

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: P919218

Luminaire Tested: DFN2DIP-PN2F0-020D020US935-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P919218
REPORT IS A COMBINATION OF REPORTS P899462 AND P896349
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN2F0-020D020US935-RLLFLL
Description: 2 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

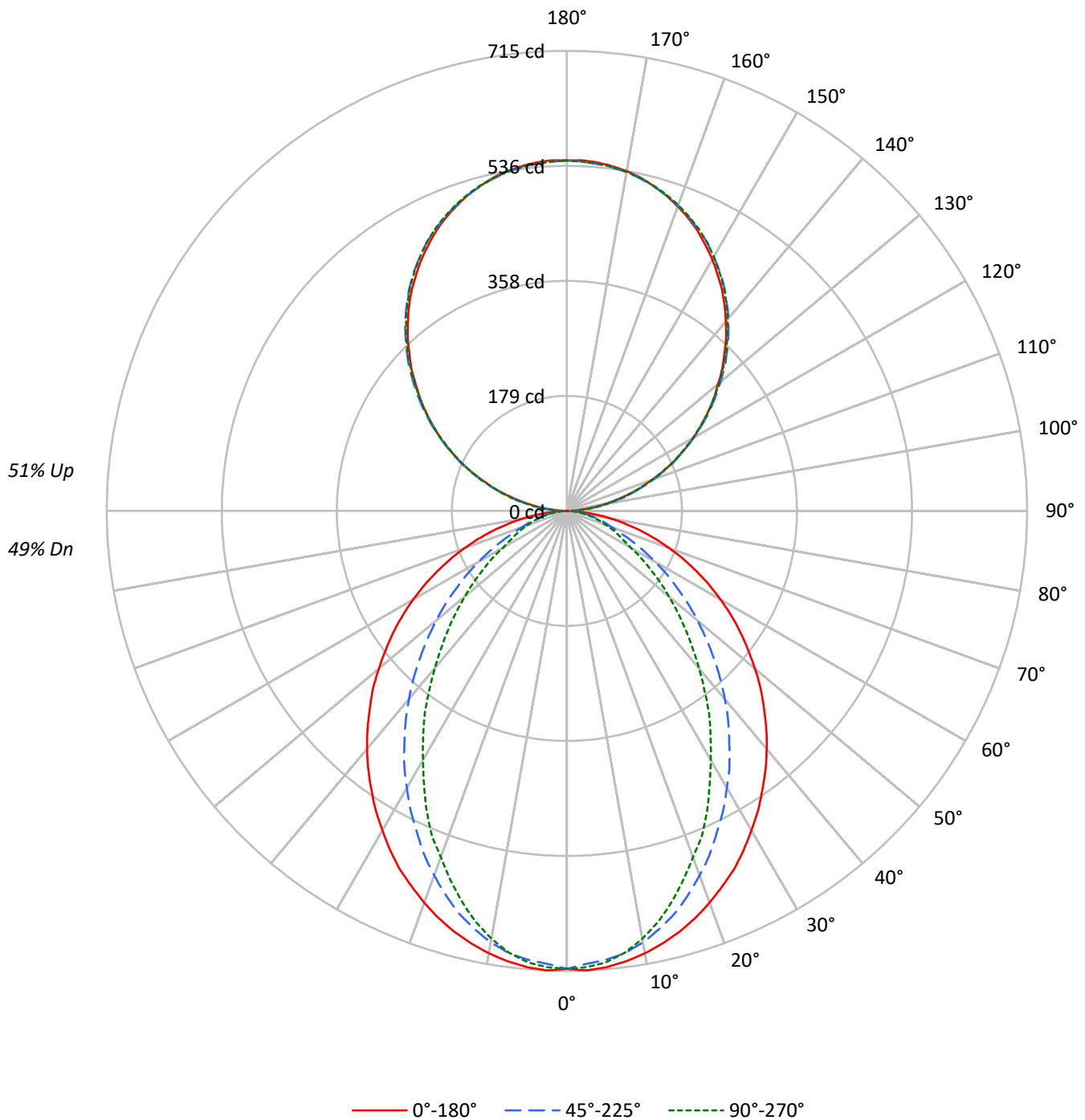
Lumens per Lamp: N/A
Luminaire Lumens: 2987.7 lumens
Efficiency: N/A
Efficacy: 92.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.17' x L: 2.29' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 32.3
Input Voltage (V):
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	107	107	107	107	99	99	99	99	83	83	83	68	68	68	55	55	55
1	98	94	90	87	90	87	84	81	73	71	69	61	59	58	50	49	48
2	90	83	77	72	82	76	71	67	65	61	58	54	51	49	44	42	41
3	82	73	66	60	75	68	61	57	58	53	49	48	45	42	40	37	35
4	75	65	57	51	69	60	54	48	51	46	42	43	40	36	36	33	31
5	69	58	50	44	64	54	47	42	46	41	37	39	35	32	32	29	27
6	64	52	44	39	59	49	42	37	42	36	32	35	31	28	30	26	24
7	59	47	40	34	55	44	37	32	38	33	29	32	28	25	27	24	22
8	55	43	36	30	51	40	33	29	35	29	26	30	26	23	25	22	20
9	51	39	32	27	47	37	30	26	32	27	23	27	23	20	23	20	18
10	48	36	29	24	44	34	28	23	30	24	21	25	21	19	22	18	16

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1541	1541	1541
5°	1541	1514	1524
10°	1524	1481	1473
15°	1500	1428	1394
20°	1470	1358	1298
25°	1439	1280	1205
30°	1398	1200	1089
35°	1358	1114	986
40°	1317	1025	869
45°	1270	928	764
50°	1221	830	661
55°	1170	725	561
60°	1110	616	460
65°	1041	506	412
70°	958	402	369
75°	852	348	331
80°	702	283	280
85°	457	176	199

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1270 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	66.7	2.2
10°-20°	183.1	6.1
20°-30°	257.1	8.6
30°-40°	280.2	9.4
40°-50°	257.6	8.6
50°-60°	202.3	6.8
60°-70°	131.7	4.4
70°-80°	67.8	2.3
80°-90°	18.8	0.6
90°-100°	33.7	1.1
100°-110°	107.1	3.6
110°-120°	183.2	6.1
120°-130°	241.0	8.1
130°-140°	270.5	9.1
140°-150°	265.3	8.9
150°-160°	222.5	7.4
160°-170°	147.6	4.9
170°-180°	51.6	1.7
0°-30°	506.9	17.0
0°-40°	787.1	26.3
0°-60°	1247.0	41.7
0°-90°	1465.3	49.0
90°-120°	324.0	10.8
90°-150°	1100.8	36.8
90°-180°	1522.0	50.9
0°-180°	2987.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	712	712	712	712	712	
5°	712	708	700	706	704	67
15°	677	670	648	636	629	191
25°	614	594	551	525	515	283
35°	529	497	440	399	385	331
45°	433	390	322	276	261	334
55°	329	279	209	171	158	294
65°	222	170	112	90	88	220
75°	118	73	52	47	46	125
85°	28	14	12	12	12	32
90°	0	6	16	15	16	3
95°	24	29	29	29	29	27
105°	99	100	101	102	102	104
115°	184	186	186	185	184	182
125°	267	272	270	269	268	239
135°	346	351	352	352	350	267
145°	420	423	426	426	425	262
155°	480	482	483	485	484	221
165°	522	522	522	525	523	147
175°	544	542	541	545	542	52
180°	545	545	545	545	545	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	711.7	711.7	711.7	711.7	711.7
2.5°	714.9	711.7	704.6	711.1	709.8
5°	711.7	708.5	700.1	705.9	704.0
7.5°	705.9	702.1	693.0	695.6	692.3
10°	698.2	693.6	680.8	678.8	675.0
12.5°	688.5	682.7	665.3	661.5	654.4
15°	676.9	669.8	647.9	635.7	629.3
17.5°	663.4	653.1	626.0	611.8	601.6
20°	647.9	635.0	602.9	586.8	572.6
22.5°	631.2	616.4	579.0	557.2	547.5
25°	614.5	593.8	551.3	525.0	515.2
27.5°	594.5	572.6	525.6	495.2	480.4
30°	573.3	548.7	497.2	464.4	446.9
32.5°	552.6	523.0	470.2	431.5	415.4
35°	529.4	496.6	440.0	399.3	385.1
37.5°	506.9	471.4	411.6	367.1	351.0
40°	483.0	444.4	381.9	336.2	319.4
42.5°	458.6	417.4	352.3	304.6	288.6
45°	432.8	389.6	322.1	276.3	260.8
47.5°	408.4	362.7	293.1	247.3	233.2
50°	381.3	335.6	264.8	220.2	206.8
52.5°	354.8	306.5	237.6	195.2	183.0
55°	329.1	278.9	209.3	170.7	158.4
57.5°	302.7	251.2	184.3	148.2	137.8
60°	275.7	224.1	157.8	125.0	114.7
62.5°	249.3	197.8	135.3	104.4	99.2
65°	222.2	170.0	112.1	90.2	88.3
67.5°	196.5	144.2	90.2	79.2	77.3
70°	169.4	119.2	74.6	68.3	65.7
72.5°	143.6	95.9	62.4	57.3	56.1
75°	118.5	73.4	51.5	47.0	46.4
77.5°	93.4	52.2	40.6	38.0	36.7
80°	70.2	37.4	30.9	28.3	28.3
82.5°	48.9	25.1	21.3	20.0	20.0
85°	27.6	14.1	12.2	12.2	12.2
87.5°	10.3	5.2	5.2	4.5	4.5
90°	0.5	5.9	16.1	15.1	15.6
92.5°	10.2	13.8	14.3	14.8	14.8
95°	23.9	28.6	29.4	29.4	28.6
97.5°	39.9	44.2	46.0	46.0	46.0
100°	58.3	62.1	63.4	63.4	62.9
102.5°	77.7	80.4	82.2	82.7	82.2
105°	98.8	100.1	101.2	101.9	101.9
107.5°	119.9	121.8	121.8	122.2	119.9
110°	140.3	142.8	142.8	142.8	141.5



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	162.2	165.0	164.5	163.2	162.2
115°	183.9	186.5	185.7	185.2	183.9
117.5°	205.4	209.1	206.7	205.4	204.1
120°	227.0	230.7	227.0	227.0	225.6
122.5°	246.8	251.3	249.1	247.8	246.8
125°	267.4	271.6	270.3	268.8	268.3
127.5°	287.7	292.7	290.9	289.0	287.7
130°	306.5	312.5	311.6	310.6	308.8
132.5°	327.7	332.3	332.6	330.4	329.0
135°	345.9	351.0	352.0	351.5	350.2
137.5°	366.3	370.4	371.3	370.9	368.9
140°	384.2	388.3	390.6	390.6	388.8
142.5°	402.6	406.6	408.0	408.5	406.6
145°	420.0	423.3	425.9	426.4	424.6
147.5°	435.6	439.7	441.7	442.5	440.7
150°	451.7	454.4	456.2	457.7	456.2
152.5°	466.0	468.7	471.1	472.9	471.1
155°	480.3	481.6	483.0	485.3	483.9
157.5°	492.6	493.5	494.4	497.7	495.3
160°	503.6	504.5	505.1	507.8	505.8
162.5°	513.8	513.8	514.2	517.4	515.0
165°	522.5	521.9	521.9	525.2	523.0
167.5°	530.3	528.8	528.8	532.1	529.9
170°	536.2	534.9	534.4	537.7	534.9
172.5°	540.4	539.0	538.6	541.8	539.0
175°	543.6	542.3	541.3	544.6	541.8
177.5°	545.4	544.2	543.1	545.9	543.1
180°	544.6	544.6	544.6	544.6	544.6

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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	8.44	9.26	9.41	10.25	11.53	4.41	5.23	5.38	6.22	7.50
	3H	10.10	10.83	11.08	11.82	13.13	5.58	6.32	6.57	7.31	8.62
	4H	10.69	11.39	11.69	12.38	13.70	6.02	6.72	7.02	7.71	9.03
	6H	11.10	11.74	12.10	12.74	14.07	6.33	6.97	7.33	7.96	9.29
	8H	11.21	11.82	12.23	12.84	14.17	6.41	7.02	7.42	8.03	9.36
	12H	11.27	11.85	12.29	12.86	14.21	6.44	7.02	7.46	8.03	9.38
4H	2H	8.45	9.15	9.46	10.14	11.46	5.00	5.69	6.00	6.68	8.00
	3H	10.26	10.84	11.27	11.86	13.19	6.32	6.90	7.34	7.93	9.26
	4H	10.94	11.46	11.95	12.48	13.83	6.86	7.39	7.88	8.40	9.76
	6H	11.43	11.89	12.46	12.92	14.28	7.26	7.71	8.29	8.75	10.10
	8H	11.59	12.02	12.63	13.05	14.42	7.38	7.80	8.41	8.83	10.20
	12H	11.68	12.06	12.73	13.11	14.48	7.43	7.81	8.48	8.86	10.23
8H	4H	10.90	11.32	11.93	12.35	13.72	7.12	7.55	8.15	8.58	9.95
	6H	11.44	11.79	12.50	12.87	14.23	7.62	7.97	8.67	9.04	10.41
	8H	11.65	11.95	12.71	13.01	14.39	7.80	8.10	8.86	9.16	10.55
	12H	11.77	12.04	12.83	13.09	14.52	7.90	8.17	8.97	9.23	10.65
12H	4H	10.85	11.23	11.90	12.28	13.65	7.13	7.51	8.17	8.55	9.93
	6H	11.42	11.72	12.48	12.78	14.17	7.66	7.97	8.72	9.03	10.41
	8H	11.62	11.89	12.69	12.95	14.37	7.86	8.13	8.92	9.18	10.61