

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: P922004

Luminaire Tested: DFN2DIP-PN2F0-050D020US940-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P922004
REPORT IS A COMBINATION OF REPORTS P899467 AND P896349
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN2F0-050D020US940-FLLFLL
Description: 2 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

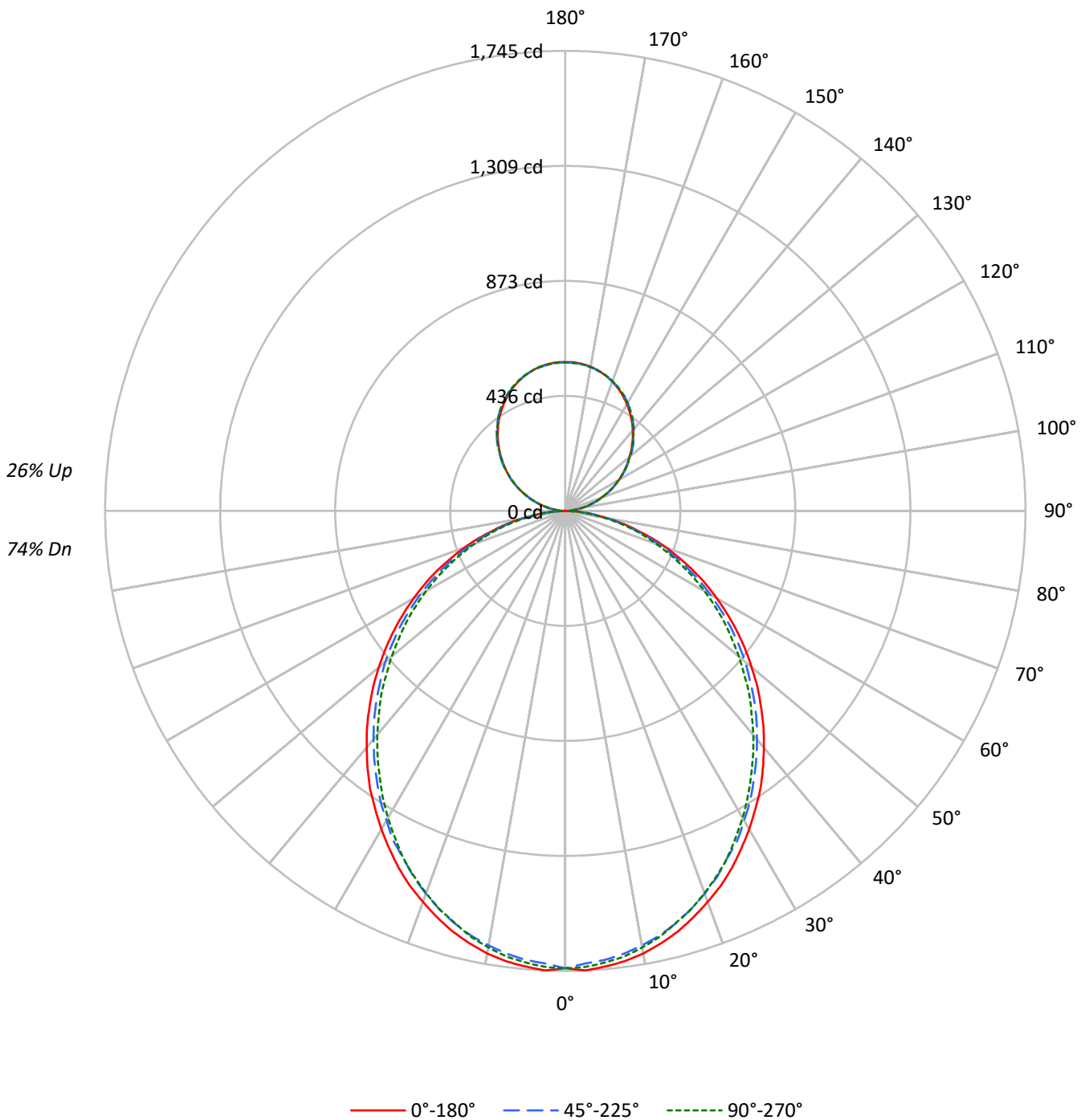
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5992.3 lumens
Efficiency: N/A
Efficacy: 89.4 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				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	113	113	113	113	107	107	107	107	96	96	96	87	87	87	78	78	78	78	78	78	74
1	103	99	95	91	98	94	90	87	85	82	80	77	74	72	69	67	66	66	66	66	62
2	94	86	80	74	89	82	76	71	74	70	66	67	64	61	61	58	55	55	55	55	52
3	86	76	68	62	81	72	65	60	66	60	55	59	55	51	54	50	47	47	47	47	44
4	79	67	59	53	74	64	57	51	58	52	47	53	48	44	48	44	41	41	41	41	38
5	72	60	52	45	68	57	50	44	52	46	41	48	42	38	43	39	36	36	36	36	33
6	67	54	46	40	63	52	44	38	47	41	36	43	38	34	39	35	31	31	31	31	29
7	62	49	41	35	58	47	39	34	43	37	32	39	34	30	36	31	28	28	28	28	26
8	57	45	37	31	54	43	35	30	39	33	28	36	31	27	33	29	25	25	25	25	23
9	54	41	33	28	51	39	32	27	36	30	26	33	28	24	31	26	23	23	23	23	21
10	50	38	30	25	48	36	29	24	33	27	23	31	26	22	28	24	21	21	21	21	19

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3757	3757	3757
5°	3757	3697	3725
10°	3721	3639	3669
15°	3660	3571	3584
20°	3580	3480	3498
25°	3501	3373	3399
30°	3402	3272	3276
35°	3308	3155	3145
40°	3194	3036	3020
45°	3080	2916	2892
50°	2954	2791	2744
55°	2823	2645	2607
60°	2673	2474	2450
65°	2509	2295	2264
70°	2301	2078	2064
75°	2016	1817	1871
80°	1668	1484	1518
85°	1132	938	951

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 3080 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	163.3	2.7
10°-20°	459.4	7.7
20°-30°	675.2	11.3
30°-40°	784.2	13.1
40°-50°	783.2	13.1
50°-60°	682.9	11.4
60°-70°	504.8	8.4
70°-80°	285.6	4.8
80°-90°	77.0	1.3
90°-100°	34.9	0.6
100°-110°	110.9	1.9
110°-120°	189.8	3.2
120°-130°	249.6	4.2
130°-140°	280.2	4.7
140°-150°	274.7	4.6
150°-160°	230.4	3.8
160°-170°	152.8	2.6
170°-180°	53.4	0.9
0°-30°	1297.9	21.7
0°-40°	2082.0	34.7
0°-60°	3548.1	59.2
0°-90°	4415.6	73.7
90°-120°	335.6	5.6
90°-150°	1140.0	19.0
90°-180°	1577.0	26.3
0°-180°	5992.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1735	1735	1735	1735	1735	
5°	1735	1728	1710	1723	1720	165
15°	1651	1642	1620	1627	1618	465
25°	1495	1481	1453	1456	1453	688
35°	1290	1273	1246	1236	1228	805
45°	1049	1038	1012	994	988	810
55°	794	784	764	744	736	710
65°	536	526	509	494	485	530
75°	280	277	268	259	262	299
85°	68	67	65	60	58	76
90°	0	6	17	16	16	6
95°	25	30	30	30	30	28
105°	102	104	105	106	106	108
115°	190	193	192	192	190	188
125°	277	281	280	278	278	248
135°	358	364	364	364	363	277
145°	435	438	441	442	440	272
155°	497	499	500	503	501	229
165°	541	541	541	544	542	153
175°	563	562	561	564	561	53
180°	564	564	564	564	564	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1734.8	1734.8	1734.8	1734.8	1734.8
2.5°	1744.9	1736.6	1718.2	1734.8	1731.7
5°	1734.8	1728.3	1709.9	1723.1	1720.0
7.5°	1723.1	1713.2	1694.9	1708.3	1705.0
10°	1705.0	1693.3	1673.3	1686.5	1681.6
12.5°	1679.8	1669.9	1649.9	1658.2	1654.8
15°	1651.4	1641.5	1619.8	1626.6	1618.2
17.5°	1616.4	1606.5	1584.7	1593.0	1584.7
20°	1578.1	1568.2	1544.8	1549.7	1543.2
22.5°	1539.8	1524.7	1503.0	1503.0	1499.6
25°	1494.7	1481.4	1453.0	1456.3	1453.0
27.5°	1444.6	1432.9	1411.3	1406.3	1398.0
30°	1394.6	1381.3	1356.3	1351.3	1344.6
32.5°	1341.2	1331.3	1304.6	1294.5	1287.8
35°	1289.5	1272.9	1246.2	1236.1	1227.8
37.5°	1231.1	1216.1	1189.4	1177.7	1169.4
40°	1171.2	1157.7	1131.0	1116.1	1109.4
42.5°	1112.8	1099.3	1072.7	1055.9	1046.0
45°	1049.4	1037.7	1012.5	994.3	987.6
47.5°	987.6	975.9	949.2	930.8	920.9
50°	922.5	914.2	890.8	867.5	859.1
52.5°	859.1	847.4	825.8	807.4	795.8
55°	794.2	784.1	764.0	744.0	735.8
57.5°	729.0	720.7	698.9	678.9	672.2
60°	663.9	657.4	634.0	615.5	610.6
62.5°	600.6	588.9	572.2	555.5	548.8
65°	535.6	525.5	508.8	493.8	485.4
67.5°	468.9	460.4	445.5	433.8	427.0
70°	407.1	400.4	385.3	373.6	367.1
72.5°	343.8	337.0	328.7	317.0	312.0
75°	280.2	277.0	268.5	258.6	262.0
77.5°	223.6	216.8	213.5	208.5	203.6
80°	166.9	165.1	161.8	156.9	153.5
82.5°	113.4	113.4	111.8	105.1	105.1
85°	68.3	66.7	65.1	60.0	58.4
87.5°	30.1	26.8	23.4	18.4	16.7
90°	0.5	6.2	16.7	15.6	16.1
92.5°	10.5	14.3	14.8	15.3	15.3
95°	24.8	29.6	30.4	30.4	29.6
97.5°	41.3	45.7	47.6	47.6	47.6
100°	60.4	64.3	65.6	65.6	65.1
102.5°	80.4	83.3	85.2	85.7	85.2
105°	102.4	103.7	104.8	105.6	105.6
107.5°	124.1	126.2	126.2	126.5	124.1
110°	145.3	147.9	147.9	147.9	146.6



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	168.0	170.9	170.4	169.0	168.0
115°	190.5	193.1	192.3	191.8	190.5
117.5°	212.8	216.5	214.1	212.8	211.3
120°	235.1	238.9	235.1	235.1	233.6
122.5°	255.6	260.3	258.0	256.6	255.6
125°	277.0	281.2	279.9	278.4	277.9
127.5°	297.9	303.2	301.3	299.3	297.9
130°	317.4	323.6	322.7	321.7	319.9
132.5°	339.4	344.2	344.5	342.1	340.7
135°	358.3	363.6	364.5	364.1	362.7
137.5°	379.3	383.6	384.5	384.1	382.1
140°	397.9	402.2	404.6	404.6	402.7
142.5°	417.0	421.2	422.6	423.0	421.2
145°	435.0	438.4	441.1	441.6	439.7
147.5°	451.1	455.4	457.4	458.2	456.4
150°	467.8	470.6	472.5	474.0	472.5
152.5°	482.6	485.4	487.9	489.7	487.9
155°	497.4	498.7	500.2	502.7	501.1
157.5°	510.1	511.1	512.0	515.4	513.0
160°	521.6	522.5	523.1	525.9	523.9
162.5°	532.1	532.1	532.5	535.8	533.4
165°	541.1	540.6	540.6	543.9	541.6
167.5°	549.2	547.7	547.7	551.1	548.8
170°	555.4	554.0	553.5	556.9	554.0
172.5°	559.6	558.2	557.8	561.2	558.2
175°	563.0	561.7	560.6	564.0	561.2
177.5°	564.9	563.6	562.5	565.3	562.5
180°	564.0	564.0	564.0	564.0	564.0



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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	13.70	14.83	14.43	15.57	16.46	13.26	14.39	13.99	15.13	16.02
	3H	15.36	16.37	16.10	17.13	18.04	14.88	15.89	15.62	16.64	17.56
	4H	15.95	16.90	16.70	17.66	18.60	15.46	16.42	16.22	17.18	18.11
	6H	16.34	17.23	17.11	18.00	18.94	15.86	16.74	16.63	17.51	18.46
	8H	16.45	17.29	17.23	18.08	19.03	15.96	16.80	16.74	17.59	18.54
	12H	16.50	17.30	17.28	18.08	19.06	16.01	16.81	16.79	17.59	18.57
4H	2H	14.18	15.14	14.94	15.90	16.83	13.83	14.79	14.59	15.55	16.48
	3H	16.05	16.85	16.82	17.64	18.59	15.65	16.45	16.42	17.24	18.19
	4H	16.76	17.48	17.54	18.28	19.26	16.34	17.07	17.13	17.87	18.84
	6H	17.27	17.90	18.07	18.72	19.70	16.85	17.48	17.65	18.30	19.28
	8H	17.41	18.00	18.22	18.82	19.82	16.99	17.58	17.80	18.40	19.39
	12H	17.49	18.02	18.32	18.86	19.86	17.06	17.59	17.89	18.43	19.43
8H	4H	16.97	17.55	17.77	18.37	19.37	16.60	17.18	17.40	18.00	19.00
	6H	17.58	18.07	18.42	18.93	19.93	17.21	17.70	18.05	18.56	19.55
	8H	17.79	18.22	18.64	19.08	20.10	17.41	17.84	18.26	18.70	19.71
	12H	17.92	18.30	18.77	19.15	20.22	17.53	17.91	18.38	18.76	19.82
12H	4H	16.96	17.49	17.79	18.33	19.33	16.60	17.13	17.43	17.97	18.97
	6H	17.61	18.04	18.46	18.90	19.91	17.25	17.68	18.09	18.54	19.55
	8H	17.85	18.23	18.70	19.08	20.15	17.48	17.86	18.33	18.71	19.78