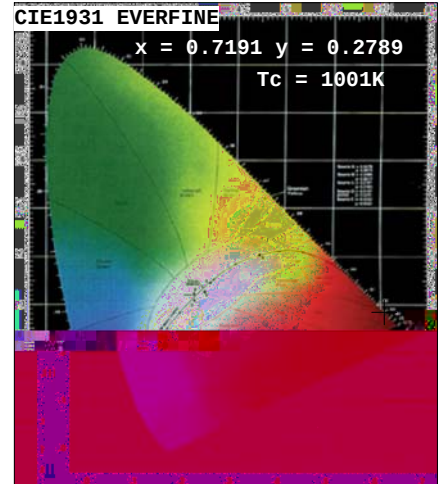
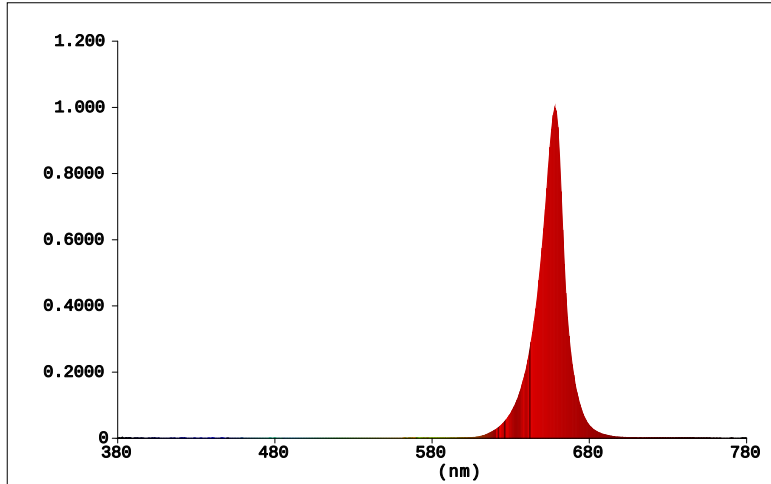




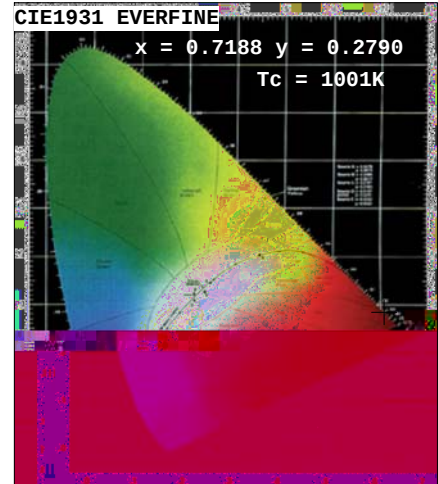
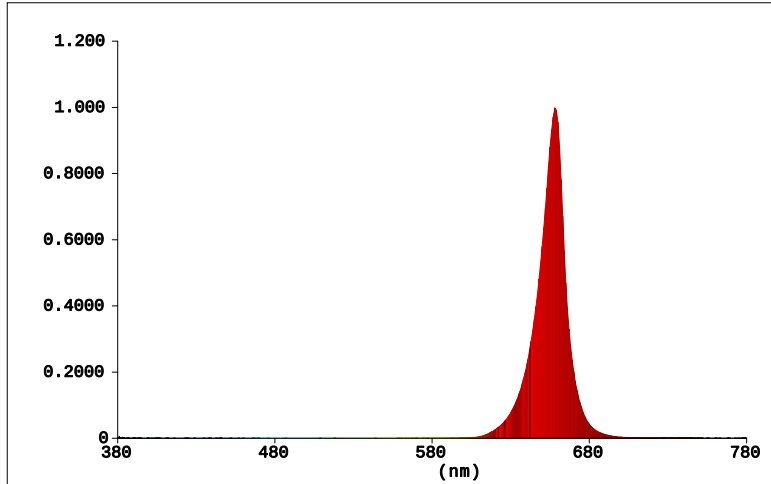
:

(2): $x=0.7191$ $y=0.2789$ $u'=0.5860$ $v'=0.5114$ $duv=-1.387e-001$: $T_c=1001K$: $\lambda_d=642.7nm$: Purity=99.4%: $R=98.9\%$ $G=1.1\%$ $B=0.0\%$: $\lambda_p=658.2nm$: $\Delta\lambda_d=15.8nm$: $R_a=15.2$ [4]

$R1 = 10.11$	$R2 = 80.22$	$R3 = 31.11$	$R4 = -20.55$	$R5 = 6.22$
$R6 = 84.95$	$R7 = 6.99$	$R8 = -77.67$	$R9 = -245.35$	$R10 = 78.21$
$R11 = -7.50$	$R12 = 84.44$	$R13 = 34.97$	$R14 = 58.53$	$R15 = -31.73$

:

 $\phi = 4.221 lm$: $48.63 lm/W$



:

(2): $x=0.7188$ $y=0.2790$ $u'=0.5856$ $v'=0.5114$ $duv=-1.384e-001$: $T_c=1001K$: $\lambda_d=642.7nm$: Purity=99.3%: $R=98.8\%$ $G=1.1\%$ $B=0.0\%$: $\lambda_p=658.4nm$: $\Delta\lambda_d=16.3nm$: $R_a=17.4$ [4]

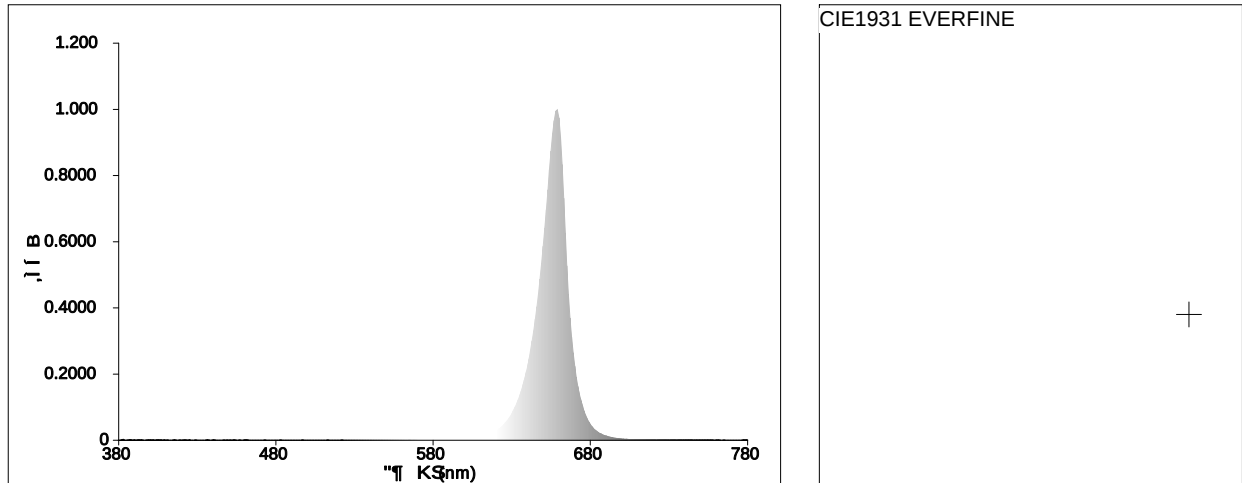
R1 =12.40	R2 =81.28	R3 =32.35	R4 =-16.52	R5 =9.62
R6 =86.44	R7 =8.40	R8 =-74.69	R9 =-240.25	R10=80.01
R11=-2.10	R12=82.06	R13=37.15	R14=59.38	R15=-29.32

:

 $\phi = 8.640 lm$: $48.36 lm/W$ $\phi_e = 135.0 mW$

($\mu mol/s$): $3.679e-004[400\sim500nm]$ $8.392e-004[500\sim600nm]$ $7.333e-001[600\sim700nm]$
 $=7.378e-001\mu mol/s$ $=657$ /

\$d B # A© y



Np8F – D

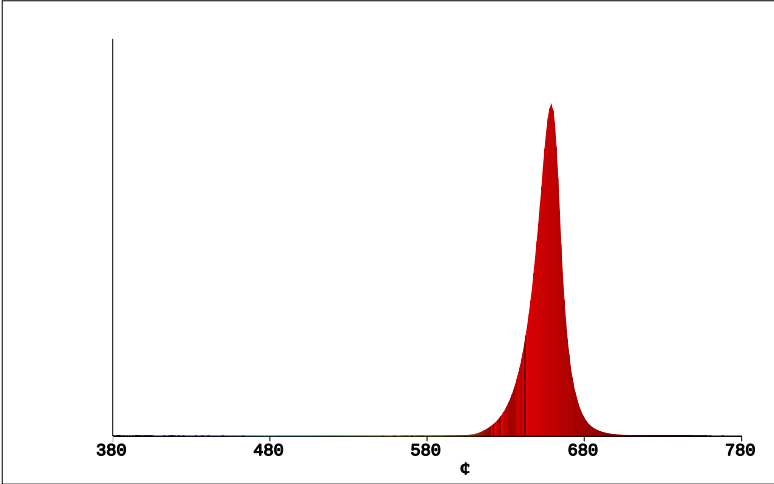
8F • \$ Ū (2 z):x=0.7186 y=0.2788/u'=0.5857 v'=0.5112 duv=-1.385e-001
 ,l G8F#ý:Tc=1001K "¶KS: d=643.1nm 8F4f z: Purity=99.2%
 8F!":R=98.9% G=1.1% B=0.0% Ä "¶KS: p=658.7nm ' z : Ū d=17.1nm
 8F Ū D :Ra=16.4 [4 Ū ð š2Ů D]
 R1=11.47 R2=81.07 R3=30.85 R4=-18.26 R5=8.44
 R6=86.33 R7=7.64 R8=-75.96 R9=-242.26 R10=80.08
 R11=-3.81 R12=82.18 R13=36.41 R14=58.43 R15=-30.30

z – D :
 EŮŒ - = 17.44 lm : 46.81 lm/W -e = 275.5 mW
 GŒ \$(umol/s): 9.174e-004[400~500nm] 1.690e-003[500~600nm] 1.497e+000[600~700nm]
 GŒ \$=1.506e+000umol/s g; :± !" =620 g; 6Ů =7.386e-001
 ŪEd Ø – D Ä 400~700nm Ä: Ū GŒ \$EŮŒ PPF: 1.4999 mol/s
 Ū Ý Ed ØEŮŒ PRF:274.47mW
 Ū \$EŮŒ)[Eff(PPF): 4.03 mol/s/W

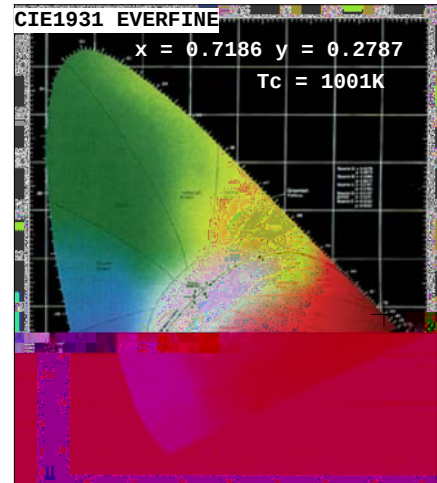
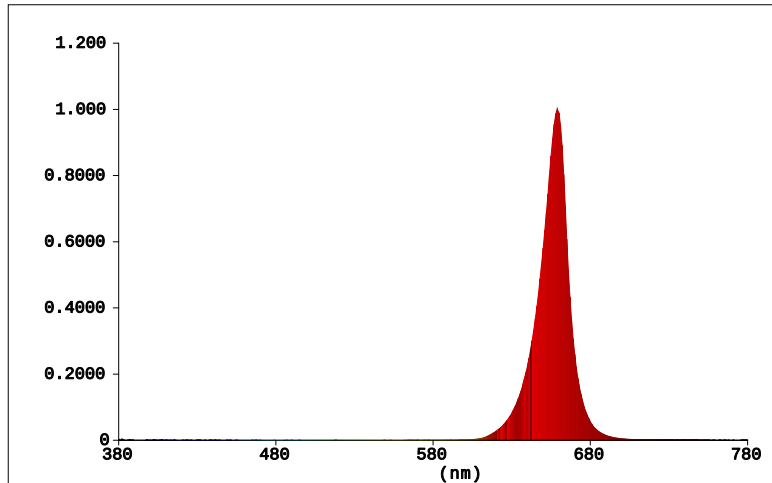
+ – D :
 !7 Å+ _ VF = 1.862 V !7 Å+ # IF = 200.0 mA s)[P = 372.5 mW Ch1
 Ú4{:**[OUT] ,Q Ú2O:OUT

¼ <(Š Ů /Ä Ū ÊKÈT=40.00ms Ip=39931 (61%) [HAAS2000_V1_USB] V2.00.289

{ • _ È :LIGHT	{ •4ê È :25
# A© Ž , :DAMIN	# A© ¹ ó :2021-04-30 14-46
)f W#ý z:25.3	)f W\$S z :65.0%
Eô V :EVERFINE	Ū "¼3#
u Ž , :damin	
# A© ¼ <LTS-300_100V + HAAS2000_V1_USB	



0 = 5 nm



:

(2): $x=0.7186$ $y=0.2787$ $u'=0.5858$ $v'=0.5111$ $duv=-1.385e-001$: $T_c=1001K$: $\lambda_d=643.2nm$: Purity=99.2%: $R=98.9\%$ $G=1.1\%$ $B=0.0\%$: $\lambda_p=659.0nm$: $\Delta\lambda_d=17.8nm$: $R_a=16.0$ [4]

R1 =11.01	R2 =80.75	R3 =30.54	R4 =-19.35	R5 =7.65
R6 =85.52	R7 =7.83	R8 =-75.82	R9 =-242.03	R10=79.77
R11=-5.84	R12=83.08	R13=35.83	R14=58.14	R15=-30.29

:

 $\phi = 30.07 lm$: $43.90 lm/W$ $\phi_e = 483.8 mW$ (umol/s): $1.777e-003[400\sim500nm]$ $3.012e-003[500\sim600nm]$ $2.628e+000[600\sim700nm]$ $=2.646e+000umol/s$ =558 =7.050e-001400~700nm : PPF: $2.634\mu mol/s$

PRF:481.7mW

Eff(PPF): $3.85\mu mol/s/W$

:

VF = 1.956 V

IF = 350.0 mA

P = 685.0 mW Ch1

:**[OUT]

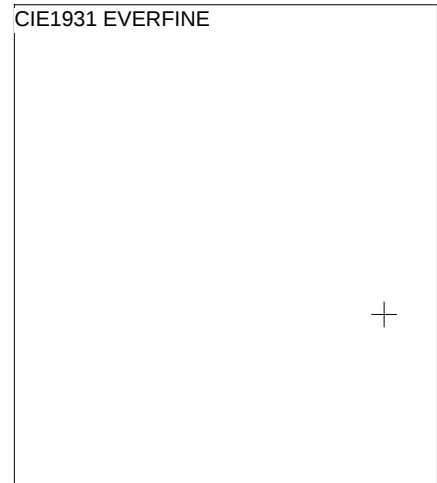
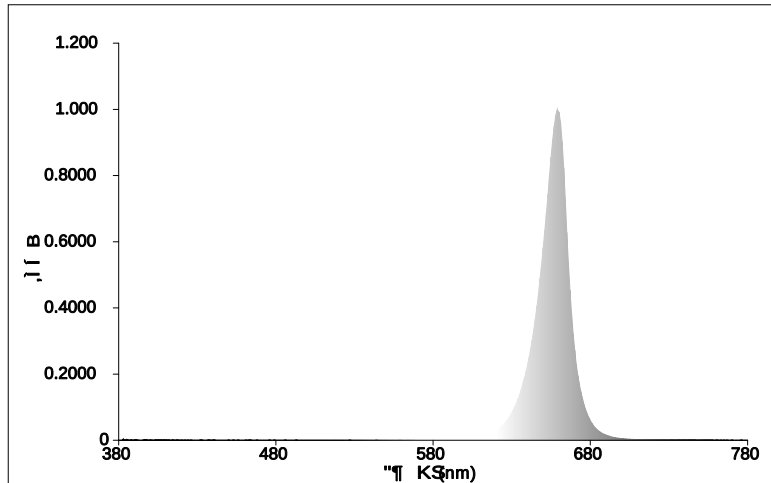
:OUT

: $T=20.00ms$ $I_p=33886 (52\%)$ [HAAS2000_V1_USB] V2.00.289

:LIGHT
:DAMIN
:25.3
:EVERFINE
:damin
:LTS-300_100V + HAAS2000_V1_USB

:27
:2021-04-30 14-47
:65.0%
:3#

\$d B # A© y



Np8F – D

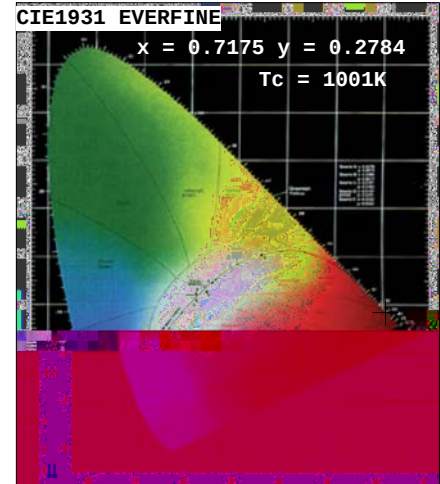
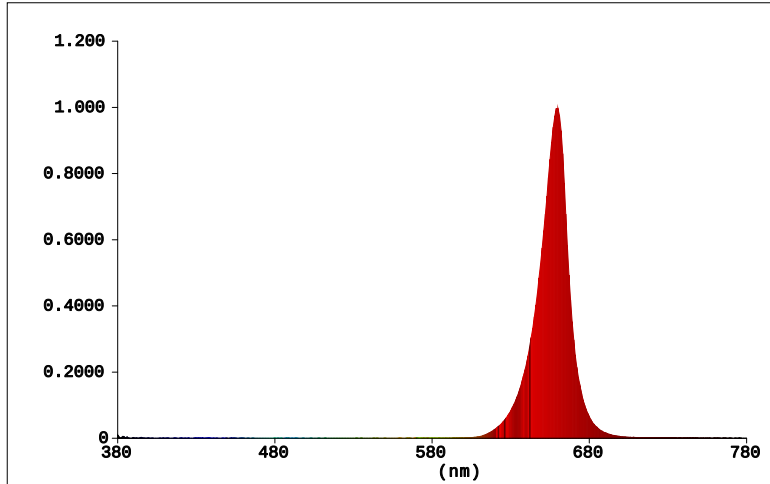
8F • \$ Ů (2 z):x=0.7188 y=0.2788/u'=0.5857 v'=0.5113 duv=-1.385e-001
 ,l G8F#ý:Tc=1001K "¶KS: d=642.8nm 8F4f z: Purity=99.3%
 8F!":R=98.8% G=1.1% B=0.0% Ä "¶KS: p=659.3nm ' z : Ů d=18.1nm
 8F Ů D :Ra=16.7 [4 Ů ð š2Ů D]
 R1=11.59 R2=80.67 R3=31.82 R4=-18.23 R5=8.20
 R6=84.98 R7=8.75 R8=-74.50 R9=-240.07 R10=79.29
 R11=-5.15 R12=84.07 R13=36.17 R14=58.95 R15=-29.35

z – D :
 EŮŒ - = 34.16 lm : 43.01 lm/W -e = 552.2 mW
 GŒ \$(µmol/s): 1.869e-003[400~500nm] 3.396e-003[500~600nm] 3.001e+000[600~700nm]
 GŒ \$=3.021e+000µmol/s g; :± !" =661 g; 6Ů =6.943e-001
 ŮEd Ø – D Ä 400~700nm Å: Ů GŒ \$EŮŒ PPF: 3.0077 mol/s
 Ů Ý Ed ØEŮŒ PRF:549.91mW
 Ů \$EŮŒ)[Eff(PPF): 3.79 mol/s/W

+ – D :
 !7 Å+ _ VF = 1.985 V !7 Å+ # IF = 399.9 mA s)[P = 794.2 mW Ch1
 Ú4{:**[OUT] ,Q Ú2O:OUT

¼ <(Š Ů /Ä Ů ÊKÈT=20.00ms Ip=38205 (58%) [HAAS2000_V1_USB] V2.00.289

{ • _ È :LIGHT	{ •4ê È :28
# A© Ž , :DAMIN	# A© ¹ ó :2021-04-30 14-47
)f W#ý z:25.3	)f W\$S z :65.0%
Eô V :EVERFINE	Ů "¼3#
u Ž , :damin	
# A© ¼ <LTS-300_100V + HAAS2000_V1_USB	



:

(2): $x=0.7175$ $y=0.2784$ $u'=0.5851$ $v'=0.5107$ $duv=-1.379e-001$: $T_c=1001K$: $\lambda_d=643.9nm$: Purity=98.8%: $R=98.8\%$ $G=1.2\%$ $B=0.1\%$: $\lambda_p=659.3nm$: $\Delta\lambda_d=18.6nm$: $R_a=18.7$ [4]

R1 =13.90	R2 =82.44	R3 =31.40	R4 =-14.89	R5 =11.92
R6 =87.76	R7 =9.28	R8 =-72.13	R9 =-235.38	R10=82.78
R11=0.16	R12=78.44	R13=38.77	R14=58.79	R15=-27.09

:

 $\phi = 42.03 lm$: $41.21 lm/W$ $\phi_e = 687.9 mW$ (umol/s): $3.265e-003[400\sim500nm]$ $4.515e-003[500\sim600nm]$ $3.736e+000[600\sim700nm]$ $=3.764e+000umol/s$ =419 =6.728e-001400~700nm : PPF: $3.7462\mu mol/s$

PRF:684.72mW

Eff(PPF): $3.67\mu mol/s/W$

:

VF = 2.040 V

IF = 499.9 mA

P = 1020 mW Ch1

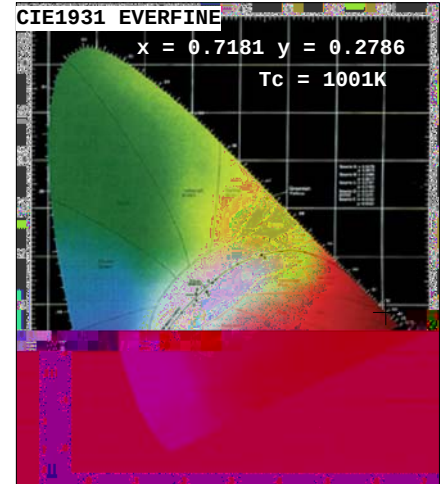
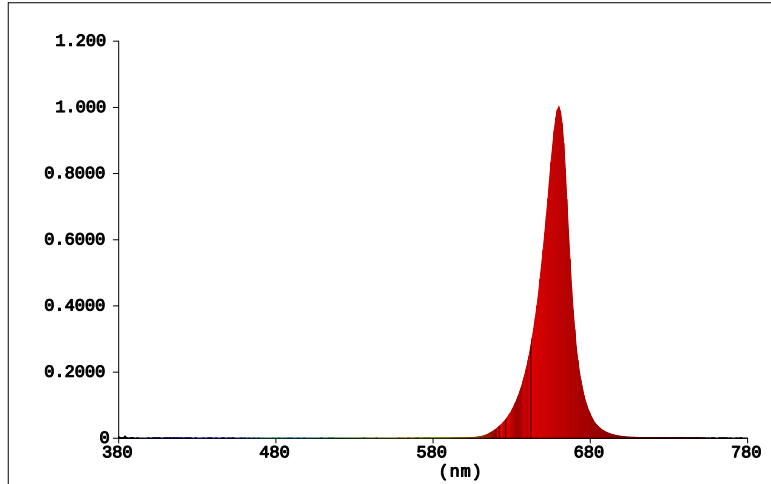
:**[OUT]

:OUT

: $T=10.00ms$ $I_p=23559 (36\%)$ [HAAS2000_V1_USB] V2.00.289

:LIGHT
:DAMIN
:25.3
:EVERFINE
:damin
:LTS-300_100V + HAAS2000_V1_USB

:29
:2021-04-30 14-47
:65.0%
:3#



:

(2): $x=0.7181$ $y=0.2786$ $u'=0.5854$ $v'=0.5110$ $duv=-1.382e-001$: $T_c=1001K$: $\lambda_d=643.5nm$: Purity=99.0%: $R=98.8\%$ $G=1.2\%$ $B=0.1\%$: $\lambda_p=660.0nm$: $\Delta\lambda_d=19.0nm$: $R_a=18.5$ [4]

R1 =13.59	R2 =81.90	R3 =31.78	R4 =-15.02	R5 =11.33
R6 =86.78	R7 =9.68	R8 =-72.08	R9 =-235.65	R10=81.92
R11=-0.34	R12=80.60	R13=38.25	R14=58.92	R15=-27.25

:

 $\phi = 49.55 lm$: $39.47 lm/W$ $\phi_e = 822.0 mW$ (umol/s): $3.207e-003[400\sim500nm]$ $5.183e-003[500\sim600nm]$ $4.467e+000[600\sim700nm]$ $=4.500e+000umol/s$ =475 =6.533e-001400~700nm : PPF: $4.4769\mu mol/s$

PRF:817.83mW

Eff(PPF): $3.57\mu mol/s/W$

:

VF = 2.093 V

IF = 599.8 mA

P = 1256 mW Ch1

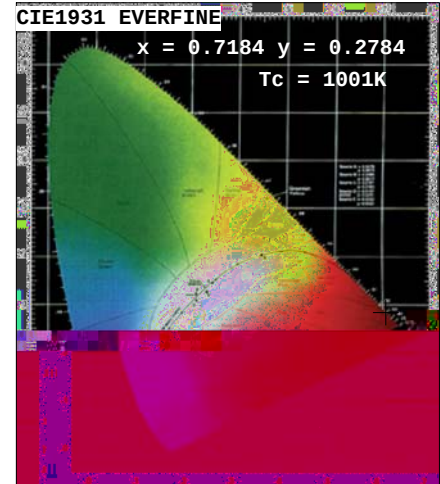
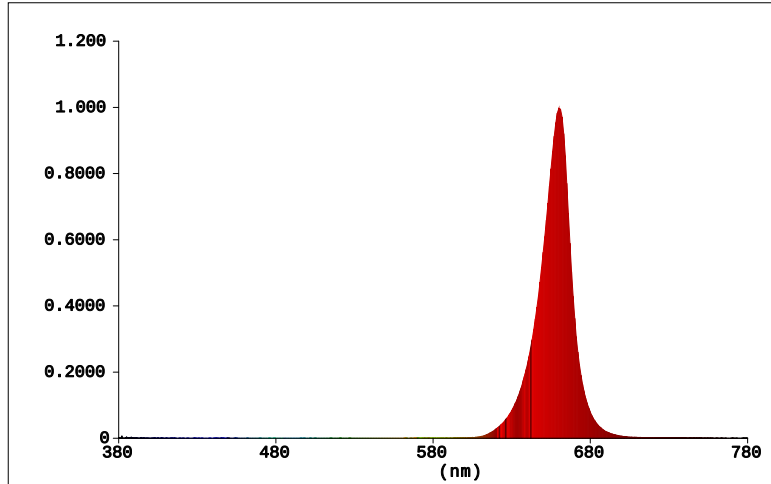
:**[OUT]

:OUT

: $T=10.00ms$ $I_p=27480 (42\%)$ [HAAS2000_V1_USB] V2.00.289

:LIGHT
:DAMIN
:25.3
:EVERFINE
:damin
:LTS-300_100V + HAAS2000_V1_USB

:30
:2021-04-30 14-47
:65.0%
:3#



:

(2): $x=0.7184$ $y=0.2784/u'=0.5860$ $v'=0.5109$ $duv=-1.388e-001$: $T_c=1001K$: $\lambda_d=643.7nm$: Purity=99.0%: R=98.9% G=1.1% B=0.0% : $\lambda_p=660.5nm$: $\Delta\lambda_d=19.4nm$

: Ra=16.6 [4]

R1 =11.67	R2 =81.17	R3 =29.96	R4 =-18.27	R5 =8.67
R6 =85.84	R7 =8.39	R8 =-74.68	R9 =-240.13	R10=80.99
R11=-4.08	R12=82.31	R13=36.59	R14=57.73	R15=-29.42

:

 $\phi = 56.53 lm$: $37.69 lm/W$ $\phi_e = 953.7 mW$ (umol/s): $3.725e-003[400\sim500nm]$ $5.828e-003[500\sim600nm]$ $5.185e+000[600\sim700nm]$ $=5.225e+000umol/s$ =491 =6.346e-001400~700nm : PPF: $5.1964\mu mol/s$

PRF: 948.72mW

Eff(PPF): $3.46\mu mol/s/W$

:

VF = 2.142 V

IF = 699.9 mA

P = 1500 mW Ch1

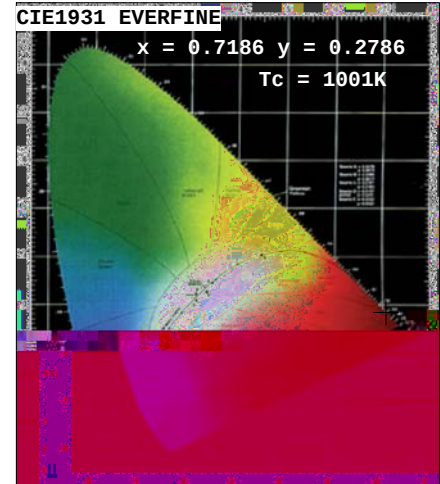
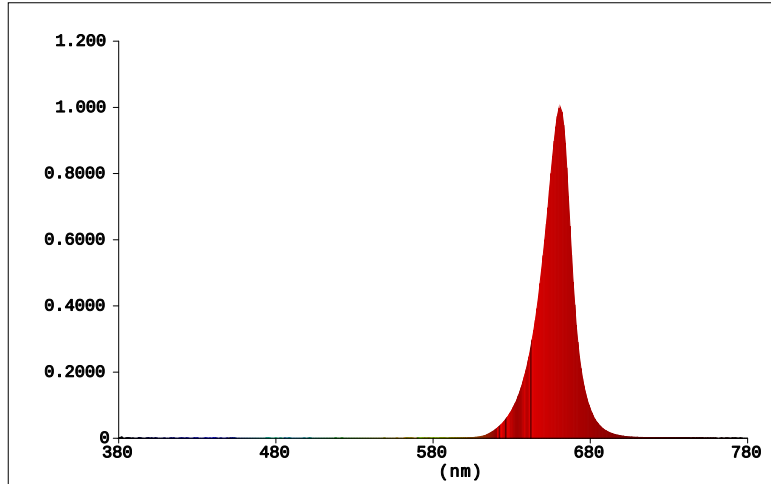
:**[OUT]

:OUT

: $T=10.00ms$ $I_p=31239 (48\%)$ [HAAS2000_V1_USB] V2.00.289

:LIGHT
:DAMIN
:25.3
:EVERFINE
:damin
:LTS-300_100V + HAAS2000_V1_USB

:31
:2021-04-30 14-48
:65.0%
:3#



:

(2): x=0.7186 y=0.2786/u'=0.5859 v'=0.5111 duv=-1.387e-001

:Tc=1001K :λd=643.2nm : Purity=99.2%

:R=98.8% G=1.2% B=0.1% :λp=660.5nm :Δλd=19.8nm

:Ra=17.9 [4]

R1 =12.90	R2 =81.36	R3 =31.53	R4 =-16.06	R5 =10.22
R6 =85.55	R7 =10.02	R8 =-72.10	R9 =-236.04	R10=81.13
R11=-2.34	R12=82.61	R13=37.45	R14=58.67	R15=-27.50

:

 $\phi = 63.25 \text{ lm}$: 36.07 lm/W $\phi_e = 1082 \text{ mW}$ (umol/s): $3.451e-003[400\sim500\text{nm}]$ $6.738e-003[500\sim600\text{nm}]$ $5.889e+000[600\sim700\text{nm}]$ $=5.934e+000\text{umol/s}$ =643 =6.163e-001400~700nm : PPF: $5.9008\mu\text{mol/s}$

PRF:1076.7mW

Eff(PPF): $3.36\mu\text{mol/s/W}$

:

VF = 2.191 V

IF = 800.0 mA

P = 1754 mW Ch1

:**[OUT]

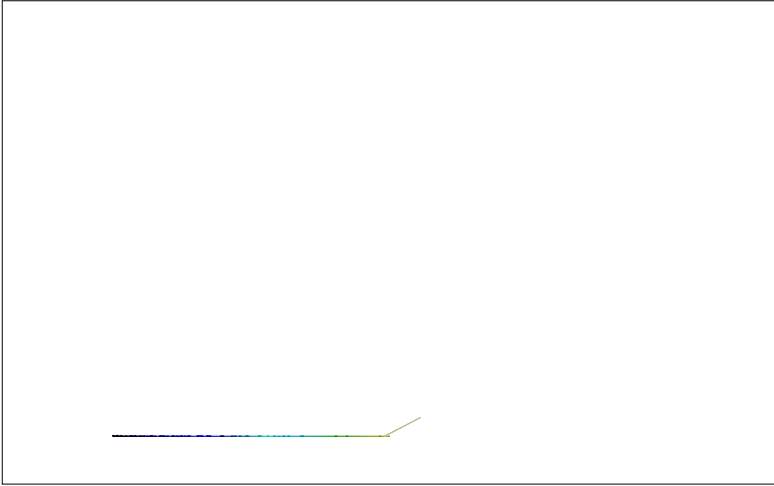
:OUT

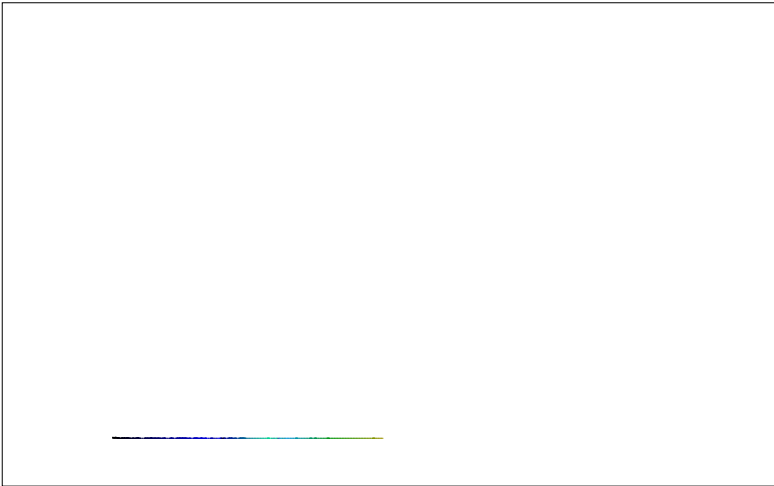
: T=10.00ms Ip=34704 (53%) [HAAS2000_V1_USB] V2.00.289

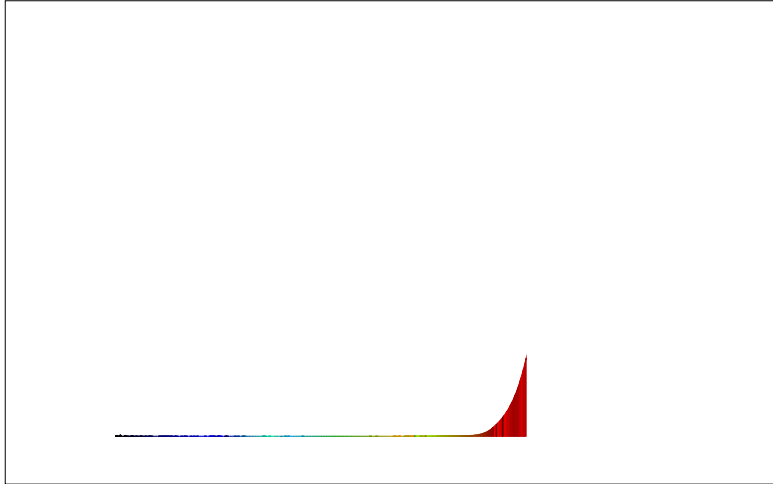
:LIGHT
:DAMIN
:25.3
:EVERFINE
:damin
:LTS-300_100V + HAAS2000_V1_USB

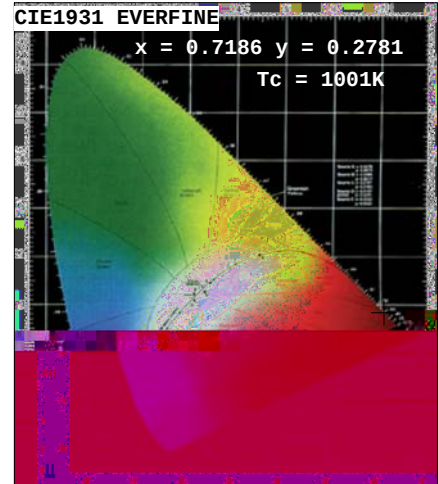
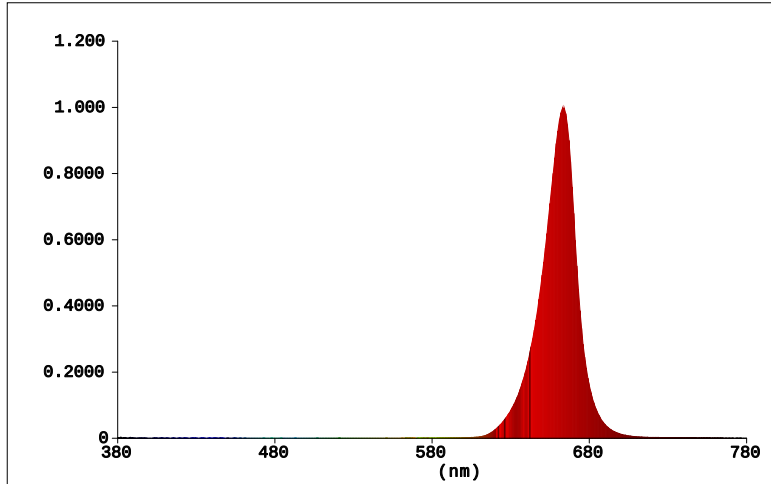
:32
:2021-04-30 14-48
:65.0%
:3#











:

(2): $x=0.7186$ $y=0.2781$ $u'=0.5867$ $v'=0.5108$ $duv=-1.395e-001$: $T_c=1001K$: $\lambda_d=644.2nm$: Purity=99.0%: $R=98.7\%$ $G=1.3\%$ $B=0.1\%$: $\lambda_p=663.6nm$: $\Delta\lambda_d=22.1nm$: $R_a=19.0$ [4]

R1 =14.32	R2 =81.77	R3 =31.05	R4 =-14.22	R5 =11.85
R6 =85.29	R7 =11.69	R8 =-69.39	R9 =-231.65	R10=82.64
R11=-0.62	R12=82.40	R13=38.60	R14=58.23	R15=-25.16

:

 $\phi = 87.93 lm$: $28.00 lm/W$ $\phi_e = 1673 mW$ (umol/s): $5.483e-003[400\sim500nm]$ $1.013e-002[500\sim600nm]$ $9.118e+000[600\sim700nm]$ $=9.205e+000umol/s$ =609 =5.318e-001400~700nm : PPF: $9.1343\mu mol/s$

PRF:1660.6mW

Eff(PPF): $2.91\mu mol/s/W$

:

VF = 2.415 V

IF = 1300 mA

P = 3141 mW Ch1

:**[OUT]

:OUT

: $T=10.00ms$ $I_p=48563 (74\%)$ [HAAS2000_V1_USB] V2.00.289

:LIGHT

:37

:DAMIN

:2021-04-30 14-49

:25.3

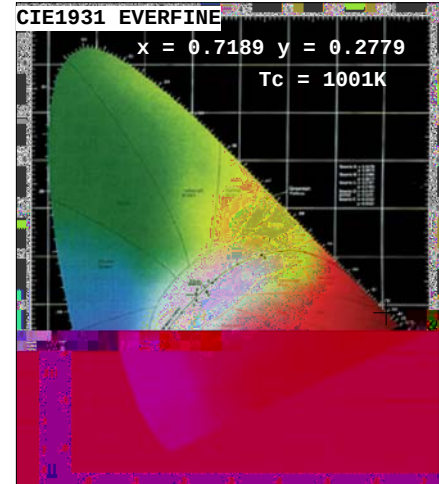
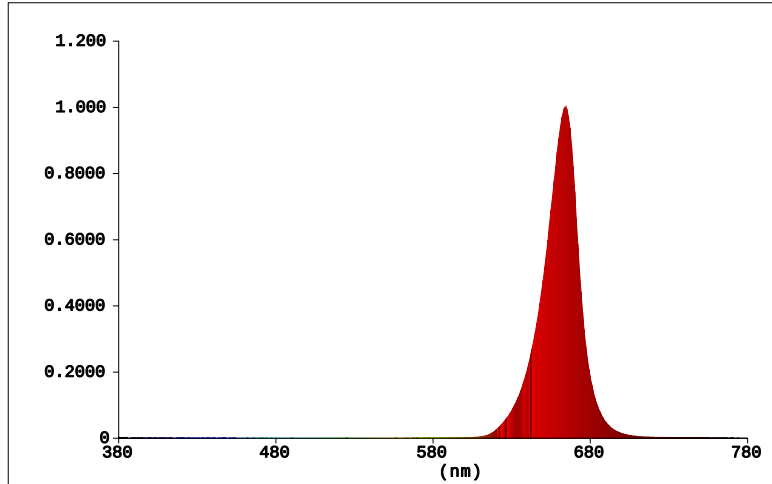
:65.0%

:EVERFINE

:3#

:damin

:LTS-300_100V + HAAS2000_V1_USB



:

(2): $x=0.7189$ $y=0.2779$ $u'=0.5872$ $v'=0.5108$ $duv=-1.400e-001$: $T_c=1001K$: $\lambda_d=644.4nm$: Purity=99.1%: $R=98.7\%$ $G=1.2\%$ $B=0.1\%$: $\lambda_p=664.0nm$: $\Delta\lambda_d=22.6nm$: $R_a=18.1$ [4]

R1 =13.39	R2 =81.25	R3 =30.38	R4 =-16.08	R5 =10.30
R6 =84.23	R7 =11.44	R8 =-70.25	R9 =-233.24	R10=81.82
R11=-3.64	R12=84.13	R13=37.65	R14=57.75	R15=-25.86

:

 $\phi = 90.89 lm$: $26.42 lm/W$ $\phi_e = 1777 mW$ (umol/s): $5.755e-003[400\sim500nm]$ $1.041e-002[500\sim600nm]$ $9.687e+000[600\sim700nm]$ $=9.785e+000umol/s$ =627 =5.157e-001400~700nm : PPF: $9.7038\mu mol/s$

PRF:1762.6mW

Eff(PPF): $2.82\mu mol/s/W$

:

VF = 2.459 V

IF = 1399 mA

P = 3440 mW Ch1

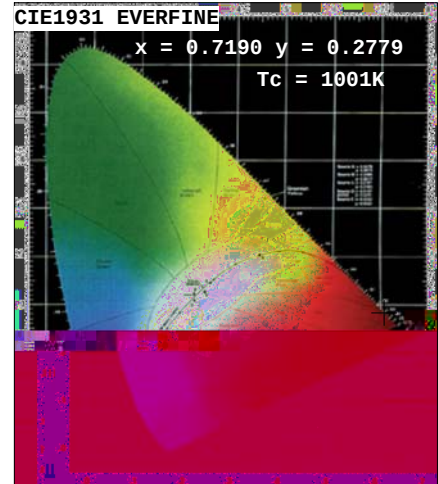
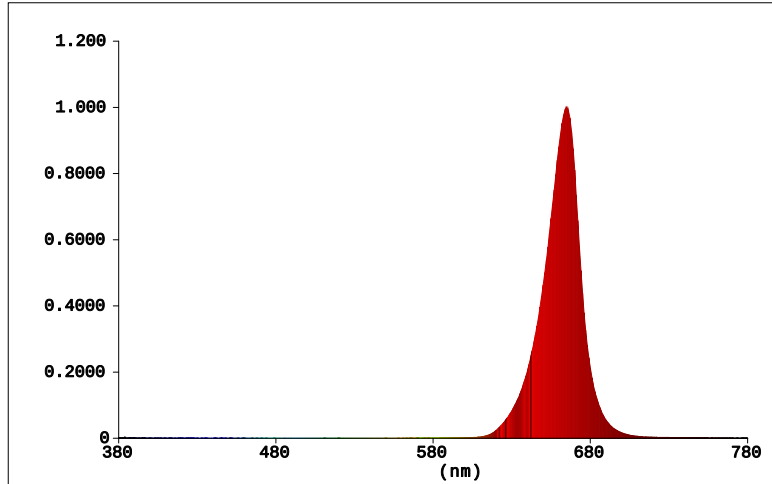
:**[OUT]

:OUT

: $T=10.00ms$ $I_p=50583 (77\%)$ [HAAS2000_V1_USB] V2.00.289

:LIGHT
:DAMIN
:25.3
:EVERFINE
:damin
:LTS-300_100V + HAAS2000_V1_USB

:38
:2021-04-30 14-49
:65.0%
:3#



:

(2): $x=0.7190$ $y=0.2779$ $u'=0.5873$ $v'=0.5107$ $duv=-1.401e-001$: $T_c=1001K$: $\lambda_d=644.5nm$: Purity=99.0%: R=98.7% G=1.3% B=0.0% : $\lambda_p=665.1nm$: $\Delta\lambda_d=23.1nm$

: Ra=19.3 [4]

R1 =14.67	R2 =81.68	R3 =31.34	R4 =-13.97	R5 =11.88
R6 =84.44	R7 =12.47	R8 =-68.46	R9 =-230.38	R10=82.45
R11=-1.30	R12=83.86	R13=38.81	R14=58.32	R15=-24.36

:

 $\phi = 93.01 lm$: $24.80 lm/W$ $\phi_e = 1872 mW$ (umol/s): $5.784e-003[400\sim500nm]$ $1.084e-002[500\sim600nm]$ $1.021e+001[600\sim700nm]$ $=1.032e+001umol/s$ =679 =4.985e-001400~700nm : PPF: $10.232\mu mol/s$

PRF:1856.6mW

Eff(PPF): $2.73\mu mol/s/W$

:

VF = 2.501 V

IF = 1499 mA

P = 3751 mW Ch1

:**[OUT]

:OUT

: $T=10.00ms$ $I_p=52255 (80\%)$ [HAAS2000_V1_USB] V2.00.289

:LIGHT
 :DAMIN
 :25.3
 :EVERFINE
 :damin
 :LTS-300_100V + HAAS2000_V1_USB

:39
 :2021-04-30 14-49
 :65.0%
 :3#