

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: P916504

Luminaire Tested: DFN2DIP-PN2F0-020D060US930-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P916504
REPORT IS A COMBINATION OF REPORTS P899501 AND P896349
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN2F0-020D060US930-FLLFLL
Description: 2 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

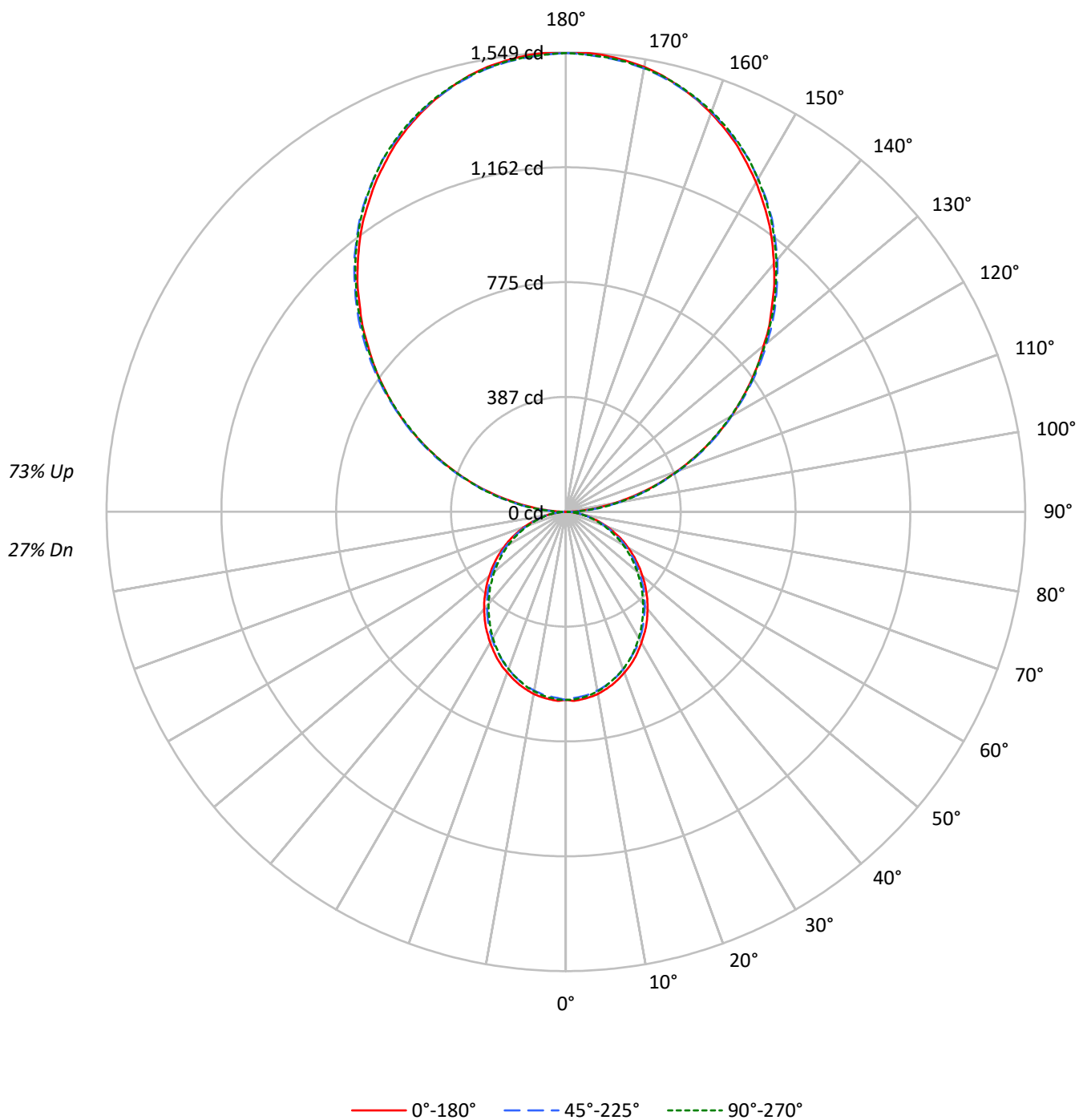
Lumens per Lamp: N/A
Luminaire Lumens: 5943.6 lumens
Efficiency: N/A
Efficacy: 86.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.17' x L: 2.29' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 69
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.099
Total Harmonic Distortion (THDi): 0.979
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	102	102	102	102	91	91	91	91	71	71	71	52	52	52	35	35	35
1	93	88	85	81	83	79	76	73	62	60	58	46	44	43	31	30	30
2	84	77	71	66	75	69	64	60	54	51	48	40	38	36	27	26	25
3	77	68	61	55	68	61	55	50	48	44	40	35	33	30	24	23	21
4	70	60	52	47	62	54	47	42	42	38	34	32	29	26	22	20	18
5	64	53	45	40	57	48	41	36	38	33	29	28	25	22	19	17	16
6	59	48	40	34	53	43	36	31	34	29	25	25	22	20	18	16	14
7	55	43	35	30	49	39	32	27	31	26	22	23	20	17	16	14	12
8	51	39	31	26	45	35	28	24	28	23	20	21	18	15	15	13	11
9	47	35	28	23	42	32	26	21	25	21	17	19	16	14	14	11	10
10	44	32	25	21	39	29	23	19	23	19	16	18	15	12	13	10	9

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1374	1374	1374
5°	1374	1352	1362
10°	1361	1331	1342
15°	1339	1306	1311
20°	1309	1273	1279
25°	1280	1233	1243
30°	1244	1197	1198
35°	1210	1154	1150
40°	1168	1110	1104
45°	1126	1067	1058
50°	1081	1021	1004
55°	1032	967	953
60°	978	905	896
65°	917	839	828
70°	842	760	755
75°	737	664	684
80°	611	543	555
85°	413	343	349

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 2086 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	59.7	1.0
10°-20°	168.0	2.8
20°-30°	246.9	4.2
30°-40°	286.8	4.8
40°-50°	286.4	4.8
50°-60°	249.7	4.2
60°-70°	184.6	3.1
70°-80°	104.5	1.8
80°-90°	32.0	0.5
90°-100°	95.7	1.6
100°-110°	304.2	5.1
110°-120°	520.6	8.8
120°-130°	684.6	11.5
130°-140°	768.4	12.9
140°-150°	753.5	12.7
150°-160°	632.1	10.6
160°-170°	419.2	7.1
170°-180°	146.5	2.5
0°-30°	474.7	8.0
0°-40°	761.5	12.8
0°-60°	1297.6	21.8
0°-90°	1618.7	27.2
90°-120°	920.5	15.5
90°-150°	3127.0	52.6
90°-180°	4325.0	72.8
0°-180°	5943.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	634	634	634	634	634	
5°	634	632	625	630	629	60
15°	604	600	592	595	592	170
25°	547	542	531	533	531	252
35°	472	466	456	452	449	295
45°	384	380	370	364	361	296
55°	290	287	279	272	269	260
65°	196	192	186	181	178	194
75°	102	101	98	95	96	109
85°	25	24	24	22	21	28
90°	1	17	46	43	44	6
95°	68	81	84	84	81	76
105°	281	284	287	290	290	296
115°	522	530	528	526	522	517
125°	760	771	768	764	762	679
135°	983	997	1000	999	995	760
145°	1193	1202	1210	1211	1206	745
155°	1364	1368	1372	1379	1374	628
165°	1484	1483	1483	1492	1486	419
175°	1544	1541	1538	1547	1539	147
180°	1547	1547	1547	1547	1547	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	634.5	634.5	634.5	634.5	634.5
2.5°	638.1	635.1	628.4	634.5	633.3
5°	634.5	632.1	625.3	630.2	629.0
7.5°	630.2	626.6	619.9	624.8	623.5
10°	623.5	619.3	612.0	616.8	615.0
12.5°	614.3	610.7	603.4	606.4	605.2
15°	604.0	600.4	592.4	594.8	591.8
17.5°	591.2	587.6	579.6	582.6	579.6
20°	577.1	573.5	564.9	566.8	564.3
22.5°	563.1	557.7	549.7	549.7	548.5
25°	546.7	541.8	531.4	532.6	531.4
27.5°	528.3	524.1	516.2	514.4	511.3
30°	510.1	505.2	496.0	494.2	491.7
32.5°	490.5	486.9	477.1	473.4	471.0
35°	471.7	465.5	455.8	452.1	449.0
37.5°	450.3	444.7	435.0	430.7	427.6
40°	428.3	423.4	413.6	408.2	405.7
42.5°	406.9	402.0	392.3	386.2	382.5
45°	383.8	379.5	370.3	363.6	361.2
47.5°	361.2	356.9	347.2	340.4	336.8
50°	337.4	334.4	325.8	317.2	314.2
52.5°	314.2	309.9	302.0	295.3	291.1
55°	290.4	286.7	279.4	272.1	269.0
57.5°	266.6	263.6	255.6	248.3	245.8
60°	242.8	240.4	231.9	225.1	223.3
62.5°	219.6	215.3	209.3	203.2	200.7
65°	195.8	192.2	186.1	180.6	177.6
67.5°	171.5	168.4	162.9	158.7	156.2
70°	148.9	146.4	140.9	136.6	134.3
72.5°	125.7	123.3	120.2	115.9	114.1
75°	102.5	101.3	98.2	94.6	95.8
77.5°	81.8	79.3	78.0	76.2	74.4
80°	61.1	60.4	59.2	57.3	56.1
82.5°	41.5	41.5	40.9	38.5	38.5
85°	24.9	24.4	23.8	21.9	21.4
87.5°	11.0	9.8	8.6	6.8	6.1
90°	1.4	16.8	45.7	42.9	44.3
92.5°	28.9	39.2	40.6	42.0	42.0
95°	68.1	81.1	83.5	83.5	81.1
97.5°	113.3	125.5	130.6	130.6	130.6
100°	165.6	176.3	180.0	180.0	178.6
102.5°	220.6	228.5	233.7	235.1	233.7
105°	280.8	284.5	287.3	289.7	289.7
107.5°	340.5	346.1	346.1	347.0	340.5
110°	398.4	405.8	405.8	405.8	402.0

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	460.8	468.7	467.3	463.6	460.8
115°	522.4	529.9	527.5	526.1	522.4
117.5°	583.5	593.8	587.2	583.5	579.8
120°	645.1	655.3	645.1	645.1	640.8
122.5°	701.0	714.0	707.5	703.8	701.0
125°	759.8	771.4	767.7	763.5	762.1
127.5°	817.2	831.6	826.5	820.9	817.2
130°	870.8	887.6	885.3	882.5	877.3
132.5°	931.0	944.0	944.9	938.4	934.7
135°	982.8	997.2	1000.0	998.6	994.8
137.5°	1040.6	1052.2	1054.6	1053.6	1048.1
140°	1091.4	1103.1	1109.6	1109.6	1104.5
142.5°	1143.6	1155.3	1159.0	1160.4	1155.3
145°	1193.1	1202.4	1209.9	1211.3	1206.2
147.5°	1237.4	1249.0	1254.7	1256.9	1251.8
150°	1283.1	1291.0	1296.2	1300.3	1296.2
152.5°	1323.6	1331.6	1338.1	1343.3	1338.1
155°	1364.2	1368.0	1372.1	1378.8	1374.5
157.5°	1399.2	1402.1	1404.4	1413.7	1407.2
160°	1430.5	1433.3	1434.7	1442.6	1437.0
162.5°	1459.4	1459.4	1460.8	1469.7	1463.1
165°	1484.1	1482.7	1482.7	1492.1	1485.6
167.5°	1506.5	1502.4	1502.4	1511.6	1505.1
170°	1523.3	1519.6	1518.2	1527.5	1519.6
172.5°	1535.0	1531.2	1529.8	1539.1	1531.2
175°	1544.3	1540.6	1537.7	1547.1	1539.1
177.5°	1549.4	1545.7	1542.9	1550.8	1542.9
180°	1547.1	1547.1	1547.1	1547.1	1547.1

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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	5.65	6.34	6.78	7.46	9.02	5.21	5.90	6.34	7.02	8.59
	3H	7.28	7.89	8.42	9.02	10.60	6.80	7.41	7.93	8.54	10.12
	4H	7.84	8.43	8.99	9.56	11.14	7.36	7.95	8.51	9.08	10.66
	6H	8.22	8.76	9.37	9.89	11.49	7.73	8.27	8.89	9.40	11.00
	8H	8.31	8.82	9.47	9.97	11.56	7.82	8.33	8.98	9.48	11.07
	12H	8.34	8.83	9.51	9.97	11.58	7.85	8.34	9.01	9.48	11.09
4H	2H	6.08	6.67	7.24	7.80	9.38	5.73	6.31	6.88	7.45	9.03
	3H	7.91	8.39	9.07	9.55	11.15	7.51	7.99	8.67	9.15	10.75
	4H	8.60	9.05	9.76	10.19	11.81	8.18	8.63	9.35	9.78	11.39
	6H	9.08	9.47	10.25	10.64	12.24	8.66	9.05	9.83	10.21	11.82
	8H	9.22	9.58	10.39	10.74	12.36	8.79	9.15	9.96	10.31	11.93
	12H	9.27	9.60	10.46	10.77	12.40	8.84	9.17	10.02	10.34	11.96
8H	4H	8.77	9.13	9.94	10.29	11.91	8.40	8.76	9.57	9.92	11.54
	6H	9.37	9.66	10.55	10.87	12.48	8.99	9.29	10.18	10.49	12.11
	8H	9.57	9.83	10.77	11.01	12.65	9.19	9.45	10.38	10.63	12.27
	12H	9.68	9.91	10.88	11.09	12.76	9.29	9.51	10.48	10.69	12.36
12H	4H	8.74	9.07	9.93	10.24	11.87	8.38	8.71	9.56	9.88	11.51
	6H	9.39	9.65	10.58	10.83	12.47	9.03	9.29	10.22	10.47	12.11
	8H	9.61	9.84	10.81	11.01	12.69	9.24	9.47	10.44	10.64	12.31