

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: P918788

Luminaire Tested: DFN2DIP-HX2F0-020D020US935-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P918788
REPORT IS A COMBINATION OF REPORTS P899152 AND P896039
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX2F0-020D020US935-RLLFLL
Description: 2 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

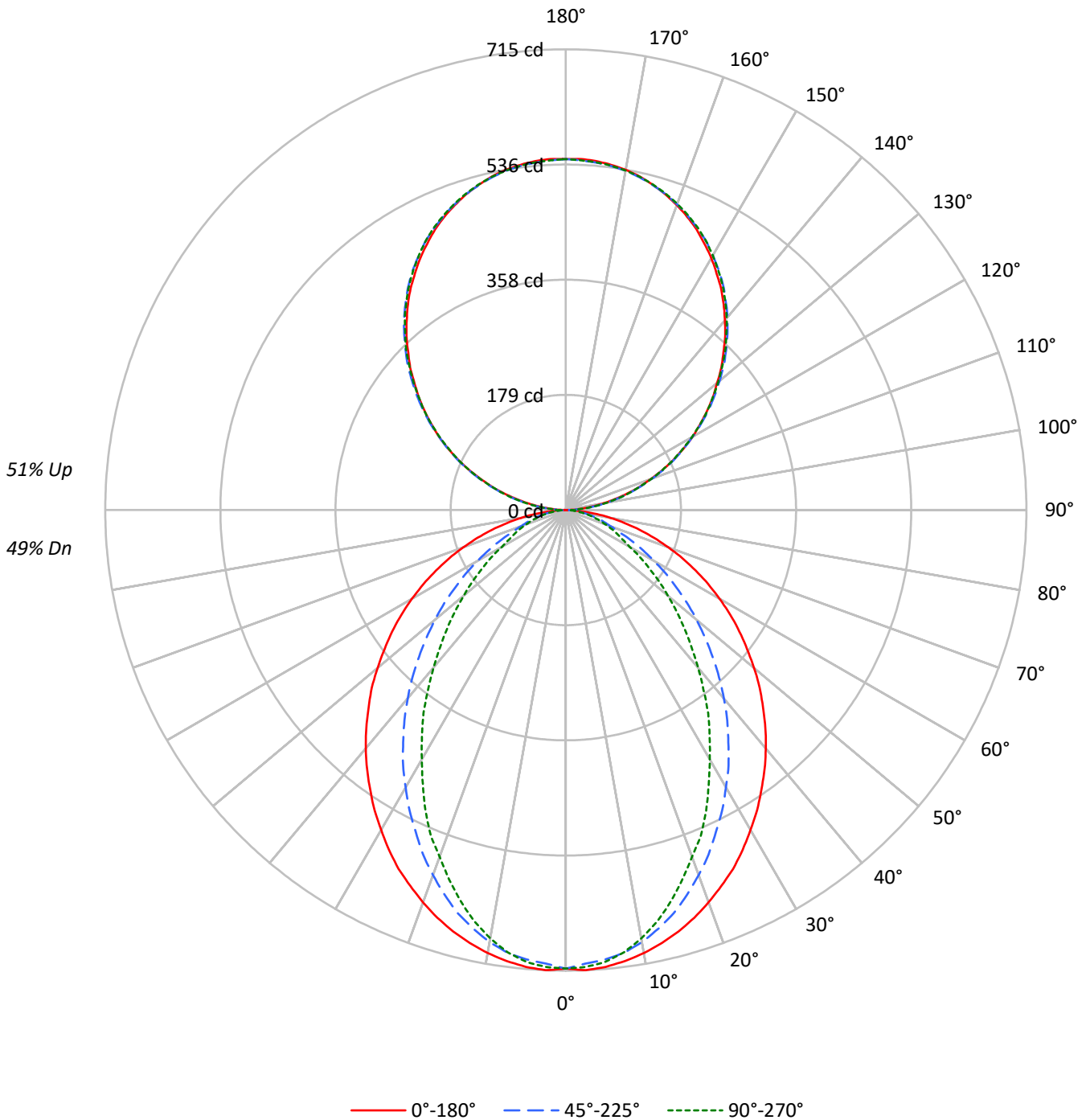
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2987.7 lumens
Efficiency: N/A
Efficacy: 98.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 1.99' x L: 2.3' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 30.5
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9968
Total Harmonic Distortion (THDi): 0.064
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P918788
CATALOG NUMBER: DFN2DIP-HX2F0-020D020US935-RLFL

Luminous Intensity Polar Plot





TEST NUMBER: P918788

CATALOG NUMBER: DFN2DIP-HX2F0-020D020US935-RLLFLL

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	107	107	107	107	99	99	99	99	83	83	83	68	68	68	55	55	55	49				49
1	98	94	90	87	90	87	84	81	73	71	69	61	59	58	50	49	48	42				42
2	90	83	77	72	82	76	71	67	65	61	58	54	51	49	44	42	41	36				36
3	82	73	66	60	75	68	61	57	58	53	49	48	45	42	40	37	35	31				31
4	75	65	57	51	69	60	54	48	51	46	42	43	40	36	36	33	31	27				27
5	69	58	50	44	64	54	47	42	46	41	37	39	35	32	32	29	27	24				24
6	64	52	44	39	59	49	42	37	42	36	32	35	31	28	30	26	24	21				21
7	59	47	40	34	55	44	37	32	38	33	29	32	28	25	27	24	22	19				19
8	55	43	36	30	51	40	33	29	35	29	26	30	26	23	25	22	20	17				17
9	51	39	32	27	47	37	30	26	32	27	23	27	23	20	23	20	18	16				16
10	48	36	29	24	44	34	28	23	30	24	21	25	21	19	22	18	16	14				14

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1677	1677	1677
5°	1677	1646	1658
10°	1658	1610	1601
15°	1632	1553	1515
20°	1599	1476	1410
25°	1566	1390	1309
30°	1521	1303	1182
35°	1478	1209	1070
40°	1433	1113	943
45°	1382	1006	827
50°	1329	900	715
55°	1273	785	607
60°	1208	667	497
65°	1133	547	444
70°	1042	435	398
75°	928	376	356
80°	764	305	299
85°	498	188	209

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 1382 cd/sqm



TEST NUMBER: P918788

CATALOG NUMBER: DFN2DIP-HX2F0-020D020US935-RLFL

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	



TEST NUMBER: P918788

CATALOG NUMBER: DFN2DIP-HX2F0-020D020US935-RLFL

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



TEST NUMBER: P918788

CATALOG NUMBER: DFN2DIP-HX2F0-020D020US935-RLFL

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



TEST NUMBER: P918788
 CATALOG NUMBER: DFN2DIP-HX2F0-020D020US935-RLLFLL

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	8.71	9.54	9.69	10.52	11.81	4.70	5.52	5.67	6.50	7.79
	3H	10.37	11.10	11.35	12.09	13.40	5.87	6.61	6.85	7.60	8.91
	4H	10.96	11.65	11.95	12.65	13.96	6.31	7.00	7.30	8.00	9.32
	6H	11.36	12.00	12.36	13.00	14.33	6.61	7.25	7.62	8.25	9.58
	8H	11.47	12.08	12.49	13.10	14.42	6.70	7.30	7.71	8.32	9.65
	12H	11.52	12.10	12.54	13.11	14.46	6.73	7.31	7.75	8.32	9.67
4H	2H	8.73	9.42	9.73	10.42	11.74	5.28	5.97	6.28	6.97	8.29
	3H	10.53	11.11	11.54	12.13	13.46	6.61	7.19	7.62	8.21	9.54
	4H	11.20	11.73	12.22	12.74	14.10	7.14	7.67	8.16	8.68	10.04
	6H	11.69	12.14	12.72	13.18	14.54	7.54	7.99	8.57	9.03	10.39
	8H	11.85	12.28	12.88	13.31	14.67	7.66	8.08	8.69	9.12	10.48
	12H	11.93	12.31	12.98	13.36	14.73	7.72	8.10	8.76	9.14	10.52
8H	4H	11.16	11.59	12.19	12.62	13.98	7.41	7.83	8.44	8.86	10.23
	6H	11.70	12.05	12.76	13.13	14.49	7.90	8.25	8.95	9.32	10.69
	8H	11.90	12.21	12.96	13.27	14.65	8.08	8.38	9.14	9.44	10.83
	12H	12.02	12.29	13.09	13.35	14.77	8.18	8.45	9.25	9.51	10.93
12H	4H	11.11	11.50	12.16	12.54	13.91	7.41	7.79	8.45	8.84	10.21
	6H	11.68	11.98	12.74	13.04	14.42	7.94	8.25	9.00	9.31	10.69
	8H	11.88	12.15	12.94	13.20	14.63	8.14	8.41	9.20	9.46	10.89