

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: P916488

Luminaire Tested: DFN2DIP-PN2F0-020D020US930-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P916488
REPORT IS A COMBINATION OF REPORTS P899461 AND P896349
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN2F0-020D020US930-FLLFLL
Description: 2 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

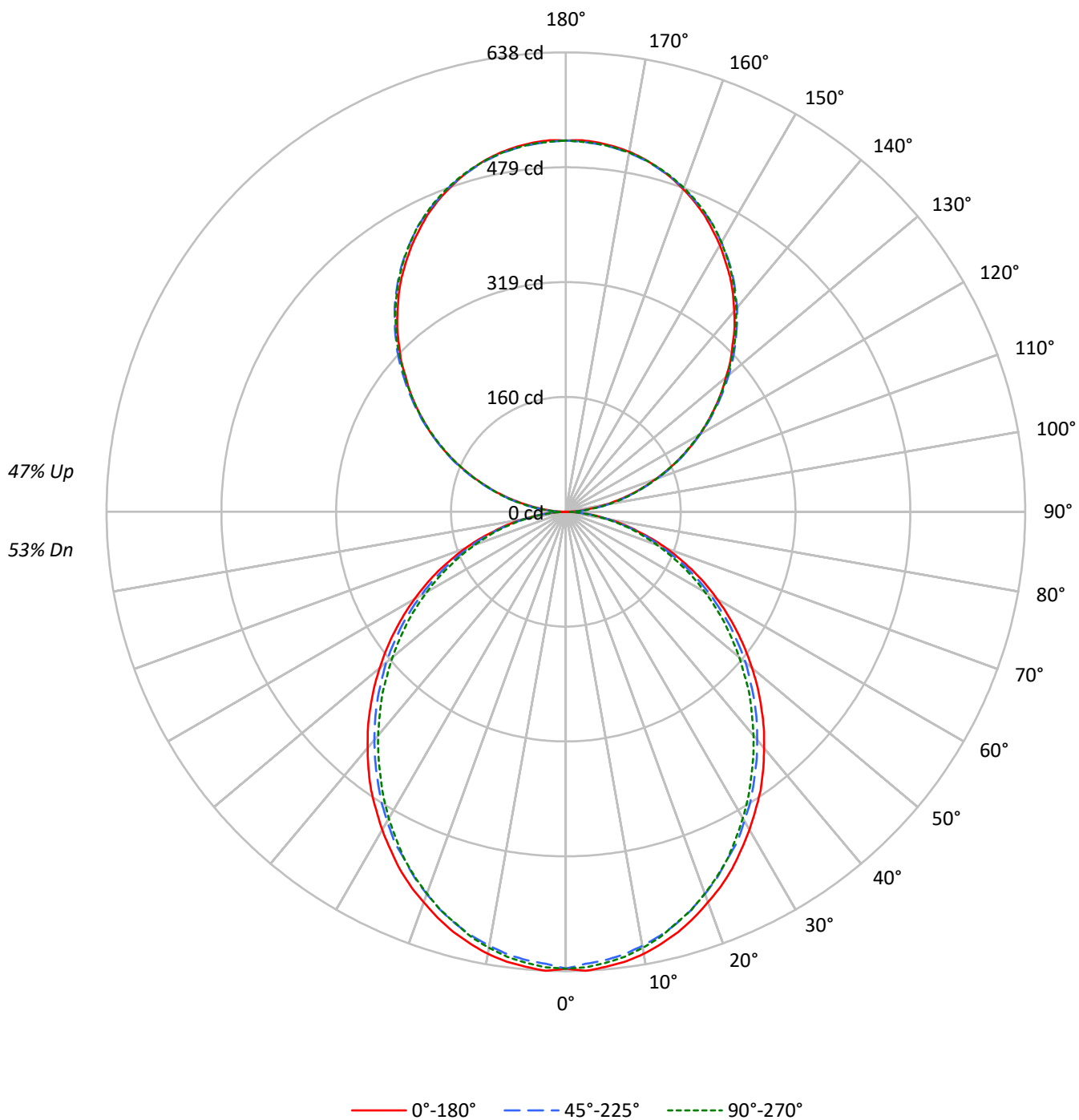
Lumens per Lamp: N/A
Luminaire Lumens: 3057.4 lumens
Efficiency: N/A
Efficacy: 94.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.17' x L: 2.29' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 32.3
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

TEST NUMBER: P916488

CATALOG NUMBER: DFN2DIP-PN2F0-020D020US930-FLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P916488

CATALOG NUMBER: DFN2DIP-PN2F0-020D020US930-FLLFL

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
RCR																	
0	108	108	108	108	100	100	100	100	85	85	85		71	71	71		59
1	98	94	90	87	91	87	84	81	74	72	70		63	61	59		52
2	90	82	76	71	83	76	71	66	65	61	58		55	52	50		46
3	82	72	65	59	75	67	61	55	58	53	49		49	45	42		41
4	75	64	56	50	69	60	52	47	51	46	41		43	39	36		36
5	69	57	49	43	63	53	46	40	46	40	36		39	35	31		33
6	63	51	43	37	58	48	40	35	41	36	31		35	31	27		30
7	59	46	38	33	54	43	36	31	37	32	28		32	28	24		27
8	54	42	34	29	50	39	32	27	34	29	24		29	25	22		25
9	51	38	31	26	47	36	29	24	31	26	22		27	23	19		23
10	47	35	28	23	44	33	26	22	29	23	20		25	21	18		21

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: 0°

Vertical Angle: 45°

Luminance: 1126 cd/sqm

TEST NUMBER: P916488

CATALOG NUMBER: DFN2DIP-PN2F0-020D020US930-FLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	59.7	2.0
10°-20°	168.0	5.5
20°-30°	246.9	8.1
30°-40°	286.8	9.4
40°-50°	286.4	9.4
50°-60°	249.7	8.2
60°-70°	184.6	6.0
70°-80°	104.5	3.4
80°-90°	29.0	1.0
90°-100°	31.9	1.0
100°-110°	101.4	3.3
110°-120°	173.5	5.7
120°-130°	228.2	7.5
130°-140°	256.1	8.4
140°-150°	251.2	8.2
150°-160°	210.7	6.9
160°-170°	139.7	4.6
170°-180°	48.8	1.6
0°-30°	474.7	15.5
0°-40°	761.5	24.9
0°-60°	1297.6	42.4
0°-90°	1615.8	52.8
90°-120°	306.8	10.0
90°-150°	1042.3	34.1
90°-180°	1442.0	47.2
0°-180°	3057.4	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°	0	6	15	14	15	3
95°	23	27	28	28	27	25
105°	94	95	96	96	96	99
115°	174	177	176	175	174	172
125°	253	257	256	254	254	226
135°	328	332	333	333	332	253
145°	398	401	403	404	402	248
155°	455	456	457	460	458	209
165°	495	494	494	497	495	140
175°	515	514	513	516	513	49
180°	516	516	516	516	516	

TEST NUMBER: P916488

CATALOG NUMBER: DFN2DIP-PN2F0-020D020US930-FLLFLL

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°	0.5	5.6	15.2	14.3	14.8
92.5°	9.6	13.0	13.5	14.0	14.0
95°	22.7	27.1	27.8	27.8	27.1
97.5°	37.7	41.8	43.5	43.5	43.5
100°	55.2	58.8	60.0	60.0	59.5
102.5°	73.5	76.1	77.9	78.4	77.9
105°	93.6	94.8	95.8	96.5	96.5
107.5°	113.5	115.4	115.4	115.7	113.5
110°	132.8	135.3	135.3	135.3	134.0



TEST NUMBER: P916488

CATALOG NUMBER: DFN2DIP-PN2F0-020D020US930-FLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	153.6	156.2	155.8	154.5	153.6
115°	174.1	176.6	175.9	175.4	174.1
117.5°	194.5	198.0	195.8	194.5	193.2
120°	215.0	218.4	215.0	215.0	213.6
122.5°	233.7	238.0	235.9	234.6	233.7
125°	253.2	257.1	255.9	254.5	254.0
127.5°	272.4	277.2	275.5	273.6	272.4
130°	290.2	295.9	295.1	294.2	292.4
132.5°	310.3	314.7	314.9	312.8	311.5
135°	327.6	332.4	333.3	332.9	331.6
137.5°	346.8	350.7	351.6	351.2	349.4
140°	363.8	367.7	369.9	369.9	368.2
142.5°	381.2	385.1	386.4	386.8	385.1
145°	397.7	400.8	403.3	403.7	402.0
147.5°	412.5	416.4	418.2	419.0	417.3
150°	427.7	430.3	432.0	433.4	432.0
152.5°	441.2	443.8	446.0	447.8	446.0
155°	454.8	456.0	457.4	459.6	458.2
157.5°	466.4	467.3	468.1	471.2	469.0
160°	476.9	477.8	478.3	480.9	479.0
162.5°	486.5	486.5	486.9	489.9	487.7
165°	494.7	494.2	494.2	497.3	495.2
167.5°	502.1	500.8	500.8	503.9	501.7
170°	507.8	506.5	506.1	509.2	506.5
172.5°	511.7	510.4	510.0	513.1	510.4
175°	514.8	513.6	512.6	515.7	513.1
177.5°	516.5	515.3	514.3	516.9	514.3
180°	515.7	515.7	515.7	515.7	515.7

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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	8.52	9.41	9.45	10.36	11.59	8.08	8.97	9.01	9.92	11.15
	3H	10.16	10.96	11.10	11.92	13.17	9.68	10.48	10.62	11.44	12.69
	4H	10.74	11.49	11.69	12.45	13.72	10.25	11.01	11.21	11.97	13.23
	6H	11.12	11.82	12.09	12.79	14.06	10.63	11.33	11.60	12.30	13.57
	8H	11.22	11.88	12.20	12.87	14.14	10.73	11.39	11.71	12.38	13.65
	12H	11.26	11.89	12.24	12.87	14.17	10.77	11.40	11.75	12.38	13.67
4H	2H	8.97	9.73	9.94	10.69	11.95	8.62	9.38	9.59	10.34	11.60
	3H	10.82	11.45	11.79	12.44	13.72	10.42	11.05	11.39	12.04	13.32
	4H	11.52	12.09	12.50	13.08	14.38	11.10	11.68	12.08	12.66	13.96
	6H	12.01	12.51	13.01	13.52	14.82	11.59	12.09	12.59	13.10	14.40
	8H	12.15	12.62	13.15	13.62	14.93	11.73	12.19	12.73	13.20	14.51
	12H	12.22	12.64	13.23	13.66	14.98	11.78	12.20	12.80	13.22	14.54
8H	4H	11.70	12.17	12.70	13.17	14.48	11.33	11.80	12.33	12.80	14.11
	6H	12.31	12.70	13.33	13.74	15.05	11.94	12.32	12.96	13.37	14.68
	8H	12.52	12.86	13.55	13.89	15.22	12.14	12.48	13.17	13.51	14.84
	12H	12.64	12.94	13.67	13.96	15.34	12.24	12.54	13.27	13.57	14.94
12H	4H	11.69	12.11	12.70	13.13	14.44	11.33	11.75	12.34	12.76	14.08
	6H	12.34	12.68	13.37	13.71	15.04	11.97	12.31	13.00	13.34	14.67
	8H	12.57	12.86	13.60	13.89	15.26	12.19	12.49	13.23	13.52	14.89