

:

( 2 ) : x=0.7191 y=0.2789/u'=0.5860 v'=0.5114 duv=-1.387e-001

:Tc=1001K :λd=642.7nm : Purity=99.4%

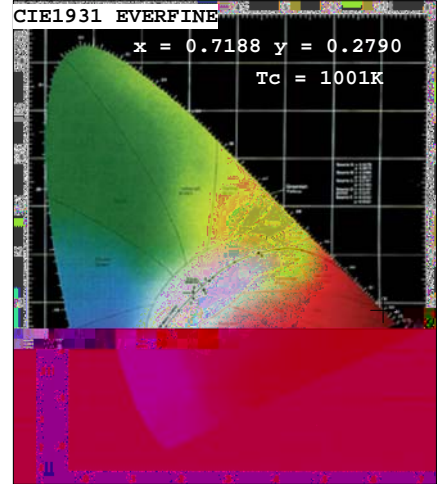
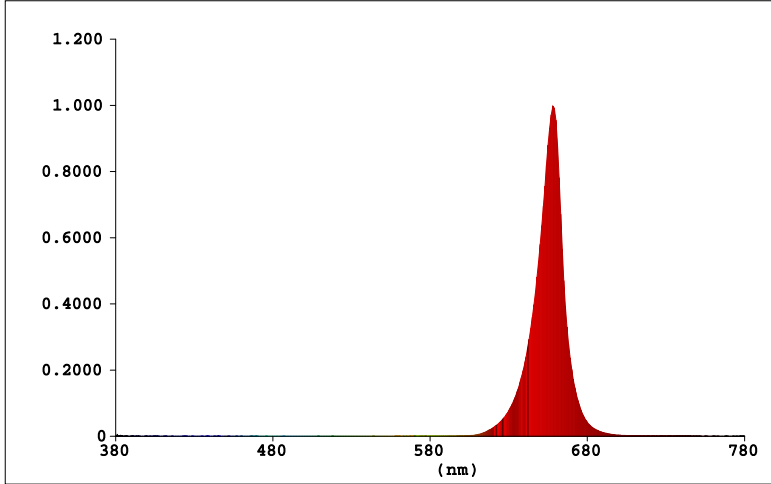
:R=98.9% G=1.1% B=0.0% :λp=658.2nm :Δλd=15.8nm

:Ra=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

:

Φ = 4.221 lm : 48.63 lm/W



:

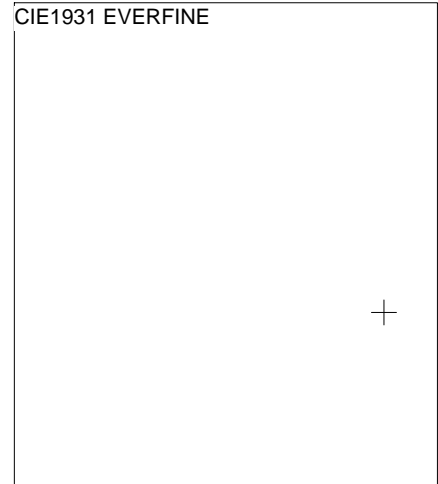
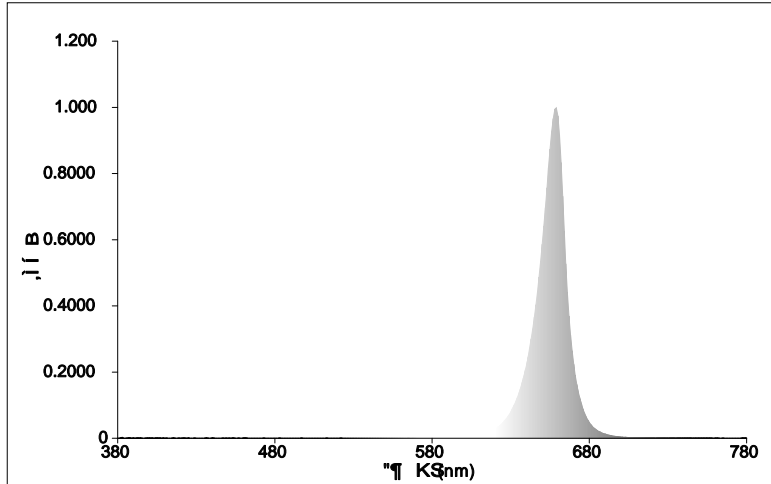
( 2 ) : x=0.7188 y=0.2790/u'=0.5856 v'=0.5114 duv=-1.384e-001  
 :Tc=1001K :λd=642.7nm : Purity=99.3%  
 :R=98.8% G=1.1% B=0.0% :λp=658.4nm :Δλd=16.3nm  
 :Ra=17.4 [ 4 ]

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

:

Φ = 8.640 lm : 48.36 lm/W Φe = 135.0 mW  
 (umol/s): 3.679e-004[400~500nm] 8.392e-004[500~600nm] 7.333e-001[600~700nm]  
 =7.378e-001umol/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

, Ì 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 : û d=17.1nm

8F Ū D :Ra=16.4 [4 Ū õ š2ĭ 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 :

EİG£ - = 17.44 lm : 46.81 lm/W -e = 275.5 mW

G£ \$(umol/s): 9.174e-004[400~500nm] 1.690e-003[500~600nm] 1.497e+000[600~700nm]

G£ \$=1.506e+000umol/s g; :± !" =620 g; 6Ñ =7.386e-001

ÜEd Ø – D Ä 400~700nm Å: Ü G£ \$EİG£ PPF: 1.4999 mol/s

Ü Ý Ed ØEİG£ PRF:274.47mW

Ü \$EİG£ ) [ Eff(PPF): 4.03 mol/s/W

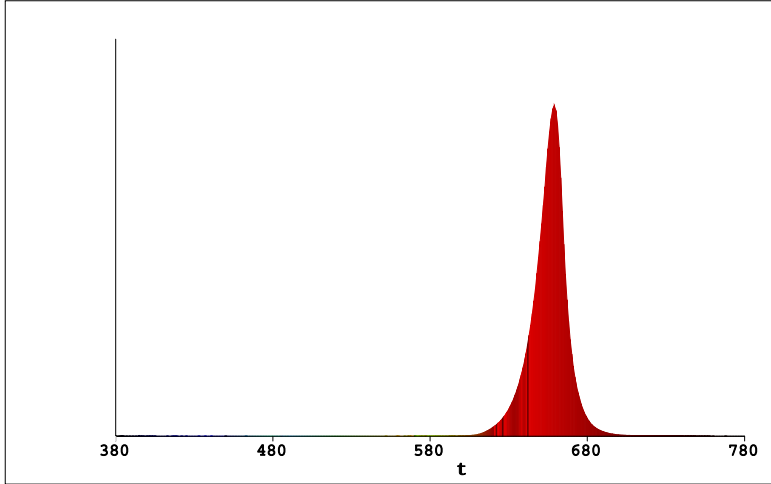
+ – D :

!7 å+ \_ VF = 1.862 V !7 å+ # IF = 200.0 mA s)[ P = 372.5 mW Ch1

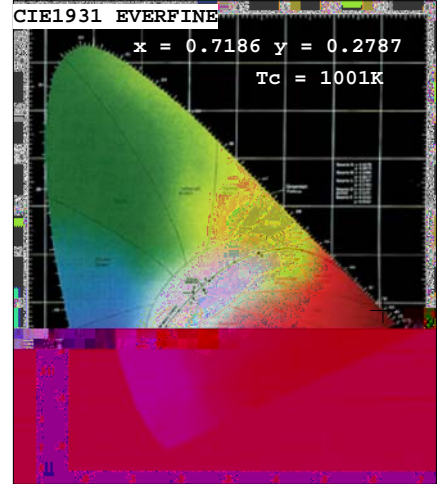
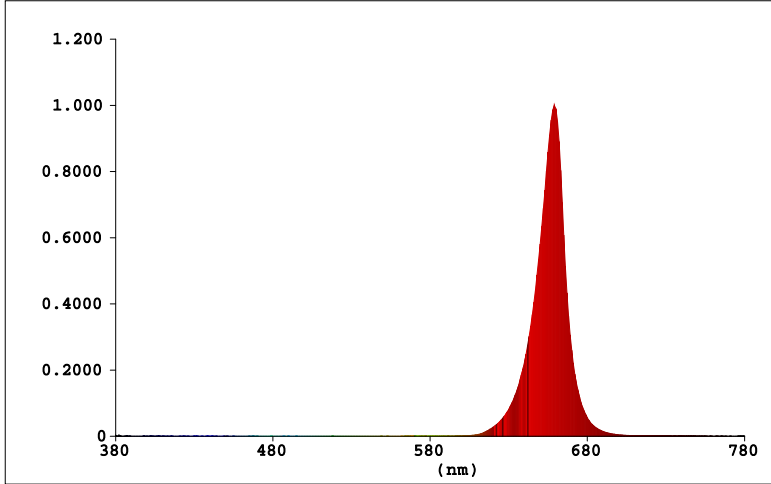
Ú4{:[OUT] ,Q Ú2O:OUT

¼ <(Š Ō. /Ä Ú ÉKÈT=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	



1 ) t



:

( 2 ) : x=0.7186 y=0.2787/u'=0.5858 v'=0.5111 duv=-1.385e-001  
 :Tc=1001K :λd=643.2nm : Purity=99.2%  
 :R=98.9% G=1.1% B=0.0% :λp=659.0nm :Δλd=17.8nm  
 :Ra=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

:

Φ = 30.07 lm : 43.90 lm/W Φe = 483.8 mW  
 (umol/s): 1.777e-003[400~500nm] 3.012e-003[500~600nm] 2.628e+000[600~700nm]  
 =2.646e+000umol/s =558 =7.050e-001  
 400~700nm : PPF: 2.634μmol/s  
 PRF:481.7mW  
 Eff(PPF): 3.85μmol/s/W

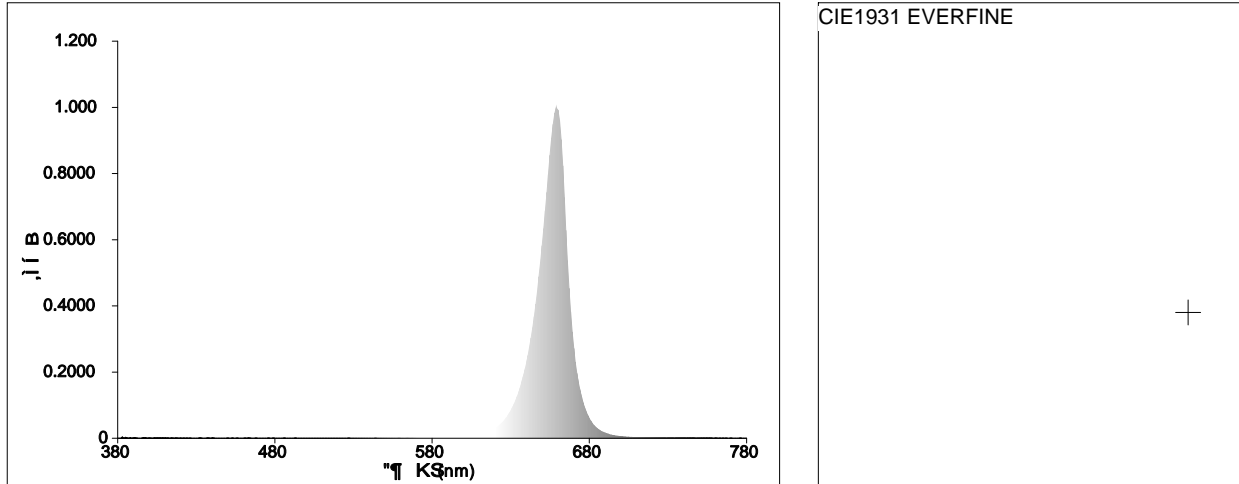
:

VF = 1.956 V IF = 350.0 mA P = 685.0 mW Ch1  
 :\*\*[OUT] :OUT

: T=20.00ms Ip=33886 (52%) [ HAAS2000\_V1\_USB ] V2.00.289

:LIGHT :27  
 :DAMIN :2021-04-30 14-47  
 :25.3 :65.0%  
 :EVERFINE :3#  
 :damin  
 :LTS-300\_100V + HAAS2000\_V1\_USB

\$d B # A© y



Np8F – D

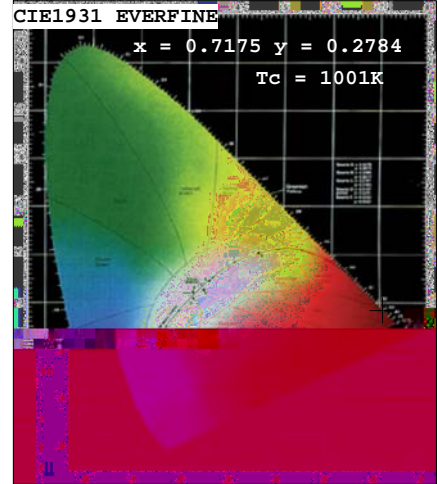
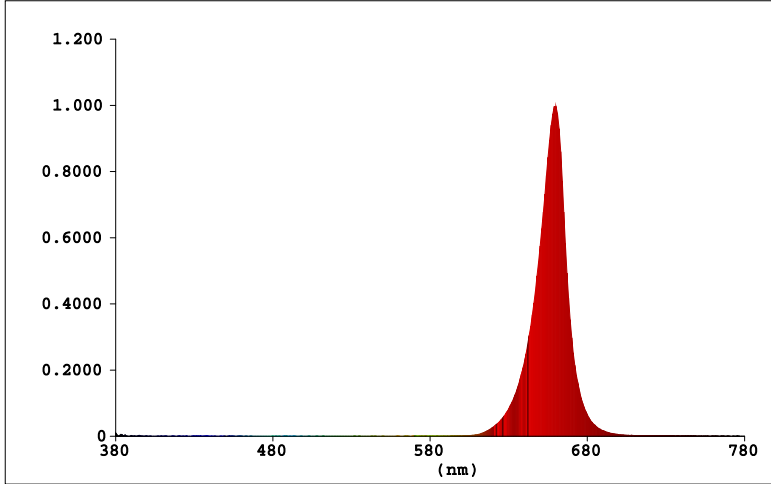
8F • \$ Ū (2 z):x=0.7188 y=0.2788/u'=0.5857 v'=0.5113 duv=-1.385e-001  
 , Ì G8F#ý:Tc=1001K "¶KS: d=642.8nm 8F4f z: Purity=99.3%  
 8F!":R=98.8% G=1.1% B=0.0% Ä "¶KS: p=659.3nm ' z : û d=18.1nm  
 8F Ū D :Ra=16.7 [4 Ū õ š2Ī D ]  
 R1 =11.59 R2 =80.67 R3 =31.82 R4 =-18.23 R5 =8.20  
 R6 =84.98 R7 =8.75 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 :  
 EİG£ - = 34.16 lm : 43.01 lm/W -e = 552.2 mW  
 G£ \$(umol/s): 1.869e-003[400~500nm] 3.396e-003[500~600nm] 3.001e+000[600~700nm]  
 G£ \$=3.021e+000umol/s g; :± !" =661 g; 6Ñ =6.943e-001  
 ÜEd Ø – D Ä 400~700nm Å: Ü G£ \$EİG£ PPF: 3.0077 mol/s  
 Ü Ý Ed ØEİG£ PRF:549.91mW  
 Ü \$EİG£ ) [ 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 Ō. /Ä Ú 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 Ū "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  
 :Tc=1001K :λd=643.9nm : Purity=98.8%  
 :R=98.8% G=1.2% B=0.1% :λp=659.3nm :Δλd=18.6nm  
 :Ra=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

:

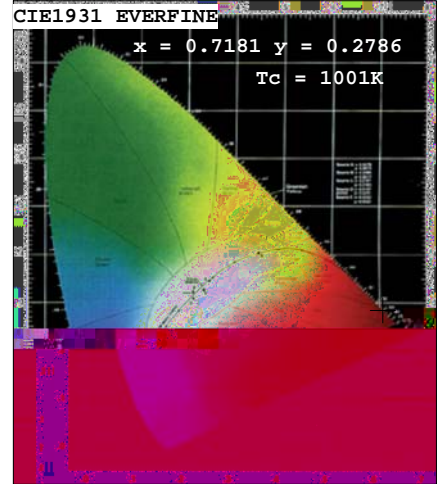
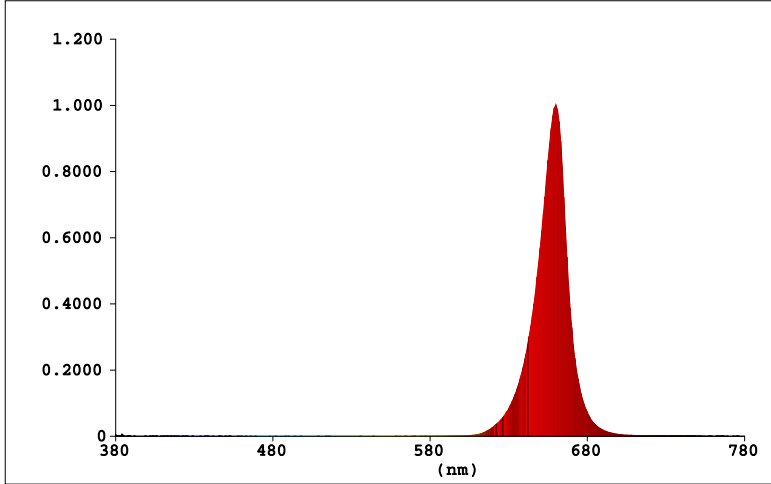
Φ = 42.03 lm : 41.21 lm/W Φe = 687.9 mW  
 (umol/s): 3.265e-003[400~500nm] 4.515e-003[500~600nm] 3.736e+000[600~700nm]  
 =3.764e+000umol/s =419 =6.728e-001  
 400~700nm : PPF: 3.7462μmol/s  
 PRF:684.72mW  
 Eff(PPF): 3.67μmol/s/W

:

VF = 2.040 V IF = 499.9 mA P = 1020 mW Ch1  
 :\*\*[OUT] :OUT

: T=10.00ms Ip=23559 (36%) [ HAAS2000\_V1\_USB ] V2.00.289

:LIGHT	:29
:DAMIN	:2021-04-30 14-47
:25.3	:65.0%
:EVERFINE	:3#
:damin	
:LTS-300_100V + HAAS2000_V1_USB	



:

( 2 ) : x=0.7181 y=0.2786/u'=0.5854 v'=0.5110 duv=-1.382e-001  
 :Tc=1001K :λd=643.5nm : Purity=99.0%  
 :R=98.8% G=1.2% B=0.1% :λp=660.0nm :Δλd=19.0nm  
 :Ra=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

:

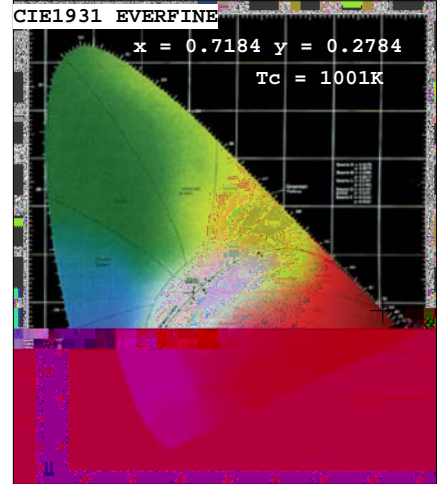
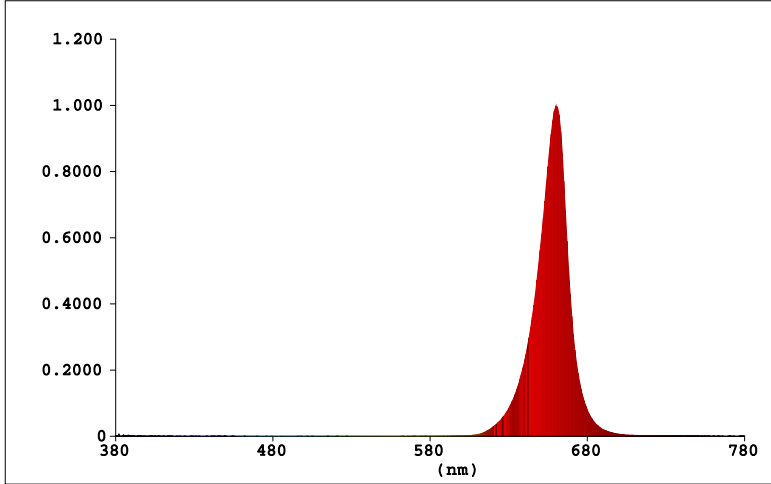
Φ = 49.55 lm : 39.47 lm/W Φe = 822.0 mW  
 (umol/s): 3.207e-003[400~500nm] 5.183e-003[500~600nm] 4.467e+000[600~700nm]  
 =4.500e+000umol/s =475 =6.533e-001  
 400~700nm : PPF: 4.4769μmol/s  
 PRF:817.83mW  
 Eff(PPF): 3.57μmol/s/W

:

VF = 2.093 V IF = 599.8 mA P = 1256 mW Ch1  
 :\*\*[OUT] :OUT

: T=10.00ms Ip=27480 (42%) [ HAAS2000\_V1\_USB ] V2.00.289

:LIGHT :30  
 :DAMIN :2021-04-30 14-47  
 :25.3 :65.0%  
 :EVERFINE :3#  
 :damin  
 :LTS-300\_100V + HAAS2000\_V1\_USB



:

( 2 ) : x=0.7184 y=0.2784/u'=0.5860 v'=0.5109 duv=-1.388e-001  
 :Tc=1001K :λd=643.7nm : Purity=99.0%  
 :R=98.9% G=1.1% B=0.0% :λp=660.5nm :Δλd=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

:

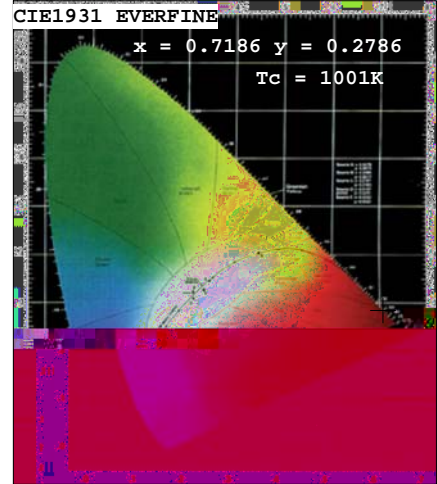
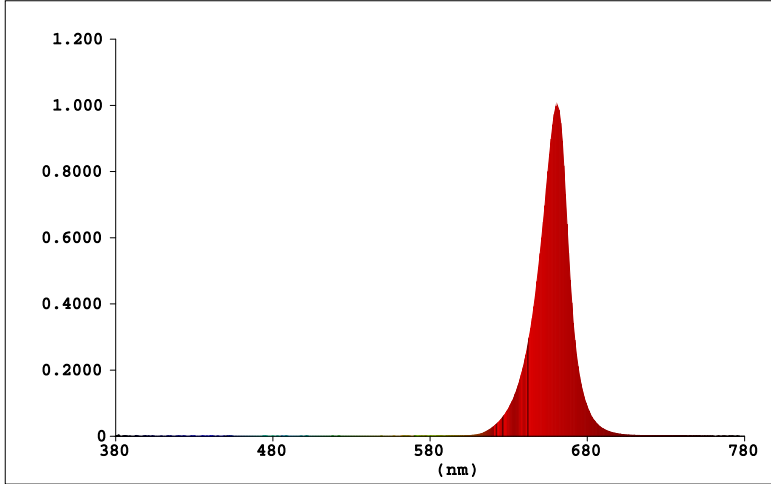
Φ = 56.53 lm : 37.69 lm/W φe = 953.7 mW  
 (umol/s): 3.725e-003[400~500nm] 5.828e-003[500~600nm] 5.185e+000[600~700nm]  
 =5.225e+000umol/s =491 =6.346e-001  
 400~700nm : PPF: 5.1964μmol/s  
 PRF:948.72mW  
 Eff(PPF): 3.46μmol/s/W

:

VF = 2.142 V IF = 699.9 mA P = 1500 mW Ch1  
 :\*\*[OUT] :OUT

: T=10.00ms Ip=31239 (48%) [ HAAS2000\_V1\_USB ] V2.00.289

:LIGHT	:31
:DAMIN	:2021-04-30 14-48
:25.3	:65.0%
:EVERFINE	:3#
:damin	
:LTS-300_100V + HAAS2000_V1_USB	



:

( 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

:

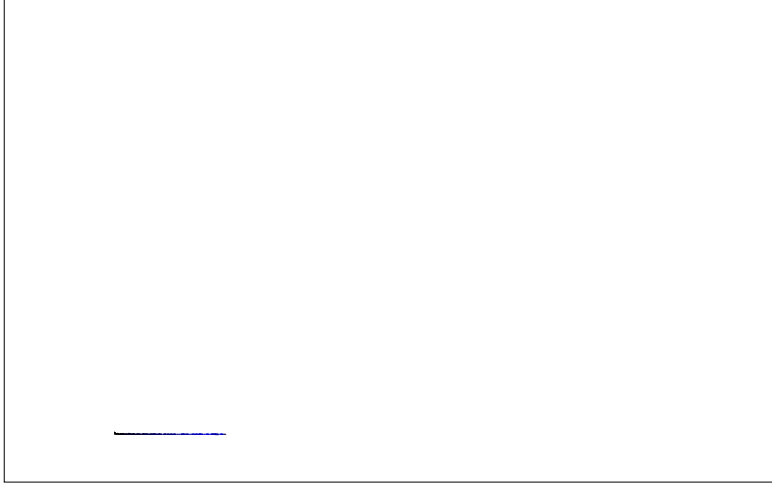
Φ = 63.25 lm : 36.07 lm/W Φe = 1082 mW  
 (umol/s): 3.451e-003[400~500nm] 6.738e-003[500~600nm] 5.889e+000[600~700nm]  
 =5.934e+000umol/s =643 =6.163e-001  
 400~700nm : PPF: 5.9008μmol/s  
 PRF:1076.7mW  
 Eff(PPF): 3.36μmol/s/W

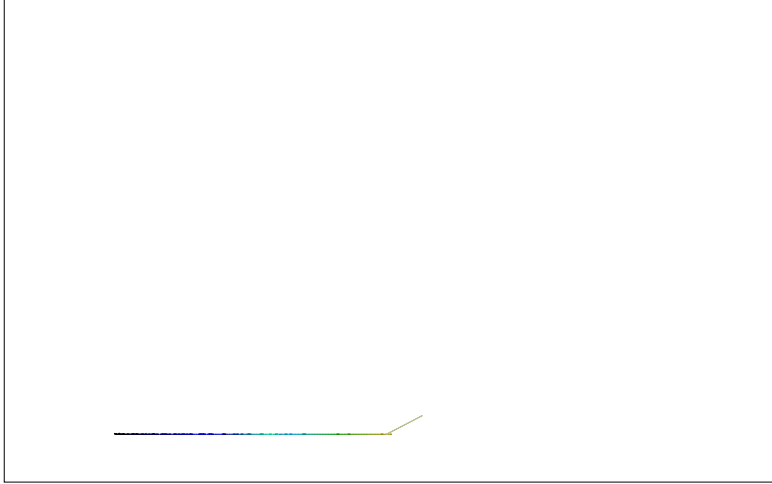
:

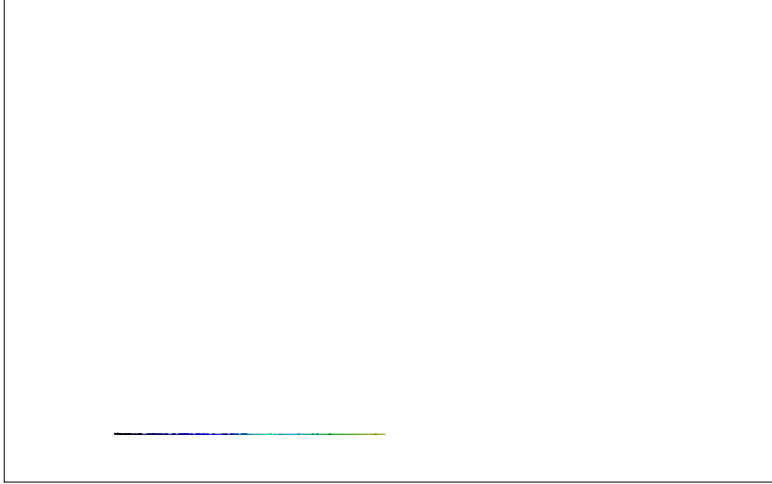
VF = 2.191 V IF = 800.0 mA P = 1754 mW Ch1  
 :\*\*[OUT] :OUT

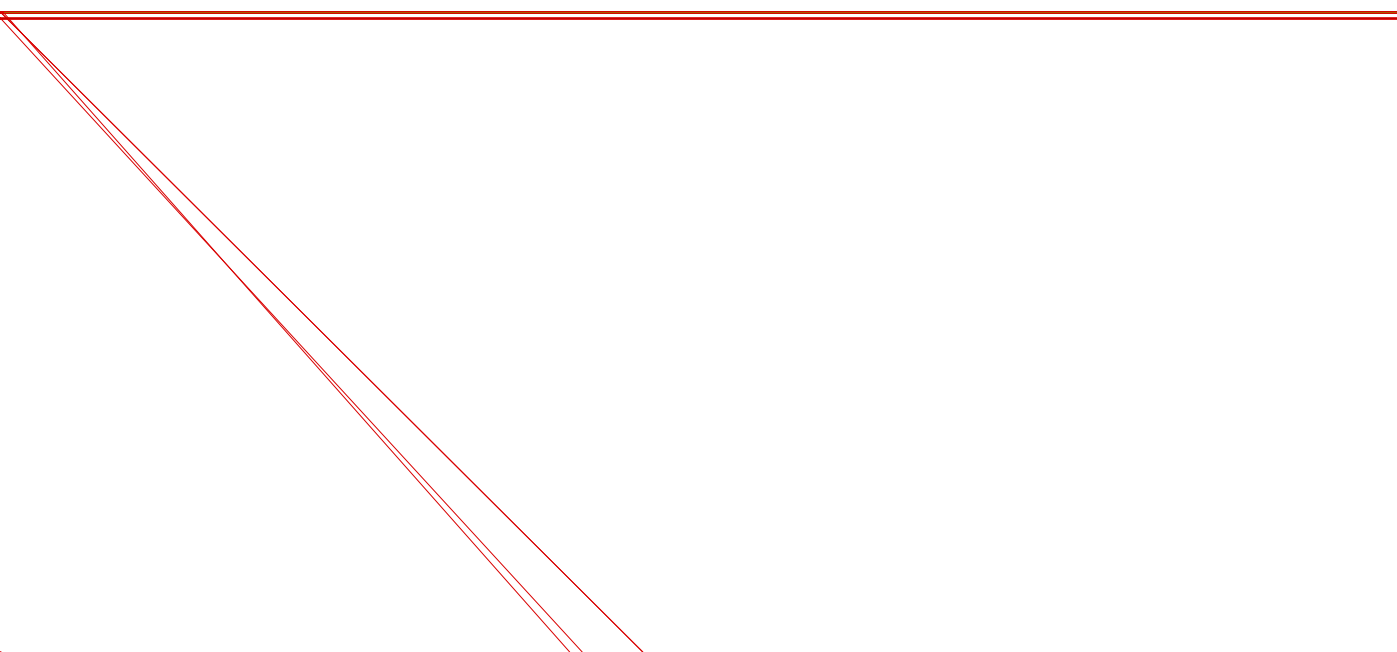
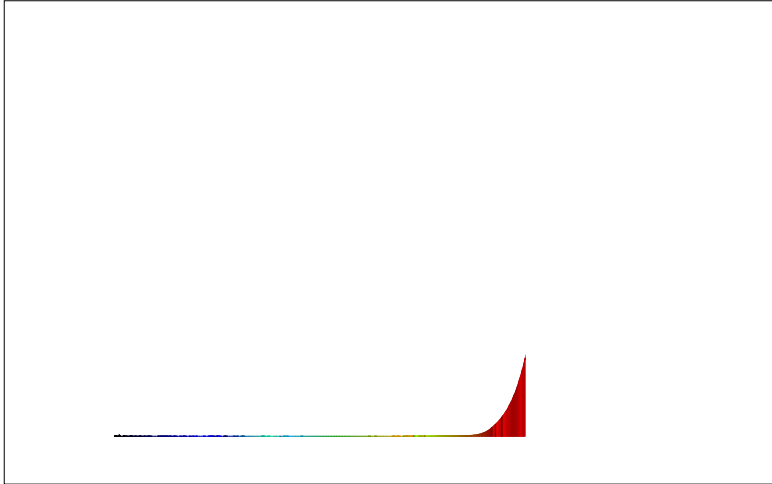
: T=10.00ms Ip=34704 (53%) [ HAAS2000\_V1\_USB ] V2.00.289

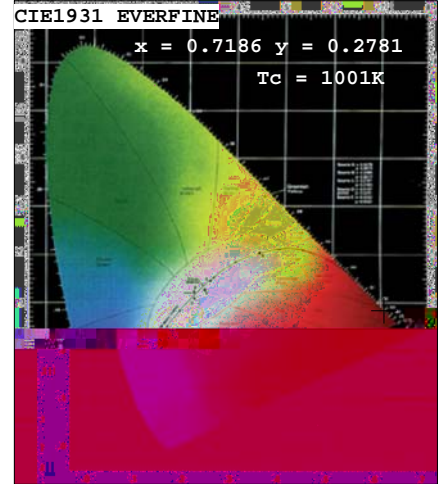
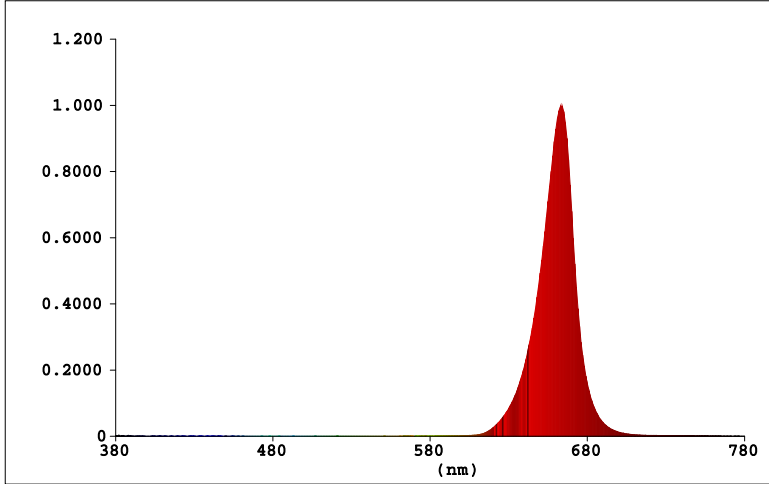
:LIGHT	:32
:DAMIN	:2021-04-30 14-48
:25.3	:65.0%
:EVERFINE	:3#
:damin	
:LTS-300_100V + HAAS2000_V1_USB	











:

( 2 ) : x=0.7186 y=0.2781/u'=0.5867 v'=0.5108 duv=-1.395e-001  
 :Tc=1001K :λd=644.2nm : Purity=99.0%  
 :R=98.7% G=1.3% B=0.1% :λp=663.6nm :Δλd=22.1nm  
 :Ra=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

:

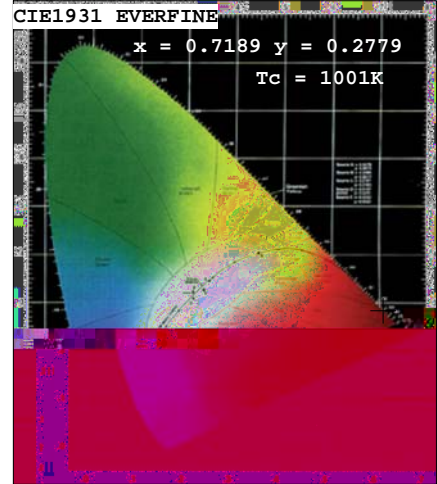
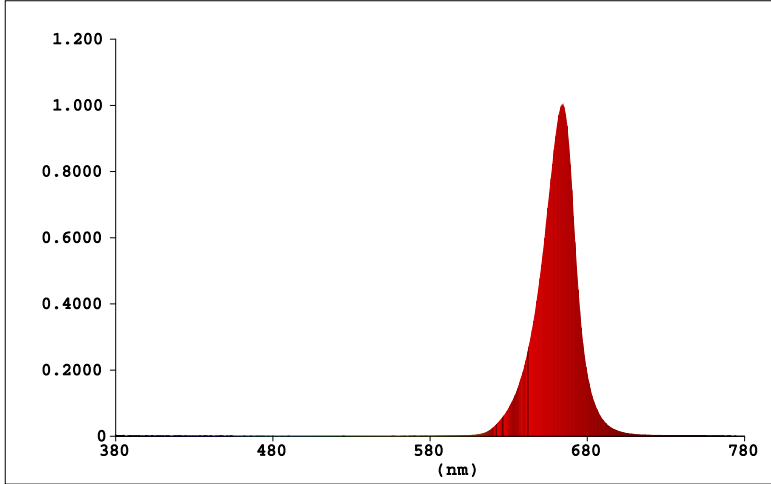
Φ = 87.93 lm : 28.00 lm/W Φe = 1673 mW  
 (umol/s): 5.483e-003[400~500nm] 1.013e-002[500~600nm] 9.118e+000[600~700nm]  
 =9.205e+000umol/s =609 =5.318e-001  
 400~700nm : PPF: 9.1343μmol/s  
 PRF:1660.6mW  
 Eff(PPF): 2.91μmol/s/W

:

VF = 2.415 V IF = 1300 mA P = 3141 mW Ch1  
 :\*\*[OUT] :OUT

: T=10.00ms Ip=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  
 :Tc=1001K :λd=644.4nm : Purity=99.1%  
 :R=98.7% G=1.2% B=0.1% :λp=664.0nm :Δλd=22.6nm  
 :Ra=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

:

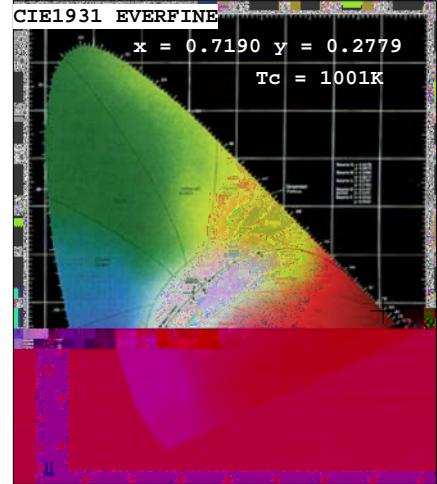
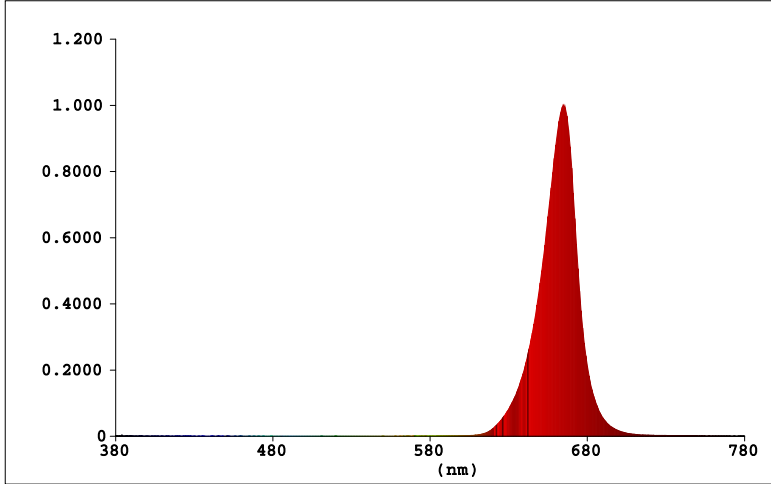
Φ = 90.89 lm : 26.42 lm/W Φe = 1777 mW  
 (umol/s): 5.755e-003[400~500nm] 1.041e-002[500~600nm] 9.687e+000[600~700nm]  
 =9.785e+000umol/s =627 =5.157e-001  
 400~700nm : PPF: 9.7038μmol/s  
 PRF:1762.6mW  
 Eff(PPF): 2.82μmol/s/W

:

VF = 2.459 V IF = 1399 mA P = 3440 mW Ch1  
 :\*\*[OUT] :OUT

: T=10.00ms Ip=50583 (77%) [ HAAS2000\_V1\_USB ] V2.00.289

:LIGHT	:38
:DAMIN	:2021-04-30 14-49
:25.3	:65.0%
:EVERFINE	:3#
:damin	
:LTS-300_100V + HAAS2000_V1_USB	



:

( 2 ) : x=0.7190 y=0.2779/u'=0.5873 v'=0.5107 duv=-1.401e-001  
 :Tc=1001K :λd=644.5nm : Purity=99.0%  
 :R=98.7% G=1.3% B=0.0% :λp=665.1nm :Δλd=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

:

Φ = 93.01 lm : 24.80 lm/W Φe = 1872 mW  
 (umol/s): 5.784e-003[400~500nm] 1.084e-002[500~600nm] 1.021e+001[600~700nm]  
 =1.032e+001umol/s =679 =4.985e-001  
 400~700nm : PPF: 10.232μmol/s  
 PRF:1856.6mW  
 Eff(PPF): 2.73μmol/s/W

:

VF = 2.501 V IF = 1499 mA P = 3751 mW Ch1  
 :\*\*[OUT] :OUT

: T=10.00ms Ip=52255 (80%) [ HAAS2000\_V1\_USB ] V2.00.289

:LIGHT :39  
 :DAMIN :2021-04-30 14-49  
 :25.3 :65.0%  
 :EVERFINE :3#  
 :damin  
 :LTS-300\_100V + HAAS2000\_V1\_USB