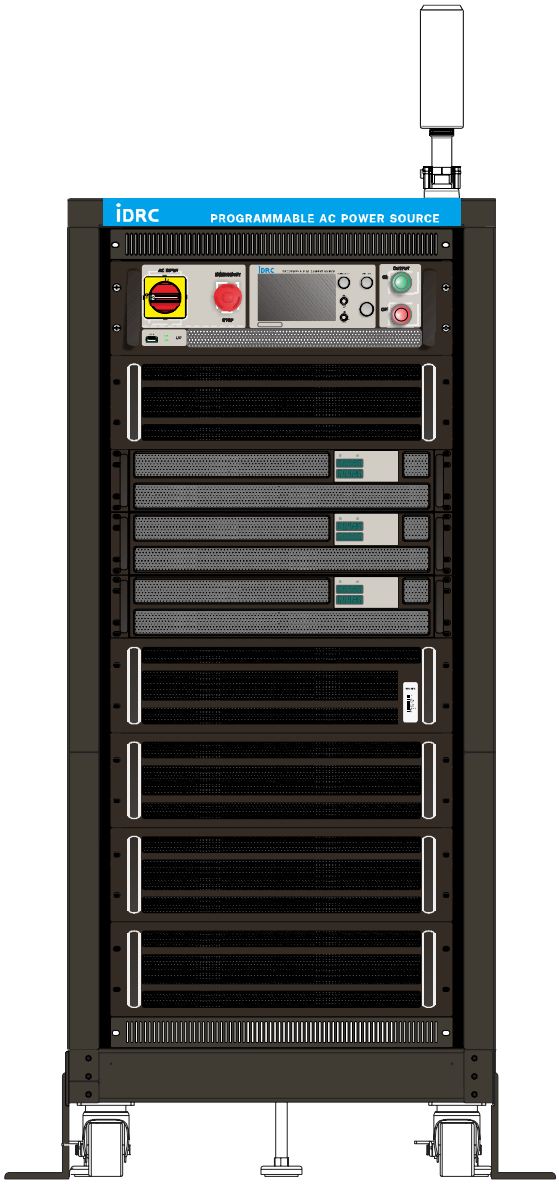
iDRC

ASP Series

Programmable AC Power Source



SiC

LXI

Environmental Mission / iDRC and the Environment

We are devoted to product innovation and development while also protecting the environment and maintaining our social responsibility. We focus on reducing the impact to the environment throughout the product lifecycle, during product design, material use, manufacturing, packaging, product use and recycling.

Purpose of Design

Our goal in designing our products is to allow every customer to have more efficient use of energy and be able to obtain power in an environmentally friendly way. Our products help our customers precisely design and develop their own remarkable energy efficient products.

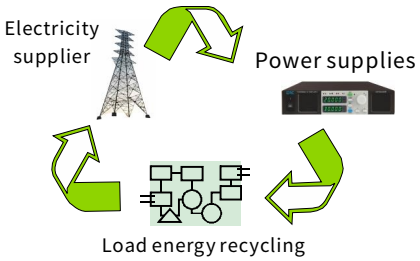
Our products include DC Power Supplies, AC Power Sources, and Power Analyzers. They are primarily used in wind, solar, and other green power energy research and development laboratories, and all kinds of electric vehicles, home appliances, and IT products. We help all of our customers to design and develop low energy consumption products that meet industry standards and help reduce gas emissions.

Eliminating Toxic Materials/Substances

We are very strict in selecting materials that we use. We do not use any harmful or toxic substances in our products or packaging. All our products and packaging strictly follow the rules of RoHs Directive, WEEE, and other environmental laws and regulations. We avoid using harmful toxins, we also seek to exclude the possibility of using harmful materials in our products.

High Efficiency

Throughout our development process we strive to meet our goals of high energy efficiency. We use low energy consumption equipment for design, for example information equipment that meets EAP energy efficiency requirements. We use power regeneration load when testing and manufacturing to reduce energy consumption. We also select low-power components and apply the latest technology to reduce energy conversion losses. Applying Active Power Factor Correct (APFC) into the products makes the PF of the products higher than 0.99 which improves the electricity quality of each product and reduces the energy waste by 20-50%.



Smaller Volume、Less energy waste

Designing small, compact, efficient products is another way iDRC reduces energy consumption. More compact products require fewer packaging materials and allow more efficient transportation. CO2 emissions produced during transportation are efficiently reduced.

Life

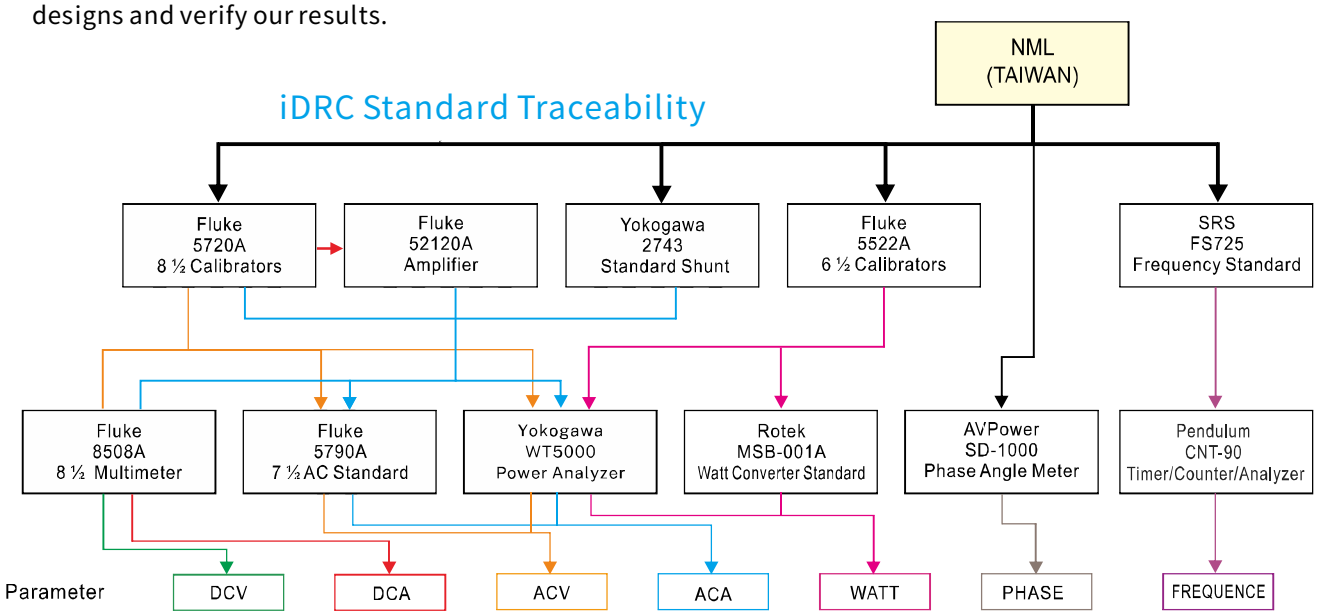
Our high quality components and iDRC's proprietary design provide greater durability and reliability. A longer product life means reduced CO2 emissions and waste produced during transportation, maintenance, and replacement.
A longer product life provides our customers with reduced life-cycle costs through flexibility and reliability.

Recycle

The recyclability of our products is higher than 85%. That means the impact of non-recyclable components on the environment is reduced.

Guarantee

iDRC commits to producing the highest quality products. We use industry leading test equipment to aid our designs and verify our results.



Calibration Equipment

FLUKE : 5720A , 5700A , 5522A , 5520A , 5500A , 52120A , 5790A , 8508A、HP 3458A、Guildline 7620、SRS : FS725 , SR620、Pendulum CNT-90、Yokogawa : WT5000 , WT3000 , 2743 [2A , 5A , 10A , 20A , 50A , 100A])、Danisense Fluxgate DCCT : DR10000IM, DR5000IM, DL2000ID, DM1200ID, DN1000ID, DS600ID, DS200ID, DT100ID, DP50IP-B, DS50ID 、ROTEK MSB-001A、AVPower SD-1000 ..etc

Development Instrumentation

Keysight/Agilent/HP : PA2201A , PA2203A , MSOX6004A , 53230A , 33522B , B2962A , 34470A , 34420A , 34461A , 34401A , L4534A , L4532A , U1620A , 3245A , 4284A+42841A、ADCMT 7461A、AudioPrecision APx525、Fluke : 8842A , 8846A , 190-104、Tektronix : 370A , TPS2024 , TPS2014、Keithley : 2000 , 2015、Hioki : 3390 , 3196 , 3197 , PW3198、IWATSU : CS3100 , CS3200 , CS3300 , DG-8000 , VOAC7602、Kikusui : TOS-9201 , TOS-6200 , TOS-7200 , TOS-3200 , TOS-5101、Lecroy : HDO8108A-MS , MDA810A , HDO6104A-MS , HDO4054A-MS , WR66Zi-HRO , DA1855A , DA1855A-PR2、NF : FRA5097 , FRA5087 , WF1948 , WF1974 , WF1946 , CK1620、R&S AM300、SRS DS360、Tabor WW2074、Yokogawa : WT5000 , WT3000 , WT1800 , PX8000 , DL950 , DL750 , SB5710 , SL1000 , DL7480 ..etc

note:The names and logos mentioned in this catalog are the property of the mentioned companies

Innovation

After decades of research and development, iDRC has nearly 400 patents (through October 2025), including more than 67 invention patents.

ASP Series Programmable AC Power Source

The ASP series programmable AC power sources adopt SiC MOSFET technology and modular design, providing fast response, high availability, and excellent stability.
Equipped with an LXI-compliant digital control interface.

Features

- Amplifier direct output, single-gear output, L-N maximum voltage 300V, L-L maximum voltage 520V [*1]
- Standard output frequency 45Hz ~ 65Hz, optional 45Hz ~ 550Hz
- Three-phase or single-phase output function
- Standard output voltage is linear sine wave with low waveform distortion

Electrical

- Adopt SiC MOSFET wide bandgap power semiconductor for high efficiency and robust performance.
- Optional temperature-compensated crystal oscillator (TCXO) delivers output frequency accuracy up to 1 mHz and time accuracy up to 1 ms.
- Programmable voltage ramp times from 0.1 to 99.9 seconds.
- 16 bit DAC for precise output setting and 16 bit ADC for accurate measurement.

Operational

- 800x480 WVGA 5" touch screen with rotary knobs and buttons for intuitive control.
- Patented dual-function key design for enhanced operation convenience.
- Independent voltage and frequency control with rotary encoder ; adjustable digit resolution on panel for precise operation.
- Two manipulating modes via panel control; direct reaction or confirmation required.
- Over-voltage and over-current protection.
- Provides time-stamped operation log for traceability.

Safety

- Intelligent stepless speed-regulated fan minimizes acoustic noise while maintaining optimal system temperature.
- Built-in timer supports programmable voltage operation duration and timing function.
- Closed-case firmware upgrade with enhanced safeguards against failure.
- Built-in RTC with user-preferred network time server ensures accurate timekeeping even without external synchronization.

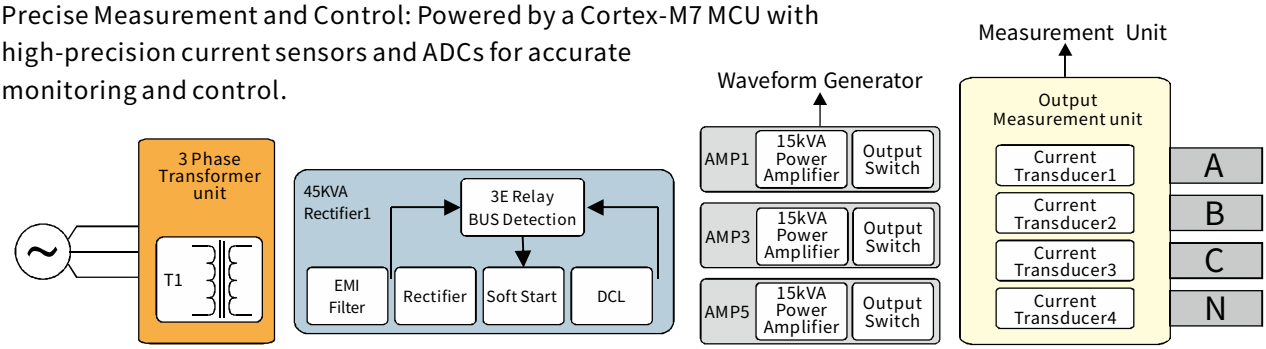
Interface

- Dual LAN ports(LXI approved) minimize wiring and reduce network complexity*2.
- Interface slot supports optional GPIB, RS422/485+USB, or Isolated Analog connections.
- Alarm signal output and Interlock mechanism prevent potential injury.

Block Diagram

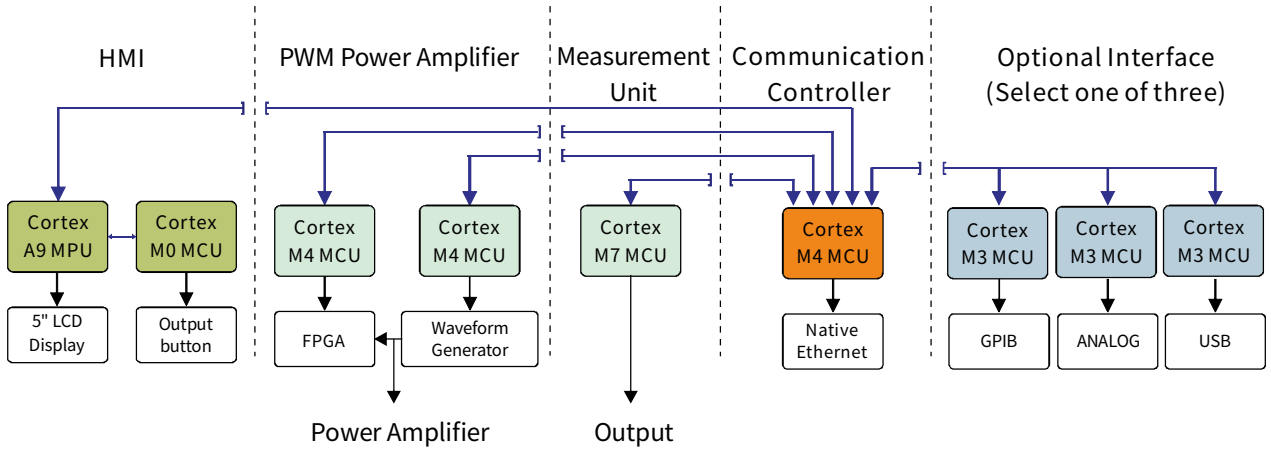
The ASP series features a modular design and PWM technology. Key features include:

1. High Integration and Scalability: A single 3U chassis integrates the 3E Relay, DCL, and a 45kVA rectifier, with support for parallel capacity expansion.
2. High-Density Power Modules: Utilizing the latest PWM technology combined with SiC MOSFETs, the series offers 2U 15kVA high-density power modules.
3. Precise Measurement and Control: Powered by a Cortex-M7 MCU with high-precision current sensors and ADCs for accurate monitoring and control.



Control Module

1. ASP series adopt multiple 32 bits ARM-based MCUs with embedded RTOS, each dedicated to a major control loop, ensuring optimal operation and industry-leading response speed.
2. Complete signal and power isolation between control loops, improving noise immunity, measurement accuracy, and control stability.
3. Cortex M4 CPU with native network capability serving as the primary communication interface, enabling seamless integration and high scalability.



Applications

- New Energy R&D
- ATE
- Factory Automation
- QC Testing
- Production line Power supply
- New product verification
- Home appliance manufacturing
- National defense industry
- Aerospace Testing
- EMC Testing
- Surge Testing
- Transient Testing
- Transformer Testing
- Inductor Testing
- Power Electronics
- Motor Testing

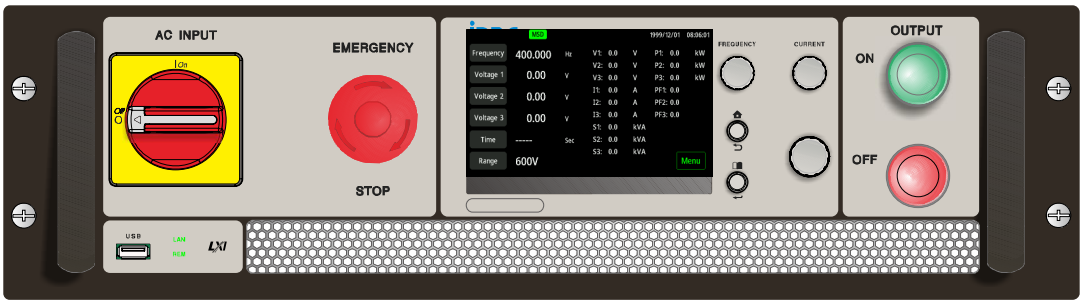
Note:

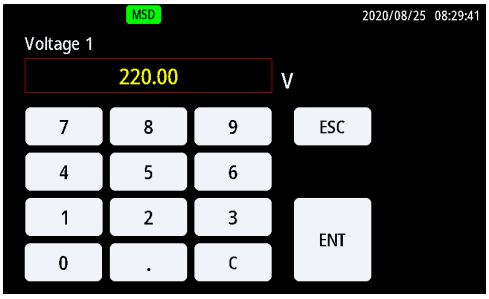
*1. L-N means line to neutral , L-L means line to line.

*2. LXI interface response time: 100/1000M network connection, computer directly connected to ASP series, the time interval from the packet sending to the DA starting action.

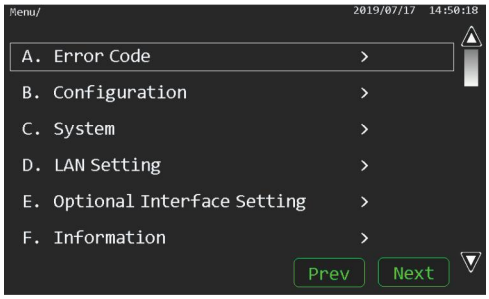
Front Panel

Featuring an 800×480 5" WVGA touchscreen LCD and a patented composite button design, the system delivers intuitive and user-friendly operation, enabling users to quickly master controls with minimal guidance.





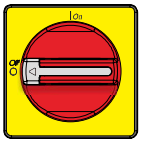
Single-screen settings interface with on-screen numeric keypad for fast, precise input.



Menu selection items are fully spelled out for clarity and ease of use.

High resolution TFT LCD touchscreen (800 x 480) WVGA

High-airflow, speed-controlled fans minimize noise, reduce internal temperature, and lower standby power consumption.

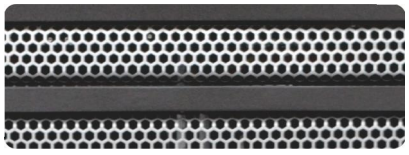


A robust power switch has a safety guard to prevent accidental operation.

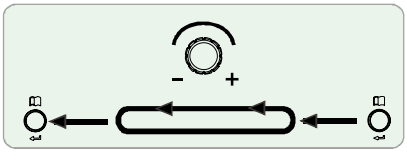
ARM Cortex-A9 (note) graphical microprocessor brings smooth operation and fast response.

USB Type A port allows access of USB memory up to 32GB.

HOME key gives rapid access to previous page or hold for 1.5 seconds to return to the Main page.



Eco-friendly paint-free (non-plated) stainless steel hexagonal mesh maximizes ventilation.



Hybrid task-selection knob provides full control of ASP series functions, duplicating touchscreen controls.

note:Thenamesandlogosmentionedinthiscatalogarethepropertyofthementionedcompanies

ASP-4530 Specifications

Model number	ASP-4530
Rated Power	45kVA
Phase Outputs	3-phase, 4-wire, Star Connection or Single phase
Output Voltage	
Max. Vac L-N	0-300VAC
Max. Vac L-L	0-520VAC
Programming Resolution	0.01 V
Programming Accuracy	≦0.1% ± 2C
Measurement Accuracy	±0.2% reading ± 0.3% Full scale ± 2C (at 10%~100% Full scale)
Temperature Coefficient	±0.1% / °C
Waveforms	Sine
Total Harmonic Distortion (Vthd)	≦2% (full, Resistive load, up to 300Vrms L-N, PF=1, THD-R measurement) (to 80kHz BW)
Output Noise (DC to 300kHz)	< 150 mVrms
Line Regulation	±0.2% for 10% Line voltage change, THD≦2%, ±5% Line frequency change) (at 80% Full scale voltage, LOAD=10%~90%, PF=1)
Load Regulation	1% Read+1% Range+3C (at 80% Full scale voltage, LOAD=10%~90%, PF=1)(Resistive load, THD-R measurement)
Voltage Sense	5V
Output Frequency	
Nominal Range	45Hz ~ 65Hz ; optional 45Hz ~ 550Hz
Programming Resolution	0.01 Hz
Programming Accuracy	≦0.05% ± 1C
Regulation	0.01 Hz
Temperature Coefficient	50 ppm / °C
Output Current	
Max. AC Current	50 Arms /per phase @3 Phase Mode ; 150A @ single phase mode
Crest Factor	2.5 @rated current
Max. peak current	3 times of Rated Current (60msec)
Programming Resolution	0.01 Arms
Measurement Accuracy	±0.4% reading ± 0.3% Full scale ± 3C ± 0.1% (at 10%~100% Full scale)
Output Power	
Measurement Accuracy	±0.2% reading ± 0.2% Full scale ± 5C (at 10%~100% Full scale)
Phase Angle	
Programmable Phase	A, B, C : 0 - 359.9°
Resolution	0.1°
Time	
Output On Ramp	1~7200 msec
Output Off Ramp	1~7200 msec
Output Time	1~7200 msec
Measurement Accuracy	±1% ± 3C (at 10%~100% Full scale)
Input	
Nominal input rating	3Ø380VAC ± 10% , 50Hz/60Hz ± 5% , 3-phase 3 wires+GND ; or specified mains
Nominal Current / Phase @380V	81Arms
Inrush current (Maximum)/phase	< 1.5 x Nominal Current@380V
Input Power (Maximum)	53.5kVA
Leakage current	< 50mA
General	
Efficiency	> 85% (at 80% Full scale Voltage, 100% Full scale Current)
Transient Response	10mS (10%~80% Resistive load)
Power factor of load	0.5~1(lead or Lag)
Protections Function	Over Load protection, Over current protection(110%), Over temperature protection, Line input over/under voltage protection (-15% / 10%)
Weights and dimensions	
Enclosure (WxHxD)(mm)	603*1386.4*1207.2
Total (WxHxD)	615*1654.4*1330.4
Approx. Weight (kg)	685

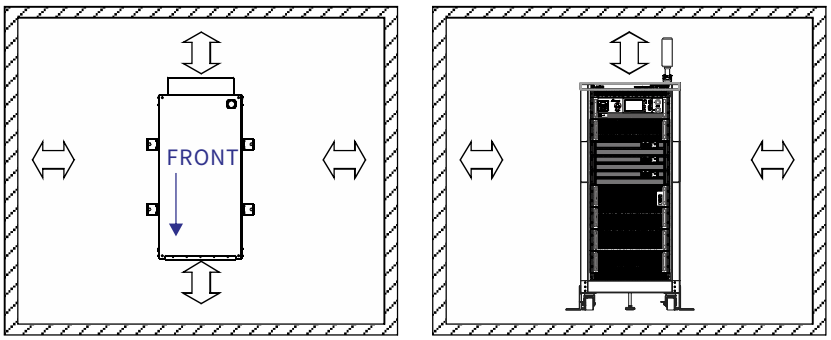
*1 The voltage drop of test leads is directly proportional to frequency, about double the drop each 100Hz.
*2 When the power factor is less than 1, the effective power output decreases accordingly. Output is based on VA capacity.
*3 All data were measured at temperature of 23±3°C, humidity below 80% (non-condensing), AC input voltage ±5%, frequency ±5%, THD of 2% or less, output voltage between 10% and 90% of the rated value, and a resistive load.
*4 Chassis dimensions in the specifications are reference only; actual sizes will be negotiated based on requirements
*5 The information in this document is subject to change without notice and should not be construed as a commitment .

General Specifications

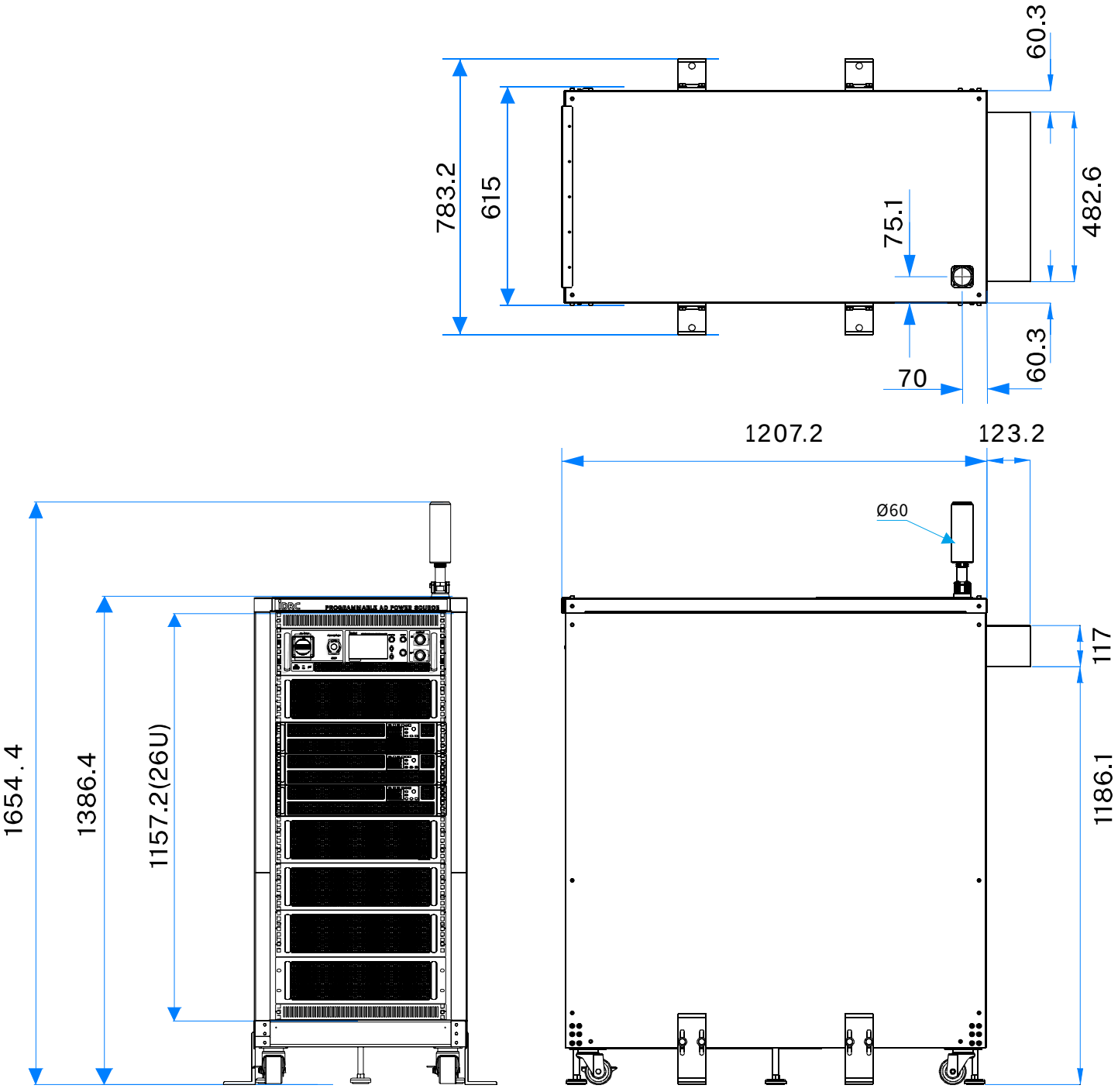
Standard LAN Interface	
Compliant	LXI 1.6 or above version
J1 (Auxiliary control)	Function : Interlock , External output ON/OFF , Alarm signal output
Optional GPIB Interface	
Compliant	SCPI - 1990, IEEE 488.2 compliant interface;
Optional RS422/RS485 Interface	
Compliant	SCPI - 1990
Baud Rate	Support 4800 , 9600 , 19200 , 38400 , 57600 , 115200 bps
Insulation	
Primary - Chassis	10MΩ/ 500VDC
Environment	
Operating environment	Indoor use
Operating temperature / humidity	0°C ~ 45°C , 10%rh ~ 90%rh (no condensation)
Storage temperature / humidity	-10°C ~ 65°C , 10%RH ~ 80%RH (no condensation)
Altitude	Up to 2000m
Cooling method	Forced air cooling using the speed controlled fan

Installation space

The ASP series must be installed in a well-ventilated environment with at least 800 mm clearance from walls or other objects, and away from heat sources.



Dimensions (mm)



CHYNG HONG ELECTRONIC CO., LTD.

Taipei Taiwan
4th F, 3-3 Baohong Rd., Hsin Tien District, New Taipei City
TEL:+886-2-2918-4785 FAX:+886-2-2918-6927

Taichung Taiwan
No.80, Lane 258, Sec. 3, Hansi W. Rd., Beitun District, Taichung City
TEL:+886-4-2437-6268 FAX:+886-4-2437-6266

Beijing China
TEL:+86-10-6498-6421 FAX:+86-10-6498-6411

Guangdong China
TEL:+86-757-8623-9927 FAX:+86-757-8639-1132

Suzhou China
TEL:+86-512-6252-9029 FAX:+86-512-6252-7013

For more information, please visit https://www.idrc.com.tw
or contact us E-mail : sales@idrcms.com.tw

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