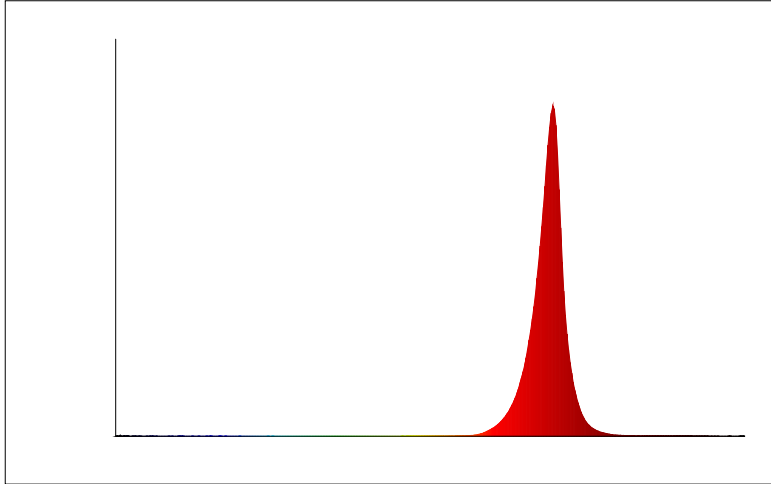


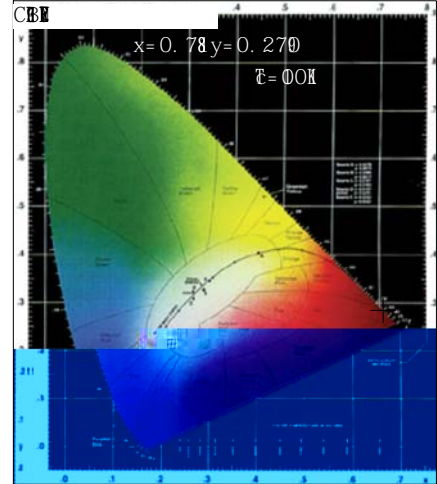
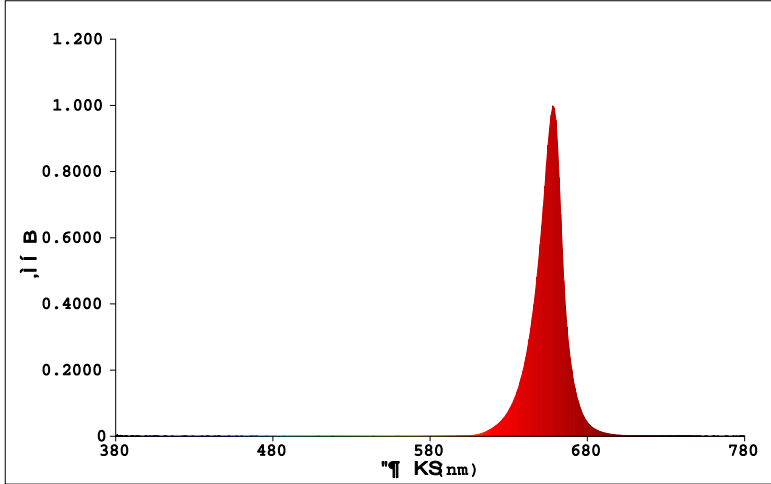
\$d B # A© y



z - D :
EIG£ - = 4.221 lm

: 48.63 lm/W -

\$d B # A© y



Np8F – D

8F • \$ Ū (2 z) : x=0.7188 y=0.2790/u'=0.5856 v'=0.5114 duv=-1.384e-001

8F # ý : Tc=1001K "¶KS : d=642.7nm 8F4f z: Purity=99.3%

8F! : R=98.8% G=1.1% B=0.0% Ä "¶KS : p=658.4nm 'z : d=16.3nm

8F Ū D : Ra=17.4 [4 Ū õ š2Ī D]

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

z – D :

EiGE - = 8.640 lm : 48.36 lm/W -e = 135.0 mW

GE \$(umol/s): 3.679e-004[400~500nm] 8.392e-004[500~600nm] 7.333e-001[600~700nm]

GE \$=7.378e-001umol/s g; ± !" =657 g; 6Ñ =7.546e-001

ÜEd Ø – D Ä 400700nm Ä : Ü GE \$EiGE PPF: 0.7348µmol/s

Ü Ý Ed ØEiGE PRF:134.51mW

Ü \$EiGE) [Eff(PPF): 4.11µmol/s/W

+ – D :

!7 å+ _ VF = 1.785 V !7 å+ # IF = 100.0 mA s)[P = 178.6 mW Ch1

Ú4{ : ** [OUT] , Q Ú2O : OUT

¼ < (š Ō. /Ä Ú ÈKÈT=80.00ms Ip=40491 (62%) [HAAS2000_V1_USB] V2.00.289

{ • _ È : LIGHT

A© Ž , : DAMIN

)f W#ý z : 25.3

Eô V : EVERFINE

u Ž , : damin

A© ¼ < LTS-300_100V + HAAS2000_V1_USB

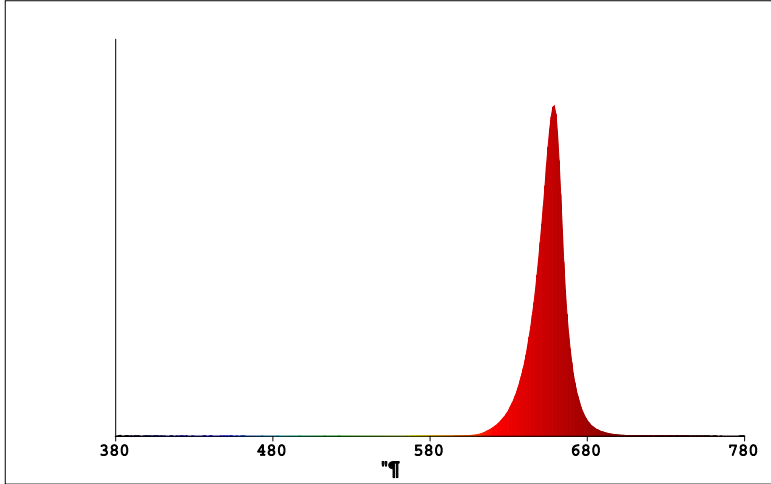
{ • 4ê È : 24

A© 1 ó : 2021-04-30 14-46

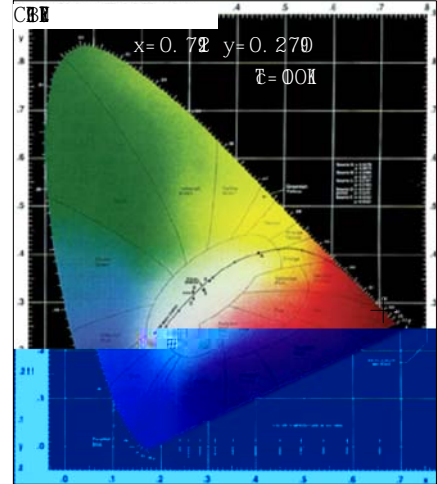
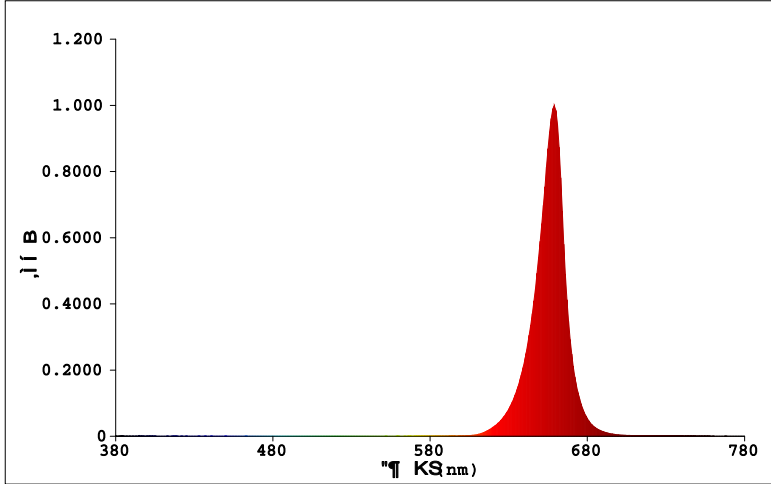
)f W\$S z : 65.0%

Ü "¼ : 3#

\$d B # A© y



\$d B # A© y



Np8F – D

8F • \$ Ū (2 z) : x=0.7192 y=0.2790/u'=0.5859 v'=0.5115 duv=-1.387e-001

, ì G8F#ý : Tc=1001K "¶KS : d=642.6nm 8F4f z: Purity=99.5%

8F! : R=98.9% G=1.1% B=0.0% Ä "¶KS : p=658.7nm 'z : d=17.7nm

8F Ū D : Ra=15.9 [4 Ū õ š2ĭ D]

R1 =10.75	R2 =80.30	R3 =31.42	R4 =-19.20	R5 =7.15
R6 =84.77	R7 =7.99	R8 =-76.06	R9 =-242.82	R10=78.66
R11=-5.80	R12=84.60	R13=35.47	R14=58.67	R15=-30.72

z – D :

EiG£ - = 25.92 lm : 44.82 lm/W -e = 413.5 mW

G£ \$(umol/s): 1.000e-003[400~500nm] 2.485e-003[500~600nm] 2.248e+000[600~700nm]

G£ \$=2.262e+000umol/s g; :± !" =820 g; 6Ñ =7.143e-001

ÜEd Ø – D Ä 400700nm Ä : Ü G£ \$EiG£ PPF: 2.2515µmol/s

Ü Ý Ed ØEiG£ PRF:411.8mW

Ü \$EiG£) [Eff(PPF): 3.89µmol/s/W

+ – D :

!7 å+ _ VF = 1.927 V !7 å+ # IF = 300.0 mA s)[P = 578.3 mW Ch1

Ú4{ : ** [OUT] , Q Ú20 : OUT

¼ < (š Ō. /Ä Ú ÈKÈT=40.00ms Ip=57902 (88%) [HAAS2000_V1_USB] V2.00.289

{ • _ È : LIGHT

A© Ž , : DAMIN

)f W#ý z : 25.3

Eô V : EVERFINE

u Ž , : damin

A© ¼ < LTS-300_100V + HAAS2000_V1_USB

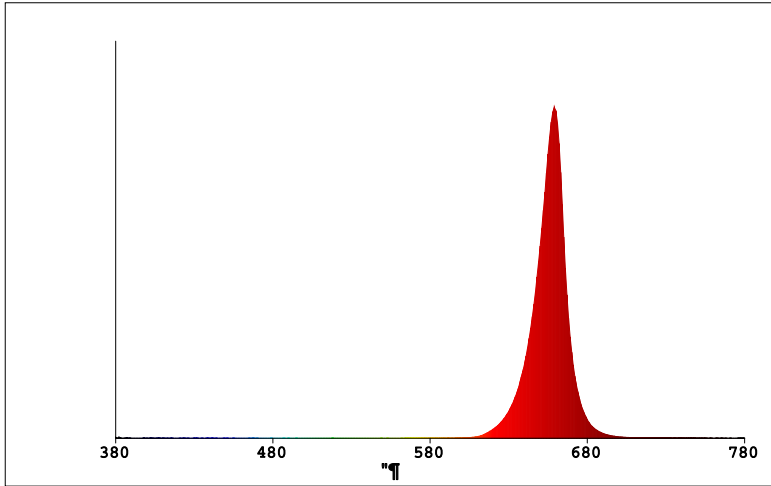
{ • 4ê È : 26

A© 1 ó : 2021-04-30 14-46

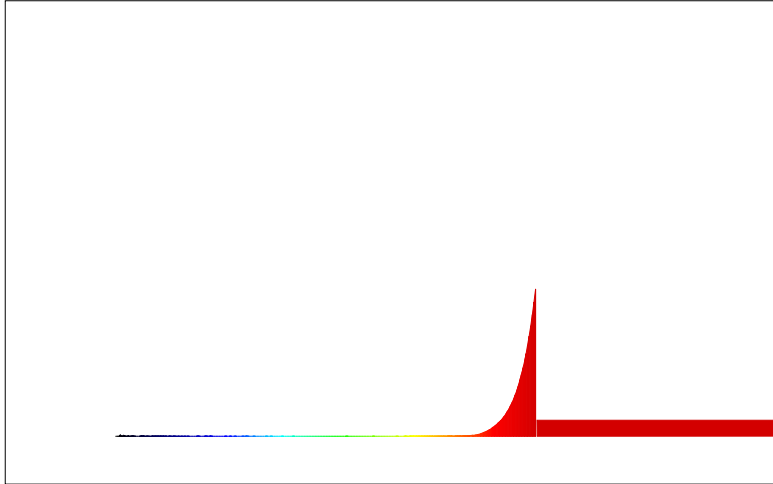
)f W\$S z : 65.0%

Ü "¼ : 3#

\$d B # A© y



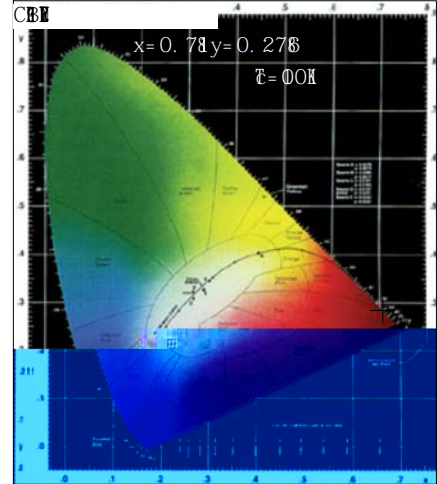
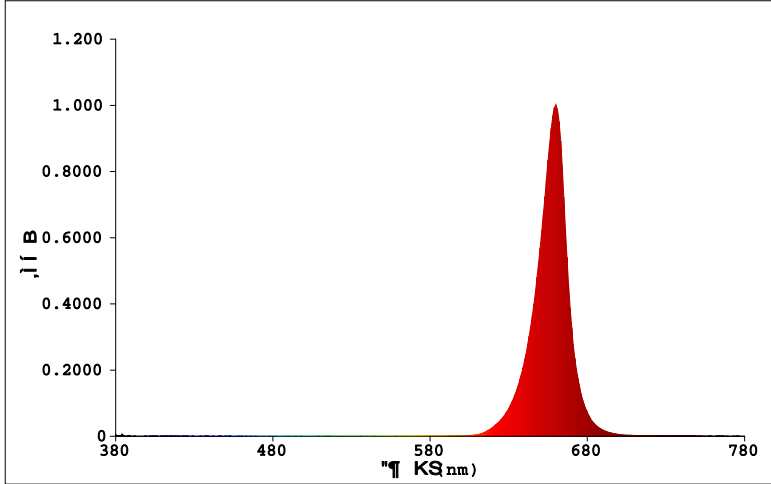
\$d B # A© y



Test report
E° • (EVERFINE)LEDspec 8F+ # A© y

1 7 NI E 17 NI

\$d B # A© y



Np8F – D

8F • \$ Ū (2 z) : x=0.7181 y=0.2786/u'=0.5854 v'=0.5110 duv=-1.382e-001

, ì G8F#ý : Tc=1001K "¶KS : d=643.5nm 8F4f z: Purity=99.0%

8F! : R=98.8% G=1.2% B=0.1% Ä "¶KS : p=660.0nm 'z : d=19.0nm

8F Ū D : Ra=18.5 [4 Ū õ š2ĭ D]

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

z – D :

EiG£ - = 49.55 lm : 39.47 lm/W -e = 822.0 mW

G£ \$(umol/s): 3.207e-003[400~500nm] 5.183e-003[500~600nm] 4.467e+000[600~700nm]

G£ \$=4.500e+000umol/s g; ± !" =475 g; 6Ñ =6.533e-001

ÜEd Ø – D Ä 400700nm Ä : Ü G£ \$EiG£ PPF: 4.4769µmol/s

Ü Ý Ed ØEiG£ PRF: 817.83mW

Ü \$EiG£) [Eff(PPF): 3.57µmol/s/W

+ – D :

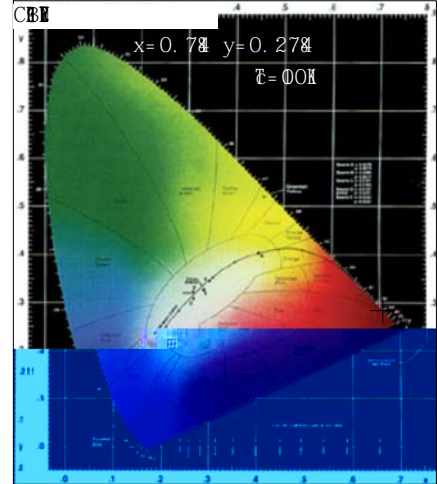
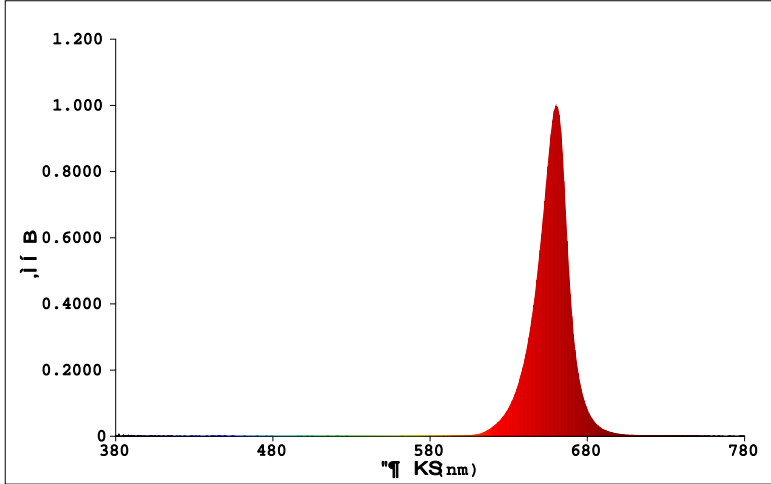
!7 å+ _ VF = 2.093 V !7 å+ # IF = 599.8 mA s)[P = 1256 mW Ch1

Ú4{ : ** [OUT] , Q Ú2O : OUT

¼ < (š Ō. /Ä Ú ÈKÈT=10.00ms Ip=27480 (42%) [HAAS2000_V1_USB] V2.00.289

{ • _ È : LIGHT	{ • 4ê È : 30
# 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	Ü "¼ : 3#
u Ž , : damin	
# A© ¼ < LTS-300_100V + HAAS2000_V1_USB	

\$d B # A© y



Np8F – D

8F • \$ Ū (2 z):x=0.7184 y=0.2784/u'=0.5860 v'=0.5109 duv=-1.388e-001

, ì G8F#ý :Tc=1001K "¶KS : d=643.7nm 8F4f z: Purity=99.0%

8F!":R=98.9% G=1.1% B=0.0% Ä "¶KS : p=660.5nm ' z : d=19.4nm

8F Ū D :Ra=16.6 [4 Ū õ š2ĭ D]

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

z – D :

EiG£ - = 56.53 lm : 37.69 lm/W -e = 953.7 mW

G£ \$(umol/s): 3.725e-003[400~500nm] 5.828e-003[500~600nm] 5.185e+000[600~700nm]

G£ \$=5.225e+000umol/s g; :± !" =491 g; 6Ñ =6.346e-001

ÜEd Ø – D Ä 400700nm Ä: Ü G£ \$EiG£ PPF: 5.1964µmol/s

Ü Ý Ed ØEiG£ PRF:948.72mW

Ü \$EiG£)(Eff(PPF): 3.46µmol/s/W

+ – D :

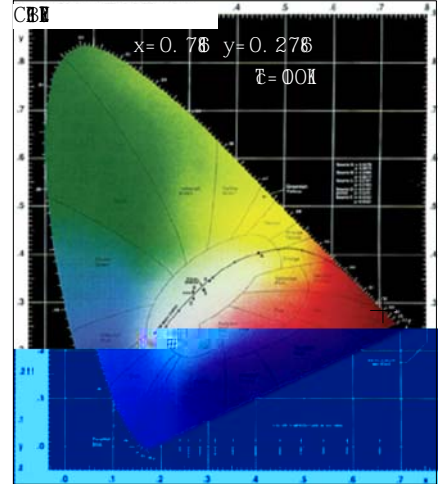
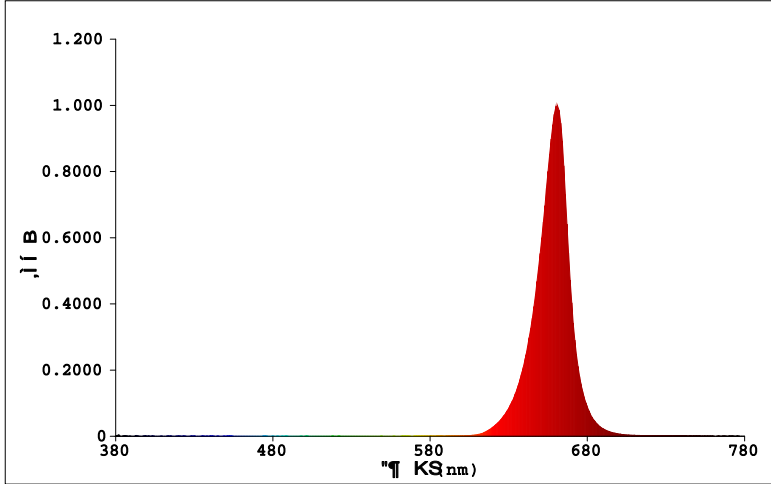
!7 å+ _ VF = 2.142 V !7 å+ # IF = 699.9 mA s)[P = 1500 mW Ch1

Ú4{:**[OUT] ,Q Ú20:OUT

¼ <(Š Ō. /Ä Ú ÊKÈT=10.00ms Ip=31239 (48%) [HAAS2000_V1_USB] V2.00.289

{ • _ È :LIGHT	{ •4ê È :31
# A© Ž , :DAMIN	# A© 1 ó :2021-04-30 14-48
)f W#ý z:25.3)f W\$\$ z :65.0%
Eô V :EVERFINE	Ü "¼:3#
u Ž , :damin	
# A© ¼ < LTS-300_100V + HAAS2000_V1_USB	

\$d B # A© y



Np8F – D

8F • \$ Ū (2 z) : x=0.7186 y=0.2786/u'=0.5859 v'=0.5111 duv=-1.387e-001

8F # ý : Tc=1001K "¶KS : d=643.2nm 8F4f z: Purity=99.2%

8F! : R=98.8% G=1.2% B=0.1% Ä "¶KS : p=660.5nm 'z : d=19.8nm

8F Ū D : Ra=17.9 [4 Ū õ š2İ D]

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

z – D :

EİGŁ - = 63.25 lm : 36.07 lm/W -e = 1082 mW

GŁ \$(umol/s): 3.451e-003[400~500nm] 6.738e-003[500~600nm] 5.889e+000[600~700nm]

GŁ \$=5.934e+000umol/s g; ± !" =643 g; 6Ń =6.163e-001

ÜEd Ø – D Ä 400700nm Ä : Ü GŁ \$EİGŁ PPF: 5.9008µmol/s

Ü Ý Ed ØEİGŁ PRF:1076.7mW

Ü \$EİGŁ) [Eff(PPF): 3.36µmol/s/W

+ – D :

!7 å+ _ VF = 2.191 V !7 å+ # IF = 800.0 mA s)[P = 1754 mW Ch1

Ú4{ : ** [OUT] , Q Ú2O : OUT

¼ < (š Ō. /Ä Ú ÉKÈT=10.00ms Ip=34704 (53%) [HAAS2000_V1_USB] V2.00.289

{ • _ È : LIGHT

A© Ž , : DAMIN

)f W#ý z : 25.3

Eô V : EVERFINE

u Ž , : damin

A© ¼ < LTS-300_100V + HAAS2000_V1_USB

{ • 4ê È : 32

A© 1 ó : 2021-04-30 14-48

)f W\$S z : 65.0%

Ü "¼: 3#

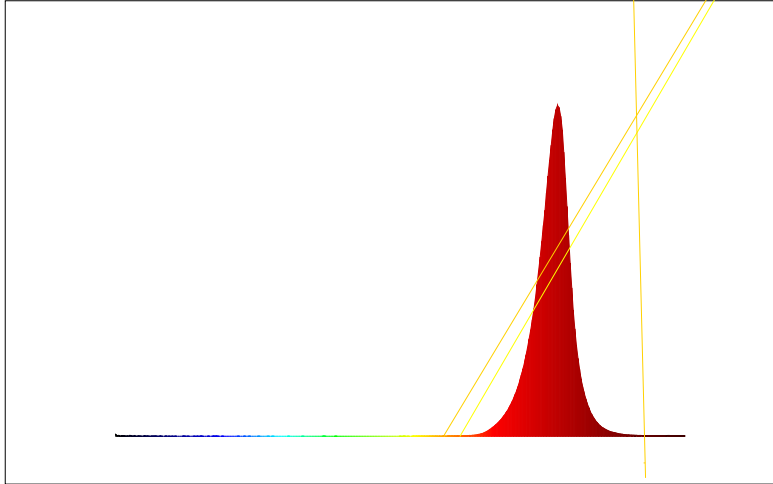
\$d

B

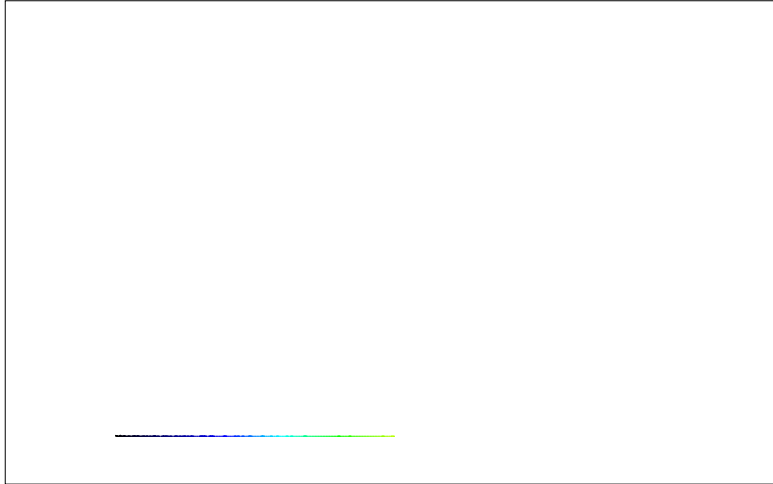
#

A© y

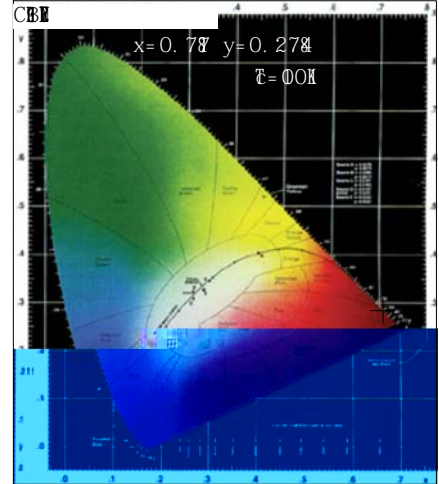
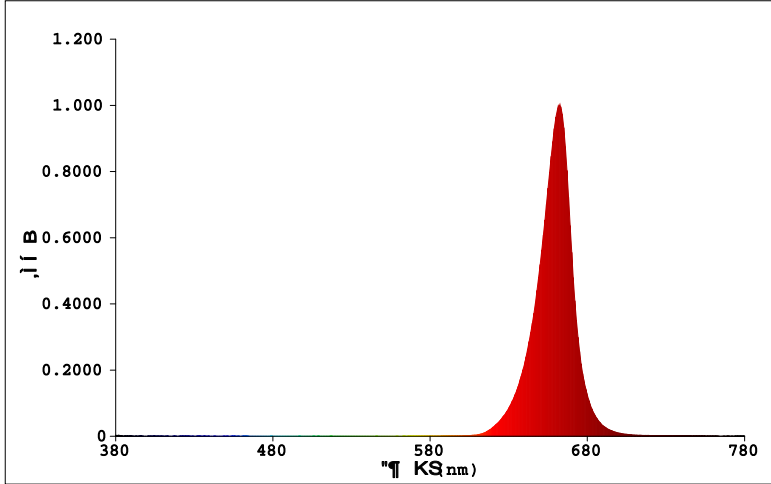
Rev: 5/14/15 R1D16 2189R-VB



\$d B # A© y



\$d B # A© y



Np8F – D

8F • \$ Ū (2 z): x=0.7187 y=0.2784/u'=0.5864 v'=0.5110 duv=-1.392e-001

, ì G8F#ý : Tc=1001K "¶KS : d=643.7nm 8F4f z: Purity=99.1%

8F!": R=98.7% G=1.2% B=0.0% Ä "¶KS : p=662.2nm ' z : d=21.2nm

8F Ū D : Ra=18.5 [4 Ū õ š2ĭ D]

R1 =13.50	R2 =81.27	R3 =32.03	R4 =-15.22	R5 =10.67
R6 =84.70	R7 =11.17	R8 =-70.51	R9 =-233.66	R10=81.15
R11=-1.95	R12=83.92	R13=37.85	R14=58.88	R15=-26.26

z – D :

EiG£ - = 79.88 lm : 31.15 lm/W -e = 1449 mW

G£ \$(umol/s): 4.707e-003[400~500nm] 8.891e-003[500~600nm] 7.894e+000[600~700nm]

G£ \$=7.961e+000umol/s g; :± !" =638 g; 6Ñ =5.642e-001

ÜEd Ø – D Ä 400700nm Ä: Ü G£ \$EiG£ PPF: 7.9082µmol/s

Ü Ý Ed ØEiG£ PRF:1440mW

Ü \$EiG£) [Eff(PPF): 3.08µmol/s/W

+ – D :

!7 å+ _ VF = 2.327 V !7 å+ # IF = 1102 mA s)[P = 2565 mW Ch1

Ú4{ : ** [OUT] , Q Ú2O : OUT

¼ < (š Ō. /Ä Ú ÊKÈT=10.00ms Ip=43766 (67%) [HAAS2000_V1_USB] V2.00.289

{ • _ È : LIGHT

A© Ž , : DAMIN

)f W#ý z : 25.3

Eô V : EVERFINE

u Ž , : damin

A© ¼ < LTS-300_100V + HAAS2000_V1_USB

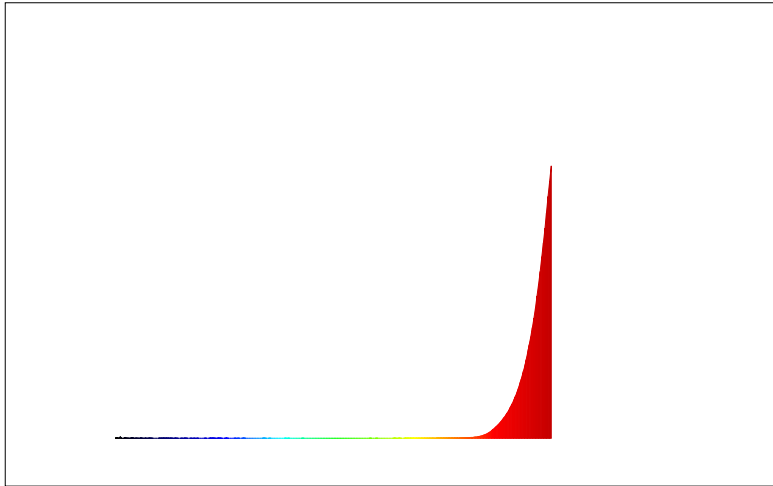
{ • 4ê È : 35

A© ¹ ó : 2021-04-30 14-48

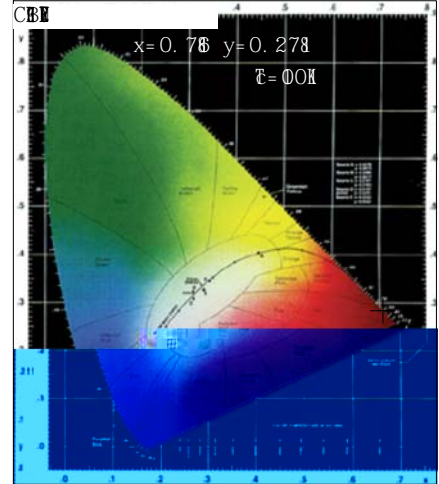
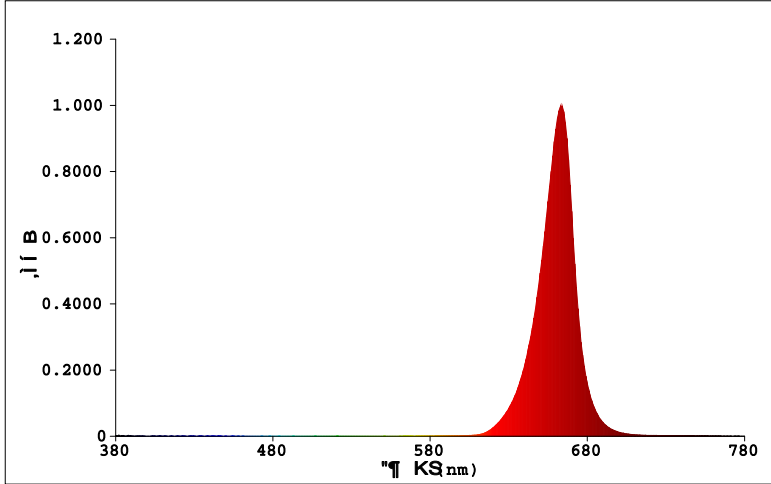
)f W\$S z : 65.0%

Ü "¼ : 3#

\$d B # A© y



\$d B # A© y



Np8F – D

8F • \$ Ū (2 z) : x=0.7186 y=0.2781/u'=0.5867 v'=0.5108 duv=-1.395e-001

λ G8F#ý : Tc=1001K "¶KS : d=644.2nm 8F4f z: Purity=99.0%

8F! : R=98.7% G=1.3% B=0.1% Å "¶KS : p=663.6nm 'z : d=22.1nm

8F Ū D : Ra=19.0 [4 Ū õ š2Ī D]

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

z – D :

EiG£ - = 87.93 lm : 28.00 lm/W -e = 1673 mW

G£ \$(umol/s): 5.483e-003[400~500nm] 1.013e-002[500~600nm] 9.118e+000[600~700nm]

G£ \$=9.205e+000umol/s g; ± !" =609 g; 6Ñ =5.318e-001

ÜEd Ø – D Å 400700nm Å: Ü G£ \$EiG£ PPF: 9.1343µmol/s

Ü Ý Ed ØEiG£ PRF:1660.6mW

Ü \$EiG£) [Eff(PPF): 2.91µmol/s/W

+ – D :

!7 å+ _ VF = 2.415 V !7 å+ # IF = 1300 mA s)[P = 3141 mW Ch1

Ú4{ : ** [OUT] , Q Ú2O : OUT

¼ < (š Ō. /Ā Ū ÉKÈT=10.00ms Ip=48563 (74%) [HAAS2000_V1_USB] V2.00.289

{ • _ È : LIGHT

A© Ž , : DAMIN

)f W#ý z : 25.3

Eô V : EVERFINE

u Ž , : damin

A© ¼ < LTS-300_100V + HAAS2000_V1_USB

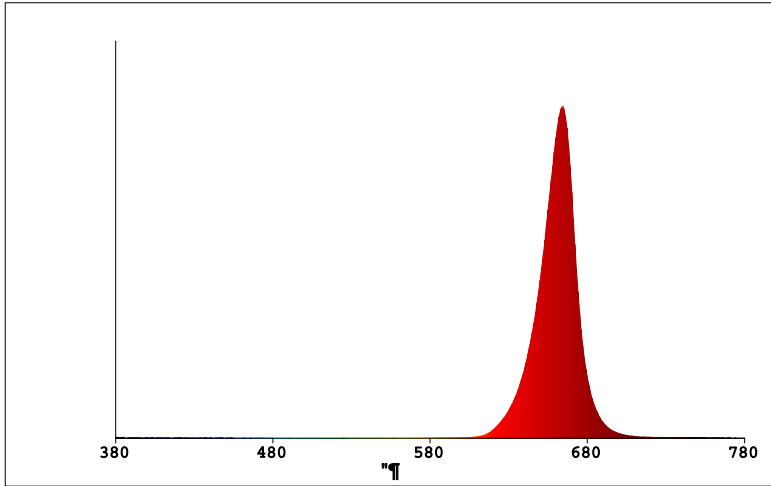
{ • 4ê È : 37

A© 1 ó : 2021-04-30 14-49

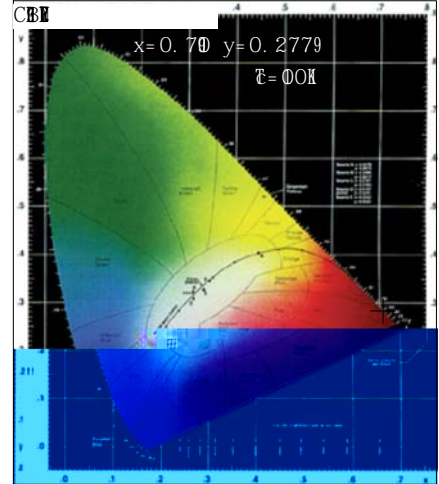
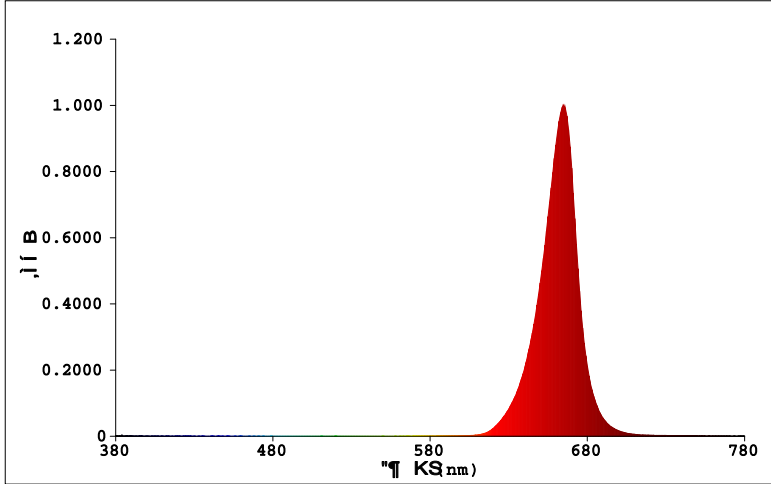
)f W\$S z : 65.0%

Ū "¼ : 3#

\$d B # A© y



\$d B # A© y



Np8F – D

8F • \$ Ū (2 z) : x=0.7190 y=0.2779/u'=0.5873 v'=0.5107 duv=-1.401e-001

8F # ý : Tc=1001K "¶KS : d=644.5nm 8F4f z: Purity=99.0%

8F! : R=98.7% G=1.3% B=0.0% Ä "¶KS : p=665.1nm 'z : d=23.1nm

8F Ū D : Ra=19.3 [4 Ū õ š2Ī D]

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

z – D :

EIGŁ - = 93.01 lm : 24.80 lm/W -e = 1872 mW

GL \$(umol/s): 5.784e-003[400~500nm] 1.084e-002[500~600nm] 1.021e+001[600~700nm]

GL \$=1.032e+001umol/s g; ± !" =679 g; 6Ñ =4.985e-001

ÜEd Ø – D Ä 400700nm Ä: Ü GL \$EIGŁ PPF: 10.232µmol/s

Ü Ý Ed ØEIGŁ PRF:1856.6mW

Ü \$EIGŁ) [Eff(PPF): 2.73µmol/s/W

+ – D :

!7 å+ _ VF = 2.501 V !7 å+ # IF = 1499 mA s)[P = 3751 mW Ch1

Ú4{:**[OUT] ,Q Ú2O:OUT

¼ <(Š Ō. /Ä Ú ÉKÈT=10.00ms Ip=52255 (80%) [HAAS2000_V1_USB] V2.00.289

{ • _ È :LIGHT

A© Ž , :DAMIN

)f W#ý z:25.3

Eô V :EVERFINE

u Ž , :damin

A© ¼ < LTS-300_100V + HAAS2000_V1_USB

{ •4ê È :39

A© 1 ó :2021-04-30 14-49

)f W\$S z :65.0%

Ü "¼:3#