

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: P913823

Luminaire Tested: DFN2DIP-PN2F0-050D020US927-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P913823
REPORT IS A COMBINATION OF REPORTS P900988 AND P897905
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN2F0-050D020US927-RLLONL
Description: 2 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

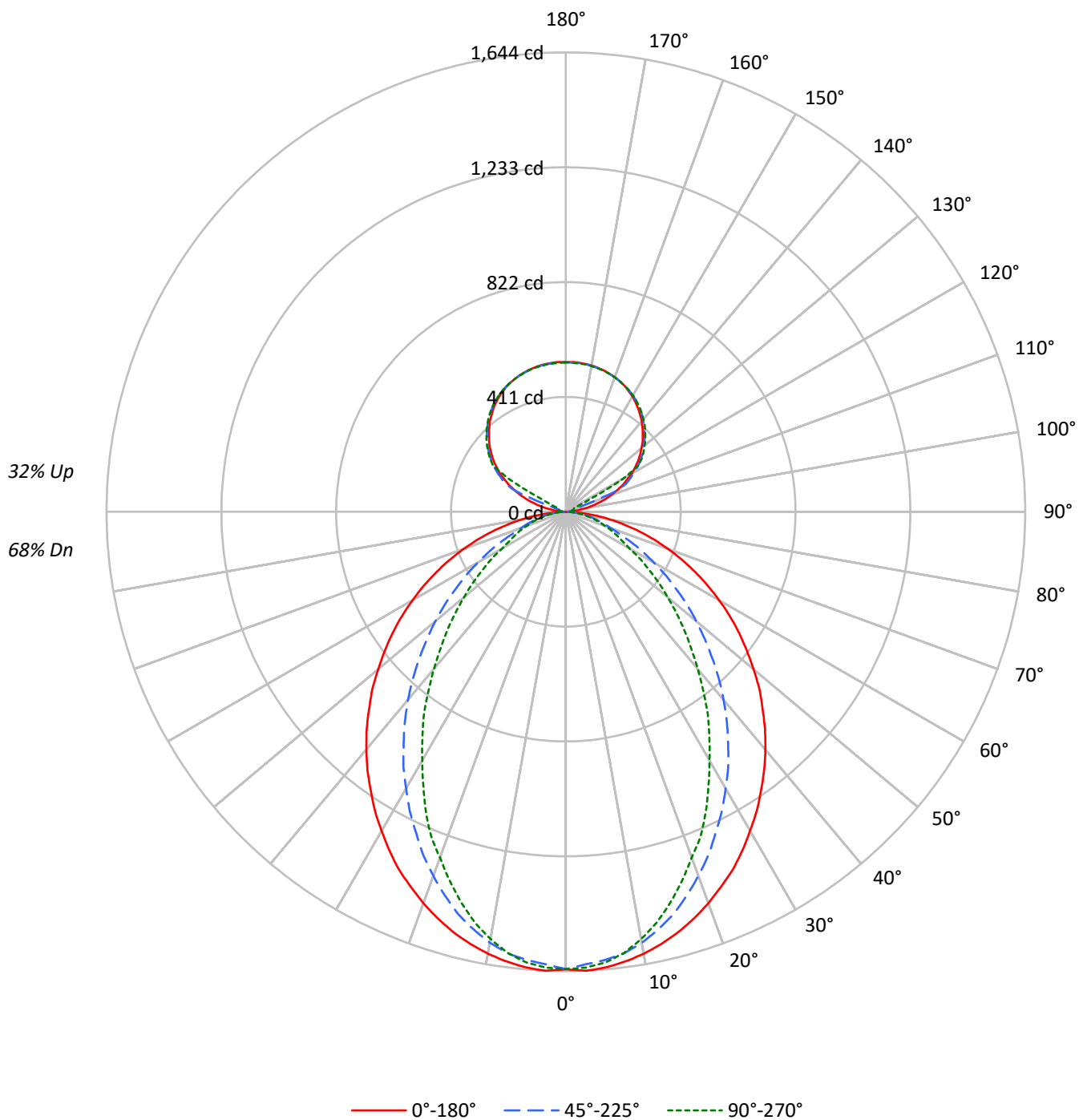
Lumens per Lamp: N/A
Luminaire Lumens: 4935.3 lumens
Efficiency: N/A
Efficacy: 73.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.17' x L: 2.29' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 67
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9821
Total Harmonic Distortion (THDi): 0.08
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	0
RCR																				
0	111	111	111	111	105	105	105	105	93	93	93		83	83	83		73	73	73	68
1	103	98	95	91	97	93	90	87	83	81	78		74	72	70		65	64	63	59
2	94	87	81	76	88	82	77	72	74	69	66		66	63	60		58	56	54	50
3	86	77	70	64	81	73	66	61	66	60	56		59	55	51		52	49	47	43
4	79	69	61	55	75	65	58	53	59	53	49		53	48	45		47	44	41	38
5	73	62	53	48	69	59	51	46	53	47	42		48	43	39		43	39	36	33
6	68	56	47	42	64	53	46	40	48	42	38		43	39	35		39	35	32	30
7	63	50	43	37	59	48	41	36	44	38	33		40	35	31		36	32	29	26
8	58	46	38	33	55	44	37	32	40	34	30		37	32	28		33	29	26	24
9	55	42	35	30	52	41	34	29	37	31	27		34	29	25		31	27	24	22
10	51	39	32	27	48	37	31	26	34	29	25		31	27	23		29	25	22	20

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3546	3546	3546
5°	3546	3482	3506
10°	3505	3406	3387
15°	3451	3286	3206
20°	3381	3124	2986
25°	3310	2943	2773
30°	3216	2759	2505
35°	3124	2562	2269
40°	3030	2358	2000
45°	2922	2134	1757
50°	2809	1907	1519
55°	2690	1667	1292
60°	2553	1416	1058
65°	2395	1163	947
70°	2203	926	850
75°	1961	802	762
80°	1613	652	645
85°	1055	405	458

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2922 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	153.4	3.1
10°-20°	421.2	8.5
20°-30°	591.3	12.0
30°-40°	644.6	13.1
40°-50°	592.4	12.0
50°-60°	465.3	9.4
60°-70°	302.9	6.1
70°-80°	155.9	3.2
80°-90°	40.8	0.8
90°-100°	17.6	0.4
100°-110°	65.7	1.3
110°-120°	174.3	3.5
120°-130°	289.1	5.9
130°-140°	307.1	6.2
140°-150°	285.4	5.8
150°-160°	229.5	4.6
160°-170°	147.9	3.0
170°-180°	50.9	1.0
0°-30°	1165.9	23.6
0°-40°	1810.5	36.7
0°-60°	2868.2	58.1
0°-90°	3367.7	68.2
90°-120°	257.7	5.2
90°-150°	1139.3	23.1
90°-180°	1568.0	31.8
0°-180°	4935.3	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	5	8	10	10	5
95°	25	12	15	17	17	30
105°	118	129	24	28	29	126
115°	222	229	239	60	32	219
125°	315	320	327	330	331	281
135°	389	396	399	403	402	301
145°	452	451	458	460	458	282
155°	497	494	498	501	498	229
165°	524	522	523	526	523	148
175°	536	533	534	537	533	51
180°	535	535	535	535	535	

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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°	0.4	4.7	7.7	9.7	10.5
92.5°	9.7	8.2	9.3	10.1	10.5
95°	25.1	12.4	15.1	17.0	16.6
97.5°	45.2	13.5	19.7	20.9	21.3
100°	68.5	15.4	22.0	25.1	25.9
102.5°	94.0	93.2	22.8	27.1	28.3
105°	117.6	129.2	23.6	27.8	29.4
107.5°	145.1	154.7	24.4	28.6	30.2
110°	171.4	179.5	67.7	29.1	30.6



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	196.1	203.1	196.5	29.8	31.0
115°	222.4	229.0	238.8	59.6	31.8
117.5°	245.3	253.0	259.6	204.3	102.9
120°	270.8	276.6	283.6	288.3	236.0
122.5°	292.5	298.7	306.4	308.7	309.2
125°	314.6	319.6	326.9	329.6	330.8
127.5°	334.7	340.1	345.9	349.7	350.1
130°	353.6	359.8	364.1	368.4	368.0
132.5°	373.0	378.0	382.2	385.7	385.4
135°	389.3	395.5	398.9	402.8	402.0
137.5°	406.2	410.9	414.8	418.7	417.5
140°	422.9	426.0	430.2	433.7	431.8
142.5°	436.8	439.6	444.6	447.7	445.7
145°	451.5	451.1	457.7	460.4	458.5
147.5°	464.3	463.1	469.7	471.6	470.1
150°	476.7	474.0	480.1	482.4	480.5
152.5°	487.1	484.0	489.8	492.2	489.4
155°	497.2	493.7	498.4	500.7	497.6
157.5°	505.3	502.2	505.7	508.4	505.3
160°	512.3	509.9	512.3	514.6	511.9
162.5°	518.4	516.1	518.1	520.8	517.3
165°	523.9	521.6	522.7	525.5	522.7
167.5°	528.1	525.8	527.0	529.7	526.2
170°	531.6	529.3	530.0	532.7	529.3
172.5°	533.9	531.6	532.4	535.1	531.6
175°	535.8	533.1	533.9	536.6	532.7
177.5°	536.6	533.9	534.3	537.0	533.5
180°	534.7	534.7	534.7	534.7	534.7

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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	12.98	13.99	13.77	14.80	15.78	8.95	9.96	9.74	10.76	11.75
	3H	14.65	15.55	15.46	16.37	17.39	10.14	11.04	10.94	11.85	12.87
	4H	15.26	16.10	16.08	16.93	17.96	10.58	11.43	11.40	12.26	13.28
	6H	15.67	16.45	16.50	17.28	18.33	10.90	11.68	11.73	12.51	13.55
	8H	15.79	16.53	16.63	17.39	18.43	10.98	11.73	11.83	12.58	13.62
	12H	15.85	16.56	16.70	17.40	18.47	11.03	11.73	11.87	12.58	13.65
4H	2H	13.02	13.87	13.84	14.69	15.72	9.56	10.40	10.38	11.23	12.26
	3H	14.84	15.54	15.68	16.40	17.45	10.90	11.61	11.74	12.47	13.51
	4H	15.52	16.16	16.37	17.02	18.09	11.44	12.08	12.29	12.94	14.01
	6H	16.03	16.58	16.89	17.46	18.54	11.85	12.40	12.72	13.29	14.36
	8H	16.19	16.71	17.06	17.59	18.67	11.98	12.49	12.84	13.37	14.45
	12H	16.29	16.75	17.17	17.65	18.74	12.04	12.50	12.93	13.40	14.49
8H	4H	15.50	16.01	16.37	16.89	17.98	11.72	12.24	12.59	13.11	14.20
	6H	16.05	16.47	16.94	17.39	18.48	12.23	12.65	13.12	13.57	14.66
	8H	16.25	16.63	17.16	17.54	18.65	12.40	12.78	13.31	13.69	14.80
	12H	16.38	16.72	17.29	17.62	18.78	12.52	12.85	13.42	13.75	14.91
12H	4H	15.46	15.92	16.35	16.82	17.91	11.73	12.20	12.62	13.09	14.18
	6H	16.02	16.40	16.93	17.31	18.42	12.27	12.65	13.18	13.56	14.66
	8H	16.24	16.57	17.15	17.47	18.63	12.47	12.80	13.38	13.71	14.87