

**UND-K Series**

50 HZ / 400 V

**UND-K 90 Diesel Generator Set**
**Standby**

 90 kVA  
 72 kW

**Prime**

 81 kVA  
 65 kW

**Standby Power (ESP)** : In case of failure of reliable mains supply, variable voltage is used to power the load. ESP is ISO8528 compliant. Overloading is not allowed.

**Prime Power (PRP)** : It is used to supply variable electricity to the load for unlimited annual working hours. PRP is compatible with ISO 8528. It is used for 1 hour 10% overload in a 12-hour working period according to ISO3046.



Universal Generator sets are designed for Standby Power (ESP) use, Prime Power (PRP) indicated in the table is added for information purposes.

**Engine**

Universal Generator uses high-tech engine brands in its engine products that are designed for heavy duty conditions, have high performance, low fuel consumption, are mounted on the fuel pump, have mechanical or electronic governors depending on the type, oil, air and fuel filters can be changed, comply with ISO 3046, ISO 8528, BS 5514, DIN 6271 standards.

**ENGINE SPECIFICATIONS**

|                         |                                 |       |
|-------------------------|---------------------------------|-------|
| Engine Brand            | KOFO                            |       |
| Engine Model            | MN4105ZLDS                      |       |
| Engine Power            | 72 kW / 66 kW (Standby / Prime) |       |
| Speed (rpm)             | 1500 d/dk                       |       |
| Time                    | 4                               |       |
| Number of Cylinders     | 4                               |       |
| Engine Capacity         | 4,15 lt                         |       |
| Bore & Stroke (mm x mm) | 100x120                         |       |
| Compression Ratio       | 19:01                           |       |
| Governor Type           | Mechanic                        |       |
| Induction System        | Turbocharge / Intercooler       |       |
| Combustion System       | Direct                          |       |
| Cooling System          | Water                           |       |
| Lubrication Capacity    | 13 lt                           |       |
| Coolant Capacity        | 17 lt                           |       |
| Fuel                    | %100                            | 17 lt |
| Consumption             | %75                             | 13 lt |
| (liter / hour)          | %50                             | 9 lt  |

Generator powers are declared according to 25°C temperature, 30% relative humidity environment and 100 kPa barometric pressure and conditions. Power loss may occur in generator sets depending on the environment in which they will operate. For power calculations for special operating conditions, please contact Universal Generator factory or the nearest authorized Universal Generator authorized dealer.

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## Alternator

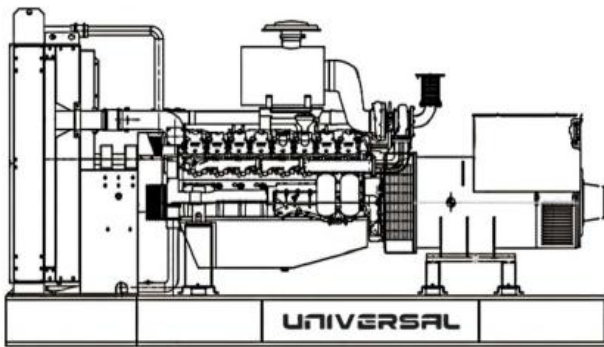
Universal Generator uses high technology alternator brands in its alternator products with steel body design, robust structure, maintenance-free bearing system (brushless), self-alert system, electronic type voltage regulator, BS 4999-5000; CEI EN 60034-1; IEC 60034-1; VDE 0530, OVE M10, NF 51-100,111; NEMA MG 1.22. Standards. The selection of alternator to be used in generator set production is optional and may vary depending on the project.

### ALTERNATOR SPECIFICATIONS

|                                  |                |
|----------------------------------|----------------|
| Power Factor ( cos $\phi$ )      | 0.8            |
| Insulation Class                 | H              |
| Protection                       | IP21 - IP23    |
| Output Voltage                   | 231 / 400 VAC  |
| Frequency (HZ)                   | 50 HZ          |
| Permanent Voltage Reg. ( $\pm$ ) | 1%             |
| Number of Poles                  | 4              |
| Design                           | AVR Brushless  |
| Number of Bearings               | Single         |
| Short Circuit Current            | %300 (10 sec.) |
| Productivity (%)                 | 90             |
| Connection Type                  | Star           |
| Overload Uptime                  | 110% - 1 hour  |
| Harmonic Degradation (%)         | < 1 %          |

### ENGINE & ALTERNATOR OPTIONS

|                         |                                            |
|-------------------------|--------------------------------------------|
| Circulation Type Heater | Oil Heater                                 |
| Automatic Fuel Filling  | Fuel - Water Separator                     |
| Manual Oil Filling Pump | Alternator with PMG and Dual AVR           |
| Manual Oil Drain        | Medium Voltage Alternator                  |
| Automatic Oil Drain     | Single Phase Option                        |
| Tropical Type Radiator  | Alternator Output Switch                   |
| Electronical Governor   | Alternator Winding Heaters (Anti-humidity) |
| Lightning Protection    | Short Circuit Voltage Interrupter          |



### COOLENT SYSTEMS

Universal Generator uses radiators consisting of an expansion tank and a cooling fan, which keep the generator components at the appropriate temperature for maximum efficiency, high performance and effective use, in accordance with international standards and regulations.

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## Control System

Universal Generator uses generator control units with microprocessors that can be programmed as standard in its sets, which can monitor all measurement values and alarm messages and provide protection. Control panels are manufactured from A1 quality galvanized sheet metal and painted with electrostatic powder paint against corrosion. In order to prevent unauthorized interventions, there is a lock system on the covers of the control panels and there is a lighting button that provides illumination inside the panel and inside the cabin. In addition to the standard control panels, sets suitable for various operating variations are also manufactured in accordance with the demands of the customers and the operating conditions of the generator.

### CONTROL SYSTEM STANDARD FEATURES

|                                             |
|---------------------------------------------|
| Automatic Control System with LCD Screen    |
| Multifunctional Business Opportunity        |
| Different Language Support                  |
| Programmable via USB, RS-232 and GSM        |
| Fuel Level Control                          |
| Engine Block Water Heater Control           |
| Summary Fault/Event Display, Record Keeping |
| Current Unbalance Protection                |
| Automatic Fuel Pump Control                 |
| Over Power and Reverse Power Protection     |
| Idle Speed Control                          |
| Fine Speed Adjustment (Some ECUs)           |
| Emergency Stop Button                       |



### OPTIONS

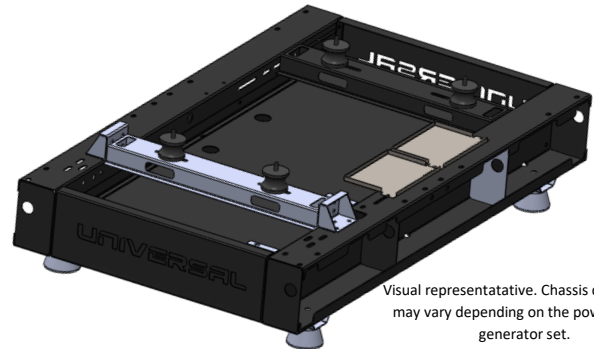
|                                      |                             |
|--------------------------------------|-----------------------------|
| Automatic Transfer Switch            | Analog Indicators           |
| Circuit Breaker                      | Motorized Circuit Breaker   |
| Electronical Governor                | Audio Warning Systems       |
| Synchronization System               | Remote Communication Module |
| Earthquake Sensor                    | Charge Ammeter              |
| Remote Monitoring and Control Module | Special Board Design        |

## Chassis, Canopy & Fuel Tank

Universal Generator chassis have a modular design and are manufactured from steel, the tank is mounted to the chassis with bolts. Engine alternator radiator connections are made with vibration mounts and vibration is reduced to a minimum level. Special chassis and fuel tank designs can be made in line with customer demands.

### CHASSIS

|                                                         |
|---------------------------------------------------------|
| High Quality Steel with Improved Corrosion Resistance   |
| Modular Design Providing Easy Accessibility&Maintenance |
| Anti-vibration Wedges                                   |
| Electrostatic Powder Paint                              |
| Fuel Tank Integrated into the Chassis                   |
| Fuel Indicator Level                                    |
| Fuel Drain Valve                                        |



Visual representative. Chassis dimensions may vary depending on the power of the generator set.

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## CANOPY

- Modular Design Providing Easy Accessibility&Maintenance
- Emergency Stop Button on Canopy
- Transparent Control Panel Window
- Fireproof Acoustic Sponge Providing Sound Insulation
- Corrosion and Rust Resistant Electrostatic Powder Paint
- Hidden Exhaust Muffler in Cabin
- Homogeneous Cooling Providing Air Ducts
- Canopy Interior Lighting Possibility



Fireproof acoustic sponges used in the production of sound insulation cabins and providing sound insulation comply with ISO 9001 and IATF 16949:2016 regulations.

## OPTIONS

|                                                |                                        |
|------------------------------------------------|----------------------------------------|
| Soundproofing Canopy in Special Size and Color | Super Quiet Isolation Canopy           |
| Chassis in Special Size and Color              | Container Type Sound Insulation Canopy |
| External Type Fuel Tank                        | Trailer                                |
| Critical / Hospital Type Silencer              | Double Walled Fuel Tank                |
| Waste Collection Pan                           | Epoxy Paint                            |

## Quality Certificates

All generator sets produced by Universal Generator have;  
 ISO 9001-2015, ISO 14001-2015, ISO 45001-2018 Management Systems certificates  
 2000/14/EC Noise Directive conformity certificate  
 TSE standards conformity certificate  
 After Sales Service Competence Certificate

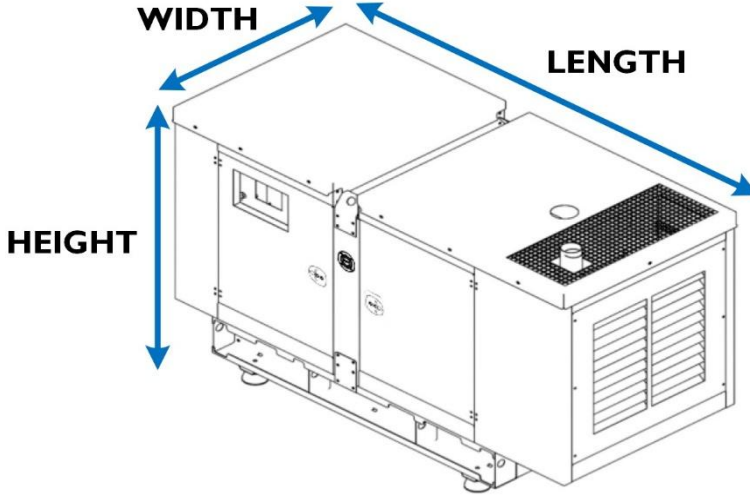
All generating sets produced by Universal Generator have CE Declaration.

Technical informations and values complies with;  
 Machinery Directive 2006/42/EC,  
 Electromagnetic Compatibility Directive 2014/30/EU,  
 2014/35/EU Low Voltage Directive,

EN ISO 8528-13:2016, EN ISO 12100:2010, EN ISO 14120:2015, EN ISO 13851:2019, EN ISO 13854:2019, EN 61000-6-2:2019, EN 61000-6-4:2019, EN 60204-1:2018 regulations and ISO3046, NEMA MG1.22, IEC 600341, BS 49995000, VDE 0530 standards.

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**Technical Dimensions**

UJST (standard canopy dimensions are specified. Dimensions for UJBT (heavy-duty canopy) and UJPT (project type canopy) vary.

**CABINET GROUP**

| WIDTH   | LENGTH  | HEIGHT  | WEIGHT  | FUEL TANK |
|---------|---------|---------|---------|-----------|
| 1100 mm | 2650 mm | 1750 mm | 1255 kg | 265 lt    |

**UNCABINET GROUP**

| WIDTH   | LENGTH  | HEIGHT  | WEIGHT  | FUEL TANK |
|---------|---------|---------|---------|-----------|
| 1100 mm | 2100 mm | 1550 mm | 1055 kg | 265 lt    |

**Documentation**

Documents included in Universal Generator sets;

- Diesel generator set operation and maintenance manual
- Diesel engine use and maintenance manual
- Alternator use and maintenance manual
- Control panel connection diagram
- General maintenance schedule
- Generator factory load test report
- Service Information Form & Running-in Maintenance Form

\* The warranty certificate and warranty conditions are located in the last section of the operation and maintenance manual booklet supplied with the generator set.

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