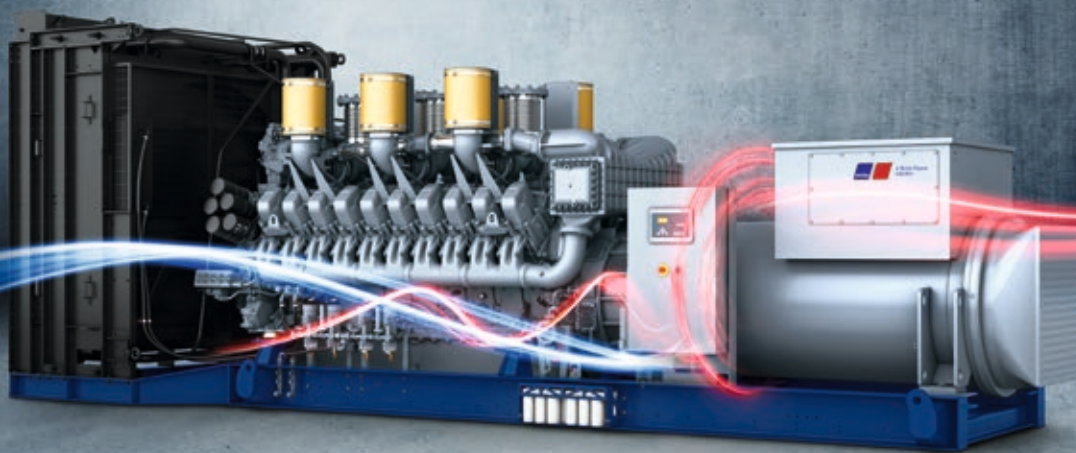




DIESEL GENERATOR SETS

50 Hz: 1,600 – 4,000 kVA
SERIES 4000



Power Generation

ENSURE A CONSTANT
FLOW OF POWER –
AND PEACE OF MIND



A Rolls-Royce
solution

20 YEARS OF TOP PERFORMANCE – NOW IN THE 4TH GENERATION

Our Series 4000 engines have been a global success story for more than 20 years.

Power Generation, a core brand of Rolls-Royce Power Systems AG, uses MTU high-speed diesel engines with common rail fuel injection systems to produce generator sets that provide an industry-leading independent power supply. Why? Because when it comes to emergency power, ground or peak load supply, facilities and installation sites demand permanent reliable performance.

Our generator sets are built on our legendary and industry-leading MTU engines, and always feature state-of-the-art technology. Now in their fourth generation, they feature 12-, 16-, and 20-cylinder engine variants, depending on your requirements. In many cases, the recently introduced 20-cylinder variant features new, intelligently coordinated components, setting new standards for power and performance. The numbers speak for themselves.

With 40° and 50°C cooling packages

The diesel generator set is adaptable to different ambient temperatures, allowing it to perform reliably and efficiently in various ambient conditions.

One standardized fuel connection interface

The unit has a fixed position for easy installation and simplified maintenance.

Fulfills G3 performance class

As defined in ISO 8528 for powering strategically critical loads or supplying a stable and accurate power supply. These diesel generator sets boast the highest load acceptance on the market thanks to state-of-the-art engine design, including optimal turbocharger arrangement and other key technologies.

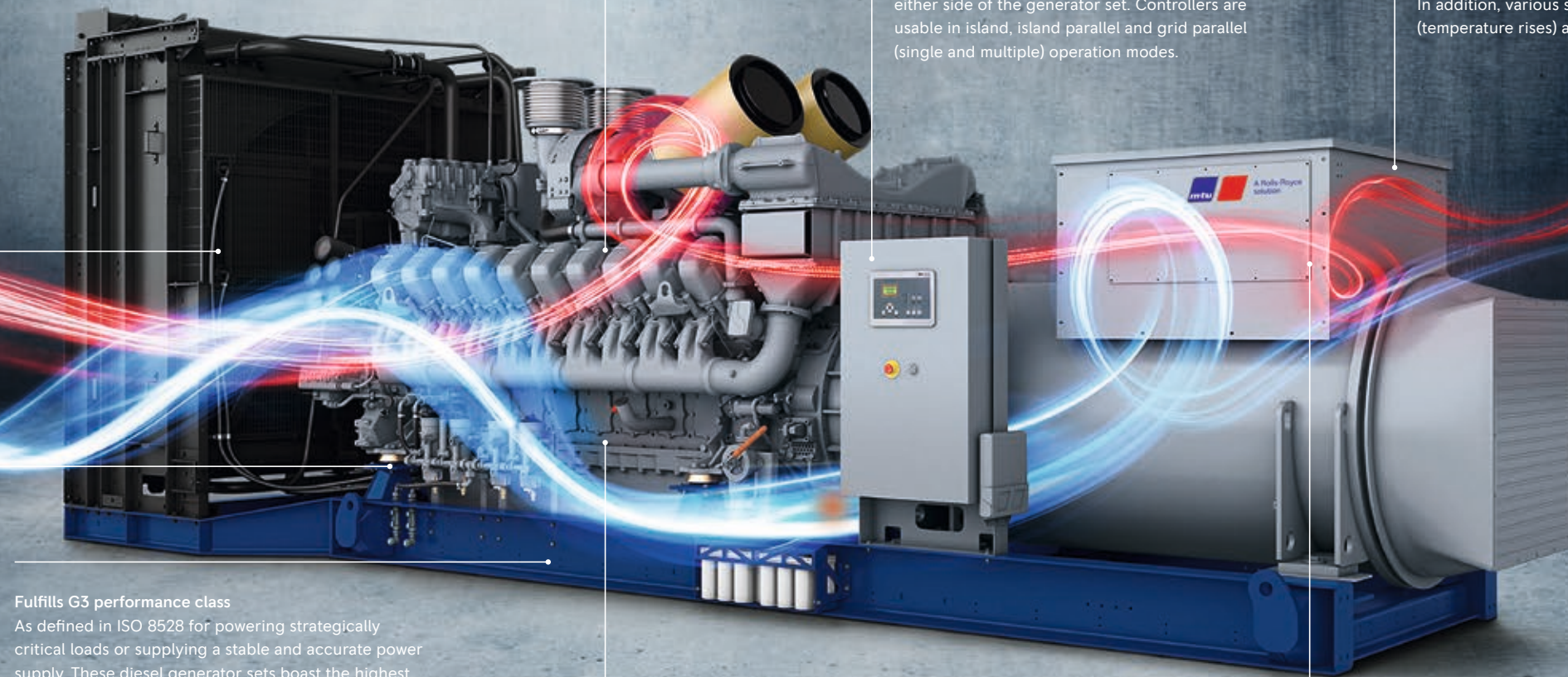
Up to 1,800 bar injection pressure
Thanks to state-of-the-art common rail injection system. Combined with the latest combustion technology, this equals superior fuel efficiency.

Two market leading controller brands
Available (Deif and Basler) in the standard scope, with simple integration if alternative controller brands are desired. Flexible product design, enabling controller cabinet to be mountable on either side of the generator set. Controllers are usable in island, island parallel and grid parallel (single and multiple) operation modes.

380 to 11,000 Volt
Broad range of low and medium voltages provided by generators from leading manufacturer Leroy-Somer and Marathon. In addition, various sizing options (temperature rises) are available.

85% load factor
For standby power – a value exceeding ISO standard, and raising the bar for power applications.

Three and four pole
And many customizable options are available for circuit breakers. Mounted on a base frame, the compact unit occupies less space and can be easily installed.



DECENTRALIZED ENERGY SUPPLY: ANYTIME, ANYWHERE

No matter how different the requirements for decentralized energy supply are, Power Generation will always give you the best solution.

Our Series 4000 diesel-powered generator sets can be designed flexibly depending on the application and location. They are suitable both for emergency power supply and permanent power systems, and can be installed as either mobile or stationary units. The performance range runs from 1,600 to 4,000 kVA. No matter which design you choose, our generator sets meet the highest demands in terms of quality, performance and fuel efficiency. Wherever and whenever they are needed, they ensure reliable power supply in the event of a grid failure – in hospitals, data centers and nuclear power plants, industrial plants, residential buildings, public facilities or decentralized power stations.

Depending on your requirements, we can offer generator sets or complete power system solutions. And because our generator sets meet all current industrial codes and standards, they can also be integrated into other systems without any hassle. Installation, operation and monitoring are simple. Thanks to the excellent load-impact behavior of the generator sets, the required energy is made available promptly. Fuel consumption is exceptionally low and vibrations and emissions are also minimized, making our generator sets ideal for the most demanding environments and challenging installations. One salient feature of our power system solutions is their improved maintenance intervals and long equipment life. And our commitment to world-class service and support helps optimize the lifetime value of your equipment. Power Generation: the technology you can trust.



Powerful

Power outputs from 1,600 to 3,730 kVA for maximum performance



Proven

Based on 3rd and 4th generation Series 4000 engine



Flexible

Available for six different applications, from standby power to prime/peak and mission critical



Clean

Optimized for fuel consumption or exhaust emissions (TA-LUFT, NEA Singapore for ORDE)



Certified

For ISO 8528, CE/IEC, NFPA 110 and German Grid Code



Reliable

Time between overhaul up to 48,000 hours



Adaptable

Available as 40ft high cube container



Approved

Designed and manufactured in ISO 9001:2008 and ISO 14001:2004 certified facilities in Germany

1 Power station, Caribbean
1,747 MW, Continuous Power

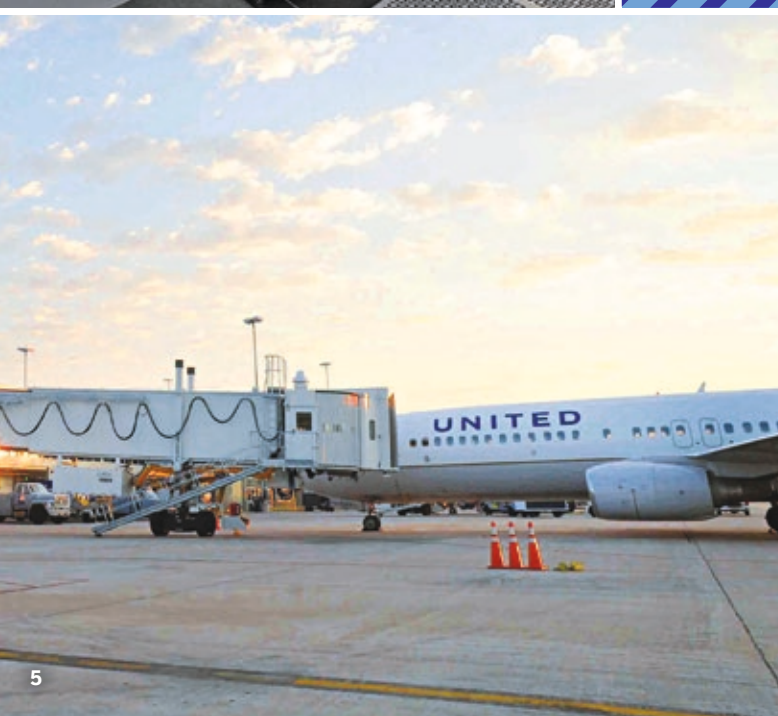
2 Hospital Charité, Berlin, Germany
1,360 kWe mission critical power

3 Data center, Power Loft, USA
20 MW, mission critical power

4 Mining, Teck Coal, Canada
2,575 kWe, mobile prime power

5 Airport, Tulsa, USA
4 MW, standby power

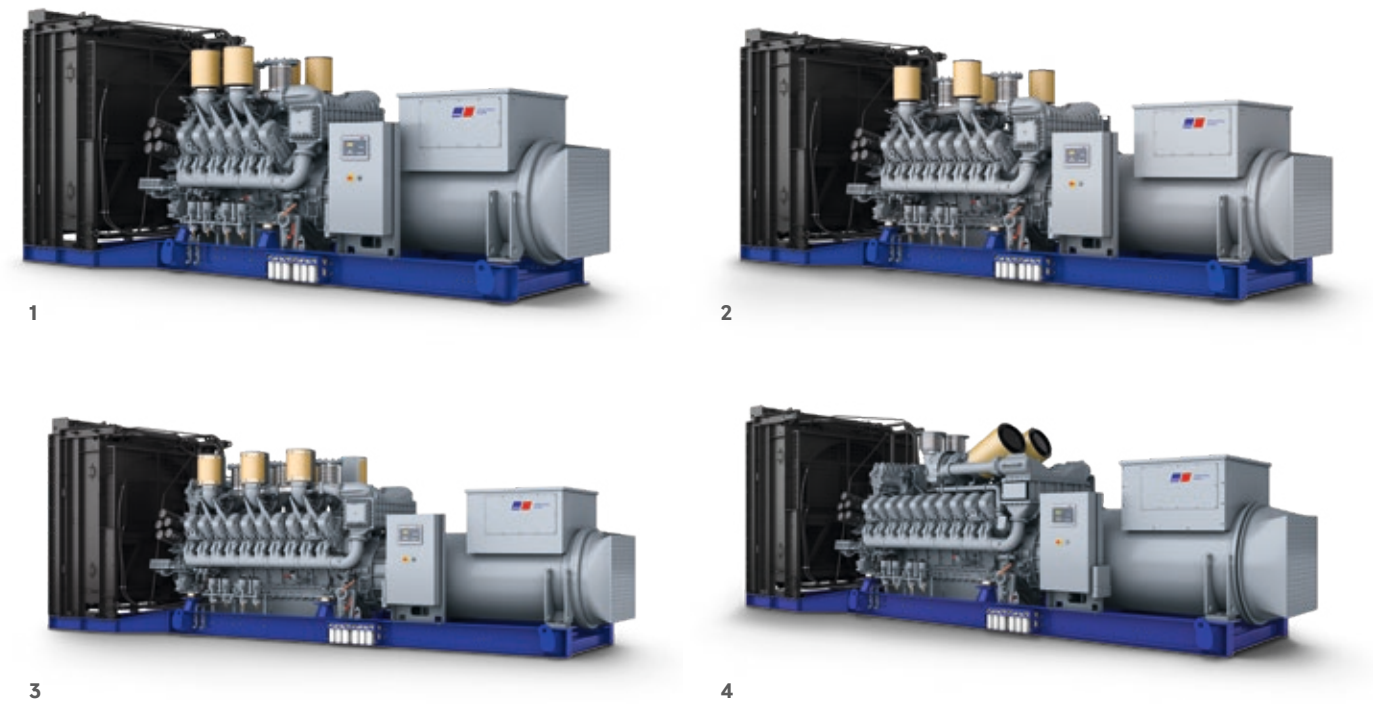
6 Türk Telekom, Istanbul, Turkey
4,152 kWe, standby power



INTELLIGENT TECHNOLOGY – STATE-OF-THE-ART

With the energy market constantly changing, We are continuously developing our Series 4000 generator sets. We’ve overhauled our third generation generator sets to incorporate new generator and paint designs, plus German Grid Code Certification. And our fourth generation generator sets feature modified components for increased performance. Other enhancements include:

- New power node 3,390 kVA prime power/4,000 kVA standby power
 - New Leroy Somer generators as standard
 - Increased reliability with redundant starters for selected models
 - Battery disconnection switch integrated into start system
 - New battery charger
 - Maintenance free batteries
- Improved fuel filter with water separator
 - Standardized fuel connection interface
 - Basler HD controller: ModBus TCP/IP with advanced programmabilities
 - Additional controller cabinet (B-side) for power supply (preheating, anti condensation heating, battery charger), ready for BDEW interface



VALUECARE

For maximum system performance, reliability and longevity, count on ValueCare, our full portfolio of service solutions. We’re 100% committed to helping you get the most out of your equipment by providing:

- Maintenance, repair & overhaul – Rely on our trained experts to keep your equipment performing optimally.
- Annual check – Identify and address problems early with inspections and preventive maintenance recommendations.
- Technical documentation – Get the details you need for proper installation, commissioning, operation and maintenance.
- Training – Empower your operators and maintenance staff with classes taught by product experts.
- Commissioning – Ensure proper system installation, integration and optimization with expert support.
- Genuine parts – Protect and prolong equipment life with the only parts that are tested and approved specifically for your system.
- Consumables – Keep everything running smoothly with filters, oils and coolants that work in perfect harmony with your equipment.
- Remanufactured products – Cut costs and uphold quality with factory remanufactured parts, engines and systems.



ValueCare is available worldwide through our global service network.

Find your closest service partner at www.mtu-solutions.com/powergen

- | | |
|--|--|
| 1 12V4000 DS1650
12V4000 DS1750
12V4000 DS2000 | 3 20V4000 DS2750
20V4000 DS3100
20V4000 DS3300 |
| 2 16V4000 DS2250
16V4000 DS2500 | 4 20V4000 DS3600
20V4000 DS4000 |

Optional equipment and finishing shown. Standard may vary.

4000 DS. TECHNICAL DATA

Power output ⁽¹⁾	Standby power			Continuous / Prime / Peak power	
	Standardized backup (3D)	Standardized backup with overload (3E)	Data center continuous (3F)	Prime (3B)	Peak (3G)
50 Hz / 1500 rpm	kVA	kVA	kVA	kVA	kVA
12V4000 DS1650	1,780	1,600	1,600	1,600	1,600
12V4000 DS1750	1,880	1,700	1,700	1,700	1,700
12V4000 DS2000	2,080	1,880	1,880	1,880	1,880
16V4000 DS2250	2,330	2,160	2,160	2,160	2,160
16V4000 DS2500	2,610	2,360	2,360	2,360	2,360
20V4000 DS2750	2,800	2,640	2,640	2,640	2,640
20V4000 DS3100	3,200	2,910	2,910	2,910	2,910
20V4000 DS3300	3,410	3,110	3,110	3,110	3,110
20V4000 DS3600	3,730	---	---	3,380	---
20V4000 DS4000	4,000	3,630	---	---	---

Load	variable	variable	continuous	variable	continuous
Load factor	≤ 85%	≤ 85%	≤ 100%	≤ 75%	≤ 100%
10% overload (ICXN)	no	yes	yes	yes	yes
Max. operating hours (per year)	500h	500h	unlimited*	unlimited	1,000h, 500h with 100% load w/o interruption
Uptime compliant	Tier I & Tier II	Tier I & Tier II	Tier III & Tier IV	Tier I & Tier II	Tier I & Tier II

Available voltages	380V / 400V / 415V /10,000V / 10,500V / 11,000V	1) Power outputs refer to standard scope of supply and may vary depending on generator voltage and ambient conditions. * Unlimited hours in data center application where a reliable grid/utility is present. 2) On request
Only for 20V4000 DS3600/ 20V4000 DS4000	3,300V ²⁾ /6,300V / 6,600V / 10,000V / 10,500V / 11,000V	

GERMAN GRID CODE CERTIFIED

In Germany, power generation systems connected to the public grid are required to meet guidelines set by BDEW (German Association of Energy & Water Industries). The Series 4000 is the first generator set in its performance class to be certified by the BDEW according to code MSR2008. It complies with all the association’s requirements for power grid operation.

Grid codes specify performance expectations on generator sets and their associated components. Important electrical and electronic components of our Series 4000 generator sets have been configured and fine-tuned according to special grid code requirements. This allows our customers to feed the power they generate into the public grid – while contributing to stable power network operating conditions.

Power modules – 50/60Hz Europe, Africa, Asia and Australia

Power output ⁽¹⁾	Standby power	Continuous power	Prime power
50 Hz / 1500 rpm	kVA	kVA	kVA
16V4000 DS2560	2,560	1,914	2,295

60 Hz / 1800 rpm	kWel	kWel	kWel
16V4000 DS2560	2,321	1,807	2,109

POWER MODULES: PLUG-AND-PLAY

Wherever you need power, we offer turnkey solutions:
containerized plug-and-play power systems.

Our Power Modules are equipped with generator sets powered by 16-cylinder Series 4000 engines, for use without any further housing, even under extreme ambient conditions – on the roofs of buildings, in the desert, etc. The systems are modular in design and can be used for standby, emergency or peak loads, depending on the design – individually or in groups. Options include isolated operation, island parallel operation, and mains parallel operation. The CSC-certified 40 ft high cube containers meet international freight standards. They are robust, stackable and can be easily transported – even to remote locations. Our turnkey container systems guarantee the reliable supply of power, quickly and easily.

Power Modules – built to last.

Designed for harsh ambient conditions and remote locations

- Plug-and-play, ready-to-use
- Wide standard scope of supply
- Optimized for shipping: easy to transport, with stackable storage (CSC-certified)
- Modular design with wide range of options
- Double door access for easy maintenance and component repair



