



# 33430G Series

**High Power 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.
- 150 sets Store / Recall memory.



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- 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 forword 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**

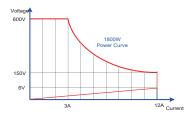
- LED Driver
- Voltage / Current source
- SMPS transient response
- Current limit testing and battery emulation
- Battery charger
- Battery discharge
- R&D / Quality Control
- ATE system
- Production testing

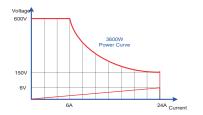
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| SPECIFICATIONS               |  |  |  |
|------------------------------|--|--|--|
| Model                        | 33431G   | 33432G   |  |
| Power                        | 1800 W   | 3600 W   |  |
| Current                      | 0 A to 12 A  | 0 A to 24 A  |  |
| Voltage                      | 0 V to 600 V   | 0 V to 600 V   |  |
| Min. Operating Voltage       | 6 V @ 12 A   | 6 V @ 24 A   |  |
| Constant Current Mode        |  |  |  |
| Range *1                     | 0 A to 3 A/12 A  | 0 A to 6 A/24 A  |  |
| Resolution                   | 0.05 mA/0.2 mA   | 0. 1mA/0.4 mA  |  |
| Accuracy                     | ± 0.1 % OF (So   | etting + Range)  |  |
| Constant Resistance Mod      | e  |  |  |
| Range                        | CRL: 0.5 Ω to 1.5 KΩ(300 V) / CRH:1 Ω to 3 KΩ(600 V)                                 | CRL: 0.25 Ω to 3 KΩ(300 V) / CRH: 0.5 Ω to 6 KΩ(600 V)                                     |  |
| Resolution *3                | CRL: 3.333 μS / CRH:1.666 μS   | CRL: 6.666 μS / CRH: 3.333 μS  |  |
| Accuracy                     | ± 0.2 % OF (Setting + Range)   |  |  |
| Constant Voltage Mode        |  |  |  |
| Range                        | 60 V/300 V/600 V   | 60 V/300 V/600 V   |  |
| Resolution                   | 0.001 V/0.005 V/0.01 V   | 0.001 V/0.005 V/0.01 V   |  |
| Accuracy                     | ± 0.05 % OF (Setting +Range)   |  |  |
| Constant Power Mode          |  |  |  |
| Range                        | 1800 W   | 3600 W   |  |
| Resolution                   | 30 mW  | 60 mW  |  |
| Accuracy                     | ± 0.5 % OF (Setting + Range)   |  |  |
| LED Mode                     |  |  |  |
| Vo Voltage Range             | LEDL:60 V / LEDM:300 V / LEDH:600 V  | LEDL:60 V / LEDM:300 V / LEDH:600 V  |  |
|                              | LEDL: 0.5 Ω to 100 Ω @ Vo-Vd = 0 V to 6 V<br>LEDL: 5 Ω to 1 KΩ @ Vo-Vd = 6 V to 60 V | LEDL: 0.25 Ω to 125 Ω @ Vo-Vd = 0 V to 6 V<br>LEDL: 2.5 Ω to 1.25 KΩ @ Vo-Vd = 6 V to 60 V |  |
|                              | LEDM: 2.5 Ω to 500 Ω @ Vo-Vd = 6 V to 60 V   | LEDM: 1.25 $\Omega$ to 625 $\Omega$ @ Vo-Vd = 6 V to 60 V                                  |  |
| Rd Resistance Range          | LEDM: 2.5 Ω to 5 KΩ @ Vo-Vd = 30 V to 300 V  | LEDM: 12.5 $\Omega$ to 6.25 K $\Omega$ @ Vo-Vd = 30 V to 300 V                             |  |
|                              | LEDH: 5 $\Omega$ to 1 K $\Omega$ @ Vo-Vd = 0 V to 60 V                               | LEDH: 2.5 $\Omega$ to 1.25 K $\Omega$ @ Vo-Vd = 0 V to 60 V                                |  |
|                              | LEDH: 50 Ω to 10 KΩ @ Vo-Vd = 60 V to 600 V  | LEDH: $25 \Omega$ to $12.5 K\Omega$ @ Vo-Vd = $60 V$ to $600 V$                            |  |
| Resolution                   | 16 Bits  |  |  |
| Accuracy                     | Vd: ± (0.05 % OF SETTING + 0.1 % OF RANGE),  | Rd: ± (0.05 % OF SETTING + 0.1 % OF RANGE)   |  |
| Dynamic Mode - CC            |  |  |  |
| Timing Thigh & Tlow          | 0.050 ms to 0.000 ms / 00  | 00 ms / 000 0 ms / 0000 ms   |  |
| Resolution                   | 0.050 ms to 9.999 ms/ 99.99 ms/ 999.9 ms/ 9999 ms  0.001 ms/ 0.01 ms/ 0.1 ms/ 1 ms   |  |  |
| Accuracy                     | 0.001 ms/ 0.01 ms/ 1 ms<br>1 μs/10 μs/100 μs/1 ms + 50 ppm                           |  |  |
| Slew rate                    | 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   |  |
| Resolution                   | 0.6 mA/μs, 2.4 mA/μs   | 1.2 mA/μs, 4.8 mA/μs   |  |
| Min. Rise Time               | 20 μs (typical)  | 20 μs (typical)  |  |
| Current                      | 20 μ3 (γγρ.σ)  | 20 μ3 (ε) ριεαί)   |  |
| Range *2                     | 0 A to 3 A/12 A  | 0 A to 6 A/24 A  |  |
| Resolution                   | 0.05 mA/0.2 mA   | 0.1 mA/0.4 mA  |  |
| Measurement                  |  |  |  |
| Voltage Read Back            |  |  |  |
| Range (5 Digital)            | 60 V/300 V/600 V   | 60 V/300 V/600 V   |  |
| Resolution                   | 1 mV/5 mV/10 mV  | 1 mV/5 mV/10 mV  |  |
| Accuracy                     | ± 0.025 % OF (F  | Reading + Range)   |  |
| Current Read Back            |  |  |  |
| Range (5 Digital)            | 0 A to 3 A/12 A  | 0 A to 6 A/24 A  |  |
| Resolution                   | 0.05 mA/0.2 mA   | 0.1 mA/0.4 mA  |  |
| Accuracy                     | ± 0.1 % OF (Re   | eading + Range)  |  |
| Power Read Back              |  |  |  |
| Range (5 Digital)            | 0 W to 1800 W  | 0 W to 3600 W  |  |
| Resolution                   | 0.01 W   |  |  |
| Accuracy                     | ± 0.125 % OF (Reading + Range)   |  |  |
| Program mode(Mainfram        |  |  |  |
| Sequence No.                 | F1 to F9/16 Steps  |  |  |
| T1/T2 (Dwell)                | 0.1 sec. to 9.9 sec./Repeat 9999   |  |  |
| Load Setting(External Progra | •,   |  |  |
| GO/NG Check                  | Voltage/Current/Power  |  |  |

| Protections              |                          |                            |  |
|--------------------------|--------------------------|----------------------------|--|
| Over Power               | 105 % of Rated Power     |                            |  |
| Over Current             | 105 % of Rated Current   |                            |  |
| Over Voltage             | 105 % of Rated Voltage   |                            |  |
| Over Temp.               | Yes                      |                            |  |
| Interface                |                          |                            |  |
| RS-232                   | Optional                 |                            |  |
| GPIB                     | Optional                 |                            |  |
| USB                      | Optional                 |                            |  |
| Ethernet                 | Optio                    | Optional                   |  |
| Others                   |                          |                            |  |
| Load ON Voltage          |                          |                            |  |
| Range                    | 0.4 V to 100.0 V         | 0.4 V to 100.0 V           |  |
| Resolution               | 0.4 V                    | 0.4 V                      |  |
| Accuracy                 | 1 % of Setting + 0.25 V  |                            |  |
| Load OFF Voltage         |                          |                            |  |
| Range                    | 0.4 V to 100.0 V         | 0.4 V to 100.0 V           |  |
| Resolution               |                          | Same as Voltage Meter      |  |
| Accuracy                 | Same as Voltage Meter    |                            |  |
| General                  |                          |                            |  |
| Imonitor                 | 1.2 A/V                  | 2.4 A/V                    |  |
| Accuracy                 | ± 0.5 % of (REA          | ± 0.5 % of (READING+RANGE) |  |
| short Single Output      | 12 V/100 mA              | 12 V/100 mA                |  |
| Short Circuit            |                          |                            |  |
| Current                  | 12 A                     | 24 A                       |  |
| Dimming Control          |                          |                            |  |
| Level Range              | 0 V to 12 V              |                            |  |
| Resolution               |                          | 0.048 V                    |  |
| Accuracy                 | 1 % of (SETTING + RANGE) |                            |  |
| Frequency Range          | DC to 1 KHz              |                            |  |
| Resolution               | 10 Hz                    |                            |  |
| Duty Range               |                          | 0.01 to 0.99(1 % to 99 %)  |  |
| Resolution               | 0.01                     |                            |  |
| Temperature Coefficient  |                          | 100 ppm/°C(typical)        |  |
| Power                    | 100 Wmax                 | 200 Wmax                   |  |
| Operating Temperature *2 | <del>-</del>             | 0 °C to 40 °C              |  |
| Dimension(HxWxD)         | 177 mm x 440 mm x 445 mm | 889 mm x 596 mm x 600 mm   |  |
| Weight                   | 23.6 Kg                  | 81.2 kg                    |  |
| Safety & EMC             | CE                       |                            |  |

Note  $^{^{\circ}1}$ : The range is automatically or forcing to range II only in CC mode Note  $^{^{\circ}2}$ : Operating temperature range is 0~40°C, All specifications apply for 25°C±5°C Note  $^{^{\circ}3}$ :  $\mu$ S (microsiemens) is the unit of conductance(G), one siemens equal to  $1/\Omega$ 





All specifications are subject to change without notice.

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