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HAWKO LIGHTING

LumCAT: SMOOTHFLEX-IP20-4000K

Luminaire: LED Strip light

Report No: BSR1507070201-9

Voltage(V): 24.0400

Test No: BSR1507070201-9

Current(A): 0.3520

LampCAT:

Power (W): 8.4500

Lamp flux(lm)

PF: 1.0000

Number of Lamps: 120

Ballast type:

Length(mm): 0

Width(mm): 0

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 747.08

Lumens(lm)/Power(W): 88.41

Central intensity(cd): 250.890

Maximum intensity(cd): 251.352

Angle of maximum intensity: C=0.0 γ =5.0

Beam Angle(50%Imax): [C0/180]Total=114.0

[C90/270]Total=113.9

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

[C90/270]Total=166.6

Maximum s/h(1/2): C0_180=1.28 C90_270=1.28

Maximum s/h(1/4): C0_180=2.58 C90_270=1.98

Up flux rate of LUM(%): 1.54%

Down flux rate of LUM(%): 98.46%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 76.459%

HAWKO LIGHTING SMOOTHFLEX-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	250.890	.000	.000	.000%	.000%
5.0	249.821	5.986	5.986	.801%	.801%
10.0	246.582	17.758	23.744	2.377%	3.178%
15.0	241.222	28.936	52.680	3.873%	7.051%
20.0	234.029	39.167	91.847	5.243%	12.294%
25.0	224.815	48.124	139.972	6.442%	18.736%
30.0	213.541	55.474	195.446	7.425%	26.161%
35.0	200.615	60.987	256.433	8.163%	34.325%
40.0	186.240	64.544	320.977	8.639%	42.964%
45.0	170.070	65.974	386.951	8.831%	51.795%
50.0	152.542	65.188	452.139	8.726%	60.520%
55.0	133.347	62.162	514.301	8.321%	68.841%
60.0	112.865	56.911	571.212	7.618%	76.459%
65.0	91.676	49.724	620.937	6.656%	83.115%
70.0	70.371	41.031	661.968	5.492%	88.607%
75.0	50.120	31.494	693.462	4.216%	92.822%
80.0	31.954	21.961	715.423	2.940%	95.762%
85.0	17.282	13.379	728.802	1.791%	97.553%
90.0	7.504	6.787	735.588	.908%	98.461%
95.0	3.038	2.887	738.475	.386%	98.847%
100.0	1.325	1.186	739.660	.159%	99.006%
105.0	1.318	.707	740.367	.095%	99.101%
110.0	1.307	.686	741.053	.092%	99.193%
115.0	1.332	.668	741.721	.089%	99.282%
120.0	1.380	.659	742.381	.088%	99.370%
125.0	1.429	.649	743.030	.087%	99.457%
130.0	1.481	.633	743.663	.085%	99.542%
135.0	1.515	.605	744.268	.081%	99.623%
140.0	1.533	.564	744.833	.076%	99.699%
145.0	1.531	.511	745.344	.068%	99.767%
150.0	1.531	.451	745.795	.060%	99.827%
155.0	1.533	.388	746.182	.052%	99.879%
160.0	1.532	.321	746.504	.043%	99.922%
165.0	1.532	.252	746.756	.034%	99.956%
170.0	1.537	.182	746.938	.024%	99.980%
175.0	1.538	.110	747.048	.015%	99.995%
180.0	1.541	.037	747.085	.005%	100.000%

HAWKO LIGHTING SMOOTHFLEX-IP20-4000K

Zonal flux distribution table

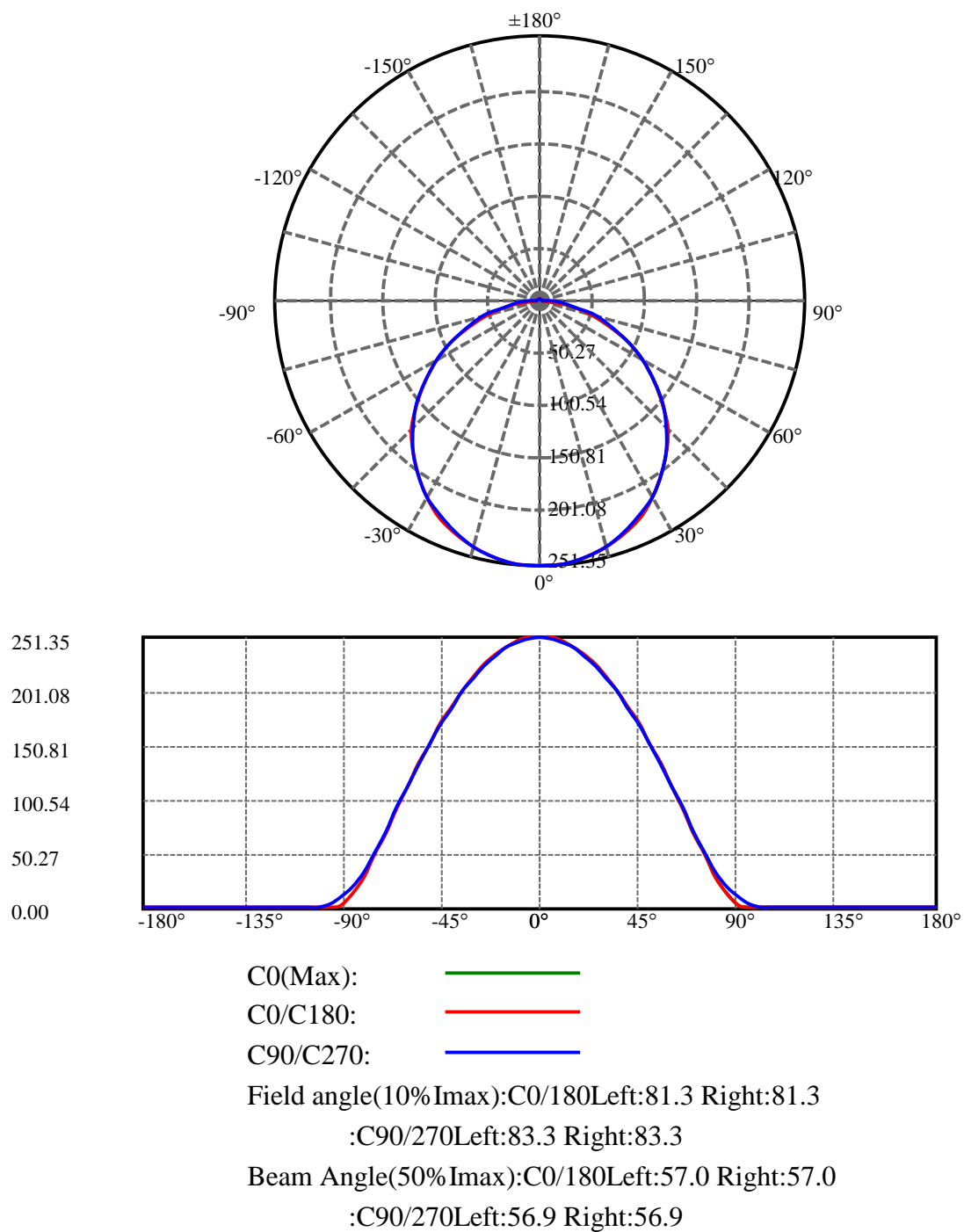
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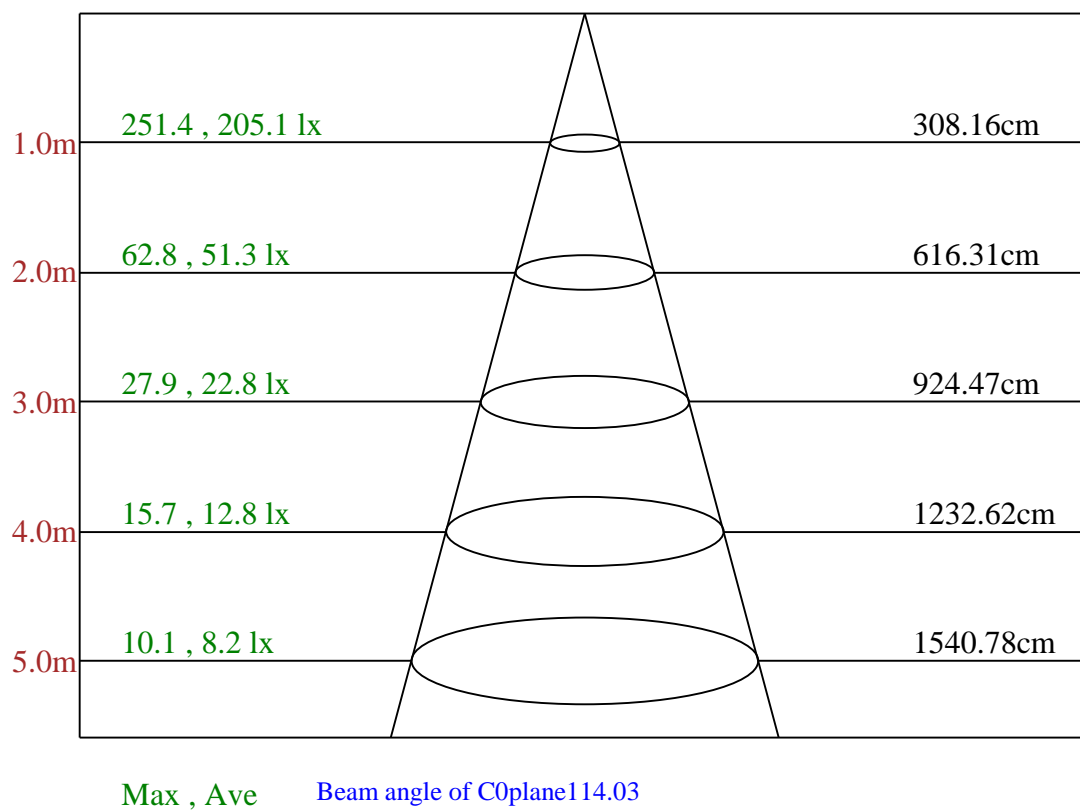
ZONAL LUMEN SUMMARY

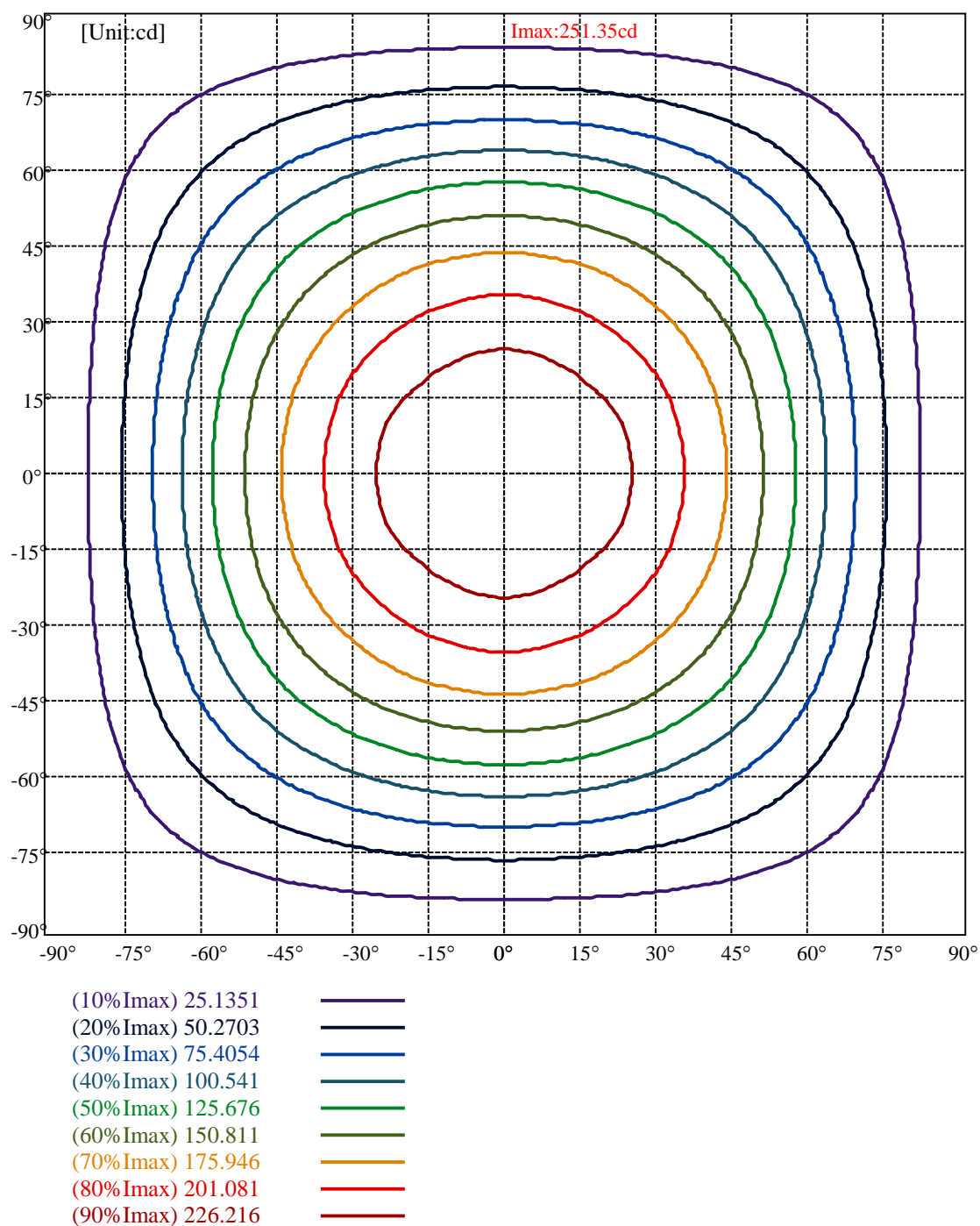
Zone	Lumens	%Fixt
0-30	195.45	26.16%
0-40	320.98	42.96%
0-60	571.21	76.46%
0-90	735.59	98.46%
0-120	742.38	99.37%
0-180	747.09	100.00%
60-90	221.29	29.62%
90-120	13.58	1.82%
90-130	14.86	1.99%
90-150	16.99	2.27%
90-180	18.25	2.44%
0-62.66	597.67	80.00%

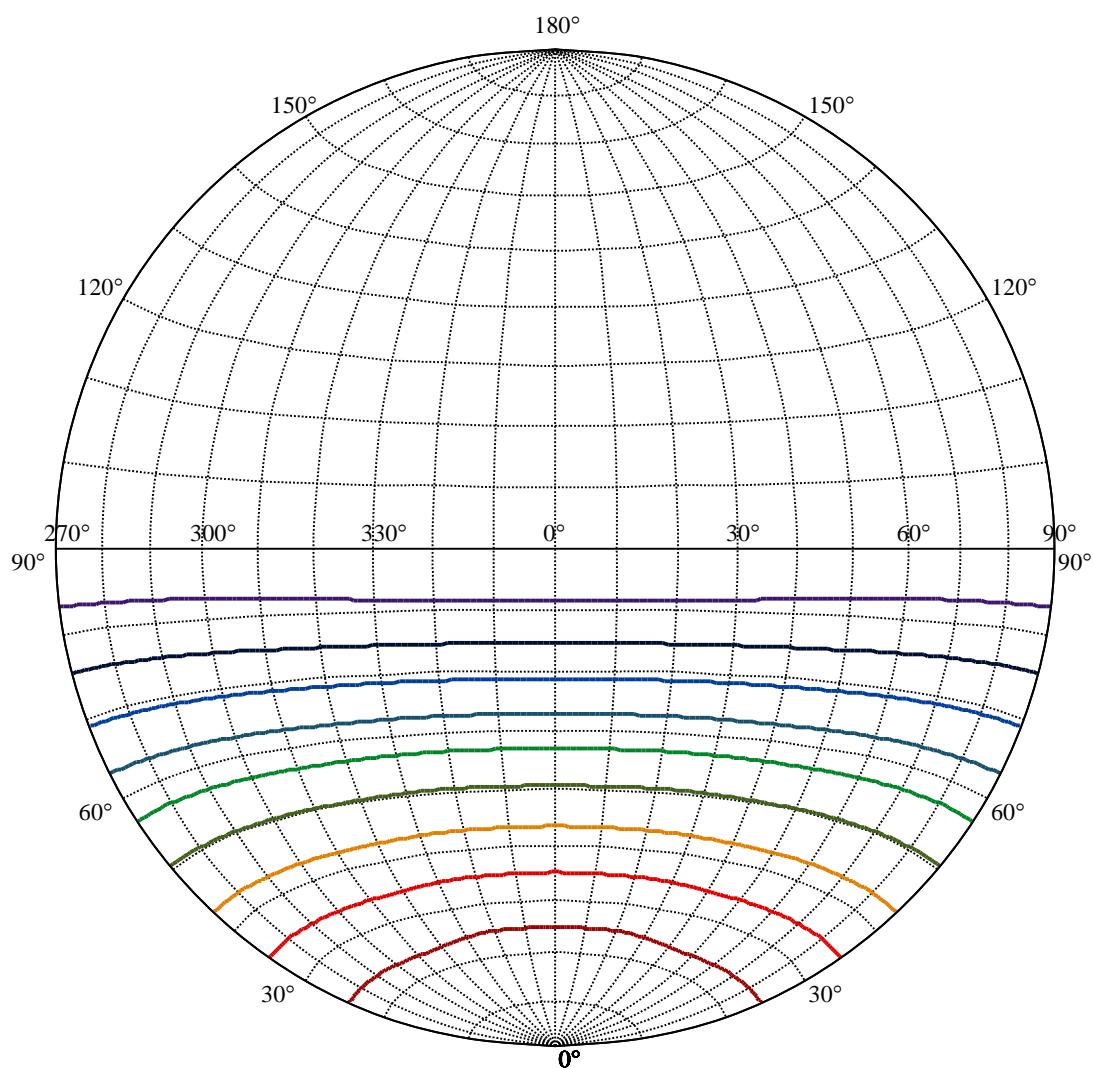
ZONAL LUMEN SUMMARY

0-10	23.74
10-20	68.10
20-30	103.60
30-40	125.53
40-50	131.16
50-60	119.07
60-70	90.76
70-80	53.46
80-90	20.17
90-100	4.07
100-110	1.39
110-120	1.33
120-130	1.28
130-140	1.17
140-150	0.96
150-160	0.71
160-170	0.43
170-180	0.11









House

[Unit:cd]

Road

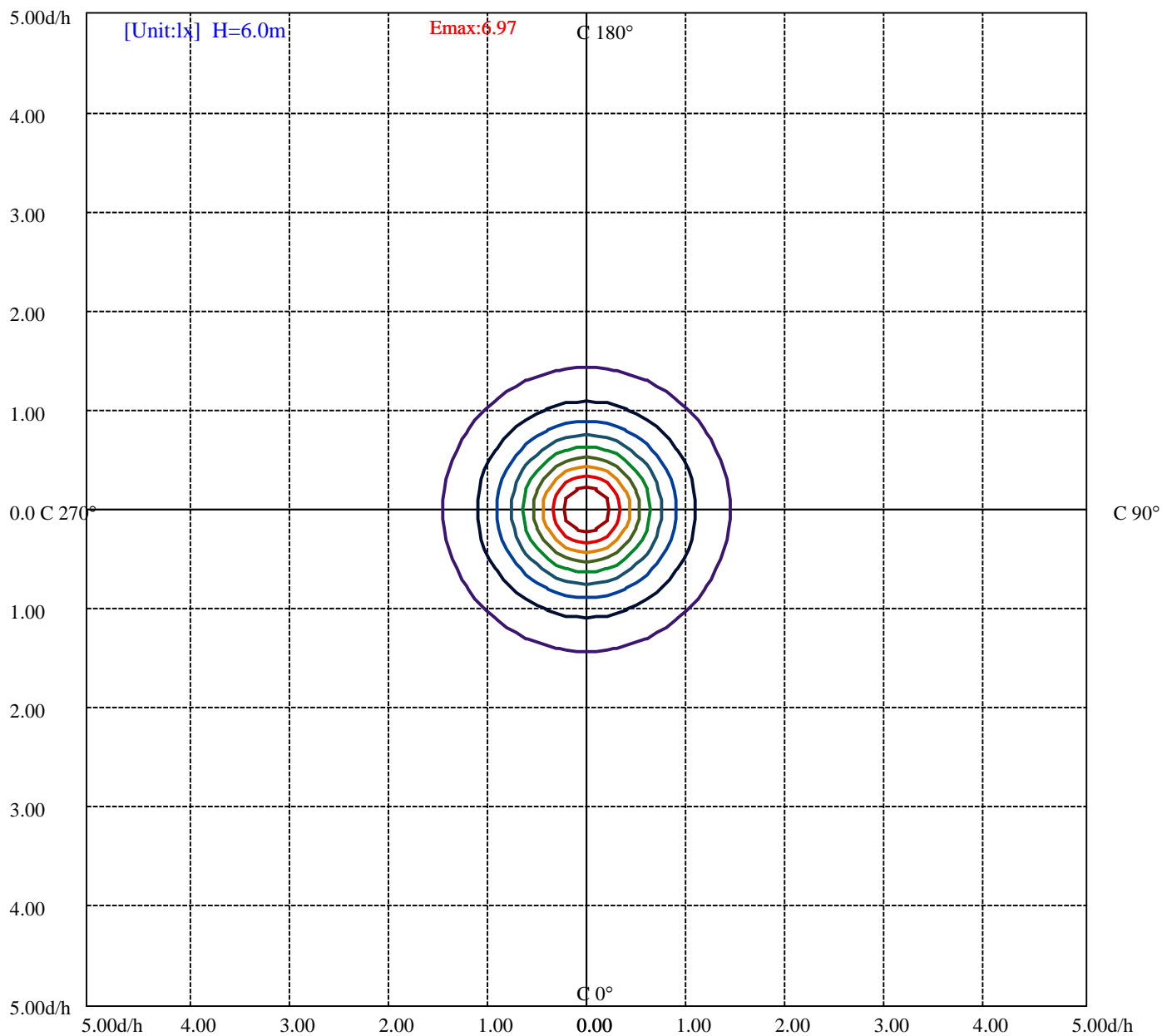
Imax:251.35
 (10% Imax) 25.1351
 (20% Imax) 50.2703
 (30% Imax) 75.4054
 (40% Imax) 100.541
 (50% Imax) 125.676
 (60% Imax) 150.811
 (70% Imax) 175.946
 (80% Imax) 201.081
 (90% Imax) 226.216



HAWKO LIGHTING SMOOTHFLEX-IP20-4000K

ISO illuminance diagram

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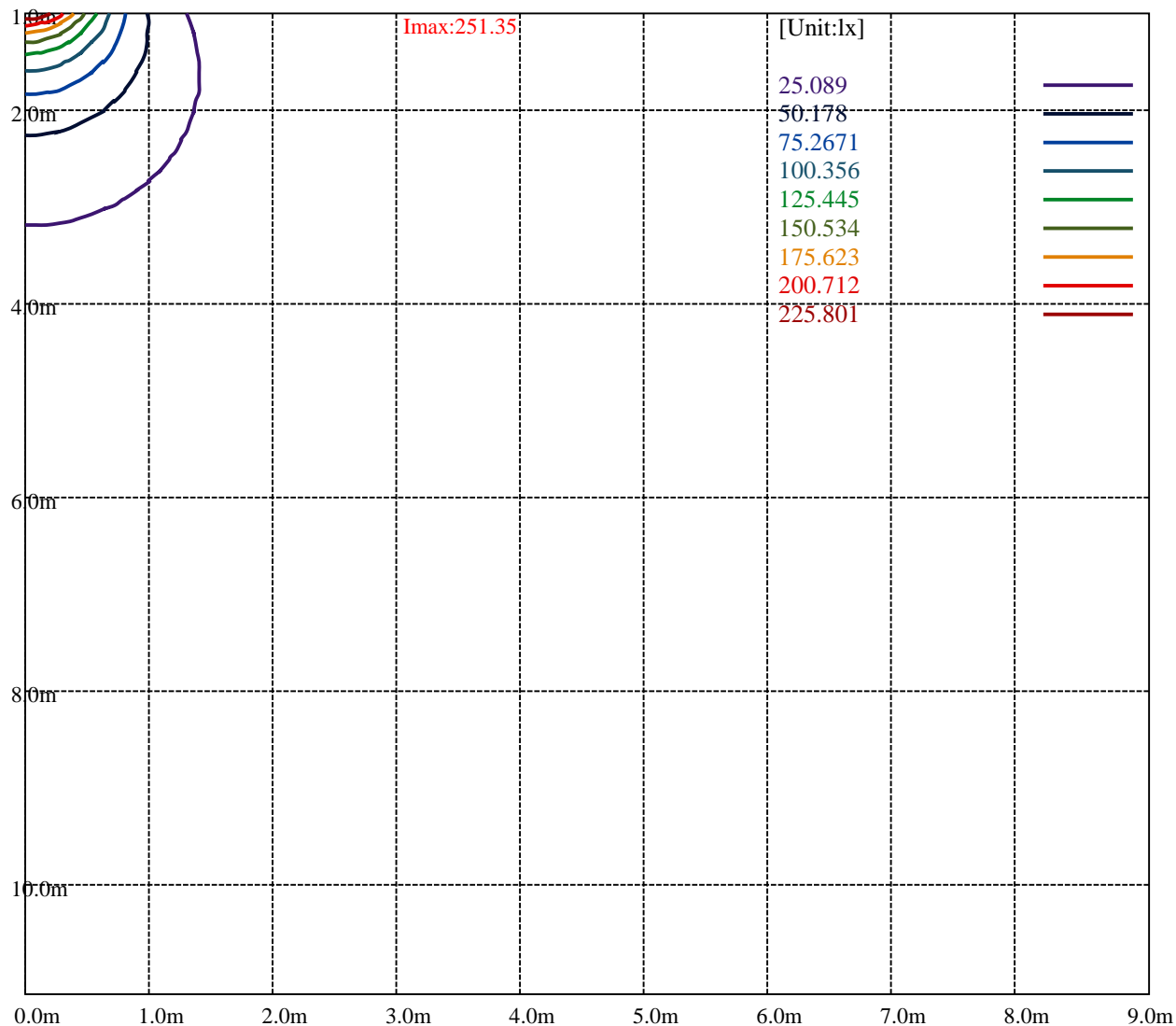


(10%Emax) 0.6969167	—
(20%Emax) 1.393833	—
(30%Emax) 2.09075	—
(40%Emax) 2.787667	—
(50%Emax) 3.484583	—
(60%Emax) 4.1815	—
(70%Emax) 4.878417	—
(80%Emax) 5.575334	—
(90%Emax) 6.27225	—

Equipment: GMS2200
Temperature(°C): 25.2

Date: 2015-7-7
Humidity(%): 61.0%

Operator: Jeanne
Distance(m): 12.40



HAWKO LIGHTING SMOOTHFLEX-IP20-4000K

Intensity data(cd)

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C/γ(°)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0
0.0	250.89	251.35	247.74	242.59	235.43	226.30	215.18	201.88	187.83
22.5	250.89	250.99	247.53	241.90	234.91	226.03	214.37	201.42	186.93
45.0	250.89	248.24	245.40	239.99	232.80	223.66	212.37	199.72	185.73
67.5	250.89	249.37	246.08	240.89	233.63	223.90	212.94	199.92	185.37
90.0	250.89	250.03	246.89	241.63	234.12	225.04	213.80	200.93	186.03
112.5	250.89	249.37	246.08	240.89	233.63	223.90	212.94	199.92	185.37
135.0	250.89	248.24	245.40	239.99	232.80	223.66	212.37	199.72	185.73
157.5	250.89	250.99	247.53	241.90	234.91	226.03	214.37	201.42	186.93
180.0	250.89	251.35	247.74	242.59	235.43	226.30	215.18	201.88	187.83
202.5	250.89	250.99	247.53	241.90	234.91	226.03	214.37	201.42	186.93
225.0	250.89	248.24	245.40	239.99	232.80	223.66	212.37	199.72	185.73
247.5	250.89	249.37	246.08	240.89	233.63	223.90	212.94	199.92	185.37
270.0	250.89	250.03	246.89	241.63	234.12	225.04	213.80	200.93	186.03
292.5	250.89	249.37	246.08	240.89	233.63	223.90	212.94	199.92	185.37
315.0	250.89	248.24	245.40	239.99	232.80	223.66	212.37	199.72	185.73
337.5	250.89	250.99	247.53	241.90	234.91	226.03	214.37	201.42	186.93
360.0	250.89	251.35	247.74	242.59	235.43	226.30	215.18	201.88	187.83

C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	171.21	153.31	133.85	113.57	91.65	69.75	49.20	29.41	13.50
22.5	171.07	153.61	134.32	112.81	91.22	69.86	48.65	30.28	15.01
45.0	169.15	152.08	132.85	112.26	91.12	69.95	49.58	31.87	17.61
67.5	169.45	151.67	132.71	112.94	92.06	71.11	51.51	33.93	19.56
90.0	170.02	152.31	133.16	113.32	92.95	71.40	52.27	34.07	20.40
112.5	169.45	151.67	132.71	112.94	92.06	71.11	51.51	33.93	19.56
135.0	169.15	152.08	132.85	112.26	91.12	69.95	49.58	31.87	17.61
157.5	171.07	153.61	134.32	112.81	91.22	69.86	48.65	30.28	15.01
180.0	171.21	153.31	133.85	113.57	91.65	69.75	49.20	29.41	13.50
202.5	171.07	153.61	134.32	112.81	91.22	69.86	48.65	30.28	15.01
225.0	169.15	152.08	132.85	112.26	91.12	69.95	49.58	31.87	17.61
247.5	169.45	151.67	132.71	112.94	92.06	71.11	51.51	33.93	19.56
270.0	170.02	152.31	133.16	113.32	92.95	71.40	52.27	34.07	20.40
292.5	169.45	151.67	132.71	112.94	92.06	71.11	51.51	33.93	19.56
315.0	169.15	152.08	132.85	112.26	91.12	69.95	49.58	31.87	17.61
337.5	171.07	153.61	134.32	112.81	91.22	69.86	48.65	30.28	15.01
360.0	171.21	153.31	133.85	113.57	91.65	69.75	49.20	29.41	13.50

C/γ(°)	90.0	95.0	100.0	105.0	110.0	115.0	120.0	125.0	130.0
0.0	3.68	1.40	1.37	1.38	1.42	1.48	1.55	1.59	1.65
22.5	5.39	1.79	1.38	1.30	1.31	1.36	1.41	1.46	1.51
45.0	7.80	3.03	1.34	1.36	1.29	1.32	1.36	1.41	1.47
67.5	9.69	4.22	1.28	1.32	1.31	1.28	1.33	1.37	1.42
90.0	10.60	4.81	1.22	1.18	1.21	1.25	1.29	1.35	1.41
112.5	9.69	4.22	1.28	1.32	1.31	1.28	1.33	1.37	1.42
135.0	7.80	3.03	1.34	1.36	1.29	1.32	1.36	1.41	1.47
157.5	5.39	1.79	1.38	1.30	1.31	1.36	1.41	1.46	1.51
180.0	3.68	1.40	1.37	1.38	1.42	1.48	1.55	1.59	1.65
202.5	5.39	1.79	1.38	1.30	1.31	1.36	1.41	1.46	1.51
225.0	7.80	3.03	1.34	1.36	1.29	1.32	1.36	1.41	1.47
247.5	9.69	4.22	1.28	1.32	1.31	1.28	1.33	1.37	1.42
270.0	10.60	4.81	1.22	1.18	1.21	1.25	1.29	1.35	1.41
292.5	9.69	4.22	1.28	1.32	1.31	1.28	1.33	1.37	1.42
315.0	7.80	3.03	1.34	1.36	1.29	1.32	1.36	1.41	1.47
337.5	5.39	1.79	1.38	1.30	1.31	1.36	1.41	1.46	1.51
360.0	3.68	1.40	1.37	1.38	1.42	1.48	1.55	1.59	1.65

HAWKO LIGHTING SMOOTHFLEX-IP20-4000K

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	1.68	1.69	1.68	1.68	1.68	1.67	1.66	1.66	1.66
22.5	1.55	1.56	1.55	1.54	1.55	1.53	1.53	1.53	1.53
45.0	1.50	1.52	1.51	1.52	1.52	1.52	1.51	1.52	1.52
67.5	1.46	1.48	1.48	1.49	1.49	1.50	1.50	1.51	1.51
90.0	1.44	1.46	1.47	1.48	1.48	1.49	1.50	1.51	1.51
112.5	1.46	1.48	1.48	1.49	1.49	1.50	1.50	1.51	1.51
135.0	1.50	1.52	1.51	1.52	1.52	1.52	1.51	1.52	1.52
157.5	1.55	1.56	1.55	1.54	1.55	1.53	1.53	1.53	1.53
180.0	1.68	1.69	1.68	1.68	1.68	1.67	1.66	1.66	1.66
202.5	1.55	1.56	1.55	1.54	1.55	1.53	1.53	1.53	1.53
225.0	1.50	1.52	1.51	1.52	1.52	1.52	1.51	1.52	1.52
247.5	1.46	1.48	1.48	1.49	1.49	1.50	1.50	1.51	1.51
270.0	1.44	1.46	1.47	1.48	1.48	1.49	1.50	1.51	1.51
292.5	1.46	1.48	1.48	1.49	1.49	1.50	1.50	1.51	1.51
315.0	1.50	1.52	1.51	1.52	1.52	1.52	1.51	1.52	1.52
337.5	1.55	1.56	1.55	1.54	1.55	1.53	1.53	1.53	1.53
360.0	1.68	1.69	1.68	1.68	1.68	1.67	1.66	1.66	1.66
C/γ(°)	180.0								
0.0	1.54								
22.5	1.54								
45.0	1.54								
67.5	1.54								
90.0	1.54								
112.5	1.54								
135.0	1.54								
157.5	1.54								
180.0	1.54								
202.5	1.54								
225.0	1.54								
247.5	1.54								
270.0	1.54								
292.5	1.54								
315.0	1.54								
337.5	1.54								
360.0	1.54								