

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: P902420

Luminaire Tested: DFN2DIP-HX2F0-020D020US830-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P902420
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-HX2F0-020D020US830-RLLFLL
Description: 2 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

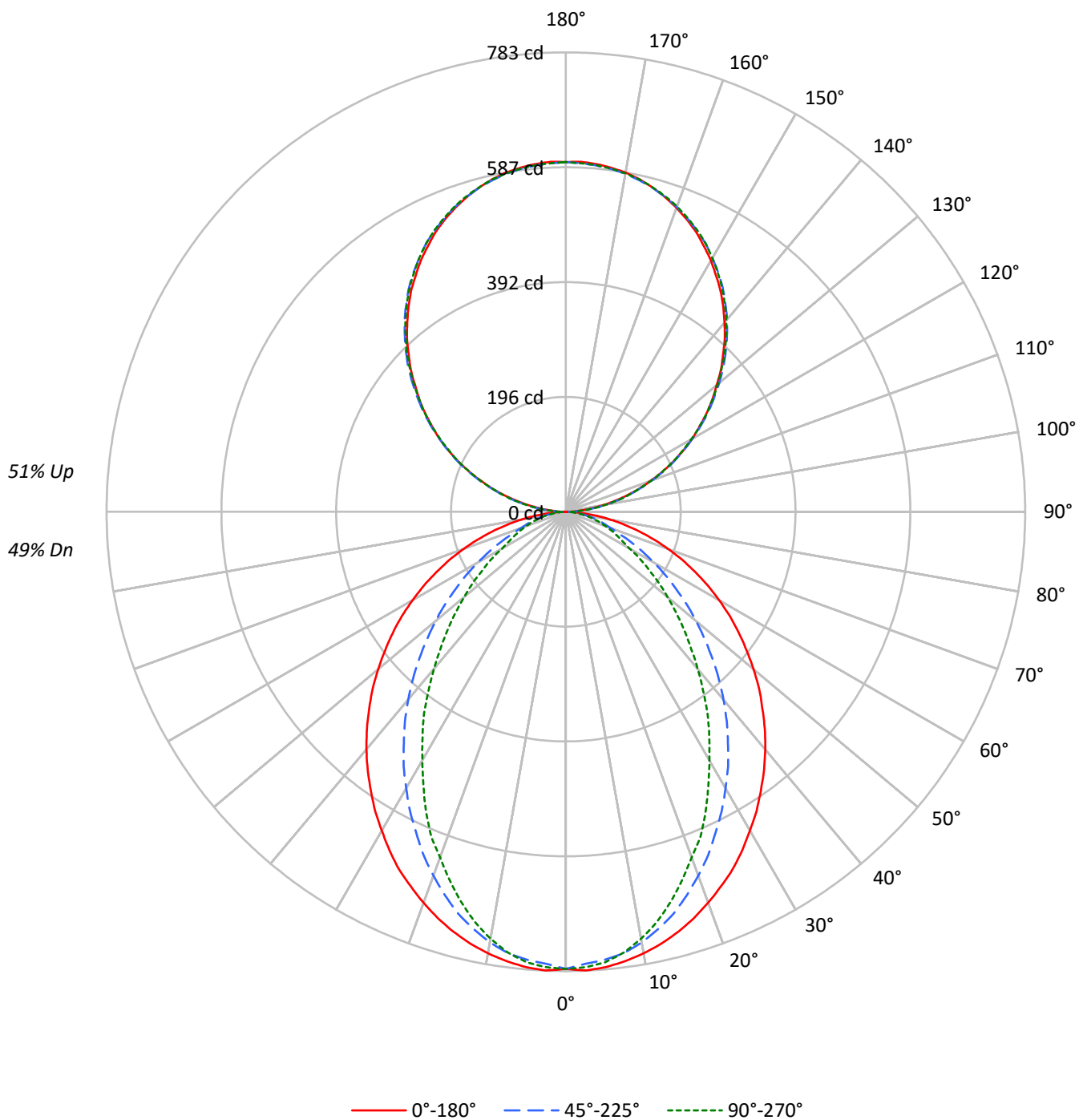
Lumens per Lamp: N/A
Luminaire Lumens: 3270.6 lumens
Efficiency: N/A
Efficacy: 107.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 1.99' x L: 2.3' x H: 0.1')
CIE Type: General Diffuse

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: P902420

CATALOG NUMBER: DFN2DIP-HX2F0-020D020US830-RLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P902420

CATALOG NUMBER: DFN2DIP-HX2F0-020D020US830-RLLFLL

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°	1836	1836	1836
5°	1836	1802	1815
10°	1815	1763	1753
15°	1787	1700	1658
20°	1751	1616	1543
25°	1714	1522	1433
30°	1665	1426	1294
35°	1618	1324	1171
40°	1569	1218	1032
45°	1513	1102	906
50°	1455	984	783
55°	1393	860	665
60°	1322	730	544
65°	1241	599	486
70°	1141	476	435
75°	1016	412	389
80°	836	333	327
85°	547	206	230

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1513 cd/sqm

TEST NUMBER: P902420

CATALOG NUMBER: DFN2DIP-HX2F0-020D020US830-RLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	73.0	2.2
10°-20°	200.4	6.1
20°-30°	281.4	8.6
30°-40°	306.8	9.4
40°-50°	282.0	8.6
50°-60°	221.4	6.8
60°-70°	144.1	4.4
70°-80°	74.2	2.3
80°-90°	20.6	0.6
90°-100°	36.9	1.1
100°-110°	117.2	3.6
110°-120°	200.6	6.1
120°-130°	263.8	8.1
130°-140°	296.1	9.1
140°-150°	290.4	8.9
150°-160°	243.6	7.4
160°-170°	161.5	4.9
170°-180°	56.5	1.7
0°-30°	554.9	17.0
0°-40°	861.7	26.3
0°-60°	1365.1	41.7
0°-90°	1604.0	49.0
90°-120°	354.7	10.8
90°-150°	1205.0	36.8
90°-180°	1667.0	51.0
0°-180°	3270.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	779	779	779	779	779	
5°	779	776	766	773	771	74
15°	741	733	709	696	689	209
25°	673	650	604	575	564	309
35°	580	544	482	437	422	363
45°	474	426	353	302	286	366
55°	360	305	229	187	173	322
65°	243	186	123	99	97	241
75°	130	80	56	52	51	137
85°	30	16	13	13	13	35
90°	1	6	18	16	17	3
95°	26	31	32	32	31	29
105°	108	110	111	112	112	114
115°	201	204	203	203	201	199
125°	293	297	296	294	294	262
135°	379	384	385	385	383	293
145°	460	463	466	467	465	287
155°	526	527	529	531	530	242
165°	572	571	571	575	572	161
175°	595	594	593	596	593	57
180°	596	596	596	596	596	

TEST NUMBER: P902420

CATALOG NUMBER: DFN2DIP-HX2F0-020D020US830-RLFL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	779.1	779.1	779.1	779.1	779.1
2.5°	782.6	779.1	771.3	778.4	777.0
5°	779.1	775.6	766.4	772.8	770.6
7.5°	772.8	768.5	758.7	761.5	757.9
10°	764.3	759.3	745.3	743.1	739.0
12.5°	753.8	747.3	728.3	724.2	716.3
15°	741.0	733.2	709.3	695.9	688.9
17.5°	726.2	714.9	685.3	669.8	658.6
20°	709.3	695.1	660.0	642.3	626.8
22.5°	691.0	674.8	633.9	609.9	599.4
25°	672.7	650.1	603.5	574.7	564.0
27.5°	650.8	626.8	575.3	542.2	525.9
30°	627.5	600.7	544.3	508.4	489.3
32.5°	604.9	572.5	514.7	472.4	454.8
35°	579.6	543.7	481.6	437.2	421.6
37.5°	554.9	516.0	450.5	401.9	384.3
40°	528.8	486.5	418.1	368.1	349.7
42.5°	502.0	456.9	385.7	333.5	315.9
45°	473.8	426.5	352.6	302.5	285.5
47.5°	447.0	397.0	320.8	270.7	255.2
50°	417.5	367.4	289.8	241.1	226.4
52.5°	388.4	335.5	260.1	213.7	200.3
55°	360.2	305.3	229.1	186.9	173.4
57.5°	331.4	274.9	201.7	162.2	150.9
60°	301.8	245.3	172.8	136.9	125.5
62.5°	272.9	216.5	148.1	114.2	108.6
65°	243.3	186.2	122.7	98.8	96.6
67.5°	215.1	157.9	98.8	86.7	84.6
70°	185.4	130.4	81.7	74.7	71.9
72.5°	157.2	105.0	68.3	62.8	61.4
75°	129.7	80.3	56.4	51.5	50.8
77.5°	102.3	57.1	44.4	41.6	40.2
80°	76.8	40.9	33.8	31.0	31.0
82.5°	53.5	27.5	23.3	21.9	21.9
85°	30.3	15.5	13.4	13.4	13.4
87.5°	11.3	5.7	5.7	4.9	4.9
90°	0.6	6.5	17.6	16.5	17.1
92.5°	11.1	15.1	15.6	16.2	16.2
95°	26.2	31.3	32.1	32.1	31.3
97.5°	43.6	48.4	50.3	50.3	50.3
100°	63.8	68.0	69.4	69.4	68.8
102.5°	85.0	88.0	90.0	90.6	90.0
105°	108.2	109.6	110.7	111.6	111.6
107.5°	131.2	133.4	133.4	133.7	131.2
110°	153.5	156.4	156.4	156.4	155.0



TEST NUMBER: P902420

CATALOG NUMBER: DFN2DIP-HX2F0-020D020US830-RLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	177.6	180.6	180.1	178.6	177.6
115°	201.3	204.2	203.3	202.7	201.3
117.5°	224.9	228.8	226.3	224.9	223.4
120°	248.5	252.5	248.5	248.5	246.9
122.5°	270.1	275.1	272.7	271.3	270.1
125°	292.8	297.3	295.9	294.3	293.7
127.5°	314.9	320.5	318.5	316.3	314.9
130°	335.5	342.0	341.1	340.1	338.1
132.5°	358.7	363.8	364.1	361.7	360.1
135°	378.7	384.3	385.3	384.8	383.3
137.5°	401.0	405.5	406.4	406.0	403.9
140°	420.6	425.1	427.6	427.6	425.7
142.5°	440.7	445.2	446.7	447.1	445.2
145°	459.8	463.4	466.3	466.7	464.8
147.5°	476.8	481.4	483.5	484.4	482.4
150°	494.5	497.5	499.5	501.1	499.5
152.5°	510.1	513.1	515.7	517.6	515.7
155°	525.8	527.2	528.8	531.3	529.7
157.5°	539.2	540.3	541.2	544.8	542.2
160°	551.3	552.3	552.9	555.9	553.7
162.5°	562.4	562.4	562.9	566.4	563.8
165°	571.9	571.4	571.4	575.0	572.5
167.5°	580.5	578.9	578.9	582.5	580.0
170°	587.0	585.6	585.0	588.6	585.6
172.5°	591.5	590.0	589.6	593.1	590.0
175°	595.1	593.7	592.6	596.2	593.1
177.5°	597.1	595.7	594.6	597.6	594.6
180°	596.2	596.2	596.2	596.2	596.2

TEST NUMBER: P902420

CATALOG NUMBER: DFN2DIP-HX2F0-020D020US830-RLFL

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	9.03	9.85	10.00	10.83	12.12	5.01	5.83	5.98	6.82	8.10
	3H	10.68	11.41	11.66	12.41	13.71	6.18	6.92	7.17	7.91	9.22
	4H	11.27	11.97	12.27	12.96	14.28	6.62	7.32	7.62	8.31	9.63
	6H	11.67	12.31	12.68	13.31	14.64	6.93	7.57	7.93	8.57	9.90
	8H	11.79	12.39	12.80	13.41	14.74	7.01	7.62	8.02	8.63	9.96
	12H	11.84	12.42	12.86	13.43	14.78	7.05	7.62	8.06	8.63	9.98
4H	2H	9.04	9.74	10.04	10.73	12.05	5.59	6.29	6.60	7.28	8.60
	3H	10.84	11.42	11.85	12.44	13.77	6.92	7.50	7.93	8.52	9.85
	4H	11.51	12.04	12.53	13.06	14.41	7.46	7.98	8.47	9.00	10.35
	6H	12.00	12.46	13.03	13.50	14.85	7.86	8.31	8.89	9.35	10.70
	8H	12.16	12.59	13.20	13.62	14.99	7.97	8.40	9.01	9.43	10.80
	12H	12.25	12.63	13.29	13.67	15.05	8.03	8.41	9.08	9.46	10.83
8H	4H	11.48	11.90	12.51	12.93	14.30	7.72	8.14	8.75	9.17	10.54
	6H	12.01	12.36	13.07	13.44	14.80	8.21	8.56	9.27	9.64	11.00
	8H	12.21	12.52	13.28	13.58	14.96	8.39	8.70	9.45	9.76	11.14
	12H	12.34	12.61	13.40	13.66	15.08	8.50	8.77	9.56	9.82	11.25
12H	4H	11.43	11.81	12.47	12.86	14.23	7.72	8.10	8.77	9.15	10.52
	6H	11.99	12.30	13.05	13.36	14.74	8.26	8.56	9.32	9.62	11.01
	8H	12.19	12.46	13.26	13.51	14.94	8.45	8.72	9.52	9.78	11.20