

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: P905250

Luminaire Tested: DFN2DIP-HX3F0-030D040US835-FLLFLL

Issue Date: 11/21/2024

**Test Information**

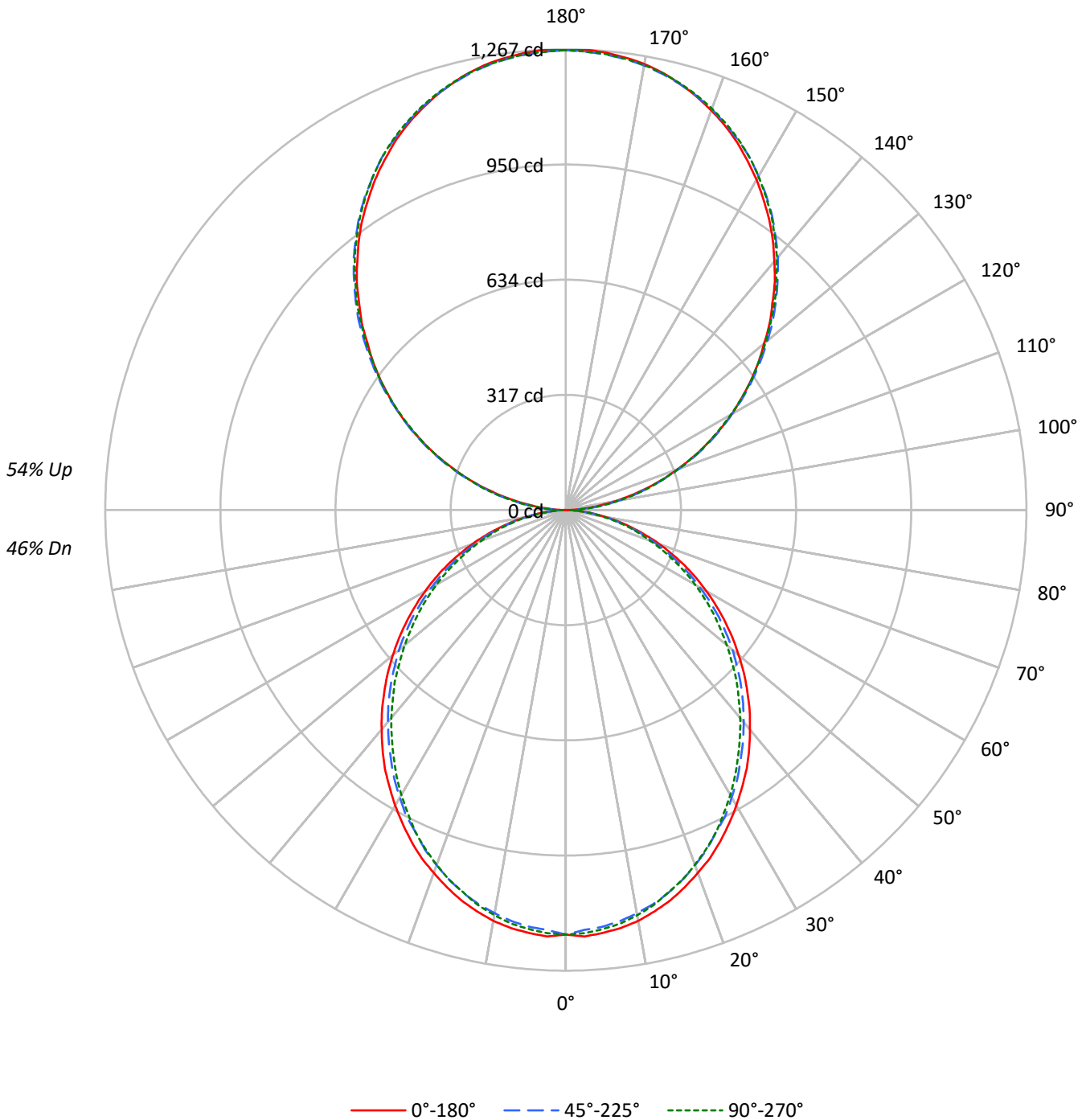
Test Method: LM-79-2019  
Report Number: P905250  
REPORT IS A COMBINATION OF REPORTS P899215 AND P896089  
Test Lab: INNOVATION CENTER  
Issue Date: 11/21/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: DFN2DIP-HX3F0-030D040US835-FLLFLL  
Description: 3 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens  
Light Source: -  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 6510.0 lumens  
Efficiency: N/A  
Efficacy: 121.9 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29  
Luminous Opening: Rectangular w/ Sides (W: 2.84' x L: 3.28' x H: 0.1')  
CIE Type: General Diffuse  
  
Input Watts (W): 53.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: 0.983  
Total Harmonic Distortion (THDi): 0.073  
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			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	106	106	106	106	97	97	97	97	81	81	81	66	66	66	52	52	52	46	46	46	46
1	97	93	89	85	89	85	82	79	71	69	66	58	56	55	46	45	44	38	38	38	38
2	88	81	75	70	81	74	69	65	62	58	55	51	48	46	41	39	37	32	32	32	32
3	80	71	64	58	73	65	59	54	55	50	46	45	42	39	36	34	32	27	27	27	27
4	74	63	55	49	67	58	51	46	49	43	39	40	36	33	32	29	27	23	23	23	23
5	67	56	48	42	62	52	45	39	44	38	34	36	32	29	29	26	24	20	20	20	20
6	62	50	42	36	57	46	39	34	39	34	30	33	28	25	26	23	21	18	18	18	18
7	57	45	37	32	53	42	35	30	36	30	26	30	25	22	24	21	19	16	16	16	16
8	53	41	33	28	49	38	31	26	32	27	23	27	23	20	22	19	17	14	14	14	14
9	50	37	30	25	45	35	28	24	30	24	21	25	21	18	20	17	15	13	13	13	13
10	46	34	27	22	42	32	25	21	27	22	19	23	19	16	19	16	14	12	12	12	12

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	1352	1352	1352
5°	1354	1332	1342
10°	1342	1314	1323
15°	1322	1291	1293
20°	1294	1260	1264
25°	1267	1223	1229
30°	1233	1189	1186
35°	1201	1148	1140
40°	1162	1107	1096
45°	1122	1066	1051
50°	1079	1023	1000
55°	1034	974	952
60°	983	915	897
65°	927	853	833
70°	856	779	763
75°	757	689	697
80°	639	574	574
85°	453	380	372

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 90°  
 Vertical Angle: 90°  
 Luminance: 1189 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	109.9	1.7
10°-20°	309.1	4.7
20°-30°	454.3	7.0
30°-40°	527.6	8.1
40°-50°	527.0	8.1
50°-60°	459.5	7.1
60°-70°	339.7	5.2
70°-80°	192.2	3.0
80°-90°	54.3	0.8
90°-100°	78.3	1.2
100°-110°	248.7	3.8
110°-120°	425.6	6.5
120°-130°	559.8	8.6
130°-140°	628.3	9.7
140°-150°	616.2	9.5
150°-160°	516.9	7.9
160°-170°	342.8	5.3
170°-180°	119.8	1.8
0°-30°	873.3	13.4
0°-40°	1400.9	21.5
0°-60°	2387.4	36.7
0°-90°	2973.6	45.7
90°-120°	752.7	11.6
90°-150°	2556.9	39.3
90°-180°	3536.0	54.3
0°-180°	6510.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1167	1167	1167	1167	1167	
5°	1167	1163	1150	1160	1157	111
15°	1111	1105	1090	1094	1089	313
25°	1006	997	978	980	978	463
35°	868	856	838	832	826	542
45°	706	698	681	669	664	545
55°	534	528	514	501	495	478
65°	360	354	342	332	327	356
75°	188	186	181	174	176	201
85°	46	45	44	40	39	51
90°	1	14	37	35	36	6
95°	56	66	68	68	66	62
105°	230	233	235	237	237	242
115°	427	433	431	430	427	422
125°	621	631	628	624	623	555
135°	804	815	818	816	814	621
145°	976	983	989	990	986	610
155°	1116	1119	1122	1127	1124	513
165°	1214	1212	1212	1220	1215	342
175°	1263	1260	1257	1265	1259	120
180°	1265	1265	1265	1265	1265	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1167.3	1167.3	1167.3	1167.3	1167.3
2.5°	1174.1	1168.5	1156.1	1167.3	1165.2
5°	1167.3	1162.9	1150.5	1159.5	1157.3
7.5°	1159.5	1152.8	1140.4	1149.5	1147.2
10°	1147.2	1139.3	1125.9	1134.8	1131.5
12.5°	1130.3	1123.6	1110.2	1115.7	1113.5
15°	1111.2	1104.6	1089.9	1094.4	1088.8
17.5°	1087.6	1081.0	1066.3	1071.9	1066.3
20°	1061.8	1055.1	1039.4	1042.7	1038.3
22.5°	1036.1	1026.0	1011.3	1011.3	1009.0
25°	1005.7	996.8	977.7	979.9	977.7
27.5°	972.0	964.1	949.6	946.3	940.7
30°	938.4	929.4	912.6	909.2	904.7
32.5°	902.5	895.8	877.8	871.0	866.5
35°	867.7	856.5	838.5	831.7	826.1
37.5°	828.4	818.3	800.3	792.4	786.8
40°	788.0	779.0	761.0	751.0	746.5
42.5°	748.7	739.7	721.8	710.5	703.8
45°	706.1	698.2	681.3	669.0	664.5
47.5°	664.5	656.7	638.7	626.3	619.6
50°	620.7	615.1	599.4	583.7	578.1
52.5°	578.1	570.2	555.7	543.3	535.4
55°	534.4	527.6	514.1	500.7	495.1
57.5°	490.5	484.9	470.3	456.8	452.3
60°	446.7	442.3	426.6	414.2	410.9
62.5°	404.1	396.2	385.0	373.8	369.3
65°	360.4	353.6	342.4	332.3	326.7
67.5°	315.5	309.8	299.7	291.9	287.4
70°	273.9	269.4	259.3	251.4	247.0
72.5°	231.3	226.7	221.1	213.3	210.0
75°	188.5	186.4	180.7	174.0	176.3
77.5°	150.4	145.9	143.6	140.3	137.0
80°	112.3	111.1	108.8	105.5	103.3
82.5°	76.3	76.3	75.3	70.7	70.7
85°	46.0	44.9	43.8	40.4	39.3
87.5°	20.2	18.0	15.7	12.4	11.2
90°	1.1	13.7	37.4	35.1	36.2
92.5°	23.6	32.0	33.2	34.3	34.3
95°	55.7	66.4	68.3	68.3	66.4
97.5°	92.7	102.6	106.8	106.8	106.8
100°	135.4	144.2	147.2	147.2	146.1
102.5°	180.4	186.9	191.1	192.2	191.1
105°	229.6	232.6	234.9	236.8	236.8
107.5°	278.4	283.0	283.0	283.7	278.4
110°	325.7	331.8	331.8	331.8	328.8



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	376.8	383.3	382.1	379.1	376.8
115°	427.1	433.3	431.3	430.2	427.1
117.5°	477.1	485.5	480.2	477.1	474.1
120°	527.5	535.8	527.5	527.5	524.0
122.5°	573.2	583.9	578.6	575.5	573.2
125°	621.3	630.8	627.8	624.3	623.2
127.5°	668.2	680.0	675.8	671.2	668.2
130°	712.0	725.8	723.9	721.6	717.4
132.5°	761.2	771.9	772.7	767.3	764.3
135°	803.6	815.4	817.7	816.5	813.5
137.5°	850.9	860.4	862.3	861.5	857.0
140°	892.4	902.0	907.3	907.3	903.1
142.5°	935.2	944.7	947.7	948.9	944.7
145°	975.6	983.2	989.3	990.5	986.3
147.5°	1011.8	1021.3	1025.9	1027.8	1023.6
150°	1049.2	1055.7	1059.9	1063.3	1059.9
152.5°	1082.4	1088.8	1094.2	1098.4	1094.2
155°	1115.5	1118.6	1122.0	1127.4	1123.9
157.5°	1144.2	1146.4	1148.3	1156.0	1150.6
160°	1169.7	1172.0	1173.1	1179.6	1175.0
162.5°	1193.3	1193.3	1194.5	1201.7	1196.4
165°	1213.6	1212.4	1212.4	1220.0	1214.7
167.5°	1231.9	1228.4	1228.4	1236.1	1230.7
170°	1245.6	1242.5	1241.4	1249.0	1242.5
172.5°	1255.1	1252.1	1250.9	1258.6	1252.1
175°	1262.8	1259.7	1257.4	1265.0	1258.6
177.5°	1267.0	1263.9	1261.6	1268.1	1261.6
180°	1265.0	1265.0	1265.0	1265.0	1265.0



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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	7.86	8.68	8.85	9.69	11.02	7.43	8.26	8.43	9.26	10.59
	3H	9.51	10.25	10.52	11.26	12.62	9.04	9.78	10.05	10.79	12.15
	4H	10.09	10.79	11.11	11.81	13.17	9.62	10.32	10.64	11.34	12.70
	6H	10.48	11.13	11.51	12.15	13.52	10.01	10.66	11.04	11.68	13.05
	8H	10.58	11.20	11.62	12.24	13.60	10.12	10.73	11.15	11.77	13.14
	12H	10.63	11.21	11.67	12.24	13.64	10.15	10.74	11.19	11.77	13.16
4H	2H	8.32	9.01	9.34	10.03	11.39	7.97	8.67	9.00	9.69	11.05
	3H	10.17	10.75	11.20	11.80	13.17	9.78	10.36	10.81	11.41	12.78
	4H	10.88	11.41	11.91	12.45	13.84	10.47	11.01	11.51	12.05	13.44
	6H	11.38	11.84	12.43	12.90	14.29	10.98	11.44	12.03	12.50	13.89
	8H	11.53	11.96	12.58	13.01	14.42	11.12	11.55	12.17	12.60	14.01
	12H	11.59	11.98	12.66	13.05	14.46	11.18	11.57	12.25	12.63	14.05
8H	4H	11.07	11.50	12.12	12.55	13.96	10.71	11.14	11.76	12.19	13.60
	6H	11.69	12.04	12.76	13.14	14.54	11.33	11.68	12.40	12.78	14.18
	8H	11.90	12.21	12.98	13.29	14.72	11.54	11.85	12.62	12.93	14.35
	12H	12.03	12.30	13.11	13.38	14.84	11.65	11.92	12.73	13.00	14.46
12H	4H	11.05	11.44	12.12	12.51	13.92	10.70	11.09	11.77	12.16	13.57
	6H	11.71	12.03	12.80	13.11	14.53	11.37	11.68	12.45	12.76	14.18
	8H	11.95	12.22	13.03	13.30	14.76	11.60	11.87	12.68	12.94	14.41