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Hawko Lighting Group Australia Pty Ltd

LumCAT: CHROMAFLEX-4000K (RED)

Luminaire: LED Strip light

Report No: BSR1706080401-9

Test No: S01

LampCAT:

Lamp flux(lm)

Number of Lamps: 60

Length(mm): 1000

Phm Type: C

Voltage(V): 24.0000

Current(A): 0.1950

Power (W): 4.6800

PF: 0.9990

Ballast type:

Width(mm): 12

Height(mm): 2

Photometric Results

Lumens(lm): 115.75

Lumens(lm)/Power(W): 24.73

Central intensity(cd): 36.097

Maximum intensity(cd): 36.281

Angle of maximum intensity: C=90.0 γ =5.0

Beam Angle(50%Imax): [C0/180]Total=124.4

[C90/270]Total=121.6

Field angle(10%Imax): [C0/180]Total=165.3

[C90/270]Total=166.8

Maximum s/h(1/2): C0_180=1.34 C90_270=1.32

Maximum s/h(1/4): C0_180=1.46 C90_270=1.44

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 76.234%

Hawko Lighting Group Australia Pty Ltd CHROMAFLEX-4000K (RED)

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	36.097	.000	.000	.000%	.000%
5.0	36.043	.862	.862	.745%	.745%
10.0	35.767	2.569	3.431	2.219%	2.964%
15.0	35.311	4.216	7.648	3.642%	6.607%
20.0	34.640	5.765	13.412	4.980%	11.587%
25.0	33.637	7.161	20.573	6.186%	17.773%
30.0	32.308	8.345	28.919	7.210%	24.983%
35.0	30.803	9.294	38.212	8.029%	33.012%
40.0	28.931	9.966	48.179	8.610%	41.622%
45.0	26.780	10.315	58.494	8.911%	50.533%
50.0	24.404	10.342	68.836	8.935%	59.468%
55.0	21.706	10.026	78.862	8.661%	68.129%
60.0	18.884	9.382	88.244	8.105%	76.234%
65.0	15.660	8.398	96.642	7.255%	83.489%
70.0	12.290	7.077	103.719	6.114%	89.603%
75.0	8.701	5.487	109.206	4.740%	94.343%
80.0	5.275	3.740	112.945	3.231%	97.573%
85.0	2.522	2.119	115.064	1.830%	99.403%
90.0	.000	.690	115.754	.597%	100.000%
95.0	.000	.000	115.754	.000%	100.000%
100.0	.000	.000	115.754	.000%	100.000%
105.0	.000	.000	115.754	.000%	100.000%
110.0	.000	.000	115.754	.000%	100.000%
115.0	.000	.000	115.754	.000%	100.000%
120.0	.000	.000	115.754	.000%	100.000%
125.0	.000	.000	115.754	.000%	100.000%
130.0	.000	.000	115.754	.000%	100.000%
135.0	.000	.000	115.754	.000%	100.000%
140.0	.000	.000	115.754	.000%	100.000%
145.0	.000	.000	115.754	.000%	100.000%
150.0	.000	.000	115.754	.000%	100.000%
155.0	.000	.000	115.754	.000%	100.000%
160.0	.000	.000	115.754	.000%	100.000%
165.0	.000	.000	115.754	.000%	100.000%
170.0	.000	.000	115.754	.000%	100.000%
175.0	.000	.000	115.754	.000%	100.000%
180.0	.000	.000	115.754	.000%	100.000%

Equipment: GMS2200
Temperature($^{\circ}\text{C}$): 25.2

Date: 2017-6-8
Humidity(%): 63.0%

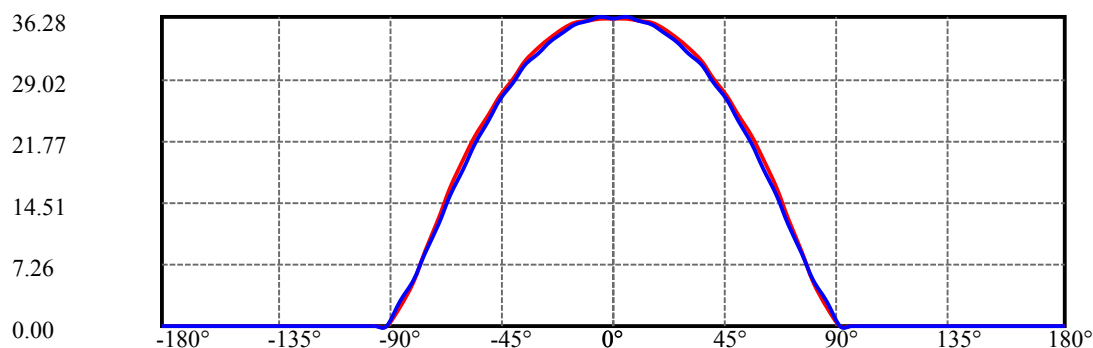
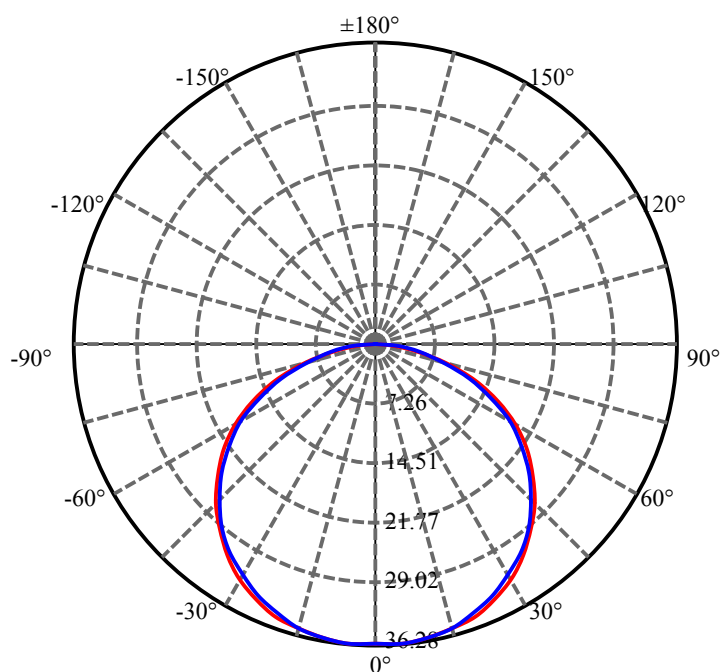
Operator: Jack
Distance(m): 12.00

ZONAL LUMEN SUMMARY

Zone	Lumens	%Fixt
0-30	28.92	24.98%
0-40	48.18	41.62%
0-60	88.24	76.23%
0-90	115.75	100.00%
0-120	115.75	100.00%
0-180	115.75	100.00%
60-90	36.89	31.87%
90-120	0.69	0.60%
90-130	0.69	0.60%
90-150	0.69	0.60%
90-180	0.69	0.60%
0-62.60	92.60	80.00%

ZONAL LUMEN SUMMARY

0-10	3.43
10-20	9.98
20-30	15.51
30-40	19.26
40-50	20.66
50-60	19.41
60-70	15.47
70-80	9.23
80-90	2.81
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00



C0/C180: ————

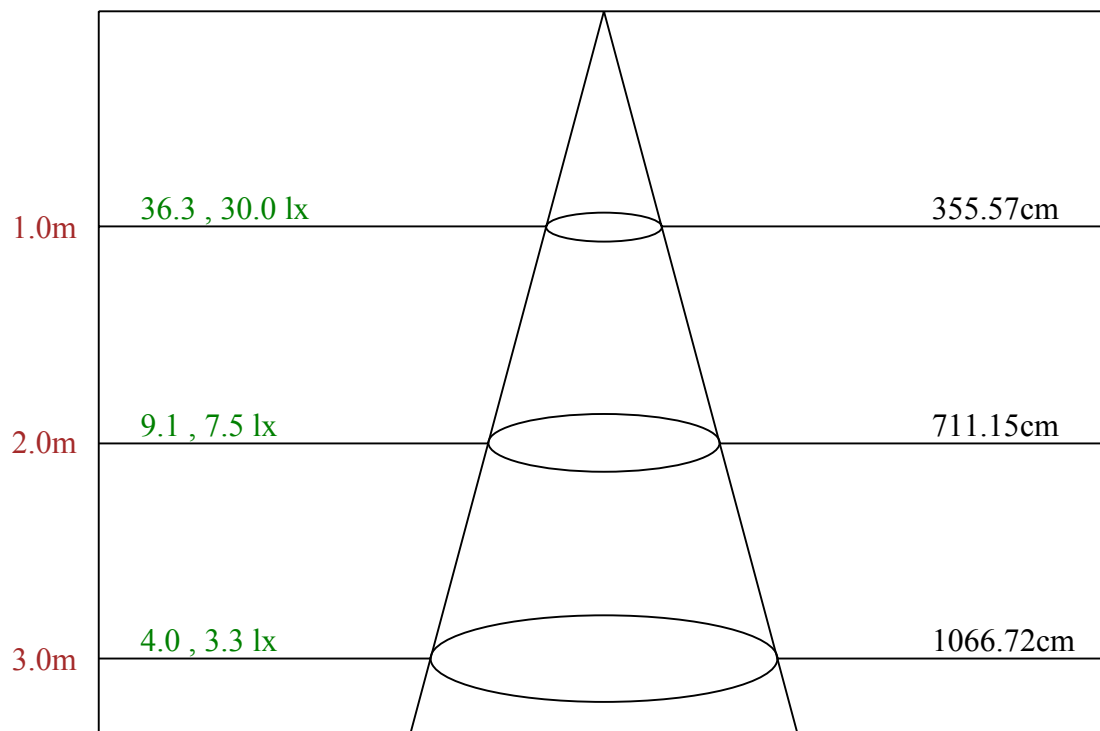
C90/C270: ————

Field angle(10%I_{max}):C0/180Left:82.7 Right:82.7

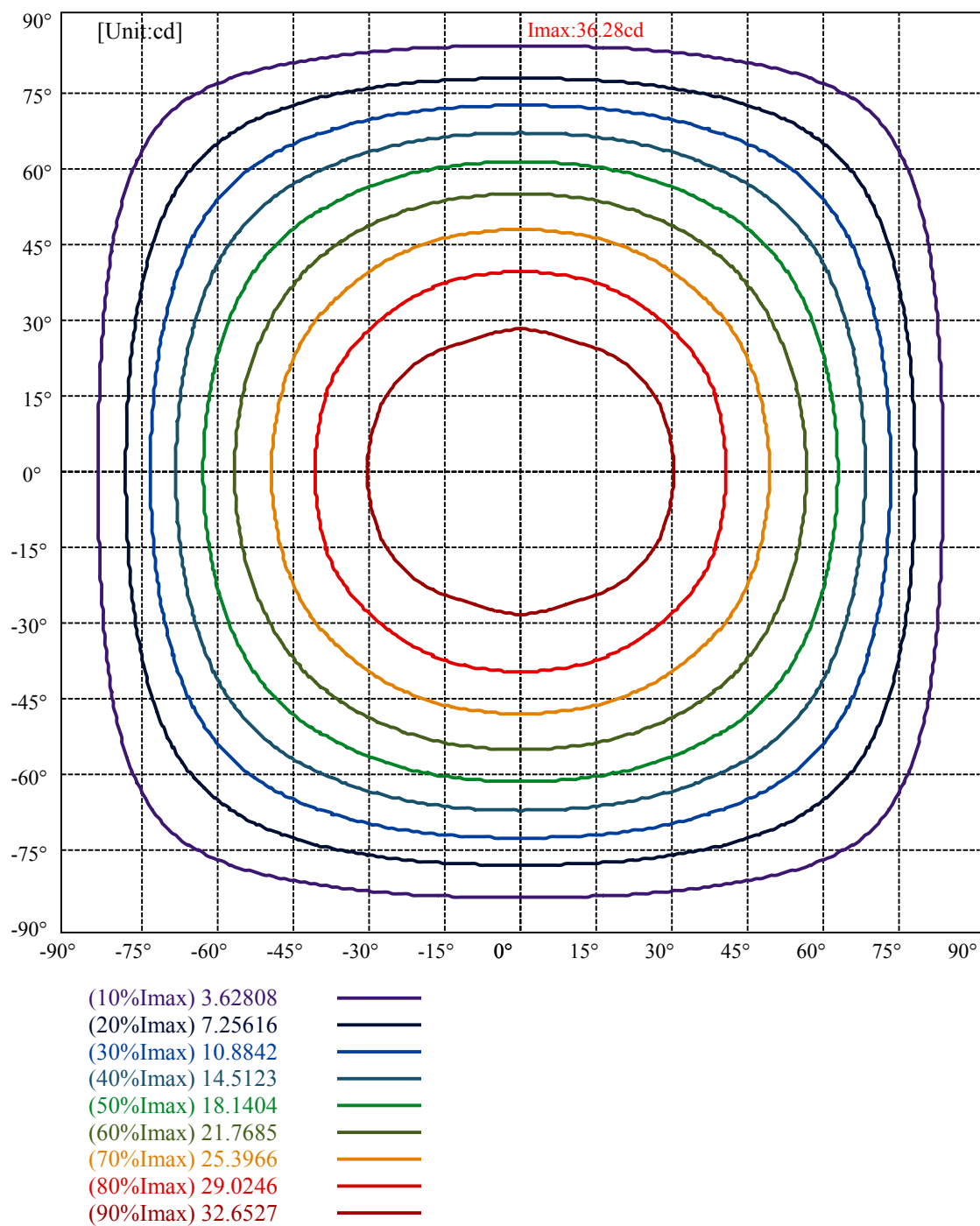
:C90/270Left:83.4 Right:83.4

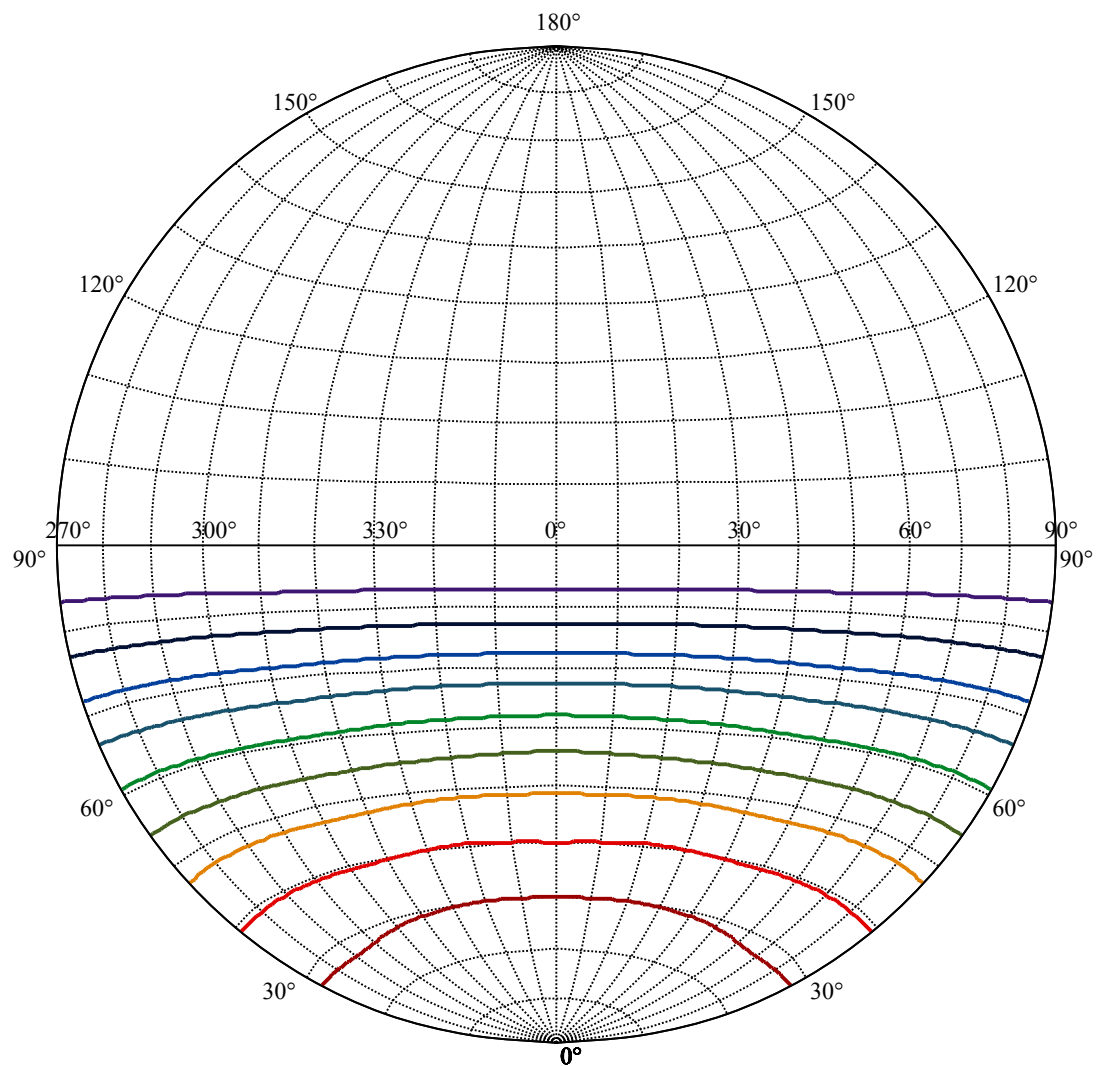
Beam Angle(50%I_{max}):C0/180Left:62.2 Right:62.2

:C90/270Left:60.8 Right:60.8



Max , Ave Beam angle of C90plane121.29





House

[Unit:cd]

Road

Imax:36.28

(10%Imax) 3.62808

(20%Imax) 7.25616

(30%Imax) 10.8842

(40%Imax) 14.5123

(50%Imax) 18.1404

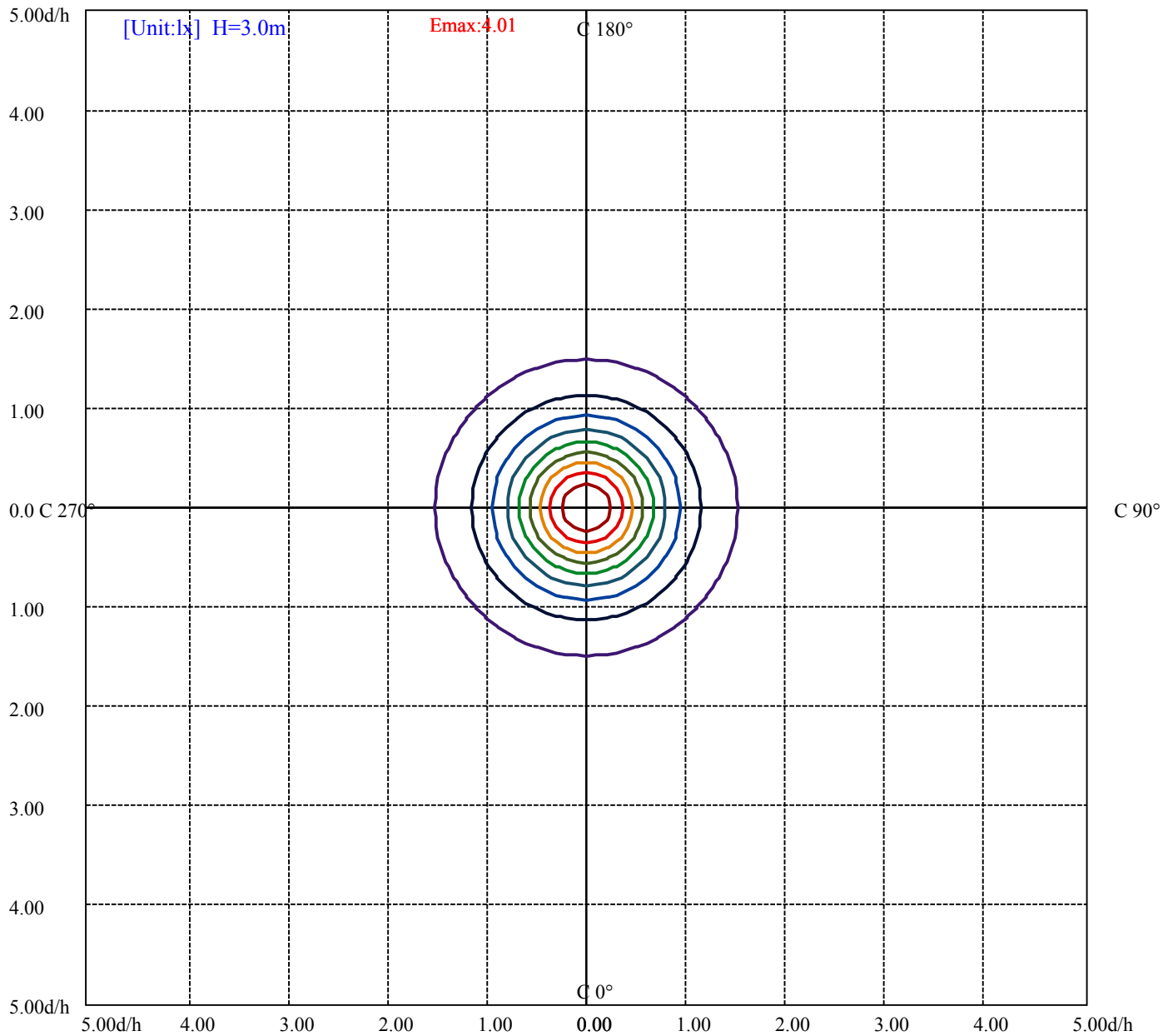
(60%Imax) 21.7685

(70%Imax) 25.3966

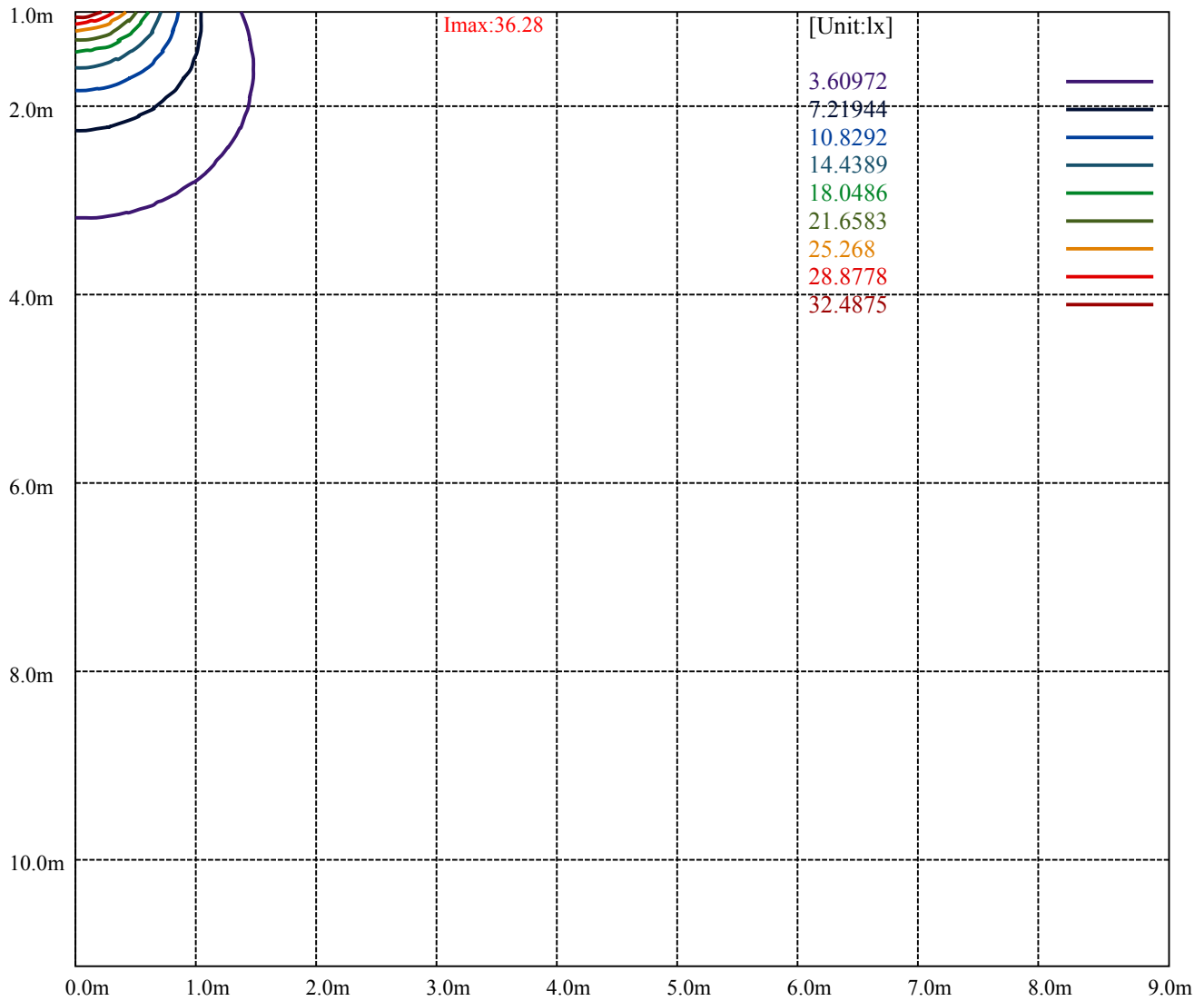
(80%Imax) 29.0246

(90%Imax) 32.6527





(10%Emax) 0.40108	—
(20%Emax) 0.80216	—
(30%Emax) 1.203244	—
(40%Emax) 1.604322	—
(50%Emax) 2.0054	—
(60%Emax) 2.406478	—
(70%Emax) 2.807555	—
(80%Emax) 3.208644	—
(90%Emax) 3.609722	—



Luminance Table

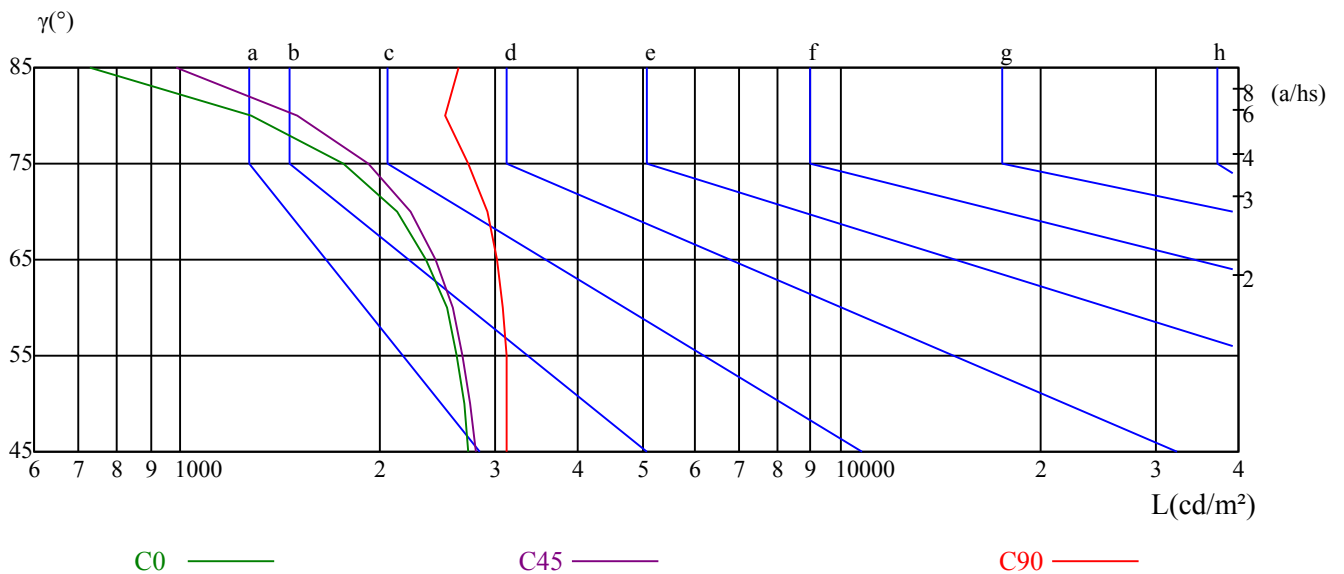
γ	45	50	55	60	65	70	75	80	85
C0	2735	2683	2622	2525	2353	2124	1762	1282	730
C45	2802	2753	2678	2576	2431	2224	1926	1507	982
C90	3116	3119	3109	3081	3021	2919	2724	2515	2645

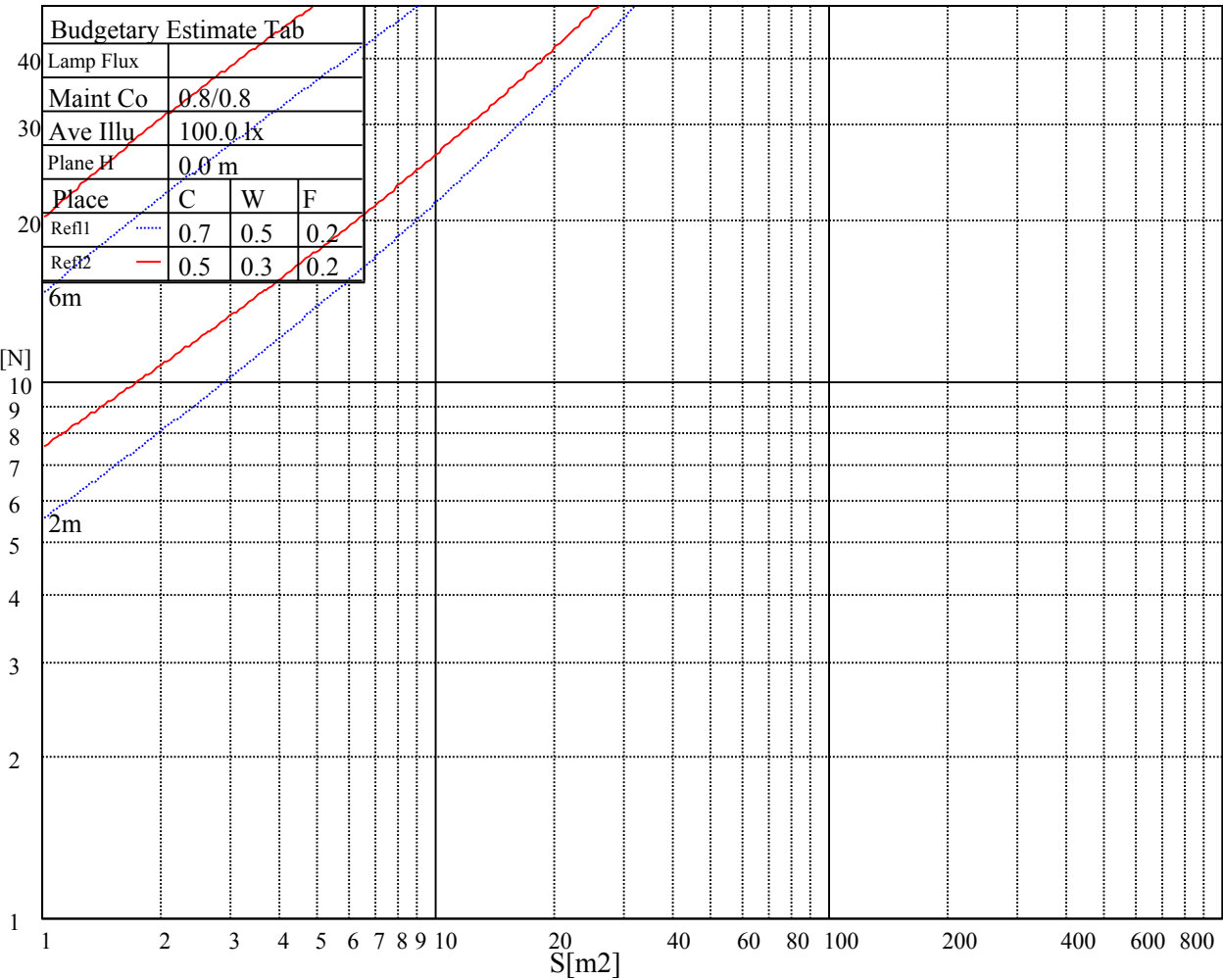
L横(65)	L纵(65)	L45(65)	L横(75)	L纵(75)	L45(75)	L横(85)	L纵(85)	L45(85)
3194	3034	3053	2858	2745	2783	2120	2706	2320

Glare Table

Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

Luminance Limiting Curve





RHOCC	80			70			50			30			10			0
RHOW	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR	COEFFICIENTS OF UTILIZATION RHOFC=20 CU															
0	1.19	1.19	1.19	1.16	1.16	1.16	1.11	1.11	1.11	1.06	1.06	1.06	1.02	1.02	1.02	1.00
1	1.03	0.99	0.95	1.01	0.97	0.93	0.97	0.93	0.90	0.93	0.90	0.87	0.89	0.87	0.85	0.82
2	0.89	0.82	0.76	0.87	0.81	0.75	0.84	0.78	0.73	0.80	0.76	0.72	0.77	0.74	0.70	0.68
3	0.78	0.69	0.63	0.76	0.68	0.62	0.73	0.67	0.61	0.71	0.65	0.60	0.68	0.63	0.59	0.57
4	0.69	0.60	0.53	0.67	0.59	0.52	0.65	0.57	0.52	0.62	0.56	0.51	0.60	0.55	0.50	0.48
5	0.61	0.52	0.45	0.60	0.51	0.45	0.58	0.50	0.44	0.56	0.49	0.44	0.54	0.48	0.43	0.41
6	0.55	0.46	0.39	0.54	0.45	0.39	0.52	0.44	0.39	0.50	0.43	0.38	0.49	0.43	0.38	0.36
7	0.50	0.41	0.34	0.49	0.40	0.34	0.47	0.40	0.34	0.46	0.39	0.34	0.44	0.38	0.33	0.31
8	0.45	0.36	0.30	0.44	0.36	0.30	0.43	0.36	0.30	0.42	0.35	0.30	0.41	0.34	0.30	0.28
9	0.41	0.33	0.27	0.41	0.33	0.27	0.40	0.32	0.27	0.39	0.32	0.27	0.37	0.31	0.27	0.25
10	0.38	0.30	0.25	0.38	0.30	0.25	0.37	0.29	0.25	0.36	0.29	0.24	0.35	0.29	0.24	0.22

Hawko Lighting Group Australia Pty Ltd CHROMAFLEX-4000K (RED)

Intensity data(cd) Page: 13 Total:14

C/γ(°)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0
0.0	36.10	36.09	35.86	35.50	34.87	33.88	32.66	31.10	29.06
22.5	36.10	36.01	35.81	35.44	34.86	33.81	32.66	31.08	29.25
45.0	36.10	35.92	35.62	35.18	34.53	33.70	32.40	30.74	28.83
67.5	36.10	36.05	35.74	35.20	34.48	33.38	31.80	30.56	28.79
90.0	36.10	36.28	35.94	35.34	34.52	33.44	32.10	30.56	28.66
112.5	36.10	36.05	35.74	35.20	34.48	33.38	31.80	30.56	28.79
135.0	36.10	35.92	35.62	35.18	34.53	33.70	32.40	30.74	28.83
157.5	36.10	36.01	35.81	35.44	34.86	33.81	32.66	31.08	29.25
180.0	36.10	36.09	35.86	35.50	34.87	33.88	32.66	31.10	29.06
202.5	36.10	36.01	35.81	35.44	34.86	33.81	32.66	31.08	29.25
225.0	36.10	35.92	35.62	35.18	34.53	33.70	32.40	30.74	28.83
247.5	36.10	36.05	35.74	35.20	34.48	33.38	31.80	30.56	28.79
270.0	36.10	36.28	35.94	35.34	34.52	33.44	32.10	30.56	28.66
292.5	36.10	36.05	35.74	35.20	34.48	33.38	31.80	30.56	28.79
315.0	36.10	35.92	35.62	35.18	34.53	33.70	32.40	30.74	28.83
337.5	36.10	36.01	35.81	35.44	34.86	33.81	32.66	31.08	29.25
360.0	36.10	36.09	35.86	35.50	34.87	33.88	32.66	31.10	29.06
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	27.08	24.80	22.34	19.53	16.20	12.71	8.88	5.20	2.22
22.5	27.12	24.69	21.91	19.25	15.98	12.57	8.86	5.28	2.42
45.0	26.61	24.25	21.57	18.65	15.48	12.12	8.64	5.26	2.43
67.5	26.60	24.21	21.44	18.60	15.38	12.10	8.60	5.31	2.72
90.0	26.49	24.11	21.46	18.55	15.39	12.05	8.52	5.30	2.83
112.5	26.60	24.21	21.44	18.60	15.38	12.10	8.60	5.31	2.72
135.0	26.61	24.25	21.57	18.65	15.48	12.12	8.64	5.26	2.43
157.5	27.12	24.69	21.91	19.25	15.98	12.57	8.86	5.28	2.42
180.0	27.08	24.80	22.34	19.53	16.20	12.71	8.88	5.20	2.22
202.5	27.12	24.69	21.91	19.25	15.98	12.57	8.86	5.28	2.42
225.0	26.61	24.25	21.57	18.65	15.48	12.12	8.64	5.26	2.43
247.5	26.60	24.21	21.44	18.60	15.38	12.10	8.60	5.31	2.72
270.0	26.49	24.11	21.46	18.55	15.39	12.05	8.52	5.30	2.83
292.5	26.60	24.21	21.44	18.60	15.38	12.10	8.60	5.31	2.72
315.0	26.61	24.25	21.57	18.65	15.48	12.12	8.64	5.26	2.43
337.5	27.12	24.69	21.91	19.25	15.98	12.57	8.86	5.28	2.42
360.0	27.08	24.80	22.34	19.53	16.20	12.71	8.88	5.20	2.22
C/γ(°)	90.0	95.0	100.0	105.0	110.0	115.0	120.0	125.0	130.0
0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
45.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
67.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
90.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
112.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
135.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
157.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
180.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
202.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
225.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
247.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
270.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
292.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
315.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
337.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
360.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Hawko Lighting Group Australia Pty Ltd CHROMAFLEX-4000K (RED)

Intensity data(cd)

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C/γ(°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0
0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
45.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
67.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
90.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
112.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
135.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
157.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
180.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
202.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
225.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
247.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
270.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
292.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
315.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
337.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
360.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

C/γ(°)	180.0
0.0	0.00
22.5	0.00
45.0	0.00
67.5	0.00
90.0	0.00
112.5	0.00
135.0	0.00
157.5	0.00
180.0	0.00
202.5	0.00
225.0	0.00
247.5	0.00
270.0	0.00
292.5	0.00
315.0	0.00
337.5	0.00
360.0	0.00