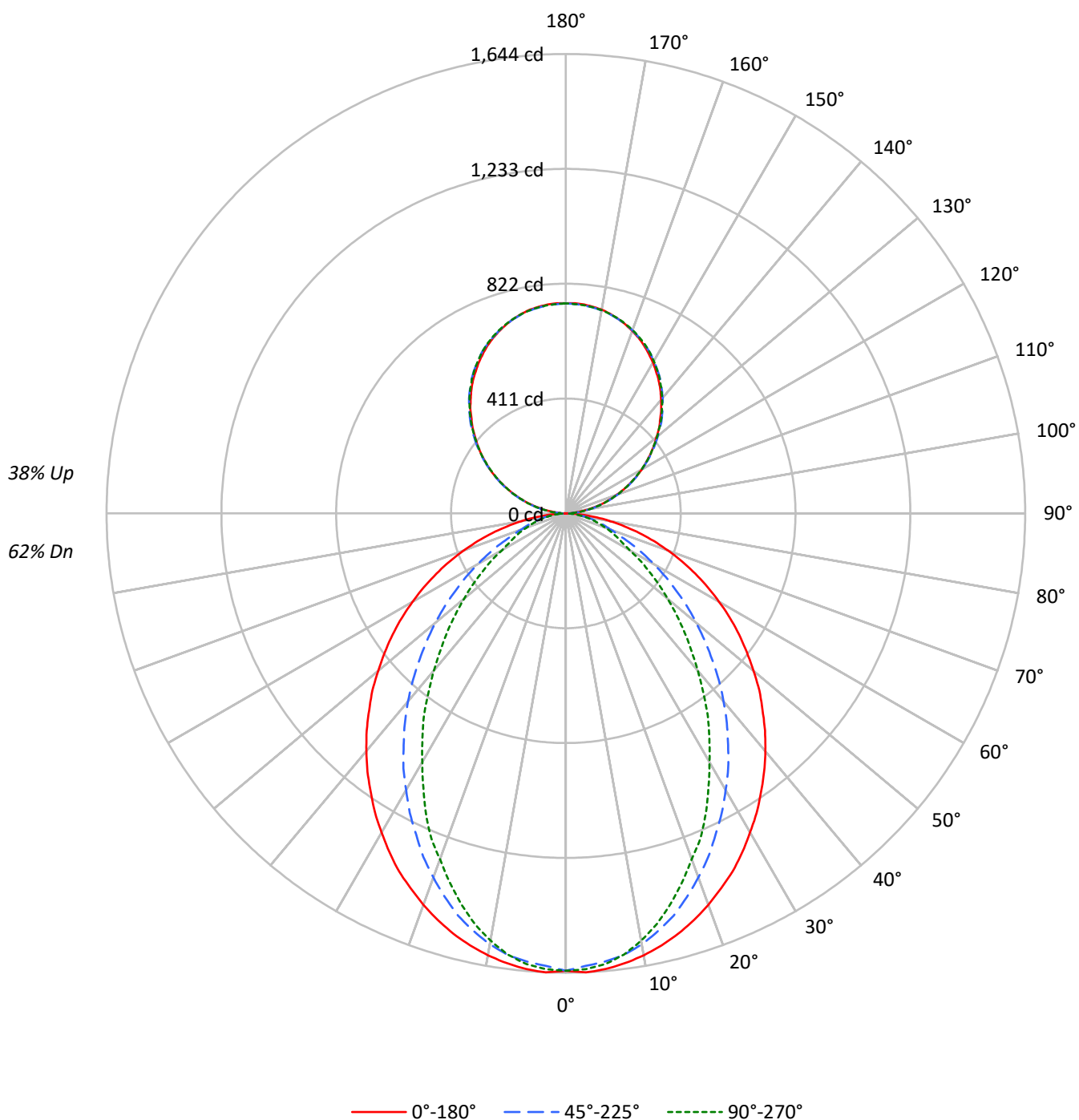
Lumens per Lamp: N/A
Luminaire Lumens: 5470.0 lumens
Efficiency: N/A
Efficacy: 74.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 4.07' x L: 4.07' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 73.1
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	110	110	110	110	103	103	103	103	90	90	90	78	78	78	67	67	67
1	101	97	93	90	94	91	88	85	80	77	75	69	68	66	60	59	58
2	92	85	79	74	86	80	75	70	71	67	63	62	59	56	53	51	49
3	85	75	68	63	79	71	65	60	63	58	54	55	51	48	48	45	43
4	78	67	60	54	73	63	57	51	56	51	46	49	45	42	43	40	37
5	72	60	52	46	67	57	50	44	51	45	41	45	40	37	39	36	33
6	66	54	46	41	62	51	44	39	46	40	36	41	36	32	36	32	29
7	62	49	42	36	58	47	40	35	42	36	32	37	33	29	33	29	26
8	57	45	37	32	54	43	36	31	38	33	28	34	30	26	30	27	24
9	53	41	34	29	50	39	32	28	35	30	26	32	27	24	28	24	22
10	50	38	31	26	47	36	30	25	33	27	23	29	25	22	26	22	20

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1062	1062	1062
5°	1064	1045	1052
10°	1053	1025	1018
15°	1039	992	966
20°	1020	945	901
25°	1000	893	839
30°	974	840	759
35°	948	782	690
40°	922	723	610
45°	892	657	537
50°	860	590	466
55°	827	519	398
60°	789	444	328
65°	745	368	296
70°	692	297	268
75°	626	263	245
80°	529	222	214
85°	370	150	163

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 892 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	153.4	2.8
10°-20°	421.2	7.7
20°-30°	591.3	10.8
30°-40°	644.6	11.8
40°-50°	592.4	10.8
50°-60°	465.3	8.5
60°-70°	302.9	5.5
70°-80°	155.9	2.8
80°-90°	41.9	0.8
90°-100°	46.5	0.9
100°-110°	147.8	2.7
110°-120°	252.9	4.6
120°-130°	332.6	6.1
130°-140°	373.3	6.8
140°-150°	366.1	6.7
150°-160°	307.1	5.6
160°-170°	203.7	3.7
170°-180°	71.2	1.3
0°-30°	1165.9	21.3
0°-40°	1810.5	33.1
0°-60°	2868.2	52.4
0°-90°	3368.9	61.6
90°-120°	447.2	8.2
90°-150°	1519.2	27.8
90°-180°	2101.0	38.4
0°-180°	5470.0	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°	1	8	22	21	22	5
95°	33	40	41	41	40	37
105°	136	138	140	141	141	144
115°	254	257	256	256	254	251
125°	369	375	373	371	370	330
135°	477	484	486	485	483	369
145°	580	584	588	588	586	362
155°	663	665	667	670	668	305
165°	721	720	720	725	722	203
175°	750	748	747	752	748	71
180°	752	752	752	752	752	

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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°	0.7	8.2	22.2	20.8	21.5
92.5°	14.0	19.0	19.7	20.4	20.4
95°	33.1	39.5	40.6	40.6	39.5
97.5°	55.1	60.9	63.5	63.5	63.5
100°	80.4	85.6	87.5	87.5	86.8
102.5°	107.2	111.1	113.5	114.2	113.5
105°	136.4	138.2	139.6	140.7	140.7
107.5°	165.4	168.1	168.1	168.6	165.4
110°	193.5	197.2	197.2	197.2	195.4

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	223.9	227.8	227.0	225.2	223.9
115°	253.8	257.4	256.3	255.6	253.8
117.5°	283.4	288.4	285.3	283.4	281.6
120°	313.4	318.4	313.4	313.4	311.3
122.5°	340.6	346.9	343.7	341.9	340.6
125°	369.2	374.8	373.0	370.9	370.3
127.5°	397.0	404.0	401.6	398.8	397.0
130°	423.0	431.2	430.1	428.7	426.2
132.5°	452.3	458.6	459.1	455.9	454.1
135°	477.4	484.4	485.8	485.1	483.3
137.5°	505.5	511.2	512.3	511.9	509.1
140°	530.2	535.9	539.1	539.1	536.5
142.5°	555.6	561.3	563.1	563.8	561.3
145°	579.6	584.2	587.8	588.4	586.0
147.5°	601.2	606.8	609.5	610.7	608.2
150°	623.4	627.2	629.7	631.8	629.7
152.5°	643.1	646.9	650.1	652.6	650.1
155°	662.8	664.6	666.6	669.8	667.8
157.5°	679.8	681.1	682.3	686.8	683.7
160°	695.0	696.3	697.0	700.8	698.1
162.5°	709.0	709.0	709.7	714.0	710.8
165°	721.0	720.3	720.3	724.8	721.7
167.5°	731.9	729.8	729.8	734.4	731.2
170°	740.1	738.2	737.6	742.1	738.2
172.5°	745.7	743.9	743.2	747.7	743.9
175°	750.3	748.5	747.1	751.6	747.7
177.5°	752.7	750.9	749.6	753.4	749.6
180°	751.6	751.6	751.6	751.6	751.6

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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	8.39	9.33	9.25	10.20	11.30	4.35	5.29	5.21	6.16	7.26
	3H	10.08	10.92	10.95	11.80	12.93	5.55	6.39	6.42	7.27	8.40
	4H	10.70	11.49	11.59	12.38	13.52	6.01	6.80	6.89	7.69	8.82
	6H	11.13	11.86	12.03	12.76	13.90	6.34	7.06	7.23	7.96	9.11
	8H	11.26	11.96	12.17	12.87	14.02	6.43	7.12	7.34	8.04	9.18
	12H	11.33	11.99	12.24	12.90	14.07	6.48	7.14	7.39	8.04	9.22
4H	2H	8.42	9.21	9.32	10.10	11.24	4.96	5.75	5.86	6.64	7.78
	3H	10.27	10.92	11.17	11.85	13.00	6.33	6.98	7.23	7.90	9.05
	4H	10.97	11.57	11.88	12.48	13.66	6.88	7.48	7.79	8.39	9.57
	6H	11.50	12.01	12.42	12.95	14.13	7.31	7.82	8.23	8.76	9.94
	8H	11.68	12.16	12.61	13.09	14.28	7.44	7.92	8.37	8.85	10.04
	12H	11.78	12.21	12.73	13.16	14.36	7.51	7.94	8.46	8.90	10.09
8H	4H	10.95	11.42	11.88	12.36	13.55	7.17	7.65	8.10	8.59	9.78
	6H	11.52	11.92	12.48	12.89	14.08	7.70	8.09	8.65	9.07	10.26
	8H	11.74	12.09	12.71	13.06	14.27	7.89	8.24	8.85	9.21	10.42
	12H	11.89	12.20	12.86	13.16	14.42	8.01	8.32	8.98	9.28	10.54
12H	4H	10.90	11.33	11.85	12.29	13.48	7.18	7.61	8.13	8.57	9.76
	6H	11.50	11.85	12.46	12.82	14.02	7.75	8.10	8.71	9.07	10.27
	8H	11.73	12.03	12.69	13.00	14.25	7.96	8.27	8.93	9.23	10.49