

3340G Series

LED DC Electronic Load Simulator

FEATURES

- LED mode load for LED Power Driver test.
- CC, CR, CV, CP, LED and Dynamic mode.
- Simulate LED Forward Bias Voltage (Vd) and Resistance (Rd).
- Not only CC, CR, and CP mode have parallel operation functions, but CV mode also has parallel operation functions.
- Fast Response for PWM dimming test.
- Built-in dimming control signal for PWM dimming test.
- Short circuit test by external relay (built-in short relay driver circuit).
- 5 digital V / A / W Meter.
- Protections against V, I, W, and °C.
- Voltage can be increased to 600 V (Option)
- The power input dimming frequency of 3345G & 33402G is up to 25 KHz that is the fastest and widest of bandwidth electronic load in the market.

GW INSTEK
Simply Reliable

3340G Series LED DC Electronic Load Simulator

3341G	300V,	24A,	300W
3342G	500V,	12A,	300W
3343G	500V,	24A,	300W
3345G	120V,	4A,	150W
3346G	120V,	12A,	300W
33401G	500V,	6A,	150Wx2
33402G	120V,	2A,	75Wx2
33403G	120V,	6A,	150Wx2

Voltage can be increased to 600V (option)



Features

- LED mode load for LED Power Driver test.
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- Simulate LED Forward Bias Voltage (Vd) and Resistance (Rd).
- Not only CC, CR, and CP mode have parallel operation functions, but CV mode also has parallel operation functions.
- Fast Response for PWM dimming test.
- Built-in dimming control signal for PWM dimming test.
- Short circuit test by external relay (built-in short relay driver circuit).
- 5 digital V / A / W Meter.
- Protections against V, I, W, and °C.
- Can be configured in the Mainframe of 3302G [Single Solt Mainframe] 、 3305G [Two Solt Mainframe] or 3300G [Four Solt Mainframe] ， each mainframe has up to 150 sets Store/Recall memory.
- Voltage can be increased to 600V (option)
- Optional Interface : GPIB 、 RS232 、 USB 、 LAN.
- The power input dimming frequency of 3345G & 33402G is up to 25KHZ that is the fastest and widest of bandwidth electronic load in the market.
- The dimming control output of 3345G & 33402G is DC-10KHZ

Descriptions

- Each 3340G Series module has its own control and display panel, LED/CC/CR/ CV/CP/ Dynamic modes, plug in 3300F with 150 sets Store/Recall memory which provides load set-up more efficiently , also can be controlled intranet via RS232 、 Ethernet 、 USB and GPIB interface.
- Short circuit test by external relay (there is an optional fixture for short), Short Time can be set and Short Voltage can be measured.
- Built-in dimming control signal output is for PWM dimming test.
- Simulate LED forward Bias voltage (Vd) and Resistance (Rd).
- Programmable Load ON/OFF voltage, GO/NG meter check, Voltage meter display “ + ” or “ - ” is selectable and 150 sets Store/Recall larger memory is much advance feature for each different application.
- 150 sets test parameter and status storage function can call the storage memory real time in accordance with the auto sequence requirement.

Applications

- LED Driver
- Voltage / Current source
- SMPS transient response
- Current limit testing and battery emulation
- Battery charger
- Battery discharge Control
- R&D / Quality Control
- ATE system
- Production testing

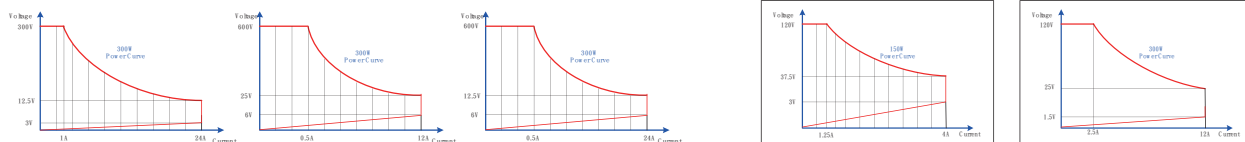
SPECIFICATIONS											
MODEL	3341G		3342G		3343G		3345G		3346G		
Power	300 W		300 W		300 W		150 W		300 W		
Current	0 A to 6 A	0 A to 24 A	0 A to 3 A	0 A to 12 A	0 A to 6 A	0 A to 24 A	0 A to 1.2 A	0 A to 4 A	0 A to 3 A	0 A to 12 A	
Voltage	0 V to 300 V		0 V to 500 V		0 V to 500 V		0 V to 120 V		0 V to 120 V		
Min. Operating Voltage	3 V @ 24 A		6 V @ 12 A		6 V @ 24 A		3 V @ 4 A		1.5 V @ 12 A		
Constant Current Mode											
Range ¹	0 A to 6 A	0 A to 24 A	0 A to 3 A	0 A to 12 A	0 A to 6 A	0 A to 24 A	0 A to 1.2 A	0 A to 4 A	0 A to 3 A	0 A to 12 A	
Resolution	0.1 mA	0.4 mA	0.05 mA	0.2 mA	0.1 mA	0.4 mA	0.02 mA	0.08 mA	0.05 mA	0.2 mA	
Accuracy	± 0.1 % OF (SETTING + RANGE)										
Constant Resistance Mode											
Range	CRL:0.125 Ω to 1.5 KΩ(150 V)	CRH:0.25 Ω to 3 KΩ(300 V)	CRL:0.5 Ω to 1.5 KΩ(300 V)	CRH:1 Ω to 3 KΩ(500 V)	CRL:0.25 Ω to 3 KΩ(300 V)	CRH:0.5 Ω to 6 KΩ(500 V)	CRL:0.75 Ω to 750 Ω(60 V)	CRH:1.5 Ω to 1.5 KΩ(120 V)	CRL:0.1 Ω to 1.2 KΩ(60 V)	CRH:0.2 Ω to 2.4 KΩ(120 V)	
Resolution ⁴	133.333 μS	66.666 μS	33.333 μS	16.666 μS	66.666 μS	33.333 μS	66.666 μS	33.333 μS	166.66 μS	83.333 μS	
Accuracy	± 0.2 % OF (SETTING + RANGE)										
Constant Voltage Mode											
Range	30 V/150 V/300 V		60 V/300 V/500 V		60 V/300 V/500 V		30 V/60 V/120 V		12 V/60 V/120 V		
Resolution	0.0005 V/0.0025 V/0.005 V		0.001 V/0.005 V/0.01 V		0.001 V/0.005 V/0.01 V		0.0005 V/0.001 V/0.002 V		0.0002 V / 0.001 V / 0.002 V		
Accuracy	± 0.05 % OF (SETTING + RANGE)										
Constant Power Mode											
Range	0 W to 300 W		0 W to 300 W		0 W to 300 W		0 W to 300 W		0 W to 300 W		
Resolution	0.005 W		0.005 W		0.005 W		0.005 W		0.005 W		
Accuracy	± 0.5 % OF (SETTING + RANGE)										
LED Mode											
Vo Voltage Range	LEDL:30 V / LEDM:150 V / LEDH:300 V		LEDL:60 V / LEDM:300 V / LEDH:500 V		LEDL:60 V / LEDM:300 V / LEDH:500 V		LEDL:30 V / LEDM:60 V / LEDH:120 V		LEDL:12 V / LEDM:60 V / LEDH:120 V		
Rd Resistance Range	LEDL : 0.125 Ω to 125 Ω @ Vo-Vd = 0 V to 3 V LEDL : 1.25 Ω to 1.25 KΩ @ Vo-Vd = 3 V to 30 V LEDM : 0.625 Ω to 625 Ω @ Vo-Vd = 0 V to 15 V LEDM : 6.25 Ω to 6.25 KΩ @ Vo-Vd = 15 V to 150 V LEDH : 1.25 Ω to 1.25 KΩ @ Vo-Vd = 0 V to 30 V LEDH : 12.5 Ω to 12.5 KΩ @ Vo-Vd = 30 V to 300 V		LEDL : 0.5 Ω to 100 Ω @ Vo-Vd = 0 V to 6 V LEDL : 5 Ω to 1 KΩ @ Vo-Vd = 6 V to 60 V LEDM : 2.5 Ω to 500 Ω @ Vo-Vd = 0 V to 30 V LEDM : 25 Ω to 5 KΩ @ Vo-Vd = 30 V to 300 V LEDH : 5 Ω to 1 KΩ @ Vo-Vd = 0 V to 60 V LEDH : 50 Ω to 10 KΩ @ Vo-Vd = 60 V to 500 V		LEDL : 0.25 Ω to 125 Ω @ Vo-Vd = 0 V to 6 V LEDL : 2.5 Ω to 1.25 KΩ @ Vo-Vd = 6 V to 60 V LEDM : 1.25 Ω to 625 Ω @ Vo-Vd = 0 V to 30 V LEDM : 12.5 Ω to 6.25 KΩ @ Vo-Vd = 30 V to 300 V LEDH : 2.5 Ω to 1.25 KΩ @ Vo-Vd = 0 V to 60 V LEDH : 25 Ω to 12.5 KΩ @ Vo-Vd = 60 V to 500 V		LEDL : 0.625 Ω to 0.75 KΩ @ Vo-Vd = 0 V to 3 V LEDL : 6.25 Ω to 7.5 KΩ @ Vo-Vd = 3 V to 30 V LEDM : 1.25 Ω to 1.5 KΩ @ Vo-Vd = 0 V to 6 V LEDM : 12.5 Ω to 15 KΩ @ Vo-Vd = 6 V to 60 V LEDH : 2.5 Ω to 3 KΩ @ Vo-Vd = 0 V to 12 V LEDH : 25 Ω to 30 KΩ @ Vo-Vd = 12 V to 120 V		LEDL : 0.1 Ω to 120 Ω @ Vo-Vd = 0 V to 1.2 V LEDL : 1 Ω to 1.2 KΩ @ Vo-Vd = 1.2 V to 12 V LEDM : 0.5 Ω to 600 Ω @ Vo-Vd = 0 V to 12 V LEDM : 5 Ω to 6 KΩ @ Vo-Vd = 12 V to 60 V LEDH : 1 Ω to 1.2 KΩ @ Vo-Vd = 0 V to 60 V LEDH : 10 Ω to 12 KΩ @ Vo-Vd = 60 V to 120 V		
Resolution	16 Bits										
Accuracy	Vd : ± (0.05 % OF SETTING + 0.1 % OF RANGE), Rd : ± (0.05 % OF SETTING + 0.1 % OF RANGE)										
Dynamic Mode											
Timing											
THIGH & TLOW	0.050 ms to 9.999 ms / 99.99 ms / 999.9 ms / 9999 ms										
Resolution	0.001 ms / 0.01 ms / 0.1 ms / 1 ms										
Accuracy	1 μs / 10 μs / 100 μs / 1 ms ± 50 ppm										
Slew Rate	4.8 mA/μs to 300 mA/μs	19.2 mA/μs to 1200 mA/μs	2.4 mA/μs to 150 mA/μs	9.6 mA/μs to 600 mA/μs	4.8 mA/μs to 300 mA/μs	19.2 mA/μs to 1200 mA/μs	0.96 mA/μs to 60 mA/μs	3.84 mA/μs to 240 mA/μs	2.4 mA/μs to 150 mA/μs	9.6 mA/μs to 600 mA/μs	
Resolution	1.2 mA/μs	4.8 mA/μs	0.6 mA/μs	2.4 mA/μs	1.2 mA/μs	4.8 mA/μs	0.24 mA/μs	0.96 mA/μs	0.6 mA/μs	2.4 mA/μs	
Accuracy	± (5 % OF SETTING) ± 10 μs										
Min. Rise Time	20 μs (Typical)		20 μs (Typical)		20 μs (Typical)		20 μs (Typical)		20 μs (Typical)		
Current											
Range	0 A to 6 A	0 A to 24 A	0 A to 3 A	0 A to 12 A	0 A to 6 A	0 A to 24 A	0 A to 1.2 A	0 A to 4 A	0 A to 3 A	0 A to 12 A	
Resolution	0.1 mA	0.4 mA	0.05 mA	0.2 mA	0.1 mA	0.4 mA	0.02 mA	0.08 mA	0.05 mA	0.2 mA	
Accuracy	± 0.1 % OF (SETTING + RANGE)										
Measurement											
Voltage Read Back											
Range	30 V/150 V/300 V		60 V/300 V/500 V		60 V/300 V/500 V		30 V/60 V/120 V		12 V/60 V/120 V		
Resolution	0.5 mV/2.5 mV/5 mV		1 mV/5 mV/10 mV		1 mV/5 mV/10 mV		0.5 mV/1 mV/2 mV		0.2 mV/1 mV/2 mV		
Accuracy	± 0.025 % OF (READING + RANGE)										
Current Read Back											
Range	6 A	24 A	3 A	12 A	6 A	24 A	1.2 A	4 A	3 A	12 A	
Resolution	0.1 mA	0.4 mA	0.05 mA	0.2 mA	0.1 mA	0.4 mA	0.02 mA	0.08 mA	0.05 mA	0.2 mA	
Accuracy	± 0.1 % OF (READING + RANGE)										
Power Read Back											
Range	300 W		300 W		300 W		150 W		300 W		
Accuracy ²	± 0.1 % OF (READING + RANGE)										
General											
Imonitor	2.4 A/V		1.2 A/V		2.4 A/V		0.4 A/V		1.2 A/V		
Accuracy	± 0.5 % OF (READING + RANGE)										
Short Signal Output	12 V/100 mAmax		12 V/100 mAmax		12 V/100 mAmax		12 V/100 mAmax		12 V/100 mAmax		
Dimming Control											
Level Range	0 V to 12 V										
Resolution	0.048 V										
Accuracy	1 % OF (SETTING + RANGE)										
Frequency Range	DC to 1 KHz					DC to 10 KHz			DC to 1 KHz		
Resolution	10 Hz					100 Hz			10 Hz		
Duty Range	0.01 to 0.99(1 % to 99 %)					0.01 to 0.99(1 % to 99 %)			0.01 to 0.99(1 % to 99 %)		
Resolution	0.01					0.1			0.01		
Temperature Coefficient	100 ppm/°C (typical)										
Power	Supply from mainframe										
Operating Temperature ³	0 °C to 40 °C										
Dimension(HxWxD)	143 mm x 108 mm x 405 mm										
Weight	3.5 Kg		3.5 Kg		3.5 Kg		3.5 Kg		3.5 Kg		
Safety & EMC	CE										

Note¹: The range is automatically or forcing to range II only in CC mode

Note²: Power F.S. = Vrange F.S. x Irange F.S.

Note³: Operating temperature range is 0 °C to 40 °C, All specifications apply for 25 °C ± 5 °C, Except as noted

Note⁴: μS (microsiemens) is the unit of conductance(G), one siemens equal to 1/Ω



All specifications are subject to change without notice.

SPECIFICATIONS

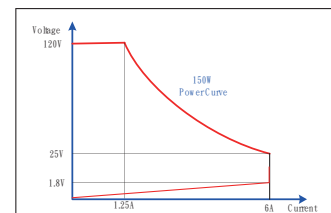
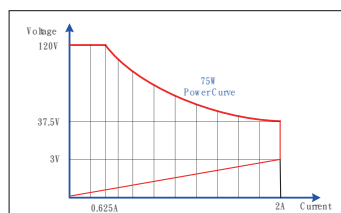
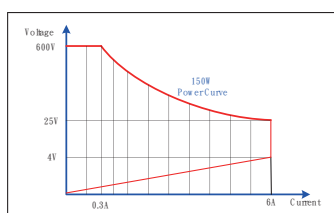
MODEL	33401G		33402G		33403G	
Power	150 W × 2		75 W × 2		150 W × 2	
Current	0 A to 1.5 A	0 A to 6 A	0 A to 0.6 A	0 A to 2 A	0 A to 1.5 A	0 A to 6 A
Voltage	0 V to 600 V		0 V to 120 V		0 V to 120 V	
Min. Operating Voltage	4 V @ 6 A		3 V @ 2 A		1.8 V @ 6 A	
Constant Current Mode						
Range ^{*1}	0 A to 1.5 A	0 A to 6 A	0 A to 0.6 A	0 A to 2 A	0 A to 1.5 A	0 A to 6 A
Resolution	0.025 mA	0.1 mA	0.01 mA	0.04 mA	0.025 mA	0.1 mA
Accuracy	± 0.1 % OF (SETTING + RANGE)					
Constant Resistance Mode						
Range	CRL:1 Ω to 3 KΩ(300 V)	CRH:2 Ω to 6 KΩ(600 V)	CRL:1.5 Ω to 1.5 KΩ(60 V)	CRH:3 Ω to 3 KΩ(120 V)	CRL:0.2 Ω to 2.4 KΩ(60 V)	CRH:0.4 Ω to 4.8 KΩ(120 V)
Resolution ^{*4}	16.666 μS	8.333 μS	33.33 μS	16.66 μS	83.333 μS	41.666 μS
Accuracy	± 0.2 % OF (SETTING + RANGE)					
Constant Voltage Mode						
Range	60 V/300 V/600 V		30 V/60 V/120 V		12 V/60 V/120 V	
Resolution	0.001 V/0.005 V/0.01 V		0.0005 V/0.001 V/0.002 V		0.0002 V / 0.001 V / 0.002 V	
Accuracy	± 0.05 % OF (SETTING + RANGE)					
LED Mode						
Vo Voltage Range	LEDL:60 V / LEDM:300 V / LEDH:600 V		LEDL:30 V / LEDM:60 V / LEDH:120 V		LEDL:12 V / LEDM:60 V / LEDH:120 V	
Rd Resistance Range	LEDL: 1 Ω to 200 Ω @ Vo-Vd = 0 V to 6 V LEDL: 10 Ω to 2 K Ω @ Vo-Vd = 6 V to 60 V LEDM: 5 Ω to 1 K Ω @ Vo-Vd = 0 V to 30 V LEDM: 50 Ω to 10 K Ω @ Vo-Vd = 30 V to 300 V LEDH: 10 Ω to 2 K Ω @ Vo-Vd = 0 V to 60 V LEDH:100 Ω to 20 K Ω @ Vo-Vd = 60 V to 600 V		LEDL: 1.25 Ω to 1.5 K Ω @ Vo-Vd = 0 V to 3 V LEDL: 12.5 Ω to 15 K Ω @ Vo-Vd = 3 V to 30 V LEDM: 2.5 Ω to 3 K Ω @ Vo-Vd = 0 V to 6 V LEDM: 25 Ω to 30 K Ω @ Vo-Vd = 6 V to 60 V LEDH: 5 Ω to 6 K Ω @ Vo-Vd = 0 V to 12 V LEDH:50 Ω to 60 K Ω @ Vo-Vd = 12 V to 120 V		LEDL: 0.2 Ω to 240 Ω @ Vo-Vd = 0 V to 1.2 V LEDL: 2 Ω to 2.4 K Ω @ Vo-Vd = 1.2 V to 12 V LEDM: 1 Ω to 1.2 K Ω @ Vo-Vd = 0 V to 6 V LEDM: 10 Ω to 12 K Ω @ Vo-Vd = 6 V to 60 V LEDH: 2 Ω to 2.4 K Ω @ Vo-Vd = 0 V to 12 V LEDH:20 Ω to 24 K Ω @ Vo-Vd = 12 V to 120 V	
Resolution	16 Bits					
Accuracy	Vd: ± (0.05 % OF SETTING + 0.1 % OF RANGE), Rd: ± (0.05 % OF SETTING + 0.1 % OF RANGE)					
Measurement						
Voltage Read Back						
Range	60 V/300 V/600 V		30 V/60 V/120 V		12 V/60 V/120 V	
Resolution	0.001 V/0.005 V/0.01 V		0.0005 V/0.001 V/0.002 V		0.0002 V / 0.001 V / 0.002 V	
Accuracy	± 0.025 % OF (READING + RANGE)					
Current Read Back						
Range	1.5 A	6 A	0.6 A	2 A	1.5 A	6 A
Resolution	0.025 mA	0.1 mA	0.01 mA	0.04 mA	0.025 mA	0.1 mA
Accuracy	± 0.1 % OF (READING + RANGE)					
Power Read Back						
Range	150 W		75 W		150 W	
Accuracy ^{*2}	± 0.1 % OF (READING + RANGE)					
General						
Short Signal Output	12 V/100 mAmax		12 V/100 mAmax		12 V/100 mAmax	
Dimming Control						
Level Range	0 V to 12 V					
Resolution	0.048 V					
Accuracy	1 % of (SETTING + RANGE)					
Frequency Range	DC to 1 KHz		DC to 10 KHz		DC to 1 KHz	
Resolution	10 Hz		100 Hz		10 Hz	
Duty Range	0.01 to 0.99(1 % to 99 %)					
Resolution	0.01		0.1		0.01	
Temperature Coefficient	100 ppm/°C (typical)					
Power	Supply from mainframe					
Operating Temperature ^{*3}	0 °C to 40 °C					
Dimension(HxWxD)	143 mm x 108 mm x 405 mm					
Weight	3.5 Kg		3.5 Kg		3.5 Kg	
Safety & EMC	CE					

Note^{*1}: The range is automatically forcing to range II only in CC mode

Note^{*2}: Power F.S. = Vrange F.S. x Irange F.S.

Note^{*3}: Operating temperature range is 0~40°C, All specifications apply for 25°C±5°C, Except as noted

Note^{*4}: μS (microsiemens) is the unit of conductance(G), one siemens equal to 1/Ω



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SPECIFICATIONS

MODEL	3300G	3305G	3302G
Load Module Configure	4 CH	2 CH	1 CH
Accept Load Module			
3340G,3341G,3342G, 3343G, 3345G,3346G, 33401G, 33402G 3310G,3311G,3312G,3314G,3315G 3330G,3332G,3336G	Yes		
Interface Function			
Opt-01 GPIB	Yes		
Opt-02 RS-232	Yes		
Opt-03 USB	Yes		
Opt-04 LAN	Yes		
Opt-10 Remote Control I/O	Yes		
Opt-13 GPIB+RS-232	Yes		
Store/Recall memory	150		
9933 Remote Controller	Yes		
Weight	9.3 Kg	7.5 Kg	5.5 Kg
Dimension (WxHxD)	440 mm x 177 mm x 445 mm	269 mm x 177 mm x 452 mm	160 mm x 177 mm x 452 mm

Order Information

3341G	LED DC Electronic Load Simulator	300 V / 24 A / 300 W
3342G	LED DC Electronic Load Simulator	500 V / 12 A / 300 W
3343G	LED DC Electronic Load Simulator	500 V / 24 A / 300 W
3345G	LED DC Electronic Load Simulator	120 V / 4 A / 150 W
3346G	LED DC Electronic Load Simulator	120 V / 12 A / 300 W
33401G	LED DC Electronic Load Simulator	500 V / 6 A / 150 W x 2
33402G	LED DC Electronic Load Simulator	120 V / 2 A / 75 W x 2
33403G	LED DC Electronic Load Simulator	120 V / 6 A / 150 W x 2



3.7kg
W=108mm
H=143mm
D=412mm

3302G (Single Slot Mainframe)



5.5kg
W=160mm
H=177mm
D=452mm

3305G (Two Slot Mainframe)



7.5kg
W=269mm
H=177mm
D=452mm

3300G (Four Slot Mainframe)



9.3kg
W=440mm
H=177mm
D=445mm

GPIB+RS232 interface



RS232 interface



GPIB interface



USB interface



LAN interface



OPTIONAL ACCESSORIES

GPIB+RS232 interface
RS232 interface
GPIB interface
USB interface
LAN interface

9933 Remote Controller
NTC Optional function : 10 KΩ Simulator resistance
(100 Ω to 500 KΩ)
NTC Optional function : 100 KΩ Simulator resistance
(1 KΩ to 5 MΩ)

FPIB cable length 1 m
FPIB cable length 2 m
USB TYPE A to TYPE B cable length 1.8 m

Note: * Regarding the product delivery date, please contact your regional sales representative.

Global Headquarters

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