

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: P908308

Luminaire Tested: DFN2DIP-PN2F0-020D030US840-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P908308
REPORT IS A COMBINATION OF REPORTS P899471 AND P896349
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN2F0-020D030US840-FLLFLL
Description: 2 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

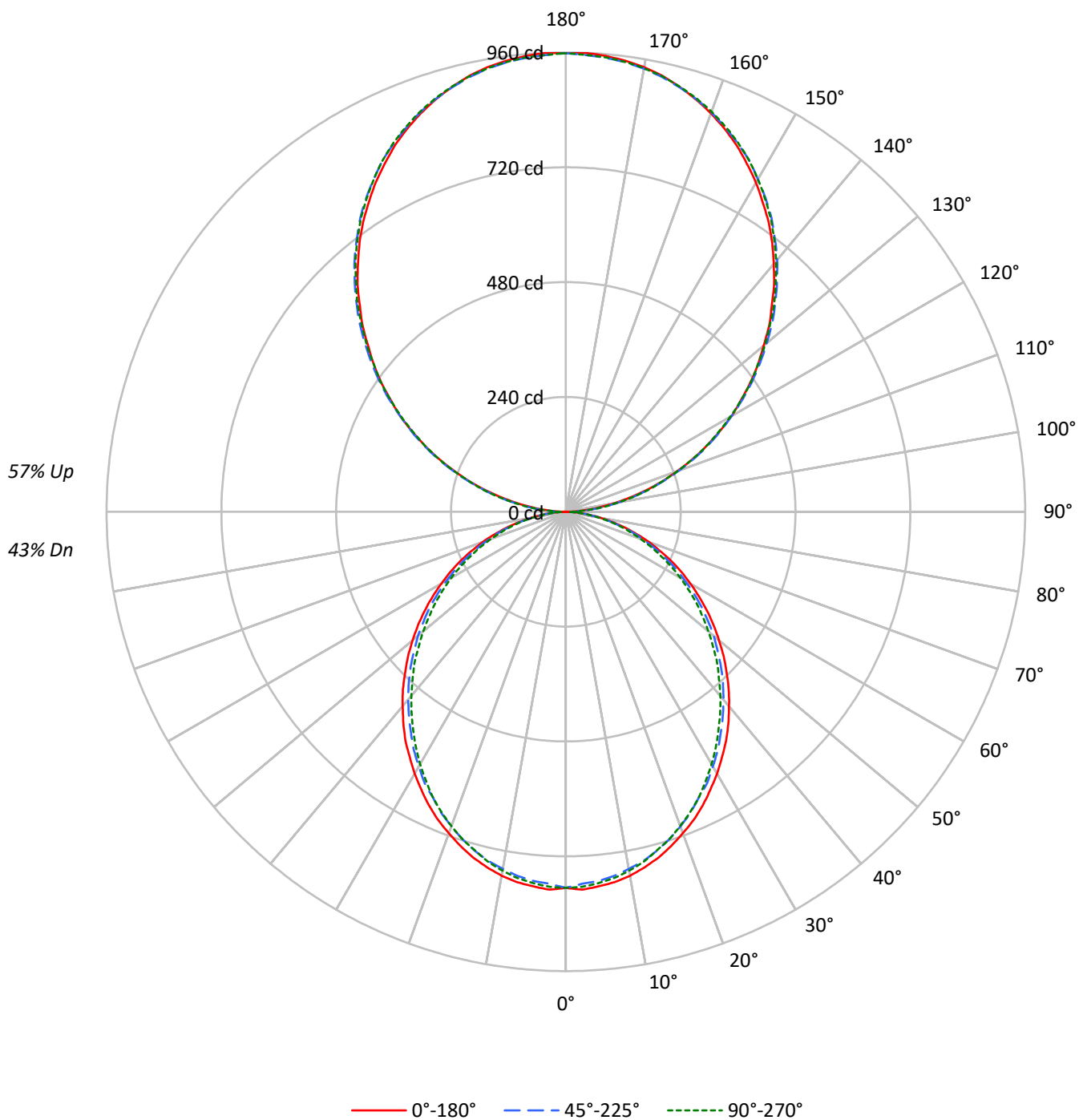
Lumens per Lamp: N/A
Luminaire Lumens: 4680.7 lumens
Efficiency: N/A
Efficacy: 133.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.17' x L: 2.29' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 35.2
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	105	105	105	105	96	96	96	96	79	79	79	64	64	64	49	49	49
1	96	92	88	85	88	84	81	78	69	67	65	56	54	53	44	43	42
2	88	80	74	69	80	73	68	64	61	57	54	49	47	44	38	37	35
3	80	70	63	57	73	65	58	53	54	49	45	44	40	37	34	32	30
4	73	62	55	49	66	57	50	45	48	43	39	39	35	32	30	28	26
5	67	56	47	42	61	51	44	39	43	37	33	35	31	28	27	25	22
6	62	50	42	36	56	46	39	34	38	33	29	31	27	24	25	22	20
7	57	45	37	31	52	41	34	29	35	29	25	29	24	21	23	20	18
8	53	41	33	28	48	38	31	26	32	26	23	26	22	19	21	18	16
9	49	37	30	25	45	34	28	23	29	24	20	24	20	17	19	16	14
10	46	34	27	22	42	31	25	21	27	22	18	22	18	15	18	15	13

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1702	1702	1702
5°	1702	1675	1687
10°	1686	1649	1662
15°	1658	1618	1624
20°	1622	1576	1585
25°	1586	1528	1540
30°	1541	1482	1484
35°	1499	1429	1424
40°	1447	1375	1368
45°	1395	1321	1310
50°	1338	1264	1243
55°	1278	1198	1181
60°	1211	1121	1110
65°	1137	1040	1026
70°	1042	941	935
75°	913	823	848
80°	755	672	688
85°	512	425	432

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1395 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	74.0	1.6
10°-20°	208.1	4.4
20°-30°	305.8	6.5
30°-40°	355.2	7.6
40°-50°	354.8	7.6
50°-60°	309.4	6.6
60°-70°	228.7	4.9
70°-80°	129.4	2.8
80°-90°	36.9	0.8
90°-100°	59.3	1.3
100°-110°	188.4	4.0
110°-120°	322.4	6.9
120°-130°	424.0	9.1
130°-140°	475.9	10.2
140°-150°	466.7	10.0
150°-160°	391.5	8.4
160°-170°	259.6	5.5
170°-180°	90.7	1.9
0°-30°	587.9	12.6
0°-40°	943.2	20.1
0°-60°	1607.3	34.3
0°-90°	2002.3	42.8
90°-120°	570.1	12.2
90°-150°	1936.6	41.4
90°-180°	2678.0	57.2
0°-180°	4680.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	786	786	786	786	786	
5°	786	783	775	781	779	75
15°	748	744	734	737	733	211
25°	677	671	658	660	658	312
35°	584	577	564	560	556	365
45°	475	470	459	450	447	367
55°	360	355	346	337	333	322
65°	243	238	231	224	220	240
75°	127	126	122	117	119	135
85°	31	30	30	27	26	35
90°	1	10	28	27	28	5
95°	42	50	52	52	50	47
105°	174	176	178	179	179	184
115°	324	328	327	326	324	320
125°	471	478	475	473	472	420
135°	609	618	619	618	616	470
145°	739	745	749	750	747	462
155°	845	847	850	854	851	389
165°	919	918	918	924	920	259
175°	956	954	952	958	953	91
180°	958	958	958	958	958	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	785.9	785.9	785.9	785.9	785.9
2.5°	790.4	786.7	778.3	785.9	784.5
5°	785.9	782.9	774.6	780.6	779.1
7.5°	780.6	776.1	767.8	773.9	772.3
10°	772.3	767.1	758.0	764.0	761.7
12.5°	760.9	756.5	747.4	751.1	749.6
15°	748.1	743.7	733.8	736.8	733.1
17.5°	732.3	727.8	717.9	721.6	717.9
20°	714.9	710.3	699.7	702.1	699.0
22.5°	697.5	690.7	680.9	680.9	679.3
25°	677.1	671.1	658.2	659.6	658.2
27.5°	654.4	649.1	639.3	637.1	633.3
30°	631.8	625.7	614.4	612.2	609.0
32.5°	607.5	603.1	591.0	586.4	583.4
35°	584.2	576.6	564.5	560.0	556.1
37.5°	557.7	550.9	538.8	533.5	529.7
40°	530.5	524.4	512.3	505.6	502.5
42.5°	504.0	498.0	485.9	478.4	473.8
45°	475.3	470.1	458.7	450.4	447.4
47.5°	447.4	442.1	430.0	421.6	417.2
50°	417.9	414.1	403.5	392.9	389.2
52.5°	389.2	383.8	374.1	365.8	360.5
55°	359.7	355.2	346.1	337.1	333.3
57.5°	330.2	326.5	316.6	307.6	304.5
60°	300.7	297.8	287.2	278.8	276.6
62.5°	272.1	266.7	259.2	251.7	248.6
65°	242.6	238.0	230.6	223.7	219.9
67.5°	212.4	208.5	201.8	196.5	193.5
70°	184.4	181.4	174.5	169.3	166.3
72.5°	155.7	152.7	148.9	143.6	141.4
75°	126.9	125.5	121.6	117.1	118.7
77.5°	101.3	98.3	96.6	94.4	92.2
80°	75.6	74.8	73.3	71.0	69.5
82.5°	51.4	51.4	50.7	47.7	47.7
85°	30.9	30.2	29.5	27.2	26.5
87.5°	13.6	12.1	10.6	8.4	7.6
90°	0.9	10.4	28.3	26.6	27.5
92.5°	17.9	24.2	25.1	26.0	26.0
95°	42.2	50.3	51.7	51.7	50.3
97.5°	70.2	77.7	80.9	80.9	80.9
100°	102.5	109.2	111.5	111.5	110.7
102.5°	136.6	141.6	144.7	145.6	144.7
105°	173.9	176.2	177.9	179.4	179.4
107.5°	210.9	214.3	214.3	214.9	210.9
110°	246.7	251.4	251.4	251.4	249.0

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	285.4	290.3	289.4	287.1	285.4
115°	323.6	328.1	326.7	325.9	323.6
117.5°	361.3	367.7	363.7	361.3	359.0
120°	399.5	405.9	399.5	399.5	396.9
122.5°	434.1	442.2	438.2	435.9	434.1
125°	470.6	477.8	475.4	472.8	472.0
127.5°	506.0	515.0	511.9	508.4	506.0
130°	539.3	549.7	548.3	546.5	543.3
132.5°	576.5	584.6	585.2	581.2	578.9
135°	608.6	617.5	619.4	618.4	616.1
137.5°	644.4	651.7	653.1	652.6	649.0
140°	675.9	683.2	687.2	687.2	684.0
142.5°	708.3	715.5	717.8	718.7	715.5
145°	738.9	744.7	749.3	750.1	747.0
147.5°	766.4	773.6	777.0	778.5	775.3
150°	794.7	799.6	802.7	805.4	802.7
152.5°	819.8	824.7	828.7	831.9	828.7
155°	845.0	847.2	849.8	853.8	851.3
157.5°	866.6	868.3	869.8	875.6	871.5
160°	886.0	887.7	888.6	893.4	890.0
162.5°	903.8	903.8	904.7	910.2	906.2
165°	919.2	918.3	918.3	924.0	920.0
167.5°	933.0	930.4	930.4	936.1	932.1
170°	943.4	941.1	940.3	946.0	941.1
172.5°	950.6	948.4	947.5	953.2	948.4
175°	956.4	954.1	952.4	958.2	953.2
177.5°	959.6	957.3	955.5	960.5	955.5
180°	958.2	958.2	958.2	958.2	958.2

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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	8.29	9.09	9.31	10.12	11.49	7.86	8.66	8.87	9.68	11.05
	3H	9.93	10.65	10.96	11.68	13.07	9.45	10.17	10.48	11.20	12.59
	4H	10.50	11.18	11.54	12.22	13.62	10.02	10.70	11.06	11.74	13.13
	6H	10.88	11.51	11.93	12.55	13.96	10.40	11.02	11.45	12.06	13.47
	8H	10.98	11.57	12.03	12.63	14.04	10.49	11.09	11.55	12.14	13.55
	12H	11.02	11.58	12.08	12.63	14.06	10.52	11.09	11.58	12.14	13.57
4H	2H	8.74	9.42	9.78	10.46	11.85	8.39	9.07	9.44	10.11	11.50
	3H	10.58	11.14	11.63	12.21	13.62	10.18	10.74	11.23	11.81	13.22
	4H	11.27	11.79	12.33	12.85	14.28	10.86	11.38	11.92	12.43	13.87
	6H	11.76	12.21	12.83	13.29	14.72	11.34	11.79	12.41	12.87	14.30
	8H	11.90	12.32	12.97	13.39	14.83	11.48	11.90	12.55	12.97	14.41
	12H	11.96	12.34	13.05	13.43	14.87	11.53	11.91	12.62	12.99	14.44
8H	4H	11.45	11.87	12.52	12.94	14.38	11.08	11.50	12.15	12.57	14.02
	6H	12.06	12.40	13.15	13.51	14.96	11.68	12.03	12.77	13.14	14.58
	8H	12.26	12.56	13.36	13.66	15.12	11.88	12.18	12.98	13.28	14.74
	12H	12.38	12.64	13.48	13.74	15.24	11.98	12.25	13.09	13.34	14.84
12H	4H	11.43	11.81	12.52	12.90	14.34	11.07	11.45	12.16	12.53	13.98
	6H	12.08	12.38	13.18	13.48	14.94	11.72	12.02	12.82	13.12	14.58
	8H	12.30	12.57	13.41	13.66	15.16	11.93	12.20	13.04	13.29	14.79