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## HAWKO LIGHTING

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LumCAT: ECOFLEX-IP20-4000K

Luminaire: LED Strip light

Report No: BSR1507070101-9

Voltage(V): 23.9900

Test No: BSR1507070101-9

Current(A): 0.1800

LampCAT:

Power (W): 4.3200

Lamp flux(lm)

PF: 1.0000

Number of Lamps: 60

Ballast type:

Length(mm): 0

Width(mm): 0

Phm Type: C

Height(mm): 0

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## Photometric Results

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Lumens(lm): 382.56

Lumens(lm)/Power(W): 88.55

Central intensity(cd): 125.444

Maximum intensity(cd): 125.968

Angle of maximum intensity:  $C=22.5$   $\gamma=5.0$

Beam Angle(50%Imax): [C0/180]Total=113.8

[C90/270]Total=112.5

Field angle(10%Imax): [C0/180]Total=162.7

[C90/270]Total=182.6

Maximum s/h(1/2): C0\_180=1.28 C90\_270=1.26

Maximum s/h(1/4): C0\_180=2.58 C90\_270=1.96

Up flux rate of LUM(%): 2.54%

Down flux rate of LUM(%): 97.46%

CIE Type : Direct lighting

Output flux ratio in  $\pi$  solid angle : 73.992%

# HAWKO LIGHTING ECOFLEX-IP20-4000K

Zonal flux distribution table

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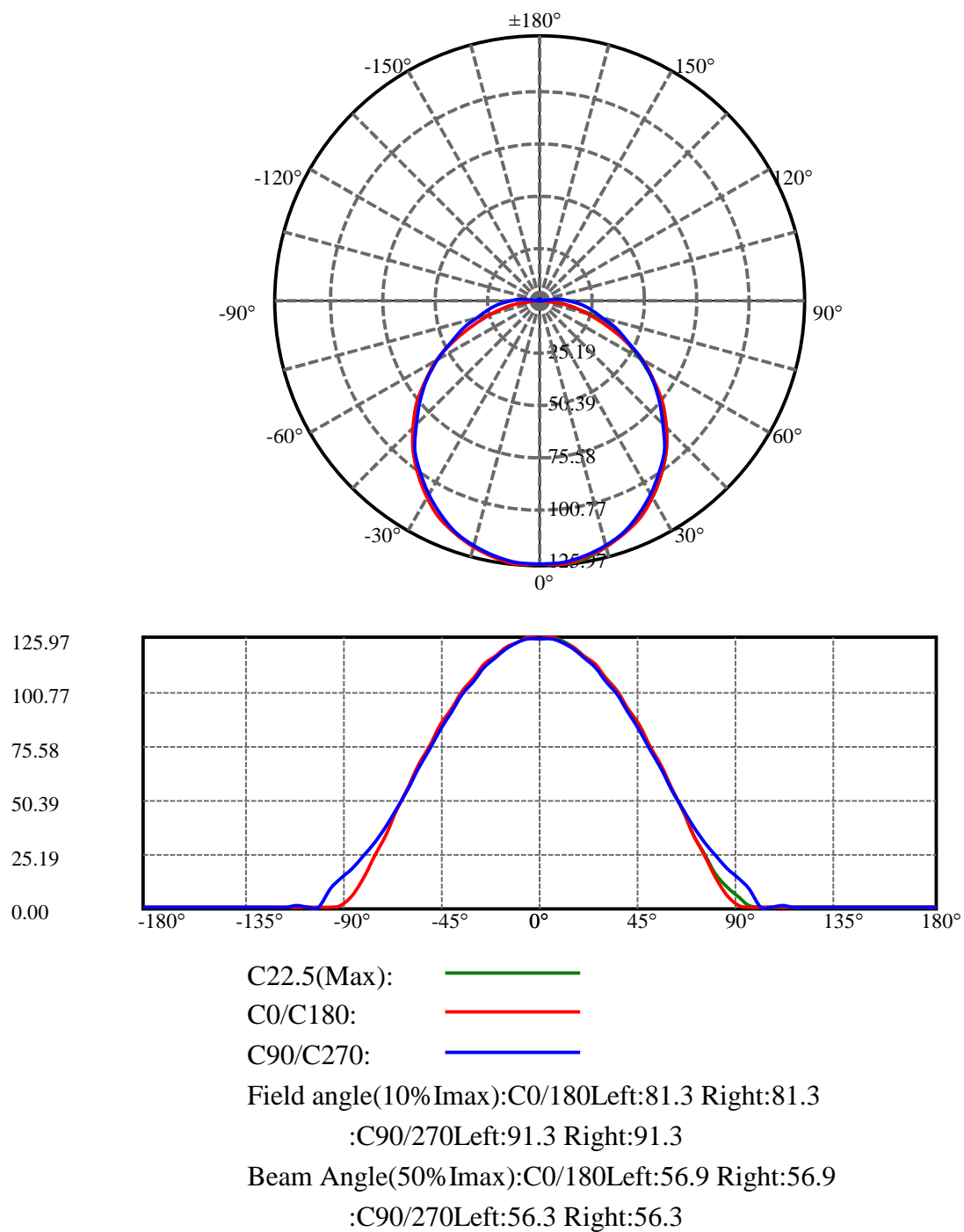
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	125.444	.000	.000	.000%	.000%
5.0	124.990	2.994	2.994	.783%	.783%
10.0	123.245	8.880	11.874	2.321%	3.104%
15.0	120.483	14.458	26.332	3.779%	6.883%
20.0	116.585	19.538	45.870	5.107%	11.990%
25.0	111.912	23.965	69.835	6.264%	18.255%
30.0	106.138	27.594	97.429	7.213%	25.468%
35.0	99.623	30.300	127.729	7.920%	33.388%
40.0	92.200	32.004	159.733	8.366%	41.754%
45.0	84.081	32.640	192.373	8.532%	50.286%
50.0	74.969	32.138	224.511	8.401%	58.687%
55.0	65.484	30.539	255.050	7.983%	66.670%
60.0	55.703	28.012	283.062	7.322%	73.992%
65.0	45.612	24.630	307.692	6.438%	80.430%
70.0	36.036	20.674	328.366	5.404%	85.834%
75.0	27.393	16.579	344.945	4.334%	90.168%
80.0	19.830	12.636	357.581	3.303%	93.471%
85.0	13.698	9.110	366.691	2.381%	95.853%
90.0	8.800	6.160	372.851	1.610%	97.463%
95.0	5.005	3.780	376.631	.988%	98.451%
100.0	1.012	1.635	378.266	.427%	98.878%
105.0	1.049	.552	378.818	.144%	99.022%
110.0	.842	.494	379.312	.129%	99.152%
115.0	.722	.396	379.708	.103%	99.255%
120.0	.741	.356	380.063	.093%	99.348%
125.0	.759	.347	380.410	.091%	99.439%
130.0	.789	.337	380.747	.088%	99.527%
135.0	.803	.322	381.069	.084%	99.611%
140.0	.813	.299	381.368	.078%	99.689%
145.0	.807	.270	381.638	.071%	99.760%
150.0	.811	.238	381.877	.062%	99.822%
155.0	.808	.205	382.081	.054%	99.876%
160.0	.809	.170	382.251	.044%	99.920%
165.0	.809	.133	382.384	.035%	99.955%
170.0	.810	.096	382.481	.025%	99.980%
175.0	.811	.058	382.539	.015%	99.995%
180.0	.815	.019	382.558	.005%	100.000%

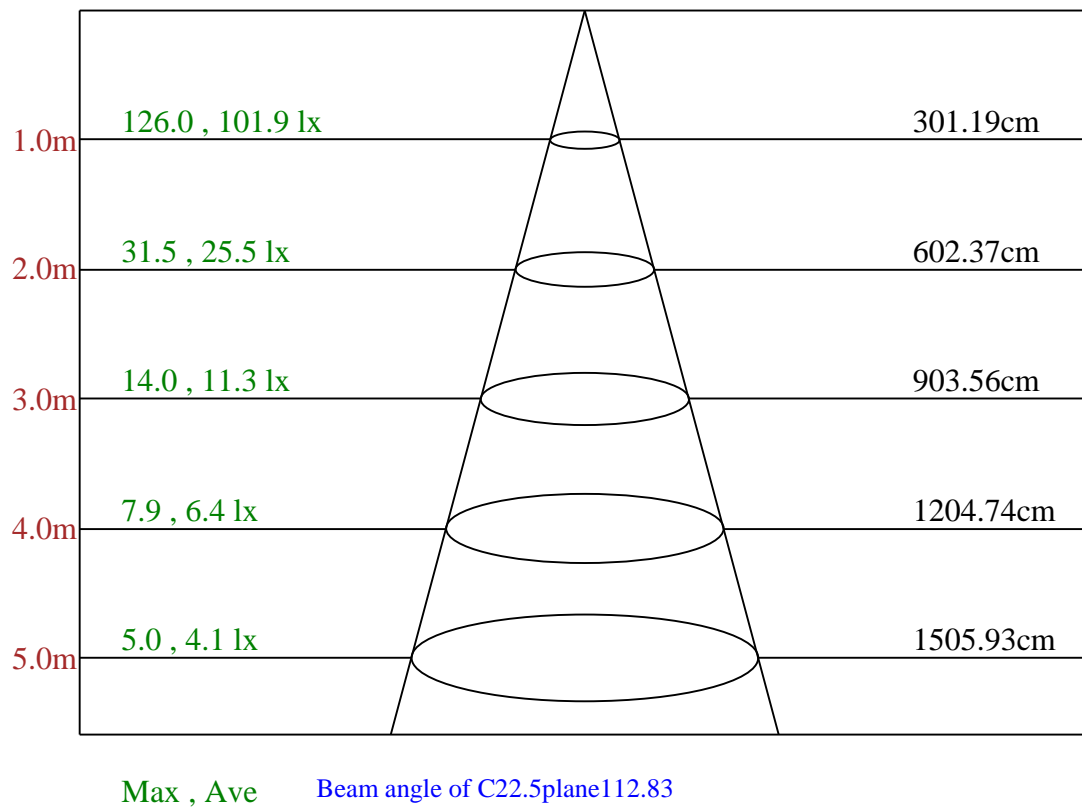
## ZONAL LUMEN SUMMARY

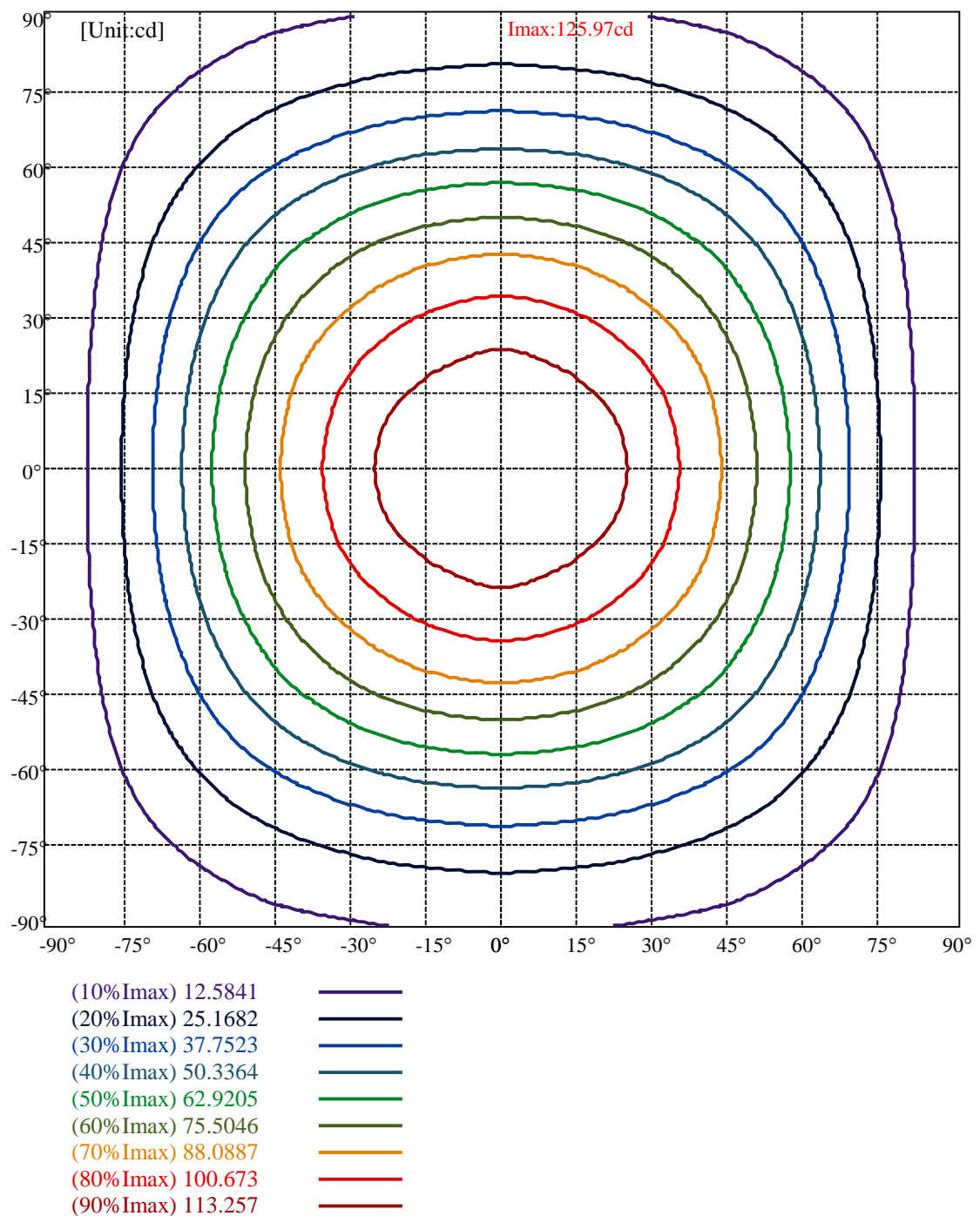
Zone	Lumens	%Fixt
0-30	97.43	25.47%
0-40	159.73	41.75%
0-60	283.06	73.99%
0-90	372.85	97.46%
0-120	380.06	99.35%
0-180	382.56	100.00%
60-90	117.80	30.79%
90-120	13.37	3.50%
90-130	14.06	3.67%
90-150	15.19	3.97%
90-180	15.85	4.14%
0-64.67	306.05	80.00%

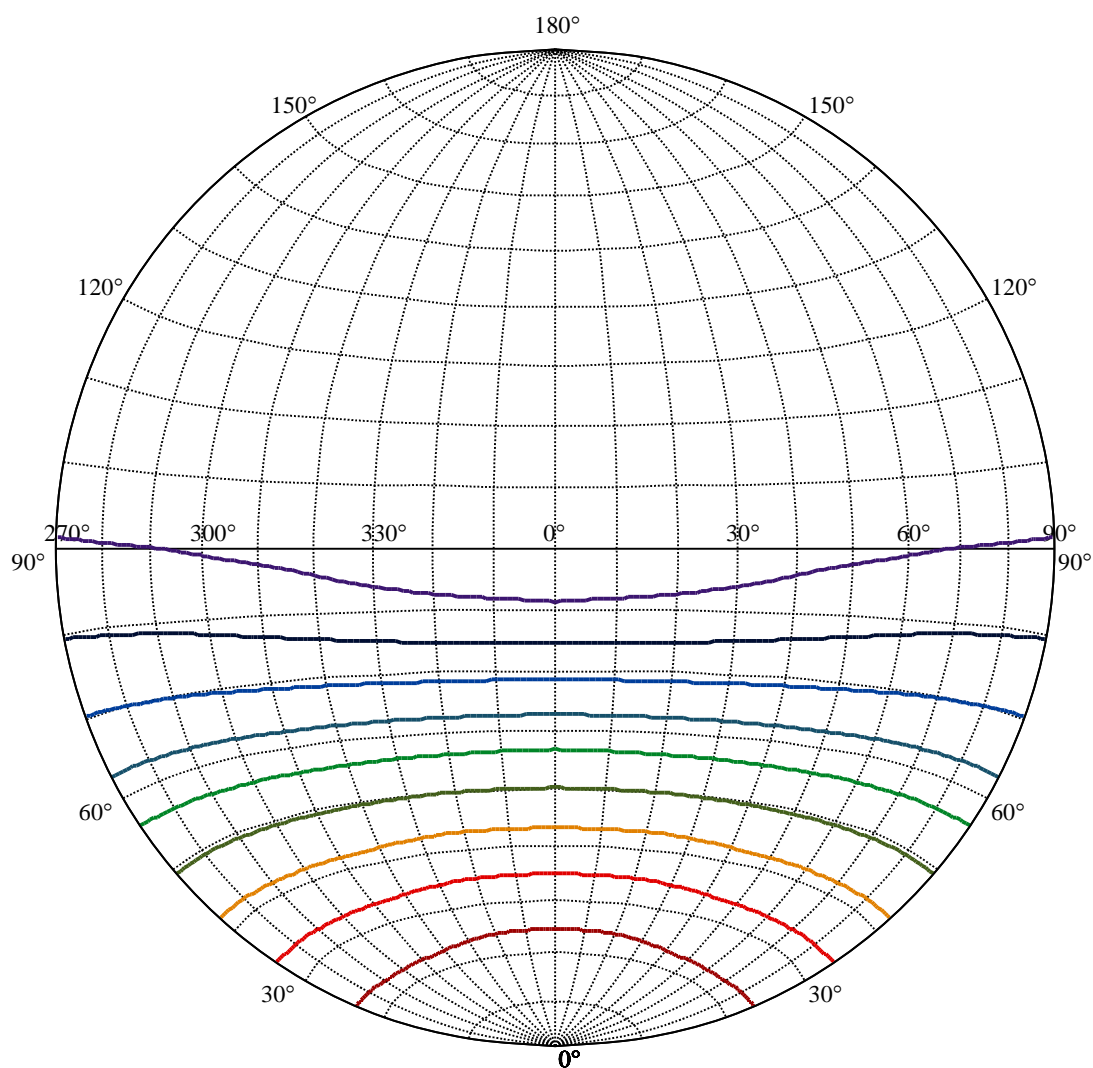
## ZONAL LUMEN SUMMARY

0-10	11.87
10-20	34.00
20-30	51.56
30-40	62.30
40-50	64.78
50-60	58.55
60-70	45.30
70-80	29.22
80-90	15.27
90-100	5.41
100-110	1.05
110-120	0.75
120-130	0.68
130-140	0.62
140-150	0.51
150-160	0.37
160-170	0.23
170-180	0.06







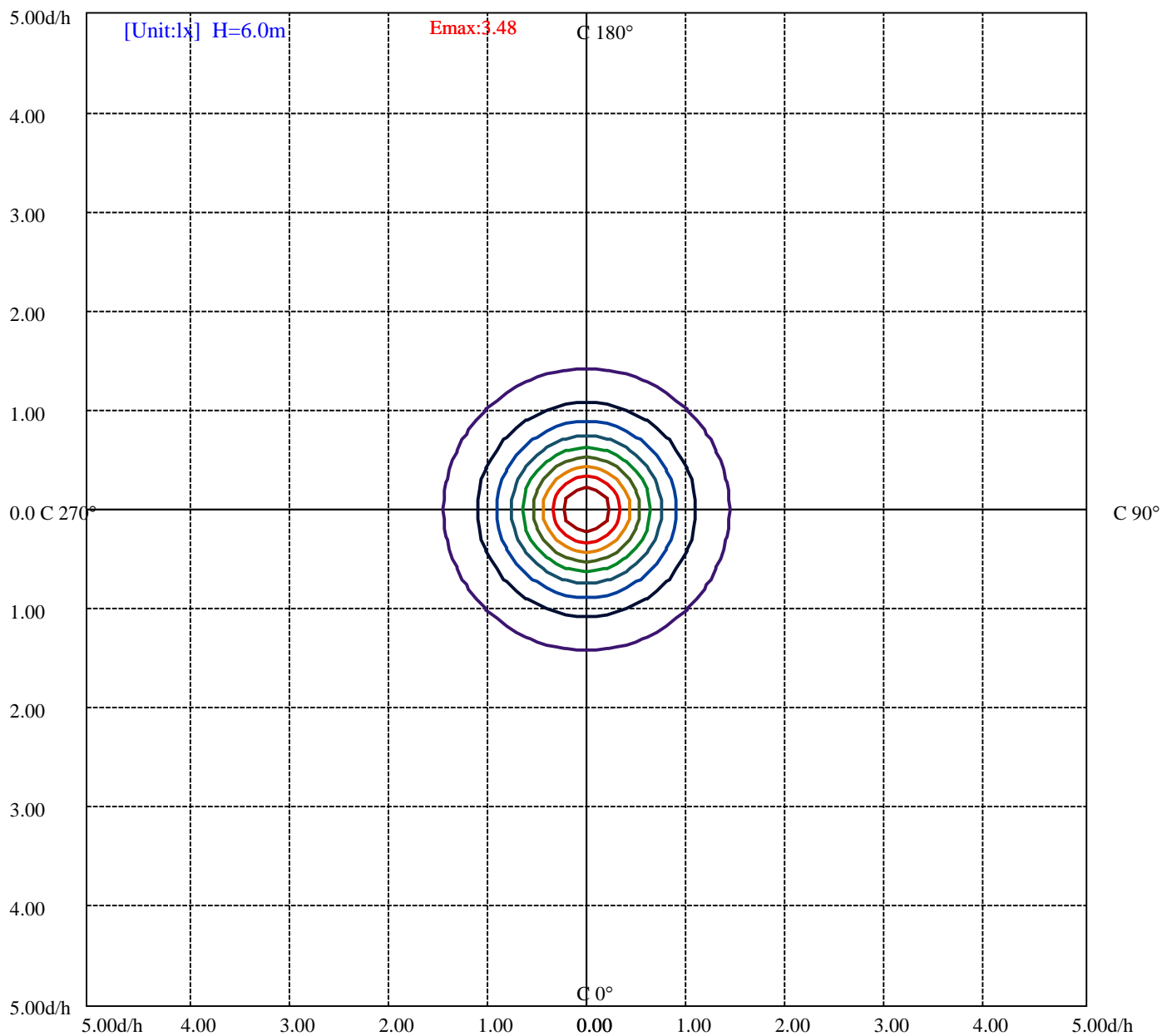


House

[Unit:cd]

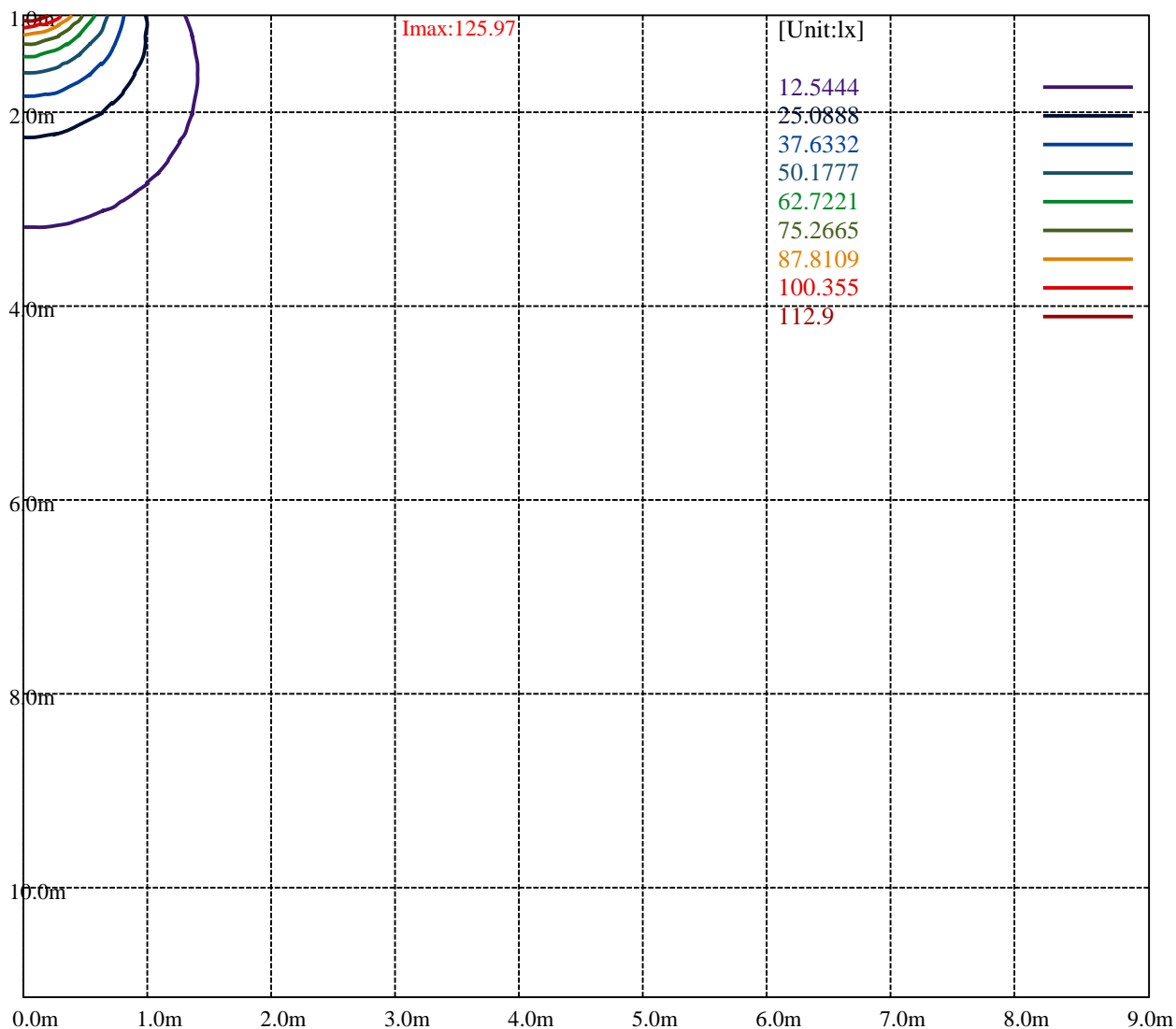
Road

**I<sub>max</sub>:125.97**(10% I<sub>max</sub>) 12.5964(20% I<sub>max</sub>) 25.1928(30% I<sub>max</sub>) 37.7891(40% I<sub>max</sub>) 50.3855(50% I<sub>max</sub>) 62.9819(60% I<sub>max</sub>) 75.5783(70% I<sub>max</sub>) 88.1746(80% I<sub>max</sub>) 100.771(90% I<sub>max</sub>) 113.367



(10%Emax) 0.3484555	—
(20%Emax) 0.6969111	—
(30%Emax) 1.045367	—
(40%Emax) 1.393822	—
(50%Emax) 1.742278	—
(60%Emax) 2.090736	—
(70%Emax) 2.439192	—
(80%Emax) 2.787639	—
(90%Emax) 3.136111	—





# HAWKO LIGHTING ECOFLEX-IP20-4000K

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Intensity data(cd)									
C/γ(°)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0
0.0	125.44	125.78	123.93	121.33	117.71	113.15	107.13	100.84	93.44
22.5	125.44	125.97	124.29	121.31	117.38	112.71	107.14	100.56	93.31
45.0	125.44	124.31	122.54	119.84	115.99	111.33	105.69	99.09	91.59
67.5	125.44	124.30	122.55	119.83	115.74	111.15	105.23	98.81	91.26
90.0	125.44	124.98	123.28	120.58	116.74	111.77	105.86	99.23	91.83
112.5	125.44	124.30	122.55	119.83	115.74	111.15	105.23	98.81	91.26
135.0	125.44	124.31	122.54	119.84	115.99	111.33	105.69	99.09	91.59
157.5	125.44	125.97	124.29	121.31	117.38	112.71	107.14	100.56	93.31
180.0	125.44	125.78	123.93	121.33	117.71	113.15	107.13	100.84	93.44
202.5	125.44	125.97	124.29	121.31	117.38	112.71	107.14	100.56	93.31
225.0	125.44	124.31	122.54	119.84	115.99	111.33	105.69	99.09	91.59
247.5	125.44	124.30	122.55	119.83	115.74	111.15	105.23	98.81	91.26
270.0	125.44	124.98	123.28	120.58	116.74	111.77	105.86	99.23	91.83
292.5	125.44	124.30	122.55	119.83	115.74	111.15	105.23	98.81	91.26
315.0	125.44	124.31	122.54	119.84	115.99	111.33	105.69	99.09	91.59
337.5	125.44	125.97	124.29	121.31	117.38	112.71	107.14	100.56	93.31
360.0	125.44	125.78	123.93	121.33	117.71	113.15	107.13	100.84	93.44
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	85.43	76.13	66.82	56.45	45.33	34.54	24.37	14.76	6.57
22.5	85.21	75.67	65.79	55.87	45.29	34.70	25.05	16.27	9.88
45.0	83.63	74.70	65.18	55.57	45.24	35.68	27.22	20.05	14.37
67.5	83.22	74.27	64.95	55.47	46.07	37.35	29.74	23.29	17.76
90.0	83.09	74.33	65.20	55.36	46.36	38.27	30.76	24.65	19.00
112.5	83.22	74.27	64.95	55.47	46.07	37.35	29.74	23.29	17.76
135.0	83.63	74.70	65.18	55.57	45.24	35.68	27.22	20.05	14.37
157.5	85.21	75.67	65.79	55.87	45.29	34.70	25.05	16.27	9.88
180.0	85.43	76.13	66.82	56.45	45.33	34.54	24.37	14.76	6.57
202.5	85.21	75.67	65.79	55.87	45.29	34.70	25.05	16.27	9.88
225.0	83.63	74.70	65.18	55.57	45.24	35.68	27.22	20.05	14.37
247.5	83.22	74.27	64.95	55.47	46.07	37.35	29.74	23.29	17.76
270.0	83.09	74.33	65.20	55.36	46.36	38.27	30.76	24.65	19.00
292.5	83.22	74.27	64.95	55.47	46.07	37.35	29.74	23.29	17.76
315.0	83.63	74.70	65.18	55.57	45.24	35.68	27.22	20.05	14.37
337.5	85.21	75.67	65.79	55.87	45.29	34.70	25.05	16.27	9.88
360.0	85.43	76.13	66.82	56.45	45.33	34.54	24.37	14.76	6.57
C/γ(°)	90.0	95.0	100.0	105.0	110.0	115.0	120.0	125.0	130.0
0.0	1.51	0.83	0.81	0.82	0.85	0.88	0.91	0.94	0.96
22.5	5.47	1.59	0.85	0.72	0.73	0.75	0.77	0.79	0.82
45.0	9.51	5.38	1.25	0.98	0.69	0.68	0.71	0.73	0.76
67.5	12.58	8.08	1.16	1.75	0.93	0.67	0.68	0.70	0.73
90.0	13.78	9.10	0.76	0.68	1.20	0.69	0.68	0.69	0.72
112.5	12.58	8.08	1.16	1.75	0.93	0.67	0.68	0.70	0.73
135.0	9.51	5.38	1.25	0.98	0.69	0.68	0.71	0.73	0.76
157.5	5.47	1.59	0.85	0.72	0.73	0.75	0.77	0.79	0.82
180.0	1.51	0.83	0.81	0.82	0.85	0.88	0.91	0.94	0.96
202.5	5.47	1.59	0.85	0.72	0.73	0.75	0.77	0.79	0.82
225.0	9.51	5.38	1.25	0.98	0.69	0.68	0.71	0.73	0.76
247.5	12.58	8.08	1.16	1.75	0.93	0.67	0.68	0.70	0.73
270.0	13.78	9.10	0.76	0.68	1.20	0.69	0.68	0.69	0.72
292.5	12.58	8.08	1.16	1.75	0.93	0.67	0.68	0.70	0.73
315.0	9.51	5.38	1.25	0.98	0.69	0.68	0.71	0.73	0.76
337.5	5.47	1.59	0.85	0.72	0.73	0.75	0.77	0.79	0.82
360.0	1.51	0.83	0.81	0.82	0.85	0.88	0.91	0.94	0.96

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**HAWKO LIGHTING ECOFLEX-IP20-4000K**

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Intensity data(cd)									Page: 11 Total:11
C/γ(°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0
0.0	0.98	0.98	0.97	0.96	0.96	0.95	0.96	0.96	0.95
22.5	0.83	0.84	0.83	0.83	0.83	0.83	0.81	0.81	0.82
45.0	0.77	0.79	0.78	0.79	0.78	0.78	0.78	0.79	0.79
67.5	0.75	0.76	0.76	0.76	0.76	0.76	0.77	0.77	0.78
90.0	0.74	0.75	0.75	0.76	0.76	0.77	0.78	0.77	0.77
112.5	0.75	0.76	0.76	0.76	0.76	0.76	0.77	0.77	0.78
135.0	0.77	0.79	0.78	0.79	0.78	0.78	0.78	0.79	0.79
157.5	0.83	0.84	0.83	0.83	0.83	0.83	0.81	0.81	0.82
180.0	0.98	0.98	0.97	0.96	0.96	0.95	0.96	0.96	0.95
202.5	0.83	0.84	0.83	0.83	0.83	0.83	0.81	0.81	0.82
225.0	0.77	0.79	0.78	0.79	0.78	0.78	0.78	0.79	0.79
247.5	0.75	0.76	0.76	0.76	0.76	0.76	0.77	0.77	0.78
270.0	0.74	0.75	0.75	0.76	0.76	0.77	0.78	0.77	0.77
292.5	0.75	0.76	0.76	0.76	0.76	0.76	0.77	0.77	0.78
315.0	0.77	0.79	0.78	0.79	0.78	0.78	0.78	0.79	0.79
337.5	0.83	0.84	0.83	0.83	0.83	0.83	0.81	0.81	0.82
360.0	0.98	0.98	0.97	0.96	0.96	0.95	0.96	0.96	0.95
C/γ(°)	180.0								
0.0	0.81								
22.5	0.81								
45.0	0.81								
67.5	0.81								
90.0	0.81								
112.5	0.81								
135.0	0.81								
157.5	0.81								
180.0	0.81								
202.5	0.81								
225.0	0.81								
247.5	0.81								
270.0	0.81								
292.5	0.81								
315.0	0.81								
337.5	0.81								
360.0	0.81								