

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: P902423

Luminaire Tested: DFN2DIP-HX2F0-020D030US830-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P902423
REPORT IS A COMBINATION OF REPORTS P900681 AND P897595
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX2F0-020D030US830-FLLONL
Description: 2 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

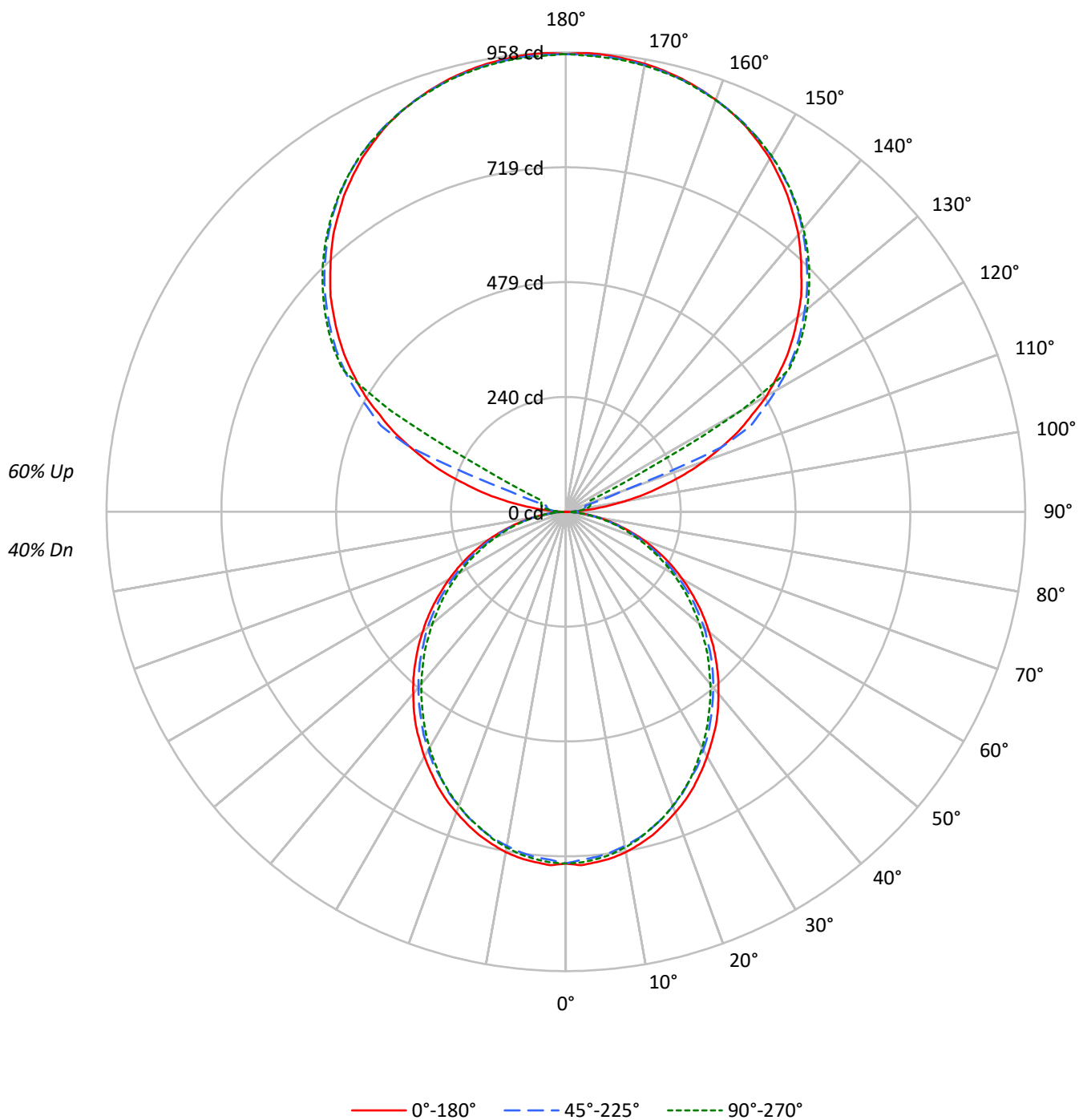
Lumens per Lamp: N/A
Luminaire Lumens: 4665.6 lumens
Efficiency: N/A
Efficacy: 126.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 1.99' x L: 2.3' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 37
Input Voltage (V): 120
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

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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	95	95	95	95	78	78	78	62	62	62	47	47	47
1	96	91	87	84	87	83	80	77	68	66	64	54	53	51	41	41	40
2	87	80	74	69	79	73	68	63	60	56	53	48	45	43	37	35	33
3	79	70	63	57	72	64	58	53	53	48	44	42	39	36	32	30	28
4	73	62	54	48	66	57	50	45	47	42	38	37	34	31	29	26	24
5	67	55	47	41	60	50	44	38	42	37	33	34	30	27	26	23	21
6	61	49	41	36	56	45	38	33	38	32	28	30	26	23	24	21	19
7	57	45	37	31	51	41	34	29	34	29	25	28	24	21	22	19	17
8	52	40	33	27	48	37	30	26	31	26	22	25	21	18	20	17	15
9	49	37	29	24	44	34	27	23	28	23	20	23	19	17	18	15	13
10	46	34	27	22	41	31	25	20	26	21	18	21	18	15	17	14	12

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1728	1728	1728
5°	1728	1700	1712
10°	1712	1673	1686
15°	1683	1641	1647
20°	1647	1599	1606
25°	1610	1549	1560
30°	1565	1502	1503
35°	1522	1448	1442
40°	1469	1393	1384
45°	1417	1338	1325
50°	1359	1279	1256
55°	1298	1212	1192
60°	1230	1133	1119
65°	1154	1050	1033
70°	1059	949	939
75°	928	828	849
80°	768	674	684
85°	520	423	424

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 1417 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	69.0	1.5
10°-20°	194.2	4.2
20°-30°	285.5	6.1
30°-40°	331.5	7.1
40°-50°	331.1	7.1
50°-60°	288.7	6.2
60°-70°	213.4	4.6
70°-80°	120.8	2.6
80°-90°	33.6	0.7
90°-100°	31.5	0.7
100°-110°	117.3	2.5
110°-120°	311.1	6.7
120°-130°	516.0	11.1
130°-140°	548.1	11.7
140°-150°	509.4	10.9
150°-160°	409.6	8.8
160°-170°	263.9	5.7
170°-180°	90.8	1.9
0°-30°	548.7	11.8
0°-40°	880.3	18.9
0°-60°	1500.2	32.2
0°-90°	1867.9	40.0
90°-120°	459.9	9.9
90°-150°	2033.4	43.6
90°-180°	2798.0	60.0
0°-180°	4665.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	734	734	734	734	734	
5°	734	731	723	729	727	70
15°	698	694	685	688	684	197
25°	632	626	614	616	614	291
35°	545	538	527	523	519	340
45°	444	439	428	420	418	342
55°	336	332	323	315	311	300
65°	226	222	215	209	205	224
75°	118	117	114	109	111	126
85°	29	28	28	25	25	32
90°	1	8	14	17	19	4
95°	45	22	27	30	30	53
105°	210	231	42	50	52	224
115°	397	409	426	106	57	391
125°	561	570	584	588	590	501
135°	695	706	712	719	718	537
145°	806	805	817	822	818	504
155°	887	881	889	894	888	409
165°	935	931	933	938	933	264
175°	956	952	953	958	951	91
180°	954	954	954	954	954	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	733.5	733.5	733.5	733.5	733.5
2.5°	737.7	734.2	726.4	733.5	732.2
5°	733.5	730.8	722.9	728.6	727.2
7.5°	728.6	724.3	716.6	722.3	720.9
10°	720.9	716.0	707.5	713.0	711.0
12.5°	710.2	706.1	697.6	701.1	699.6
15°	698.2	694.1	684.9	687.7	684.2
17.5°	683.4	679.3	670.1	673.5	670.1
20°	667.2	663.0	653.1	655.3	652.4
22.5°	651.0	644.7	635.5	635.5	634.0
25°	632.0	626.3	614.3	615.7	614.3
27.5°	610.8	605.9	596.7	594.6	591.1
30°	589.7	584.0	573.4	571.4	568.4
32.5°	567.0	562.9	551.6	547.3	544.5
35°	545.3	538.2	526.9	522.6	519.1
37.5°	520.6	514.2	502.8	497.9	494.4
40°	495.1	489.5	478.2	471.9	469.0
42.5°	470.4	464.8	453.6	446.5	442.2
45°	443.7	438.8	428.1	420.4	417.5
47.5°	417.5	412.6	401.3	393.5	389.4
50°	390.0	386.5	376.6	366.7	363.3
52.5°	363.3	358.3	349.1	341.4	336.5
55°	335.7	331.5	323.0	314.6	311.0
57.5°	308.2	304.7	295.5	287.1	284.2
60°	280.7	278.0	268.1	260.2	258.2
62.5°	253.9	248.9	242.0	234.9	232.1
65°	226.4	222.2	215.2	208.8	205.3
67.5°	198.2	194.6	188.3	183.4	180.6
70°	172.1	169.3	162.9	158.0	155.2
72.5°	145.3	142.5	138.9	134.0	132.0
75°	118.5	117.2	113.5	109.3	110.7
77.5°	94.5	91.7	90.2	88.1	86.1
80°	70.6	69.8	68.4	66.3	64.8
82.5°	48.0	48.0	47.3	44.5	44.5
85°	28.8	28.2	27.5	25.4	24.7
87.5°	12.7	11.3	9.9	7.8	7.1
90°	0.7	8.3	13.8	17.3	18.6
92.5°	17.3	14.5	16.6	18.0	18.6
95°	44.9	22.1	26.9	30.4	29.7
97.5°	80.8	24.2	35.2	37.3	38.0
100°	122.2	27.6	39.4	44.9	46.3
102.5°	167.8	166.5	40.7	48.3	50.4
105°	209.9	230.6	42.1	49.7	52.5
107.5°	258.9	276.2	43.5	51.1	53.9
110°	305.9	320.4	120.8	51.8	54.6



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	350.2	362.5	350.8	53.2	55.2
115°	397.0	408.8	426.0	106.3	56.6
117.5°	437.8	451.6	463.4	364.6	183.7
120°	483.3	493.7	506.1	514.4	421.2
122.5°	522.0	533.1	547.0	551.0	551.8
125°	561.4	570.3	583.5	588.3	590.4
127.5°	597.3	606.9	617.4	624.2	624.9
130°	631.1	642.2	649.8	657.3	656.8
132.5°	665.6	674.7	682.2	688.4	687.8
135°	694.7	705.8	711.9	718.9	717.5
137.5°	725.0	733.3	740.3	747.2	745.1
140°	754.7	760.3	767.8	774.0	770.6
142.5°	779.7	784.5	793.4	798.9	795.5
145°	805.9	805.1	816.9	821.7	818.2
147.5°	828.6	826.5	838.3	841.7	839.0
150°	850.7	845.9	857.0	861.0	857.6
152.5°	869.3	863.8	874.2	878.4	873.5
155°	887.3	881.2	889.4	893.5	888.1
157.5°	901.8	896.4	902.6	907.4	901.8
160°	914.3	910.1	914.3	918.4	913.5
162.5°	925.3	921.1	924.6	929.4	923.2
165°	934.9	930.9	932.9	937.7	932.9
167.5°	942.5	938.4	940.5	945.4	939.1
170°	948.8	944.6	946.0	950.8	944.6
172.5°	952.9	948.8	950.2	955.0	948.8
175°	956.3	951.5	952.9	957.7	950.8
177.5°	957.7	952.9	953.7	958.5	952.3
180°	954.3	954.3	954.3	954.3	954.3

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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	8.04	8.82	9.08	9.86	11.27	7.62	8.39	8.65	9.44	10.85
	3H	9.67	10.36	10.72	11.42	12.84	9.21	9.91	10.26	10.96	12.38
	4H	10.23	10.90	11.29	11.95	13.38	9.78	10.44	10.84	11.49	12.93
	6H	10.61	11.22	11.68	12.28	13.72	10.15	10.76	11.22	11.82	13.26
	8H	10.70	11.28	11.78	12.36	13.80	10.25	10.83	11.32	11.90	13.34
	12H	10.74	11.29	11.82	12.36	13.82	10.28	10.83	11.36	11.90	13.36
4H	2H	8.48	9.14	9.55	10.20	11.63	8.14	8.80	9.21	9.86	11.29
	3H	10.31	10.86	11.38	11.94	13.39	9.93	10.48	11.00	11.56	13.01
	4H	11.00	11.51	12.08	12.58	14.05	10.61	11.11	11.69	12.19	13.65
	6H	11.49	11.92	12.58	13.02	14.48	11.09	11.53	12.18	12.62	14.08
	8H	11.62	12.03	12.71	13.12	14.60	11.23	11.63	12.31	12.72	14.20
	12H	11.68	12.05	12.79	13.15	14.63	11.28	11.64	12.38	12.75	14.23
8H	4H	11.18	11.59	12.27	12.67	14.15	10.83	11.23	11.92	12.32	13.80
	6H	11.78	12.11	12.89	13.24	14.72	11.43	11.76	12.54	12.89	14.37
	8H	11.98	12.28	13.10	13.39	14.88	11.63	11.92	12.74	13.03	14.53
	12H	12.09	12.35	13.21	13.46	14.99	11.72	11.98	12.85	13.09	14.62
12H	4H	11.16	11.53	12.27	12.63	14.11	10.81	11.18	11.92	12.28	13.77
	6H	11.80	12.10	12.92	13.21	14.70	11.46	11.75	12.58	12.87	14.36
	8H	12.02	12.28	13.14	13.39	14.92	11.68	11.93	12.80	13.04	14.58

END OF REPORT