

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: P924733

Luminaire Tested: DFN2DIP-PN2F0-050D020US950-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P924733
REPORT IS A COMBINATION OF REPORTS P900987 AND P897905
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN2F0-050D020US950-FLLONL
Description: 2 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

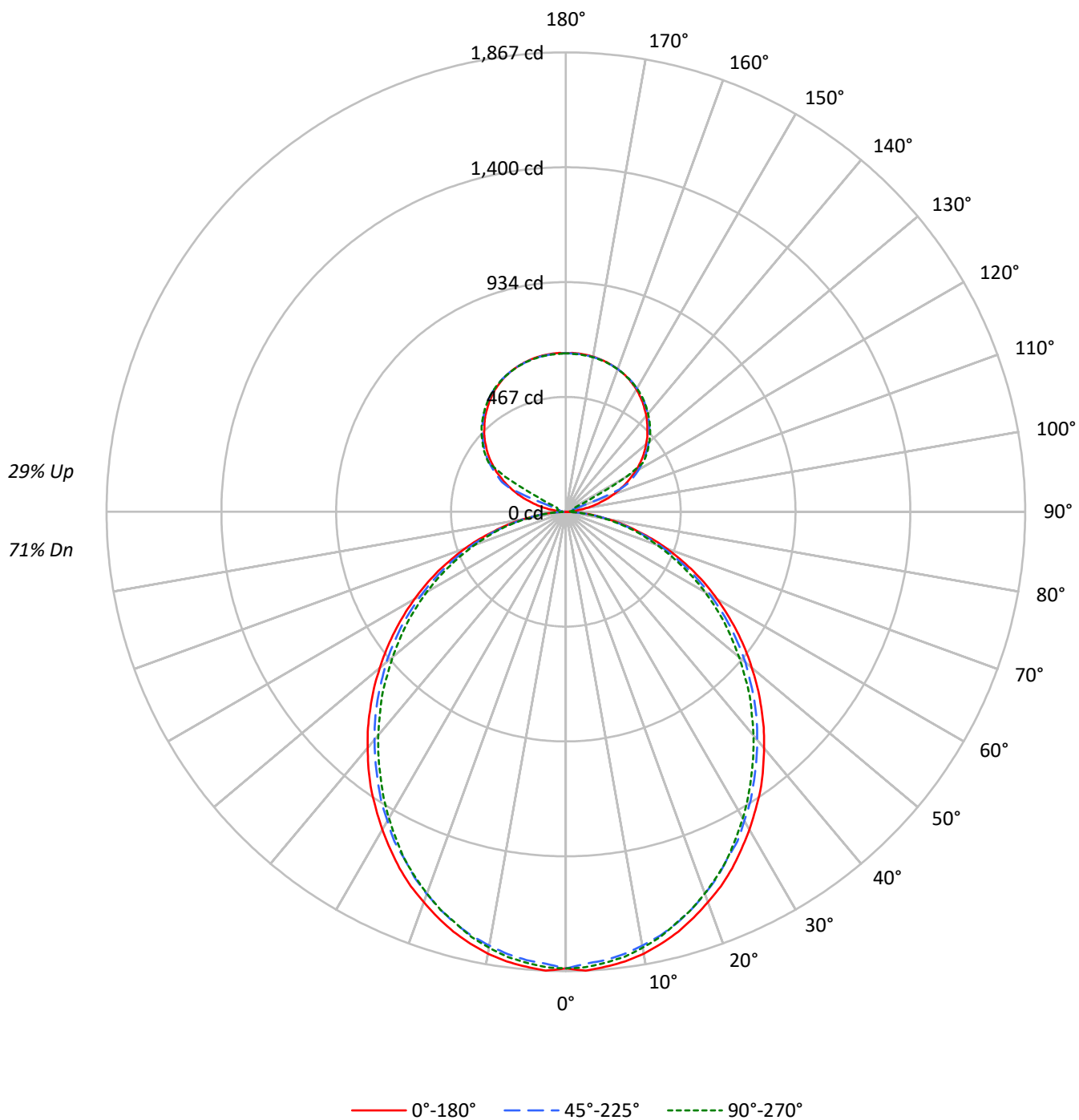
Lumens per Lamp: N/A
Luminaire Lumens: 6611.2 lumens
Efficiency: N/A
Efficacy: 98.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.17' x L: 2.29' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 67
Input Voltage (V): 120
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
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	76	76	76
1	103	98	94	90	97	93	90	86	84	81	78	75	73	71	67	66	64
2	93	86	79	74	88	81	76	71	73	69	65	66	62	59	59	56	54
3	85	75	68	62	80	72	65	59	65	59	55	58	54	50	52	49	46
4	78	67	59	52	74	64	56	50	58	52	47	52	47	43	47	43	40
5	72	60	51	45	68	57	49	44	52	45	40	47	42	38	42	38	35
6	66	54	45	39	63	51	44	38	47	40	35	42	37	33	38	34	31
7	61	49	40	35	58	47	39	34	42	36	31	39	33	29	35	31	27
8	57	44	36	31	54	42	35	30	39	33	28	35	30	26	32	28	24
9	53	41	33	28	50	39	32	27	36	30	25	33	27	24	30	25	22
10	50	37	30	25	47	36	29	24	33	27	23	30	25	21	28	23	20

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4020	4020	4020
5°	4020	3955	3985
10°	3981	3894	3925
15°	3916	3821	3835
20°	3830	3723	3743
25°	3745	3608	3637
30°	3640	3501	3505
35°	3539	3375	3365
40°	3417	3248	3231
45°	3295	3120	3094
50°	3161	2985	2936
55°	3020	2830	2789
60°	2860	2647	2621
65°	2685	2456	2423
70°	2462	2223	2208
75°	2156	1943	2002
80°	1785	1588	1624
85°	1211	1002	1018

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3295 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	174.7	2.6
10°-20°	491.5	7.4
20°-30°	722.3	10.9
30°-40°	838.9	12.7
40°-50°	837.9	12.7
50°-60°	730.6	11.1
60°-70°	540.1	8.2
70°-80°	305.6	4.6
80°-90°	81.8	1.2
90°-100°	21.2	0.3
100°-110°	79.1	1.2
110°-120°	209.9	3.2
120°-130°	348.2	5.3
130°-140°	369.8	5.6
140°-150°	343.7	5.2
150°-160°	276.4	4.2
160°-170°	178.1	2.7
170°-180°	61.3	0.9
0°-30°	1388.5	21.0
0°-40°	2227.5	33.7
0°-60°	3796.0	57.4
0°-90°	4723.4	71.4
90°-120°	310.3	4.7
90°-150°	1372.0	20.8
90°-180°	1888.0	28.6
0°-180°	6611.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1856	1856	1856	1856	1856	
5°	1856	1849	1829	1844	1840	176
15°	1767	1756	1733	1740	1731	498
25°	1599	1585	1554	1558	1554	736
35°	1380	1362	1333	1322	1314	862
45°	1123	1110	1083	1064	1057	866
55°	850	839	817	796	787	760
65°	573	562	544	528	519	567
75°	300	296	287	277	280	320
85°	73	71	70	64	62	82
90°	0	6	9	12	13	6
95°	30	15	18	20	20	36
105°	142	156	28	34	35	151
115°	268	276	288	72	38	264
125°	379	385	394	397	398	338
135°	469	476	480	485	484	362
145°	544	543	551	554	552	340
155°	599	594	600	603	599	276
165°	631	628	629	633	629	178
175°	645	642	643	646	642	61
180°	644	644	644	644	644	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1856.0	1856.0	1856.0	1856.0	1856.0
2.5°	1866.8	1857.9	1838.3	1856.0	1852.7
5°	1856.0	1849.0	1829.3	1843.5	1840.2
7.5°	1843.5	1832.9	1813.3	1827.7	1824.0
10°	1824.0	1811.6	1790.2	1804.3	1799.1
12.5°	1797.1	1786.6	1765.2	1774.1	1770.4
15°	1766.8	1756.2	1732.9	1740.2	1731.2
17.5°	1729.3	1718.7	1695.4	1704.3	1695.4
20°	1688.3	1677.7	1652.7	1658.0	1651.0
22.5°	1647.4	1631.2	1608.0	1608.0	1604.3
25°	1599.1	1584.9	1554.5	1558.0	1554.5
27.5°	1545.5	1533.0	1509.9	1504.6	1495.7
30°	1492.1	1477.7	1451.0	1445.7	1438.5
32.5°	1434.9	1424.3	1395.7	1384.9	1377.8
35°	1379.6	1361.8	1333.2	1322.4	1313.6
37.5°	1317.1	1301.1	1272.4	1259.9	1251.1
40°	1253.0	1238.6	1210.0	1194.0	1186.9
42.5°	1190.5	1176.1	1147.7	1129.6	1119.0
45°	1122.7	1110.2	1083.3	1063.8	1056.6
47.5°	1056.6	1044.1	1015.5	995.8	985.2
50°	986.9	978.0	953.0	928.1	919.1
52.5°	919.1	906.6	883.5	863.8	851.3
55°	849.6	838.9	817.4	796.0	787.1
57.5°	779.9	771.0	747.7	726.4	719.1
60°	710.3	703.3	678.3	658.5	653.3
62.5°	642.5	630.0	612.2	594.3	587.2
65°	573.0	562.2	544.4	528.3	519.4
67.5°	501.6	492.6	476.6	464.1	456.9
70°	435.5	428.3	412.2	399.7	392.8
72.5°	367.8	360.5	351.6	339.1	333.8
75°	299.7	296.3	287.2	276.7	280.3
77.5°	239.2	231.9	228.4	223.0	217.8
80°	178.6	176.7	173.1	167.8	164.2
82.5°	121.3	121.3	119.6	112.5	112.5
85°	73.1	71.4	69.6	64.2	62.5
87.5°	32.1	28.6	25.0	19.7	17.8
90°	0.5	5.6	9.3	11.6	12.6
92.5°	11.6	9.8	11.2	12.1	12.6
95°	30.2	14.9	18.1	20.5	20.0
97.5°	54.5	16.3	23.8	25.2	25.7
100°	82.5	18.6	26.5	30.2	31.2
102.5°	113.2	112.3	27.5	32.6	34.1
105°	141.7	155.6	28.4	33.5	35.4
107.5°	174.8	186.3	29.4	34.4	36.3
110°	206.4	216.2	81.6	35.0	36.8

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	236.2	244.6	236.7	35.9	37.3
115°	267.9	275.8	287.5	71.7	38.3
117.5°	295.4	304.7	312.6	246.0	123.9
120°	326.2	333.1	341.5	347.2	284.2
122.5°	352.2	359.7	369.0	371.8	372.3
125°	378.8	384.8	393.7	397.0	398.4
127.5°	403.1	409.6	416.6	421.2	421.7
130°	425.9	433.3	438.5	443.6	443.1
132.5°	449.1	455.2	460.3	464.5	464.1
135°	468.8	476.2	480.3	485.1	484.2
137.5°	489.2	494.8	499.5	504.2	502.8
140°	509.2	513.1	518.1	522.3	520.0
142.5°	526.0	529.4	535.4	539.1	536.7
145°	543.8	543.3	551.2	554.5	552.2
147.5°	559.1	557.7	565.6	567.9	566.1
150°	574.0	570.8	578.2	581.0	578.7
152.5°	586.6	582.9	589.9	592.7	589.4
155°	598.7	594.5	600.2	602.9	599.2
157.5°	608.6	604.8	609.0	612.3	608.6
160°	617.0	614.1	617.0	619.7	616.5
162.5°	624.3	621.5	623.9	627.2	623.0
165°	630.9	628.1	629.4	632.8	629.4
167.5°	636.0	633.2	634.6	637.9	633.6
170°	640.2	637.4	638.3	641.6	637.4
172.5°	643.0	640.2	641.2	644.4	640.2
175°	645.3	642.0	643.0	646.2	641.6
177.5°	646.2	643.0	643.5	646.7	642.5
180°	643.9	643.9	643.9	643.9	643.9

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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	13.77	14.86	14.52	15.63	16.56	13.33	14.42	14.08	15.20	16.12
	3H	15.43	16.41	16.19	17.19	18.15	14.95	15.93	15.71	16.71	17.67
	4H	16.01	16.94	16.79	17.73	18.70	15.53	16.46	16.31	17.25	18.22
	6H	16.41	17.26	17.20	18.06	19.04	15.92	16.78	16.71	17.57	18.56
	8H	16.51	17.33	17.31	18.14	19.13	16.02	16.84	16.83	17.66	18.64
	12H	16.56	17.34	17.37	18.15	19.16	16.07	16.84	16.87	17.65	18.67
4H	2H	14.25	15.17	15.03	15.96	16.93	13.90	14.83	14.68	15.61	16.58
	3H	16.11	16.88	16.91	17.71	18.70	15.71	16.49	16.51	17.31	18.30
	4H	16.82	17.52	17.63	18.35	19.36	16.40	17.11	17.21	17.93	18.95
	6H	17.33	17.94	18.15	18.78	19.80	16.91	17.52	17.73	18.36	19.39
	8H	17.47	18.04	18.30	18.88	19.92	17.05	17.62	17.88	18.46	19.49
	12H	17.55	18.06	18.40	18.92	19.96	17.11	17.63	17.96	18.49	19.53
8H	4H	17.02	17.59	17.85	18.43	19.47	16.65	17.22	17.48	18.07	19.10
	6H	17.64	18.11	18.50	19.00	20.03	17.26	17.74	18.12	18.62	19.66
	8H	17.85	18.27	18.72	19.15	20.20	17.47	17.89	18.34	18.77	19.82
	12H	17.98	18.35	18.85	19.22	20.32	17.58	17.95	18.45	18.82	19.93
12H	4H	17.02	17.53	17.87	18.39	19.43	16.66	17.17	17.51	18.03	19.07
	6H	17.67	18.09	18.54	18.97	20.02	17.30	17.72	18.17	18.60	19.65
	8H	17.90	18.27	18.78	19.14	20.25	17.53	17.90	18.41	18.78	19.88