

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: P905168

Luminaire Tested: DFN2DIP-HX2F0-030D020US835-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P905168
REPORT IS A COMBINATION OF REPORTS P899154 AND P896039
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX2F0-030D020US835-RLLFLL
Description: 2 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

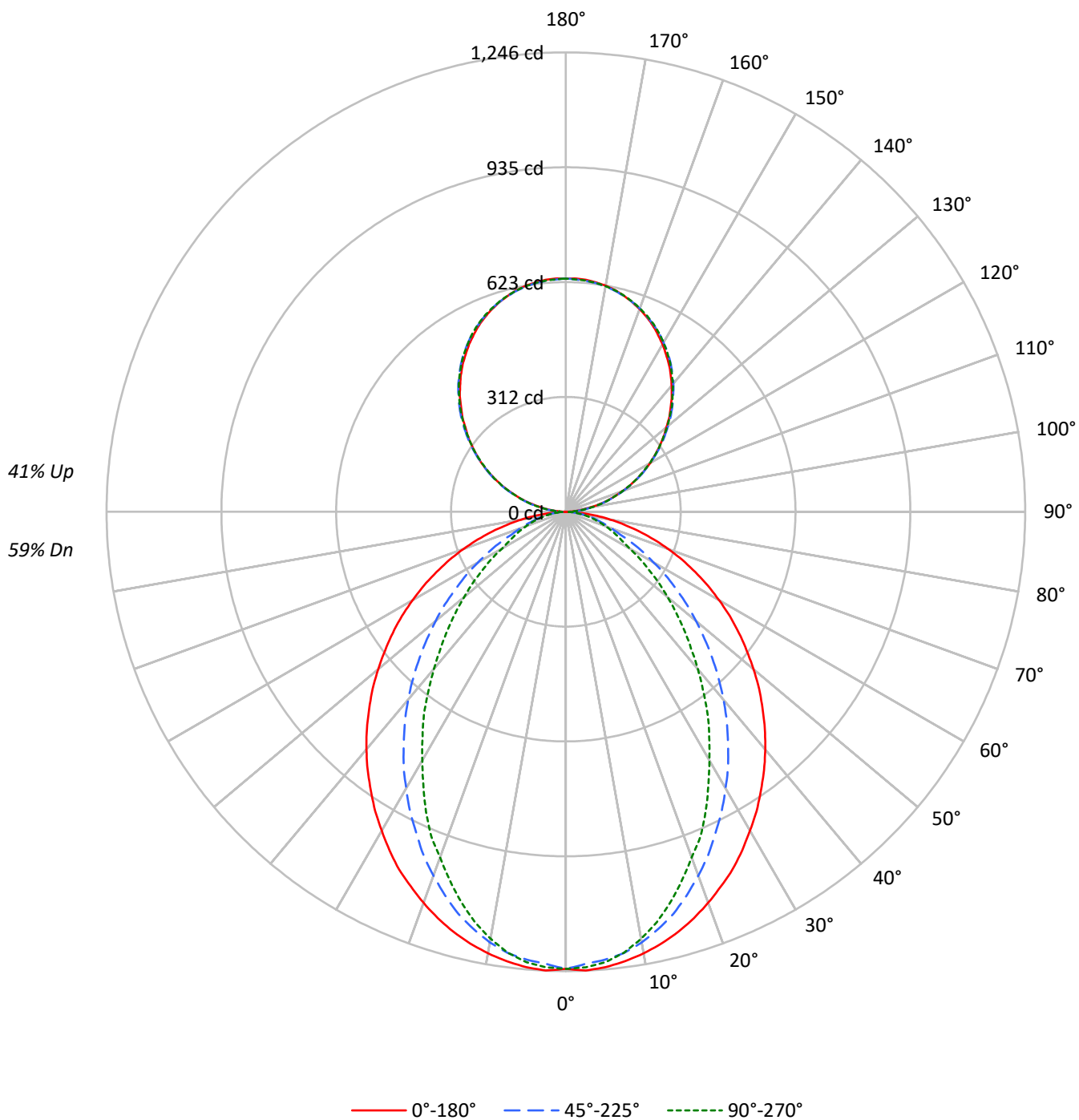
Lumens per Lamp: N/A
Luminaire Lumens: 4320.0 lumens
Efficiency: N/A
Efficacy: 106.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 1.99' x L: 2.3' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 40.5
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9951
Total Harmonic Distortion (THDi): 0.07
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P905168

CATALOG NUMBER: DFN2DIP-HX2F0-030D020US835-RLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P905168

CATALOG NUMBER: DFN2DIP-HX2F0-030D020US835-RLFL

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	109	109	109	109	102	102	102	102	88	88	88	76	76	76	64	64	64
1	100	96	92	89	94	90	87	84	78	76	74	68	66	64	58	57	56
2	92	85	79	74	86	79	74	70	69	65	62	60	57	55	52	50	48
3	84	75	68	62	78	70	64	59	62	57	53	54	50	47	46	44	41
4	77	67	59	53	72	63	56	51	55	50	46	48	44	41	42	39	36
5	71	60	52	46	66	56	49	44	50	44	40	44	39	36	38	34	32
6	66	54	46	40	61	51	44	39	45	39	35	40	35	32	35	31	28
7	61	49	41	36	57	46	39	34	41	35	31	36	32	28	32	28	25
8	57	45	37	32	53	42	35	30	38	32	28	33	29	25	29	26	23
9	53	41	34	29	50	39	32	27	35	29	25	31	26	23	27	24	21
10	50	38	31	26	47	36	29	25	32	27	23	29	24	21	25	22	19

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2921	2921	2921
5°	2921	2868	2888
10°	2888	2805	2789
15°	2843	2705	2639
20°	2786	2571	2456
25°	2728	2422	2280
30°	2650	2270	2059
35°	2575	2107	1864
40°	2497	1939	1643
45°	2408	1753	1442
50°	2315	1567	1246
55°	2217	1368	1058
60°	2104	1162	866
65°	1974	953	774
70°	1816	758	692
75°	1616	655	619
80°	1331	530	522
85°	870	327	366

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2408 cd/sqm

TEST NUMBER: P905168

CATALOG NUMBER: DFN2DIP-HX2F0-030D020US835-RLFL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	116.2	2.7
10°-20°	319.0	7.4
20°-30°	447.9	10.4
30°-40°	488.2	11.3
40°-50°	448.7	10.4
50°-60°	352.4	8.2
60°-70°	229.4	5.3
70°-80°	118.1	2.7
80°-90°	31.9	0.7
90°-100°	39.1	0.9
100°-110°	124.4	2.9
110°-120°	212.8	4.9
120°-130°	279.9	6.5
130°-140°	314.2	7.3
140°-150°	308.1	7.1
150°-160°	258.4	6.0
160°-170°	171.4	4.0
170°-180°	59.9	1.4
0°-30°	883.1	20.4
0°-40°	1371.3	31.7
0°-60°	2172.4	50.3
0°-90°	2551.8	59.1
90°-120°	376.3	8.7
90°-150°	1278.5	29.6
90°-180°	1768.0	40.9
0°-180°	4320.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1240	1240	1240	1240	1240	
5°	1240	1234	1220	1230	1226	118
15°	1179	1167	1129	1108	1096	332
25°	1070	1034	960	914	898	492
35°	922	865	766	696	671	577
45°	754	679	561	481	454	582
55°	573	486	365	297	276	512
65°	387	296	195	157	154	384
75°	206	128	90	82	81	218
85°	48	25	21	21	21	55
90°	1	7	19	18	18	4
95°	28	33	34	34	33	31
105°	115	116	118	118	118	121
115°	214	217	216	215	214	211
125°	311	315	314	312	312	278
135°	402	408	409	408	407	311
145°	488	492	495	495	493	305
155°	558	559	561	564	562	257
165°	607	606	606	610	607	171
175°	631	630	629	632	629	60
180°	632	632	632	632	632	

TEST NUMBER: P905168

CATALOG NUMBER: DFN2DIP-HX2F0-030D020US835-RLFL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1239.9	1239.9	1239.9	1239.9	1239.9
2.5°	1245.5	1239.9	1227.5	1238.8	1236.6
5°	1239.9	1234.3	1219.7	1229.8	1226.4
7.5°	1229.8	1223.1	1207.4	1211.8	1206.2
10°	1216.3	1208.5	1186.1	1182.6	1176.0
12.5°	1199.5	1189.4	1159.1	1152.4	1140.0
15°	1179.3	1166.9	1128.8	1107.5	1096.3
17.5°	1155.7	1137.8	1090.6	1066.0	1048.0
20°	1128.8	1106.3	1050.2	1022.3	997.5
22.5°	1099.7	1073.8	1008.7	970.6	953.8
25°	1070.5	1034.5	960.5	914.5	897.6
27.5°	1035.7	997.5	915.6	862.9	837.0
30°	998.7	956.0	866.2	809.1	778.7
32.5°	962.7	911.1	819.2	751.8	723.7
35°	922.4	865.1	766.4	695.7	671.0
37.5°	883.1	821.3	717.0	639.5	611.6
40°	841.6	774.3	665.4	585.7	556.6
42.5°	798.9	727.2	613.8	530.7	502.7
45°	754.1	678.8	561.1	481.3	454.4
47.5°	711.4	631.8	510.6	430.8	406.2
50°	664.3	584.6	461.2	383.7	360.2
52.5°	618.2	534.1	414.1	340.0	318.7
55°	573.3	485.8	364.6	297.4	276.1
57.5°	527.4	437.6	321.0	258.1	240.1
60°	480.2	390.5	274.9	217.7	199.8
62.5°	434.3	344.5	235.6	181.8	172.9
65°	387.1	296.2	195.2	157.1	153.7
67.5°	342.3	251.3	157.1	138.0	134.6
70°	295.1	207.6	130.1	118.9	114.4
72.5°	250.2	167.1	108.8	99.9	97.6
75°	206.4	127.9	89.8	81.9	80.8
77.5°	162.7	90.8	70.7	66.2	63.9
80°	122.3	65.1	53.8	49.4	49.4
82.5°	85.2	43.8	37.0	34.8	34.8
85°	48.2	24.6	21.3	21.3	21.3
87.5°	18.0	8.9	8.9	7.9	7.9
90°	0.6	6.9	18.7	17.5	18.1
92.5°	11.8	16.0	16.6	17.2	17.2
95°	27.8	33.2	34.1	34.1	33.2
97.5°	46.3	51.3	53.4	53.4	53.4
100°	67.7	72.1	73.6	73.6	73.0
102.5°	90.2	93.4	95.5	96.1	95.5
105°	114.8	116.3	117.5	118.4	118.4
107.5°	139.2	141.5	141.5	141.9	139.2
110°	162.9	165.9	165.9	165.9	164.4

TEST NUMBER: P905168

CATALOG NUMBER: DFN2DIP-HX2F0-030D020US835-RLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	188.4	191.6	191.1	189.5	188.4
115°	213.6	216.6	215.7	215.1	213.6
117.5°	238.6	242.8	240.1	238.6	237.0
120°	263.7	267.9	263.7	263.7	262.0
122.5°	286.6	291.9	289.3	287.8	286.6
125°	310.6	315.4	313.9	312.2	311.6
127.5°	334.1	340.0	337.9	335.6	334.1
130°	356.0	362.9	361.9	360.8	358.7
132.5°	380.6	386.0	386.3	383.7	382.1
135°	401.8	407.7	408.8	408.3	406.7
137.5°	425.4	430.2	431.2	430.8	428.5
140°	446.2	451.0	453.7	453.7	451.6
142.5°	467.6	472.3	473.9	474.4	472.3
145°	487.8	491.6	494.7	495.2	493.1
147.5°	505.9	510.7	513.0	513.9	511.8
150°	524.6	527.8	529.9	531.6	529.9
152.5°	541.2	544.4	547.1	549.2	547.1
155°	557.8	559.3	561.0	563.7	562.0
157.5°	572.1	573.2	574.2	578.0	575.3
160°	584.9	586.0	586.6	589.8	587.5
162.5°	596.7	596.7	597.2	600.9	598.2
165°	606.8	606.2	606.2	610.0	607.4
167.5°	615.9	614.2	614.2	618.0	615.4
170°	622.8	621.3	620.7	624.5	621.3
172.5°	627.6	626.0	625.5	629.3	626.0
175°	631.4	629.9	628.7	632.5	629.3
177.5°	633.5	632.0	630.8	634.0	630.8
180°	632.5	632.5	632.5	632.5	632.5

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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	11.54	12.45	12.42	13.35	14.49	7.52	8.43	8.41	9.33	10.47
	3H	13.20	14.01	14.09	14.92	16.08	8.70	9.52	9.60	10.42	11.59
	4H	13.79	14.56	14.70	15.48	16.65	9.14	9.91	10.05	10.82	12.00
	6H	14.20	14.91	15.12	15.83	17.01	9.45	10.16	10.38	11.08	12.27
	8H	14.32	14.99	15.25	15.93	17.11	9.54	10.21	10.47	11.15	12.33
	12H	14.37	15.01	15.31	15.94	17.15	9.58	10.22	10.51	11.15	12.36
4H	2H	11.56	12.33	12.48	13.25	14.42	8.11	8.88	9.03	9.80	10.97
	3H	13.37	14.01	14.30	14.96	16.14	9.45	10.09	10.38	11.03	12.22
	4H	14.05	14.63	14.98	15.57	16.78	9.99	10.57	10.92	11.51	12.72
	6H	14.54	15.04	15.49	16.01	17.22	10.39	10.89	11.34	11.86	13.07
	8H	14.71	15.17	15.66	16.13	17.36	10.51	10.98	11.47	11.94	13.17
	12H	14.79	15.21	15.76	16.19	17.42	10.57	10.99	11.54	11.97	13.20
8H	4H	14.02	14.49	14.97	15.44	16.67	10.26	10.73	11.21	11.68	12.91
	6H	14.56	14.95	15.54	15.94	17.17	10.76	11.14	11.73	12.14	13.37
	8H	14.76	15.10	15.75	16.09	17.33	10.94	11.28	11.92	12.26	13.51
	12H	14.88	15.18	15.87	16.17	17.46	11.04	11.34	12.03	12.33	13.62
12H	4H	13.97	14.39	14.94	15.37	16.60	10.26	10.68	11.23	11.66	12.89
	6H	14.53	14.87	15.52	15.86	17.11	10.80	11.14	11.79	12.13	13.37
	8H	14.74	15.04	15.73	16.02	17.31	11.00	11.30	11.99	12.28	13.57