



Power Generation

SOLUTION GUIDE

Edition 1/21, valid from 03/2021



A Rolls-Royce
solution

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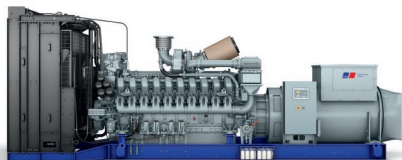
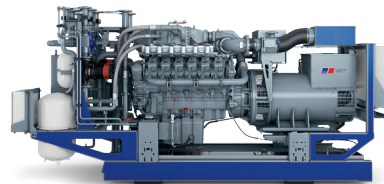
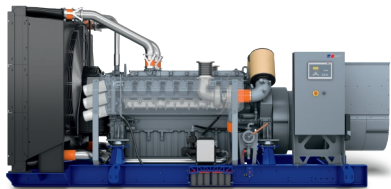
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PIONEERING THE POWER THAT MATTERS.

Rolls-Royce provides world-class power solutions and complete life-cycle support under our product and solution brand **mtu**. Through digitalization and electrification, we strive to develop drive and power generation solutions that are even cleaner and smarter and thus provide answers to the challenges posed by the rapidly growing societal demands for energy and mobility. We deliver and service comprehensive, powerful and reliable systems, based on both gas and diesel engines, as well as electrified hybrid systems. These clean and technologically-advanced solutions serve our customers in the marine and infrastructure sectors worldwide.

A solution provider

mtu systems power the largest yachts, the strongest tugboats and the biggest land vehicles and provide energy for the world's most important mission-critical applications. Through advanced solutions such as microgrids, we integrate renewable energies and manage the power needs of our customers.

Our customized service offerings help you maximize uptime and performance and are supported by our digital solutions, which enable remote monitoring, predictive maintenance and a range of other benefits that keep your systems running at their best.

For over 110 years, we have provided innovative power solutions for our customers – meeting even the most demanding drive requirements. Our products and services span a wide range of applications and power needs, with both standard and customized options.

An expert in technology

As part of Rolls-Royce, we have long been known for cutting-edge innovation and technological leadership in product development. That same spirit of innovation inspires our sustainability efforts. Our focus is on developing and implementing system solutions that both maximize efficiency and reduce emissions -- which in turn work to reduce our impact on the environment.

A passionate and reliable partner

We at Rolls-Royce spend every day working together with our customers, to deliver engines, systems and complete life-cycle solutions that best fit your needs. We understand that each application is different and has its own specific demands. Our engineers embrace the challenge of finding the perfect solution for your unique power requirements. Every step of the way – from project planning, through design, delivery and commissioning; to the lifetime care of your equipment – we are dedicated to helping you get the most from your **mtu** investment.

Rating definitions

FOR POWER SOLUTIONS.

Standby power**Standby power (3D)**

Standby power applies to installations served by a reliable utility source. The standby ratings are applicable to varying loads for the duration of a power outage.

**Prime power for stationary emergency (3E)**

Prime power for stationary emergency provides classical standby power comparable to the application group standby power (3D). The difference is that this application group offers a 10% overload capability to cover for e.g. voltage variations or peak loads.

**Data center continuous power (3F)**

Data center continuous power is a specific mission critical application. It is especially designed for the use in data centers as emergency standby units. "Data centre continuous power" offers an economic and customer friendly solution to comply to the Uptime Institute* Tier III and Tier IV standards.

**Continuous/Prime/Grid stability power****Continuous + CHP (3A)**

Continuous power applies to installations where one or several generator sets serve as utility. At constant or varying load, the number of generator set operating hours is unlimited. Typical application here is CHP.

**Prime power (3B)**

Prime power applies to installations where utility power is unavailable or unreliable. At varying load, the number of generator set operating hours is unlimited.

**Grid stability power (3G)**

Grid stability power is focused on providing additional short-term power to the grid (peak shaving). This application becomes relevant whenever renewable power sources like solar or wind are used that might not always be able to provide the full power demand for example during peak load times.



* The Uptime Institute is a pioneer in creating and operating knowledge communities for improving uptime effectiveness in data center facilities and information technology organizations.

Rating definitions

OVERVIEW

Standby power		
Standby power (3D)	mtu Power Generation	ISO 8528-1 (ESP)
Load	variable	variable
Load factor	≤ 85 %	≤ 70 %
10 % overload (ICXN)	no	not specified
Max. operating hours (per year)	500 h	200 h
Uptime compliant	Tier I & Tier II	not specified

Prime power for stationary emergency (3E)	mtu Power Generation	ISO 8528-1 (ESP)
Load	variable	variable
Load factor	≤ 85 %	≤ 70 %
10 % overload (ICXN)	yes	not specified
Max. operating hours (per year)	500 h	200 h
Uptime compliant	Tier I & Tier II	not specified

Data center continuous power (3F)	mtu Power Generation	ISO 8528-1 (DCP)
Load	continuous	continuous or variable
Load factor	≤ 100 %	≤ 100 %
10 % overload (ICXN)	yes	not specified
Max. operating hours (per year)	unlimited ^(B)	unlimited
Uptime compliant	Tier I - Tier IV	not specified

Continuous/Prime/ Grid stability power		
Continuous power + CHP (3A)	mtu Power Generation	ISO 8528-1 (COP)
Load	constant	constant
Load factor	≤ 100 %	≤ 100 %
10 % overload (ICXN)	Gas: no Diesel: yes	not specified
Max. operating hours (per year)	unlimited	unlimited

Prime power (3B)	mtu Power Generation	ISO 8528-1 (PRP)
Load	variable	variable
Load factor	≤ 75 %	≤ 70 %
10 % overload (ICXN)	yes	yes
Max. operating hours (per year)	unlimited	unlimited

Grid stability power (3G)	mtu Power Generation	ISO 8528-1 (LTP)
Load	continuous	continuous
Load factor	≤ 100 %	≤ 100 %
10 % overload (ICXN)	Gas: no Diesel: yes	not specified
Max. operating hours (per year)	1000 h; 500 h with 100% load w/o interruption	500 h

A Only available for 50Hz markets

B Unlimited hours in data center application where a reliable grid/utility is present.

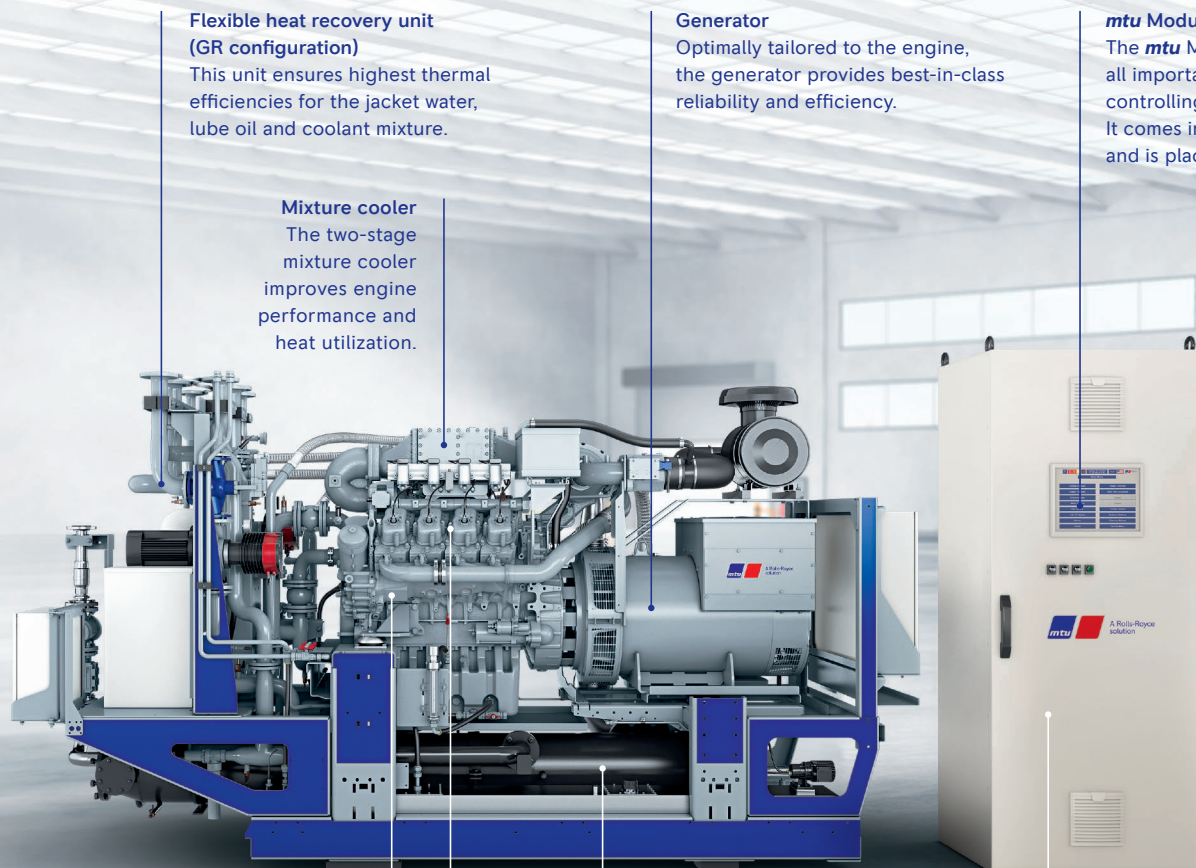
The next generation

NEW **mtu** SERIES 500 GAS GENERATOR SET

The new **mtu** Series 500 introduces natural gas generator sets to the 250-550 kW power range. Available in 50 Hz and 60 Hz versions, these highly efficient units feature an optimized engine designed to greatly lower fuel costs, making them an ideal fit for a broad range of utility and industrial applications.

- Fuel: natural gas
- Output: 250, 360 and 550 kW
- Frequency: 50 Hz and 60 Hz
- Compliant with industry codes and standards
- Efficiency: 3.1% more efficient than the previous Series 400 genset, best in class
- Flexibility: the **mtu** Module Control (MMC) automation system simplifies system control, integrates easily with diverse microgrids and creates a direct link to expert digital service support

Depicted here is an **mtu** 8V500 genset in GC configuration with MMC. The standard scope of supply (GB configuration) comprises the engine, generator, base frame, fuel gas train and **mtu** Module Control automation system.



Flexible heat recovery unit (GR configuration)
This unit ensures highest thermal efficiencies for the jacket water, lube oil and coolant mixture.

Mixture cooler
The two-stage mixture cooler improves engine performance and heat utilization.

Generator
Optimally tailored to the engine, the generator provides best-in-class reliability and efficiency.

mtu Module Control (MMC)
The **mtu** Module Control covers all important functions needed for controlling the whole system. It comes in a separate panel and is placed next to the genset.

Gas engine
Improved combustion technology increases engine efficiency and lowers fuel costs.

Ignition system
A microprocessor-controlled ignition system optimally adjusts the ignition time and ignition energy to the quality of the gas.

Exhaust heat recovery (GC configuration)
The exhaust heat recovery system with exhaust heat exchanger achieves highest thermal efficiencies in CHP systems. With the **mtu** 12V500 GS version, the exhaust heat exchanger is supplied separately.

Key features:

- Industrial PC with touch-screen colour display
- Monitors all system processes
- Logs all fault and status messages
- Integrates seamlessly with other controls
- Enables multi-module system networking
- Supports numerous protocols (e.g. Ethernet, Profibus DP)

Digital connectivity

The system can be equipped with a data logger providing access to our digital solutions, including remote monitoring, fast and reliable service support and, soon, further features such as predictive failure prevention and operational optimization.

The next generation

mtu SERIES 4000 NATURAL GAS GENERATOR SET

Operational flexibility

- Quick ramp-up and ramp-down plus a wide range of partial load operation make this product a perfect match for grid stabilization applications..
- Fulfills the highest emission standards.

30% more power

- The new genset increases its performance by 30%, withstanding hot and humid conditions.
- Highly robust against derating.

Low lifecycle costs

- Good serviceability
- Favorable maintenance intervals
- Reduced oil consumption
- No additional exchange of cylinder heads necessary before Life-Time (TBO)
- 84,000 oH lifetime to major overhaul (TBO)

Up to 44.4% el. efficiency

- An advanced, proven Series 4000 engine optimized for natural gas operation. Its combustion chambers ensure top levels of efficiency in its performance category.

Ignition system

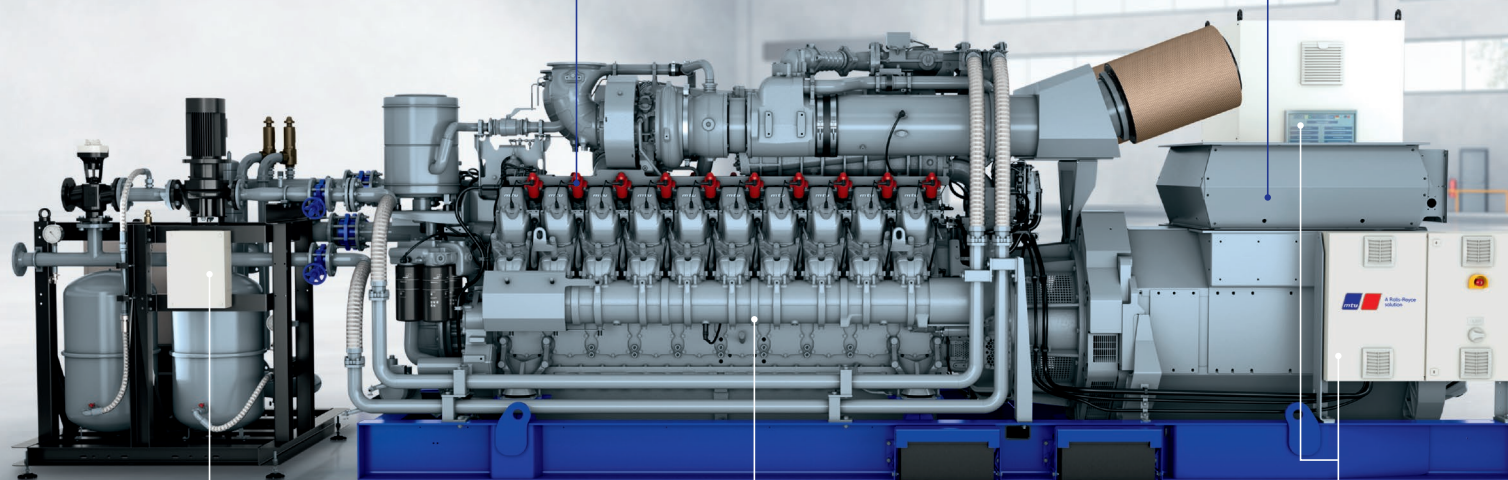
Ignition systems for individual cylinders allow for the most efficient level of operation for all cylinders, even with variable CH₄ content. The ignition voltage display gives customers information on the state of the spark plugs.

Digitally connected

The system is equipped with a data logger providing access to digital **mtu** solutions, including remote monitoring, fast and reliable service support and – coming soon – further features such as predictive failure prevention and operational optimization.

Generator

Perfectly tuned to the engine and made by renowned manufacturers, the generator ensures a high level of reliability and optimum efficiency.



Heat Recovery Unit

Well proven design perfectly suits the genset and provides the basis for optimized auxiliary efficiencies. The unit is fully integrated in the automation concept and is both safe and certified (CE).

Knock detection

Cylinder-specific knock detection and regulation protect the engine from abnormal operating conditions, and guarantee safe operation even with natural gas containing low levels of methane.

Automation Systems MIP & MMC

Motor interface panel (MIP) with stand-alone **mtu** Module Control (MMC). The MMC provides all the functions necessary for controlling the system. All the auxiliary drives required for the CHP system can be operated from here. The integrated power circuitry minimizes the customer's need for cabling on site.

20 years of top performance. Now in the 4th generation.

mtu SERIES 4000 DIESEL GENERATOR SET

More available power

- Industry-leading load factors.
- More operating hours, compared to ISO 8528-1 requirements.

Highly robust against derating

- Even under rough ambient conditions.
- Engine Site Condition Management.

Excellent load acceptance

- Overachieving ISO 8528-5 performance class G3.
- Load steps with 1st load step > 50%.
- 100% block load acceptance (NFPA 110).

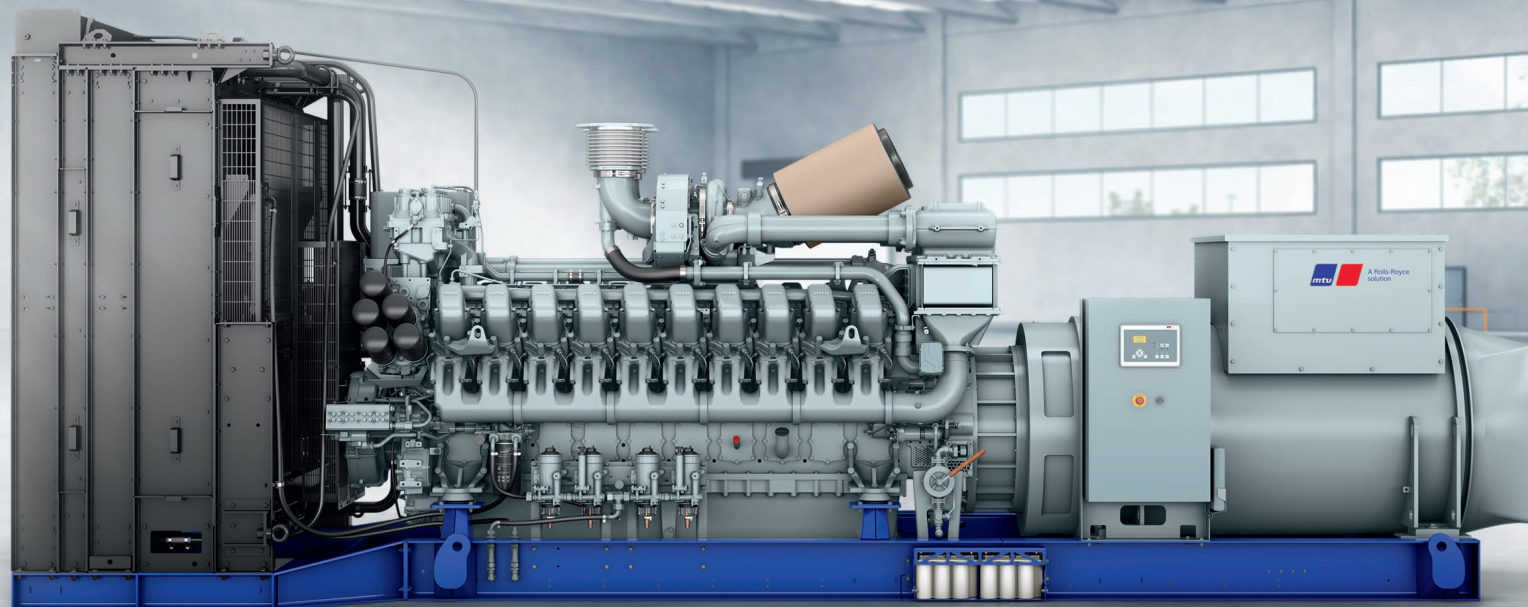
High-grade electricity

- Superior transient behavior.
- Protection for sensitive electrical infrastructure & IT equipment.
- Simplification of electrical infrastructure.

High power density

- Less investment in new installations.
- Easy retrofit and system integration.

Key technical data	mtu S4000 G04 50Hz
Cylinder version	12V, 16V, 20V
Power output/ frequency	12V: 2100 – 2300 kVA – 50Hz 16V: 2600 – 2850 kVA – 50Hz 20V: 3380 – 4000 kVA – 50Hz
Ratings	Standby power, prime power, data center continuous power, prime power for stationary emergency
Optimization	Fuel consumption optimized, emission optimized (NEA & Tier 2 compliant)



mtu 20V4000 DS4000

Ready for a new perspective on dynamic UPS?

mtu KINETIC POWERPACK

Our **mtu** Kinetic PowerPack provides dynamic uninterruptible power supply through kinetic energy and is engineered to withstand the most demanding power supply challenges.

Lower TCO

- At medium and higher power ratings, **mtu** Kinetic PowerPacks are more cost-effective, reducing consumable electricity cost and maintenance.

Smaller footprint

- Its component count and monobloc structure give the **mtu** Kinetic PowerPacks a compact design, reducing its footprint to 40% of an equivalently rated static UPS system – making it the smallest in the market.

Units up to 3000 kVA

- The current-carrying capability of electronic components does not limit **mtu** Kinetic PowerPacks. Their perunit ratings are considerably more significant, leading to a much lower component count on higher power installations.

mtu diesel engine

Complying with the latest emissions standards; preheated; quick start and not running during conditioning mode pre-lubricated.

Optimal sustainability

- Static UPS systems require heavy batteries and generate chemical waste. Due to the kinetic energy storage unit's energy that is immediately available to generate power until the **mtu** diesel engine is activated, batteries belong to the past when using **mtu** Kinetic PowerPacks.

Medium voltage systems

- mtu** Kinetic PowerPacks are the perfect solution for medium voltage critical loads or when more considerable distribution distances need to be covered.

Kinetic energy module

Patented accu provides stored kinetic energy to ride through mains interruptions; designed for a 10-year bearing life.

Synchronous machine

Four-pole synchronous machines from world-renowned manufacturers designed not to exceed Class F temperature rise; right-sized for your application and to absorb load harmonics.

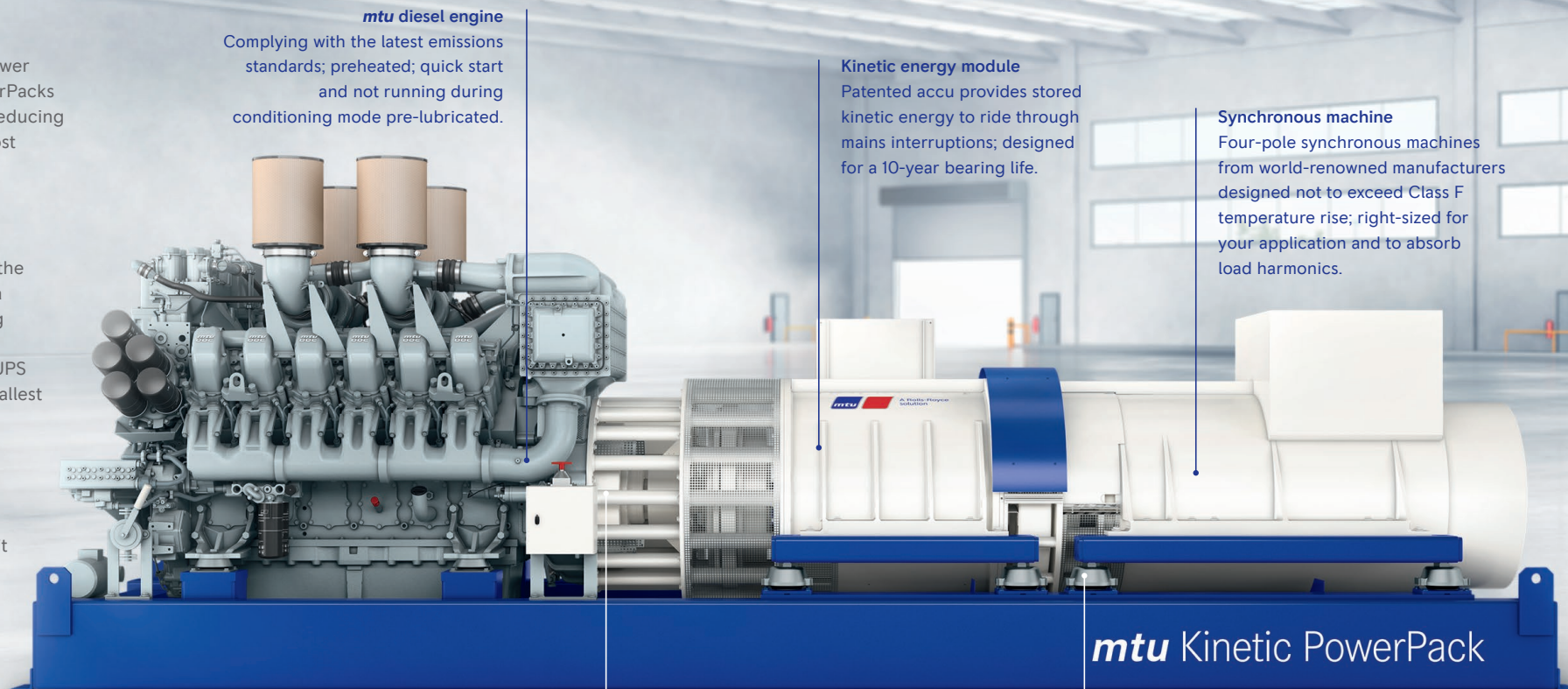
Electromagnetic clutch

The prime starter system consists of standard engine starting motors. The clutch is maintenance-free and guarantees the diesel engine to start at all times, thanks to the redundant start feature.

mtu Kinetic PowerPack

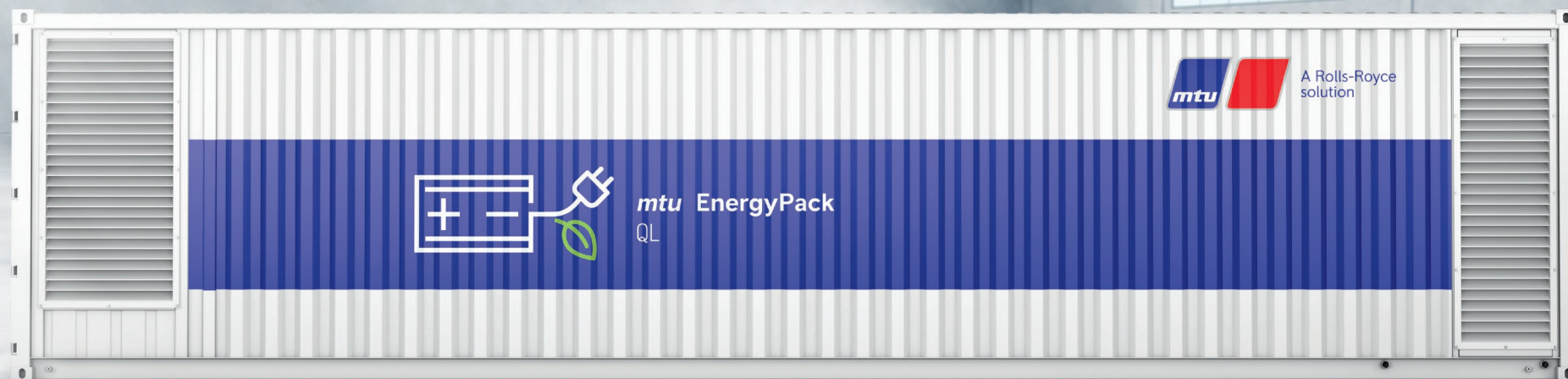
Vibration isolation

Thanks to the solid base frame with isolators between frame and equipment and direct floor installation, vibrations are reduced >97%.



The scalable all-in-one solution

mtu ENERGYPACK



Flexibility

- Factory tested plug-and-play design.
- Scalable in size.

Ultra-fast

- Immediate response.

High power density

- Compact system design.
- Small footprint.

Power control

- Condition monitoring.

Digital connectivity

- Various applications in combination with **mtu** Microgrid Controller.

Integrated solution

- Optimized system integration ability.
- Easy integration into Rolls-Royce Microgrid Solutions.

Safety features

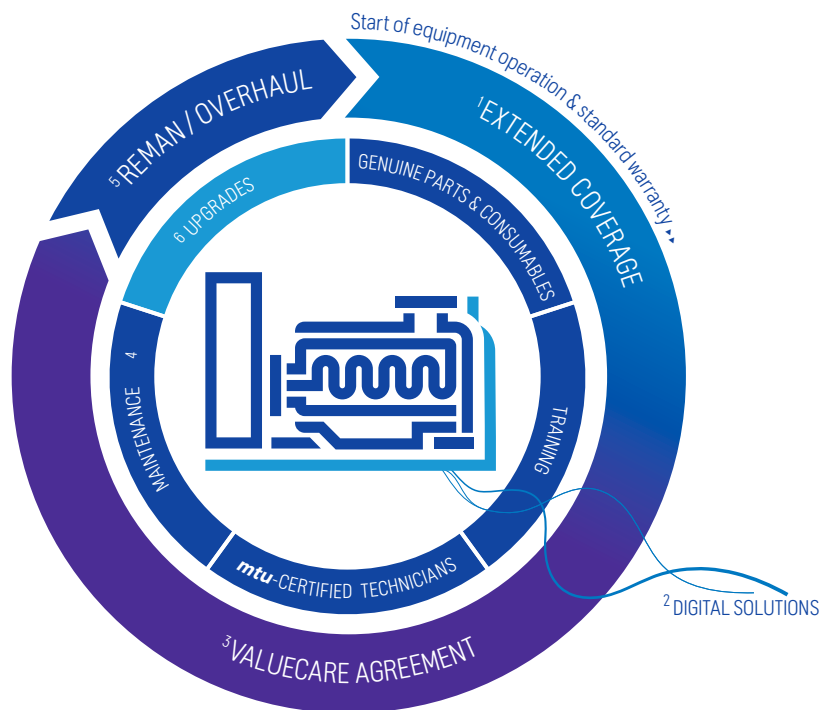
- High safety & reliability.

Key technical data	mtu EnergyPack
Dimensions	QS (Enclosure) / QM (20ft.) / QL (40ft.)
Nominal power output	40 - 2,000 kVA
Nominal capacities	70 - 2,600 kWh
Application	Continuous, prime/peak, standby power, mission critical (on- & off-grid)
Nominal grid voltages	515 V (400 V with internal transformer)
Nominal round trip efficiency (w/o HVAC)	up to 90%
Grid frequency	50/60 Hz
Power factor range (cos ϕ)	0 ind. ...1 ... 0 cap

Service solutions

FOCUS ON YOUR OPERATIONS. LEAVE THE REST TO US.

You've got a tough job. With us as your partner, you'll get the power, performance and peace of mind to get it done right. Our digitally-enabled ValueCare Agreements make it easy to keep your business running smoothly and reduce total cost of ownership by maximizing uptime, optimizing lifecycle costs and helping you avoid equipment-related business disruptions through preventive maintenance.



- 1 Avoid the unexpected with added protection beyond the standard warranty.
- 2 Make better decisions faster with digitally-enhanced tools.
- 3 Maximize availability and optimize lifecycle costs with a ValueCare Agreement.
- 4 Improve system performance and extend equipment life with on-demand support.
- 5 Keep a good thing going with factory reman/overhaul solutions.
- 6 Maximize the value of your equipment with custom upgrades for changing needs.

Service solutions designed around your priorities

With tailored solutions to meet your needs, there is a ValueCare Agreement that is just right for you.

**Bronze**

Ensure parts availability and price stability

**Silver**

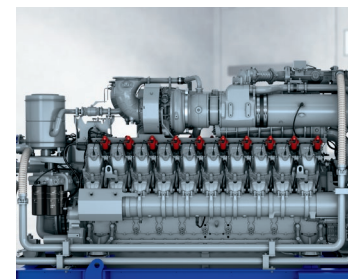
Eliminate unexpected maintenance costs

**Gold**

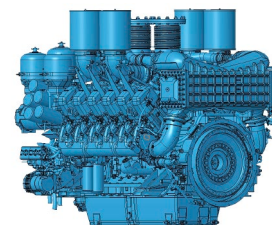
Maximize operational uptime

mtu Upgrade Solutions

We know that needs change over time, and that capital investments aren't for the short term. With upgrade solutions designed specifically for your **mtu** systems, you can get the most out of your equipment and extend its useful life.

**L33 Efficiency Solution**

The L33 Efficiency Solution is designed to extend the life of L61, L62 and L63 **mtu** Series 4000 gas systems. Through a cost-effective, sustainable system overhaul, the existing engine will be manufacturer-certified to the current status of an L33 remanufactured engine, achieving an electrical efficiency gain of about 1.4%. The upgrade also includes an alternator overhaul, new automation system and additional system enhancements. Best of all, it will fit onto the existing L61, L62 or L63 base frame, so no peripheral modifications are required.

**Lifetime-Based Overhaul**

Lifetime-Based Overhaul is our manufacturer-certified overhaul solution specifically designed for the needs of engines in standby power generation applications with low operating hours. This scheduled solution uses time as the key criteria and provides the same peace of mind as a traditional overhaul at a fraction of the cost. Only time worn components are replaced, which can be done onsite, eliminating the need for removal, transport and reinstallation that is typically required during an overhaul.



Service network

LOCAL SUPPORT. WORLDWIDE.



The most important part of your power system isn't a part at all—it's your local service team. With more than 1,200 service locations worldwide—backed by regional Parts Logistics Centers in Europe, Asia and America—you can count on responsive support by expert technicians, wherever work takes you. To find your local service partner, visit www.mtu-solutions.com.

Always on call, 24/7

Whether it's connecting you with a local service partner or assigning an urgent problem to a dedicated team of our experts, we're ready to assist you—wherever you are, whatever you need.

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Digital solutions

HOW DIGITAL SOLUTIONS
OPTIMIZE YOUR BUSINESS.**Streamline your service requirements.**

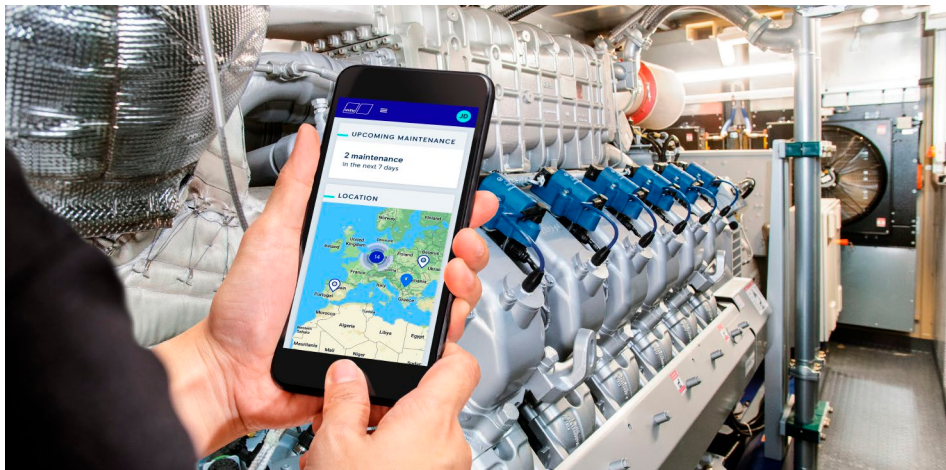
We offer you the best possible service for your equipment by incorporating digitalization in a holistic approach. This helps improve our service to you and helps you operate your equipment more effectively.

Monitor and manage your equipment.

Our digital platform **mtu** Go! offers you the opportunity to analyze system data quickly, determine important action steps, and plan them optimally, either independently or together with our service department.

Maintain your data security.

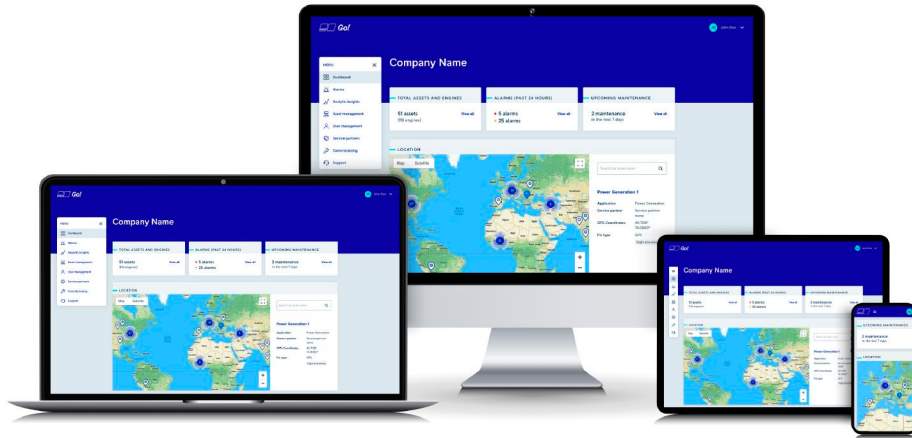
We always adhere to the highest data privacy and security standards of our industry. Because we understand and value the trust you put in us by having us analyze your data to create the best possible service solutions for your equipment.



A connectivity device transmits vital equipment data in near real-time to your screen.



Digital solutions

DELIVERING ACTIONABLE INSIGHTS
THROUGH DIGITAL SOLUTIONS.**Connect all your equipment**

Data collection from your plant, asset, system and engine

Connectivity is the basis for all the advantages of digitally supported service. Using our edge software connected to the control unit, you and your service network can monitor relevant deviations from the optimum conditions

remotely. We offer several ways to collecting data, including the creation of interfaces to already existing data sets. In doing so, we always adhere to the highest data privacy and security standards of our industry.

Access your data

- Remote monitoring, available for individual assets, as well as complete plants worldwide
- Different device and software options ensure optimal connectivity
- Data privacy and security to the highest industry standards

**Monitor your plant**

Visualization of data for a quick and accurate overview of your plant

With the **mtu Go!** platform, predefined users, such as on-site technicians or managers, can view the system data and perform initial analyses by using diagnostic tools. By accessing the same information, your service

network can provide fast support in handling alarms and planning necessary maintenance together with you. Open APIs allow you to interface directly to your existing dashboards or systems.

Keep track of your data

- All important data and alarms available at a glance for efficient plant monitoring
- Intuitive and clear design for easy operation
- Visual comparison of data using the diagnostic tools for initial analyses

**Manage your plant**

Digital solutions for your detailed data analysis on necessary actions

Supported by **mtu Go!** your Service Network is able to analyze all relevant data from your equipment and compare it with data sets from other systems. From this we together can proactively derive recommendations for action.

In future, the analysis can be enriched with additional external data sets, such as environmental influences or time schedules. Cross-linking data will create new opportunities for optimizing business processes.

Learn from your data (under development)

- Algorithms for proactive early detection of deviations
- Troubleshooting based on large amounts of data with artificial intelligence
- Comparison with data outside own plant leads for faster knowledge transfer and optimum service tool for initial analyses

Standby power – diesel generator sets

STANDBY POWER (3D) –
50 HZ/1500 RPM.

mtu 0080/0113 DS

Power output ¹⁾		Available voltages			Emissions					
kVA	kWe	380 - 415V (3 Phase)	6300 - 6600 kV (3 Phase)	10000 -11000 V (3 Phase)	Fuel consumption optimized	NOx emission optimized	NEA Singapore for ORDE	US EPA Tier 2 compliant	EU Nonroad Stage II compliant (97/68/EC)	EU Nonroad Stage IIIA compliant (97/68/EC)
56	45	x							x	
67	53	x							x	
82	66	x							x	
90	72	x			x					
500	400	x			x		x			x
540	432	x			x					x
650	520	x			x		x			
720	576	x			x		x			

mtu 1600 DS*

* available soon, for detailed information please check website

Certifications				Perform. class ²⁾		Uptime compl.		Housing		Engine type	Cooling variant ³⁾	Genset type
ISO 8528	CE/IEC	NFPA 110	VDE-AR-N 4110 (German Grid Code)	ISO 8528-5 - G2	ISO 8528-5 - G3	Tier I & Tier II	Tier III & Tier IV	Enclosure	Container			
x	x			x		x		x		F32 TM 1A	A2A	mtu 4R0080 DS55
x	x			x		x		x		NEF45 SM 1A	A2A	mtu 4R0113 DS63
x	x			x		x		x		NEF45 SM 2A	A2A	mtu 4R0113 DS80
x	x			x		x		x		NEF45 SM 5	A2A	mtu 4R0113 DS94
x	x	x		x	x	x		x		10V 1600 G70F	A2A	mtu 10V1600 DS500
x	x	x		x	x	x		x		10V 1600 G80F	A2A	mtu 10V1600 DS540
x	x	x		x	x	x		x		12V 1600 G70F	A2A	mtu 12V1600 DS650
x	x	x		x	x	x		x		12V 1600 G80F	A2A	mtu 12V1600 DS720

Standby power – diesel generator sets

STANDBY POWER (3D) –
50 HZ/1500 RPM.

	Power output ¹⁾		Available voltages			Emissions					
	kVA	kWe	380 – 415V (3 Phase)	6300 – 6600 kV (3 Phase)	10000 –11000 V (3 Phase)	Fuel consumption optimized	NOx emission optimized	NEA Singapore for ORDE	US EPA Tier 2 compliant	EU Nonroad Stage II compliant (97/68/EC)	EU Nonroad Stage IIIA compliant (97/68/EC)
mtu 2000 DS	825	660	x				x	x	x		
	1010	800	x			x					
	1100	880	x				x	x	x		
	1250	1000	x			x					
	1400	1120	x			x					
	1100	880	x				x	x	x		
	1250	1000	x			x					
	1400	1120	x			sx					
mtu 4000 DS	1780	1424	x	x		x		x			
	1880	1504	x	x		x		x			
	2080	1664	x	x		x		x			
	2300	1840	x	x		x		x	x		
	2330	1864	x	x		x		x			
	2610	2088	x	x		x		x			
	2850	2240	x	x		x		x	x		
	2800	2240	x	x		x		x			
	3200	2560	x	x		x		x			
	3410	2728	x	x		x		x			
	3730	2984	x ¹¹⁾	x		x		x	x		
	4000	3200	x ¹¹⁾	x		x		x	x		

* available soon, for detailed information please check website

Certifications				Perform. class ²⁾		Uptime compl.		Housing		Engine type	Cooling variant ³⁾	Genset type
ISO 8528	CE/IEC	NFPA 110	VDE-AR-N 4110 (German Grid Code)	ISO 8528-5 - G2	ISO 8528-5 - G3	Tier I & Tier II	Tier III & Tier IV	Enclosure	Container			
x	x	x		x	x	x				12V 2000 G76F	A2A	mtu 12V2000 DS825
x	x	x	x	x	x	x				12V 2000 G86F	A2A	mtu 12V2000 DS1000
x	x	x	x	x	x	x				16V 2000 G76F	A2A	mtu 16V2000 DS1100
x	x	x	x	x	x	x				16V 2000 G86F	A2A	mtu 16V2000 DS1250
x	x	x	x	x	x	x				18V 2000 G76F	A2A	mtu 18V2000 DS1400
x	x	x	x	x	x	x				16V 2000 G76F	W2A*	mtu 16V2000 DS1100
x	x	x	x	x	x	x				16V 2000 G86F	W2A*	mtu 16V2000 DS1250
x	x	x	x	x	x	x				18V 2000 G76F	W2A*	mtu 18V2000 DS1400
x	x	x	x	x	x	x				12V 4000 G74F	W2A	mtu 12V4000 DS1650
x	x	x	x	x	x	x				12V 4000 G74F	W2A	mtu 12V4000 DS1750
x	x	x	x	x	x	x				12V 4000 G84F	W2A	mtu 12V4000 DS2000
x	x	x	x ¹¹⁾	x	x	x				12V 4000 G94F	W2A	mtu 12V4000 DS2250
x	x	x	x	x	x	x				16V 4000 G74F	W2A	mtu 16V4000 DS2250
x	x	x	x	x	x	x				16V 4000 G84F	W2A	mtu 16V4000 DS2500
x	x	x	x ¹¹⁾	x	x	x				16V 4000 G94F	W2A	mtu 16V4000 DS2750
x	x	x	x	x	x	x				20V 4000 G64F	W2A	mtu 20V4000 DS2750
x	x	x	x	x	x	x				20V 4000 G74F	W2A	mtu 20V4000 DS3100
x	x	x	x	x	x	x				20V 4000 G84F	W2A	mtu 20V4000 DS3300
x	x	x	x ¹¹⁾	x	x	x				20V 4000 G94F	W2A	mtu 20V4000 DS3600
x	x	x		x	x	x				20V 4000 G94LF	W2A	mtu 20V4000 DS4000

Standby power – dynamic uninterruptible power supply systems

STANDBY POWER (3D) –
50 HZ/1500 RPM.

	Power output ¹⁾				Available voltages		Emissions					Accu arrang.
	no-break	no-break	short-break	short-break	low voltage 380 - 415V (3 Phase)	medium voltages 6 - 36 kV (3 Phase)	Fuel consumption optimized	NOx emission optimized	NEA Singapore for ORDE	US EPA Tier 2 compliant	EU Nonroad Stage II compliant (97/68/EC)	
	kVA	kWe	kVA	kWe								
mtu KP5	250	200			x	x		x				single
	300	240			x	x		x				single
	400	320			x	x	x		x			single
	500	400			x	x	x					single
	630	504			x	x	x		x			single
	700	560			x	x	x					single
	900	720			x	x	x					single
	1000	800			x	x	x					single
	1250	1000			x	x	x		x			single
	1500	1200			x	x	x		x			single
	1650	1320	600	480	x	x	x		x			single
	1700	1360			x	x	x		x			single
	1875	1500	625	500	x	x	x		x			single
	2000	1600			x	x	x		x			single
	2250	1800			x	x	x		x			bi
	2500	2000			x	x	x		x			bi
	2750	2200			x	x	x		x			bi
mtu KP7	2250	1800			x	x	x		x			single
	2500	2000			x	x	x		x			single
	2750	2200			x	x	x		x			single

Certifications				Perform. class ²⁾		Uptime compl.		Housing	
ISO 8528	CE/IEC	NFPA 110	VDE-AR-N 4110 (German Grid Code)	ISO 8528-5 - G3	ISO 8528-5 - G4	Tier I & Tier II	Tier III & Tier IV	Enclosure	Container
x				x		x			x
x				x		x			x
x				x		x			x
x				x		x			x
x				x		x			x
x				x		x			x
x				x		x			x
x				x		x			x
x				x		x			x
x				x		x			x
x				x		x			x
x				x		x			x
x				x		x			x
x				x		x			x
x				x		x			x
x				x		x			x
x				x		x			x

Standby power – diesel generator sets

STANDBY POWER (3D) –
60 HZ/1800 RPM.

mtu 0096/0113 DS

Power output ¹⁾		Available voltages												Certifications				
kWe	kVA	Dedicated (1 Phase) 240 V	Re-connectable (1 Phase) 240 V	(3 Phase) 208 V	(3 Phase) 240 V	(3 Phase) 380 V	(3 Phase) 440 V	(3 Phase) 480 V	(3 Phase) 600 V	(3 Phase) 4160 V	(3 Phase) 12470 V	(3 Phase) 13200 V	(3 Phase) 13800 V	ISO 8528	UL2200	NFPA 110	IBC 2015	IBC 2018
30	37		x	x	x	x		x	x					x	x	x	x	
40	50		x	x	x	x		x	x					x	x	x	x	
50	62	x	x	x	x	x		x	x					x	x	x	x	
60	75	x	x	x	x	x		x	x					x	x	x	x	
80	100	x	x	x	x			x	x					x	x	x		
100	125	x	x	x	x			x	x					x	x	x		
125	156	x	x	x	x			x	x					x	x	x		
150	187	x	x	x	x			x	x					x	x	x		
180	225	x	x	x	x			x	x					x	x	x		
200	250	x	x	x	x			x	x					x	x	x		

mtu 0120 DS

80	100	x	x	x	x	x		x	x					x	x	x		x
100	125	x	x	x	x	x		x	x					x	x	x		x
125	156	x	x	x	x	x		x	x					x	x	x		x
150	187	x	x	x	x	x		x	x					x	x	x		x
180	225	x	x	x	x	x		x	x					x	x	x		x
200	250	x	x	x	x	x		x	x					x	x	x		x

mtu 0150/0225 DS

230	288	x	x	x	x			x	x					x	x	x		x
230	288	x	x	x	x			x	x					x	x	x		x
250	313	x	x	x	x			x	x					x	x	x		x
250	313	x	x	x	x			x	x					x	x	x		x
275	344		x	x	x			x	x					x	x	x		x
275	344		x	x	x			x	x					x	x	x		x
300	375		x	x	x			x	x					x	x	x		x
300	375		x	x	x			x	x					x	x	x		x
350	438		x	x	x			x	x					x	x	x		x
350	438		x	x	x			x	x					x	x	x		x
400	500		x	x	x			x	x					x	x	x		x
400	500		x	x	x			x	x					x	x	x		x

Emissions						Uptime compl.		Housing		Engine type	Cooling variant ³⁾	Genset type
US EPA Tier 4	US EPA stat. EMERG Tier 3 (40 CF 60)	US EPA Nonroad Tier 3 compliant	US EPA stat. EMERG Tier 2 (40 CF 60)	US EPA Nonroad Tier 2 compliant	Fuel consumption optimized	Tier I & Tier II	Tier III & Tier IV	Enclosure	Container			
x						x		x		3029 TFG89	TC only	mtu 3R0096 DS30
x						x		x		4045 TF280	TC only	mtu 4R0113 DS40
x						x		x		4045 TF280	TC only	mtu 4R0113 DS50
x						x		x		4045 HF280	A2A	mtu 4R0113 DS60
x						x		x		4045 HF285	A2A	mtu 4R0113 DS80
x						x		x		4045 HF285	A2A	mtu 4R0113 DS100
x						x		x		4045 HF285	A2A	mtu 4R0113 DS125
x						x		x		6068 HF285	A2A	mtu 6R0113 DS150
x						x		x		6068 HFG85	A2A	mtu 6R0113 DS180
x						x		x		6068 HFG85	A2A	mtu 6R0113 DS200
x						x		x		OM924LA	A2A	mtu 4R0120 DS80
x						x		x		OM924LA	A2A	mtu 4R0120 DS100
x						x		x		OM924LA	A2A	mtu 4R0120 DS125
x						x		x		OM926LA	A2A	mtu 6R0120 DS150
x						x		x		OM926LA	A2A	mtu 6R0120 DS180
x						x		x		OM926LA	A2A	mtu 6R0120 DS200
x						x	x	x		6090 HF484	A2A	mtu 6R0150 DS230
x						x	x	x		6090 HFG06	A2A	mtu 6R0150 DS230
x						x	x	x		6090 HF484	A2A	mtu 6R0150 DS250
x						x	x	x		6090 HFG06	A2A	mtu 6R0150 DS250
x						x	x	x		6090 HF484	A2A	mtu 6R0150 DS275
x						x	x	x		6090 HFG06	A2A	mtu 6R0150 DS275
x						x	x	x		6090 HFG86	A2A	mtu 6R0150 DS300
x						x	x	x		6090 HFG06	A2A	mtu 6R0150 DS300
x						x	x	x		6135 HFG84	A2A	mtu 6R0225 DS350
x						x	x	x		6135 HFG06	A2A	mtu 6R0225 DS350
x						x	x	x		6135 HFG84	A2A	mtu 6R0225 DS400
x						x	x	x		6135 HFG06	A2A	mtu 6R0225 DS400

Standby power – diesel generator sets

STANDBY POWER (3D) –
60 HZ/1800 RPM.

mtu 1600 DS

Power output ¹⁾		Available voltages												Certifications				
		Dedicated (1 Phase)	Re-connectable (1 Phase)	(3 Phase)	(3 Phase)	(3 Phase)	(3 Phase)	(3 Phase)	(3 Phase)	(3 Phase)	(3 Phase)	(3 Phase)	(3 Phase)					
kWe	kVA	240 V	240 V	208 V	240 V	380 V	440 V	480 V	600 V	4160 V	12470 V	13200 V	13800 V	ISO 8528	UL2200	NFPA 110	IBC 2015	IBC 2018
450	563			x	x	x	x	x	x					x	x	x		x
500	625			x	x	x	x	x	x					x	x	x		x
550	688			x	x	x	x	x	x					x	x	x		x
600	750			x	x	x	x	x	x					x	x	x		x

Emissions						Uptime compl.	Housing	Engine type	Cooling variant ³⁾	Genset type		
US EPA Tier 4	US EPA stat. EMERG Tier 3 (40 CF 60)	US EPA Nonroad Tier 3 compliant	US EPA stat. EMERG Tier 2 (40 CF 60)	US EPA Nonroad Tier 2 compliant	Fuel consumption optimized	Tier I & Tier II	Tier III & Tier IV	Enclosure	Container			
x	x					x		x		10V 1600 G70S	A2A	mtu 10V1600 DS450
			x	x		x		x		10V 1600 G80S	A2A	mtu 10V1600 DS500
			x	x		x		x		12V 1600 G70S	A2A	mtu 12V1600 DS550
			x	x		x		x		12V 1600 G80S	A2A	mtu 12V1600 DS600

Standby power – diesel generator sets

STANDBY POWER (3D) –
60 HZ/1800 RPM.

mtu 2000 DS

mtu 4000 DS

Power output ¹⁾		Available voltages												Certifications				
		Dedicated (1 Phase)	Re-connectable (1 Phase)	(3 Phase)	(3 Phase)	(3 Phase)	(3 Phase)	(3 Phase)	(3 Phase)	(3 Phase)	(3 Phase)	(3 Phase)	(3 Phase)					
kWe	kVA	240 V	240 V	208 V	240 V	380 V	416 V	440 V	480 V	600 V	4160 V	12470 V	13200 V	13800 V	ISO 8528	UL2200	NFPA 110	IBC 2018
1000	1250			x	x	x			x	x	x				x	x	x	x
1250	1562					x			x	x	x				x	x	x	x
1250	1562					x			x	x	x				x	x		
1250	1562					x	x	x	x	x	x	x	x	x	x	x	x	x
1500	1875					x	x	x	x	x	x	x	x	x	x	x	x	x
1500	1875					x	x	x	x	x	x	x	x	x	x	x	x	x
1750	2187					x	x	x	x	x	x	x	x	x	x	x	x	x
1750	2187					x	x	x	x	x	x	x	x	x	x	x	x	x
2000	2500					x	x	x	x	x	x	x	x	x	x	x	x	x
2250	2812					x	x	x	x	x	x	x	x	x	x	x	x	x
2500	3125					x	x	x	x	x	x	x	x	x	x	x	x	x
2500	3125					x	x	x	x	x	x	x	x	x	x	x	x	x
2800	3500					x	x	x	x	x	x	x	x	x	x	x	x	x
3000	3750					x			x	x	x	x	x	x	x	x	x	x
3250	4062								x	x	x	x	x	x	x	x	x	x

Emissions					Uptime compl.	Housing	Engine type	Cooling variant ³⁾	Genset type
US EPA stat. EMERG Tier 3 (40 CF 60)	US EPA Nonroad Tier 3 compliant	US EPA stat. EMERG Tier 2 (40 CF 60)	US EPA Nonroad Tier 2 compliant	Fuel consumption optimized	Tier I & Tier II Tier III & Tier IV	Enclosure Container			
	x	x			x		16V 2000 G86S	W2A	mtu 16V2000 DS1000
	x	x			x		16V 2000 G86S	W2A	mtu 16V2000 DS1250
	x	x			x		18V 2000 G76S	A2A	mtu 18V2000 DS1250
	x	x			x		12V 4000 G74S	W2A	mtu 12V4000 DS1250
	x	x			x		12V 4000 G74S	W2A	mtu 12V4000 DS1500
	x				x		12V 4000 G75S	W2A	mtu 12V4000 DS1500
	x	x			x		12V 4000 G84S	W2A	mtu 12V4000 DS1750
	x				x		12V 4000 G85S	W2A	mtu 12V4000 DS1750
	x	x			x		16V 4000 G74S	W2A	mtu 16V4000 DS2000
	x	x			x		16V 4000 G84S	W2A	mtu 16V4000 DS2250
	x	x			x		16V 4000 G94S	W2A	mtu 16V4000 DS2500
	x	x			x		20V 4000 G64S	W2A	mtu 20V4000 DS2500
	x	x			x		20V 4000 G74S	W2A	mtu 20V4000 DS2800
	x	x			x		20V 4000 G94S	W2A	mtu 20V4000 DS3000
	x	x			x		20V 4000 G94S	W2A	mtu 20V4000 DS3250

Standby power – dynamic uninterruptible power supply systems

STANDBY POWER (3D) –
60 HZ/1800 RPM.

	Power output ¹⁾				Available voltages		Emissions					Accu arrang.
	no- break kVA	no- break kWe	short- break kVA	short- break kWe	low voltage 208 - 480V (3 Phase)	medium voltages 4 - 36 kV (3 Phase)	US EPA stationary EMERG Tier 3 (40 CF 60)	US Nonroad Tier 3 compliant	US EPA stationary EMERG Tier 2 (40 CF 60)	US Nonroad Tier 2 compliant	Fuel consumption optimized	
mtu KP5	250	200			x	x					x	single
	300	240			x	x					x	single
	400	320			x	x					x	single
	500	400			x	x			x	x		single
	625	500			x	x			x	x		single
	800	640			x	x				x		single
	1000	800			x	x				x		single
	1250	1000			x	x				x		single
	1500	1200			x	x			x	x	x	single
	1700	1360			x	x			x	x	x	single
	1875	1500	1125	900	x	x			x	x	x	single
	2000	1600			x	x			x	x	x	single
	2000	1600	500	400	x	x			x	x	x	single
	2500	2000			x	x			x	x	x	bi
	3000	2400			x	x			x	x	x	bi
	3000	2400	300	240	x	x			x	x	x	bi
mtu KP7	2500	2000			x	x			x	x	x	single
	3000	2400			x	x			x	x	x	single
	3000	2400	300	240	x	x			x	x	x	single

Certifications				Uptime compl.		Housing	
ISO 8528	UL2200	NFPA 110	IBC 2012	Tier I & Tier II	Tier III & Tier IV	Enclosure	Container
	x			x			x
	x			x			x
	x			x			x
	x			x			x
	x			x			x
	x			x			x
	x			x			x
	x			x			x
	x			x			x
	x			x			x
	x			x			x
	x			x			x
	x			x			x
	x			x			x
	x			x			x

Standby power – gas generator sets

STANDBY POWER (3D) –
60 HZ/1800 RPM.

mtu 0063 - 0265 GS/natural gas

Power output ¹⁾		Available voltages											Emissions	Certifications			
		Dedicated (1 Phase)	Re-connectable (1 Phase)	(3 Phase)	(3 Phase)	(3 Phase)	(3 Phase)	(3 Phase)	(3 Phase)	(3 Phase)	(3 Phase)	(3 Phase)	EPA Certified				
kWe	kVA	240 V	240 V	208 V	240 V	380 V	480 V	600 V	4160 V	12470 V	13200 V	13800 V		ISO 8528	UL2200	NFPA 110	IBC 2018
30	38	x	x	x	x	x	x	x					x	x	x	x	x
40	50	x	x	x	x	x	x	x					x	x	x	x	x
50	63	x	x	x	x	x	x	x					x	x	x	x	x
60	75	x	x	x	x	x	x	x					x	x	x	x	x
70	88	x	x	x	x		x	x					x	x	x	x	x
100	125	x	x	x	x		x	x					x	x	x	x	x
125	156	x	x	x	x		x	x					x	x	x	x	x
150	187	x	x	x	x		x	x					x	x	x		
200	250	x	x	x	x		x	x					x	x	x		
260	325		x	x	x		x	x					x	x	x		
350	437		x	x	x		x	x					x	x	x		
400	500		x	x	x		x	x					x	x	x		
500	625			x	x	x	x	x	x				x	x	x		
550	688				x	x	x	x	x				x	x	x		
600	750				x	x	x	x	x				x	x	x		
650	813				x	x	x	x	x				x	x	x		

Fuel type		Housing		Engine type	Genset type
Natural gas	Propane gas/ liquid propane	Enclosure	Container		
x		x		2.5L	mtu 4R0063 GS30
x		x		2.5LT	mtu 4R0063 GS40
x		x		6.2L	mtu 8V0078 GS50
x		x		6.2L	mtu 8V0078 GS60
x		x		6.8L	mtu 10V0068 GS75
x		x		6.8LT	mtu 10V0068 GS100
x		x		6.8LT CAC	mtu 10V0068 GS125
x		x		8.1L CAC	mtu 6R0135 GS150
x		x		11.1L CAC	mtu 6R0185 GS200
x		x		14.6L CAC	mtu 8V0183 GS260
x		x		18.3L CAC	mtu 10V0183 GS350
x				21.9L CAC	mtu 12V0183 GS400
x				31.8L CAC	mtu 12V0265 GS500
x				31.8L CAC	mtu 12V0265 GS550
x				31.8L CAC	mtu 12V0265 GS600
x				31.8L CAC	mtu 12V0265 GS650

Standby power – gas generator sets

STANDBY POWER (3D) –
60 HZ/1800 RPM.

mtu 0063 - 0183 GS/propane gas	Power output ¹⁾		Available voltages										Emissions	Certifications						
	kW _e	kVA	Dedicated (1 Phase) 240 V		Re-connectable (1 Phase) 240 V		(3 Phase) 208 V	(3 Phase) 240 V	(3 Phase) 380 V	(3 Phase) 480 V	(3 Phase) 600 V	(3 Phase) 4160 V	12470 V (3 Phase)	13200 V (3 Phase)	13800 V (3 Phase)	EPA Certified	ISO 8528	UL2200	NFPA 110	IBC 2018
	30	38	x	x	x	x	x	x	x						x	x	x	x	x	
	40	50	x	x	x	x	x	x	x						x	x	x	x	x	
	50	63	x	x	x	x	x	x	x						x	x	x	x	x	
	60	75	x	x	x	x	x	x	x						x	x	x	x	x	
	75	94	x	x	x	x		x	x						x	x	x	x	x	
	100	125	x	x	x	x		x	x						x	x	x	x	x	
	125	156	x	x	x	x		x	x						x	x	x	x	x	
100	125	x	x	x	x		x	x						x	x	x				
130	162	x	x	x	x		x	x						x	x	x				
160	200		x	x	x		x	x						x	x	x				
245	306		x	x	x		x	x						x	x	x				
295	368		x	x	x		x	x						x	x	x				
350	438			x	x	x	x	x	x					x	x	x				
400	500			x	x	x	x	x	x					x	x	x				

mtu 0063 – 0183 GS/propane gas

Fuel type		Housing		Engine type	Genset type
Natural gas	Propane gas/ liquid propane	Enclosure	Container		
				2.5L	mtu 4R0063 GS30
x	x	x		2.5L	mtu 4R0063 GS40
x	x	x		6.2L	mtu 8V0078 GS50
x	x	x		6.2L	mtu 8V0078 GS60
x	x	x		6.8L	mtu 10V0068 GS75
x	x	x		6.8LT	mtu 10V0068 GS100
x	x	x		6.8LT CAC	mtu 10V0068 GS125
x	x	x		8.1L CAC	mtu 6R0135 GS150
x	x	x		11.1L CAC	mtu 6R0185 GS200
x	x	x		14.6L CAC	mtu 8V0183 GS260
x	x	x		18.3L CAC	mtu 10V0183 GS350
x	x	x		21.9L CAC	mtu 12V0183 GS400
x				31.8L CAC	mtu 12V0265 GS500
x				31.8L CAC	mtu 12V0265 GS500

Standby power – diesel generator sets

PRIME POWER FOR STATIONARY EMERGENCY (3E) -
50 HZ/1500 RPM.

Power output ¹⁾		Available voltages								Emissions						
			(3 Phase)	(3 Phase)	(3 Phase)	(3 Phase)	(3 Phase)	(3 Phase)	(3 Phase)	(3 Phase)	Fuel consumption optimized	NOx emission optimized	NEA Singapore for ORDE	US EPA Tier 2 compliant	EU Nonroad Stage II compliant (97/68/EC)	EU Nonroad Stage IIIA compliant (97/68/EC)
	kVA	kWe	380 V	400 V	415 V	6300 V	6600 V	10000 V	10500 V	11000 V						
mtu 1600 DS*	450	360	x	x	x						x	x	x			x
	500	400	x	x	x						x	x	x			x
	590	472	x	x	x						x	x	x			
	650	520	x	x	x						x	x	x			
mtu 2000 DS	800	640	x	x	x						x	x	x	x		
	910	730	x	x	x						x	x	x	x		
	1000	800	x	x	x						x	x	x	x		
	1135	900	x	x	x						x	x	x	x		
	1250	1000	x	x	x						x	x	x	x		
	910	730	x	x	x						x	x	x	x		
	1000	800	x	x	x						x	x	x	x		
	1135	900	x	x	x						x	x	x	x		
	1250	1000	x	x	x						x	x	x	x		
mtu 4000 DS	1600	1280	x	x	x			x	x	x	x	x	x			
	1700	1360	x	x	x			x	x	x	x	x	x			
	1880	1504	x	x	x			x	x	x	x	x	x			
	2100	1680	x	x	x			x	x	x	x		x	x		
	2160	1728	x	x	x			x	x	x	x	x	x			
	2360	1888	x	x	x			x	x	x	x	x	x			
	2600	2080	x	x	x			x	x	x	x		x	x		
	2640	2112	x	x	x			x	x	x	x	x	x			
	2910	2328	x	x	x			x	x	x	x	x	x			
	3110	2488	x	x	x			x	x	x	x	x	x			
	3630	2904						x ¹⁾		x	x		x	x		

* available soon, for detailed information please check website

Certifications				Perform. class ²⁾		Uptime compl.		Housing		Engine type		Cooling variant ³⁾		Genset type	
ISO 8528	CE/IEC	NFPA 110	VDE-AR-N 4110 (German Grid Code)	ISO 8528-5 - G2	ISO 8528-5 - G3	Tier I & Tier II	Tier III & Tier IV	Enclosure	Container						
x	x	x	x	x	x	x		x		10V 1600 G10F	A2A	mtu 10V1600 DS500			
x	x	x	x	x	x	x		x		10V 1600 G20F	A2A	mtu 10V1600 DS540			
x	x	x	x	x	x	x		x		12V 1600 G10F	A2A	mtu 12V1600 DS650			
x	x	x	x	x	x	x		x		12V 1600 G20F	A2A	mtu 12V1600 DS720			
x	x	x	x	x	x	x				12V 2000 G26F	A2A	mtu 12V2000 DS1000			
x	x	x	x	x	x	x				16V 2000 G16F	A2A	mtu 16V2000 DS1000			
x	x	x	x	x	x	x				16V 2000 G26F	A2A	mtu 16V2000 DS1100			
x	x	x	x	x	x	x				16V 2000 G36F	A2A	mtu 16V2000 DS1250			
x	x	x	x	x	x	x				18V 2000 G26F	A2A	mtu 18V2000 DS1400			
x	x	x	x	x	x	x				16V 2000 G16F	W2A*	mtu 16V2000 DS1000			
x	x	x	x	x	x	x				16V 2000 G26F	W2A*	mtu 16V2000 DS1100			
x	x	x	x	x	x	x				16V 2000 G36F	W2A*	mtu 16V2000 DS1250			
x	x	x	x	x	x	x				18V 2000 G26F	W2A*	mtu 18V2000 DS1400			
x	x	x	x	x	x	x				12V 4000 G14F	W2A	mtu 12V4000 DS1650			
x	x	x	x	x	x	x				12V 4000 G14F	W2A	mtu 12V4000 DS1750			
x	x	x	x	x	x	x				12V 4000 G24F	W2A	mtu 12V4000 DS2000			
x	x	x	x ¹⁾	x	x	x				12V 4000 G34F	W2A	mtu 12V4000 DS2250			
x	x	x	x	x	x	x				16V 4000 G14F	W2A	mtu 16V4000 DS2250			
x	x	x	x	x	x	x				16V 4000 G24F	W2A	mtu 16V4000 DS2500			
x	x	x	x ¹⁾	x	x	x				16V 4000 G34F	W2A	mtu 16V4000 DS2750			
x	x	x	x	x	x	x				20V 4000 G14F	W2A	mtu 20V4000 DS2750			
x	x	x	x	x	x	x				20V 4000 G24F	W2A	mtu 20V4000 DS3100			
x	x	x	x ¹⁾	x	x	x				20V 4000 G34F	W2A	mtu 20V4000 DS3300			
x	x	x		x	x	x				20V 4000 G44LF	W2A	mtu 20V4000 DS4000			

Standby power – diesel generator sets

PRIME POWER FOR STATIONARY EMERGENCY (3E) –
60 HZ/1800 RPM.

	Power output ¹⁾		Available voltages											Emissions				
	kWe	kVA	240 V Dedicated (1 Phase)	240 V Re-connectable (1 Phase)	208 V (3 Phase)	240 V (3 Phase)	380 V (3 Phase)	480 V (3 Phase)	600 V (3 Phase)	4160 V (3 Phase)	12470 V (3 Phase)	13200 V (3 Phase)	13800 V (3 Phase)	US EPA stationary EMERG Tier 3 (40 CF 60)	US EPA Nonroad Tier 3 compliant	US EPA stationary EMERG Tier 2 (40 CF 60)	US EPA Nonroad Tier 2 compliant	Fuel consumption optimized
mtu 1600 DS	450	563	x	x	x	x	x	x	x	x					x			
	500	625	x	x	x	x	x	x	x	x					x			
	550	688	x	x	x	x	x	x	x	x					x			
mtu 2000 DS	900	1125			x	x	x	x	x	x					x			
	1125	1406					x	x	x	x					x			
	1400	1750					x	x	x	x					x			
mtu 4000 DS	1600	2000					x	x	x	x					x			
	1800	2250					x	x	x	x	x	x	x		x			
	2045	2556					x	x	x	x	x	x	x		x			
	2250	2813					x	x	x	x	x	x	x		x			
	2500	3125					x	x	x	x	x	x	x		x			
	2800	3500					x	x	x	x	x	x	x		x			

Certifications				Uptime compl.		Housing		Engine type	Cooling variant ³⁾	Genset type
ISO 8528	UL2200	NFPA 110	IBC 2012	Tier I & Tier II	Tier III & Tier IV	Enclosure	Container			
x	x	x	x	x		x		10V 1600 G20S	A2A	mtu 10V1600 DS500
x	x	x	x	x		x		12V 1600 G10S	A2A	mtu 12V1600 DS550
x	x	x	x	x		x		12V 1600 G20S	A2A	mtu 12V1600 DS600
x	x	x	x	x				16V 2000 G26S	W2A	mtu 16V2000 DS1000
x	x	x	x	x		x		12V 4000 G14S	W2A	mtu 12V4000 DS1250
x	x	x	x	x		x		12V 4000 G14S	W2A	mtu 12V4000 DS1500
x	x	x	x	x		x		12V 4000 G24S	W2A	mtu 12V4000 DS1750
x	x	x	x	x		x		16V 4000 G14S	W2A	mtu 16V4000 DS2000
x	x	x	x	x				16V 4000 G24S	W2A	mtu 16V4000 DS2250
x	x	x	x	x				20V 4000 G14S	W2A	mtu 20V4000 DS2500
x	x	x	x	x				20V 4000 G24S	W2A	mtu 20V4000 DS2800
x	x	x	x	x				20V 4000 G44S	W2A	mtu 20V4000 DS3000

Standby power – diesel generator sets

DATA CENTER CONTINUOUS POWER (3F) –
50 HZ/1500 RPM.

	Power output ¹⁾		Available voltages								Emissions					
	kVA	kWe	380 V (3 Phase)	400 V (3 Phase)	415 V (3 Phase)	6300 V (3 Phase)	6600 V (3 Phase)	10000 V (3 Phase)	10500 V (3 Phase)	11000 V (3 Phase)	Fuel consumption optimized	NOx emission optimized	NEA Singapore for ORDE	US EPA Tier 2 compliant	EU Nonroad Stage II compliant (97/68/EC)	EU Nonroad Stage IIIA compliant (97/68/EC)
mtu 1600 DS*	450	360	x	x	x						x	x	x			x
	500	400	x	x	x						x	x	x			x
	590	472	x	x	x						x	x	x			
	650	520	x	x	x						x	x	x			
mtu 2000 DS	1000	800	x	x	x						x	x	x	x		
	1250	1000	x	x	x						x	x	x	x		
	1000	800	x	x	x						x	x	x	x		
	1250	1000	x	x	x						x	x	x	x		
mtu 4000 DS	1600	1280	x	x	x			x	x	x	x	x	x			
	1700	1360	x	x	x			x	x	x	x	x	x			
	1880	1504	x	x	x			x	x	x	x	x	x			
	2100	1680	x	x	x		x ⁽¹⁾	x ⁽¹³⁾			x		x	x		
	2160	1728	x	x	x			x	x	x	x	x	x			
	2360	1888	x	x	x			x	x	x	x	x	x			
	2600	2080	x	x	x		x ⁽¹⁾	x ⁽¹³⁾			x		x	x		
	2640	2112	x	x	x			x	x	x	x	x	x			
	2910	2328	x	x	x			x	x	x	x	x	x			
	3110	2488	x	x	x			x	x	x	x	x	x			
	3390	2712					x ⁽¹⁾	x ⁽¹³⁾	x ⁽¹⁾	x	x		x	x		
	3630	2904					x ⁽¹⁾	x ⁽¹⁾	x		x		x	x		

* available soon, for detailed information please check website

Certifications				Perform. class ²⁾		Uptime compl.		Housing		Engine type	Cooling variant ³⁾	Genset type
ISO 8528	CE/IEC	NFPA 110	VDE-AR-N 4110 (German Grid Code)	ISO 8528-5 - G2	ISO 8528-5 - G3	Tier I & Tier II	Tier III & Tier IV	Enclosure	Container			
x	x	x	x	x	x	x	x	x		10V 1600 G10F	A2A	mtu 10V1600 DS500
x	x	x	x	x	x	x	x	x		10V 1600 G20F	A2A	mtu 10V1600 DS540
x	x	x	x	x	x	x	x	x		12V 1600 G10F	A2A	mtu 12V1600 DS650
x	x	x	x	x	x	x	x	x		12V 1600 G20F	A2A	mtu 12V1600 DS720
x	x	x	x	x	x	x	x			16V 2000 G26F	A2A	mtu 16V2000 DS1100
x	x	x	x	x	x	x	x			18V 2000 G26F	A2A	mtu 18V2000 DS1400
x	x	x	x	x	x	x	x			16V 2000 G26F	W2A*	mtu 16V2000 DS1100
x	x	x	x	x	x	x	x			18V 2000 G26F	W2A*	mtu 18V2000 DS1400
x	x	x	x	x	x	x	x			12V 4000 G14F	W2A	mtu 12V4000 DS1650
x	x	x	x	x	x	x	x			12V 4000 G14F	W2A	mtu 12V4000 DS1750
x	x	x	x	x	x	x	x			12V 4000 G24F	W2A	mtu 12V4000 DS2000
x	x	x	x	x	x	x	x			12V 4000 G34F	W2A	mtu 12V4000 DS2250
x	x	x	x	x	x	x	x			16V 4000 G14F	W2A	mtu 16V4000 DS2250
x	x	x	x	x	x	x	x			16V 4000 G24F	W2A	mtu 16V4000 DS2500
x	x	x	x	x	x	x	x			16V 4000 G34F	W2A	mtu 16V4000 DS2750
x	x	x	x	x	x	x	x			20V 4000 G14F	W2A	mtu 20V4000 DS2750
x	x	x	x	x	x	x	x			20V 4000 G24F	W2A	mtu 20V4000 DS3100
x	x	x	x	x	x	x	x			20V 4000 G34F	W2A	mtu 20V4000 DS3300
x	x	x	x	x	x	x	x			20V 4000 G44F	W2A	mtu 20V4000 DS3600
x	x	x	x	x	x	x	x			20V 4000 G44LF	W2A	mtu 20V4000 DS4000

Standby power – dynamic uninterruptible power supply systems

DATA CENTER CONTINUOUS POWER (3F) –
50 HZ/1500 RPM.

	Power output ¹⁾				Available voltages		Emissions					Accu arrang.
	no- break	no- break	short- break	short- break	low voltage 380 - 415V (3 Phase)	medium voltages 6 - 36 kV (3 Phase)	Fuel consumption optimized	NOx emission optimized	NEA Singapore for ORDE	US EPA Tier 2 compliant	EU Nonroad Stage II compliant (97/68/EC)	
	kVA	kWe	kVA	kWe								
mtu KP5	400	400			x	x	x	x	x			single
	480	384			x	x	x	x	x			single
	630	504			x	x	x	x	x			single
	1250	1000			x	x	x	x	x			single
	1500	1200			x	x	x	x	x			single
	1650	1320	600	480	x	x	x	x	x			single
	1700	1360			x	x	x	x	x			single
	1875	1500	625	500	x	x	x	x	x			single
	2000	1600			x	x	x	x	x			single
	2200	1760			x	x	x	x	x			bi
	2500	2000			x	x	x	x	x			bi
	2750	2200			x	x	x	x	x			bi
mtu KP7	2250	1800			x	x	x	x	x			single
	2500	2000			x	x	x	x	x			single
	2750	2200			x	x	x	x	x			single

Certifications				Perform. class ²⁾		Uptime compl.		Housing	
ISO 8528	CE/IEC	NFPA 110	VDE-AR-N 4110 (German Grid Code)	ISO 8528-5 - G3	ISO 8528-5 - G4	Tier I & Tier II	Tier III & Tier IV	Enclosure	Container
x	x			x		x	x	x	
x	x			x		x	x	x	
x	x			x		x	x	x	
x	x			x		x	x	x	
x	x			x		x	x	x	
x	x			x		x	x	x	
x	x			x		x	x	x	
x	x			x		x	x	x	
x	x			x		x	x	x	
x	x			x		x	x	x	
x	x			x		x	x	x	
x	x			x		x	x	x	
x	x			x		x	x	x	

Standby power – diesel generator sets

DATA CENTER CONTINUOUS POWER (3F) –
60 HZ/1800 RPM.

	Power output ¹⁾		Available voltages												Emissions					
	kWe	kVA	240 V Dedicated (1 Phase)	240 V Re-connectable (1 Phase)	208 V (3 Phase)	240 V (3 Phase)	380 V (3 Phase)	416 V (3 Phase)	440 V (3 Phase)	480 V (3 Phase)	600 V (3 Phase)	4160 V (3 Phase)	12470 V (3 Phase)	13200 V (3 Phase)	13800 V (3 Phase)	US EPA stationary EMERG Tier 3 (40 CF 60)	US EPA Nonroad Tier 3 compliant	US EPA stationary EMERG Tier 2 (40 CF 60)	US EPA Nonroad Tier 2 compliant	Fuel consumption optimized
mtu 2000 DS	900	1125			x	x	x			x	x	x						x	x	x
mtu 4000 DS	1135	1419					x	x	x	x	x	x	x	x	x			x	x	x
	1350	1688					x	x	x	x	x	x	x	x	x			x	x	
	1400	1750					x	x	x	x	x	x	x	x	x			x	x	x
	1600	2000					x	x	x	x	x	x	x	x	x			x	x	
	1600	2000					x	x	x	x	x	x	x	x	x			x	x	x
	1825	2281					x	x	x	x	x	x	x	x	x			x	x	x
	2045	2556					x	x	x	x	x	x	x	x	x			x	x	x
	2275	2843					x	x	x	x	x	x	x	x	x			x	x	x
	2500	3125					x	x	x	x	x	x	x	x	x			x	x	x
	2800	3500					x	x	x	x	x	x	x	x	x			x	x	x

Certifications				Uptime compl.		Housing		Engine type	Cooling variant ³⁾	Genset type
ISO 8528	UL2200	NFPA 110	IBC 2012	Tier I & Tier II	Tier III & Tier IV	Enclosure	Container			
x	x	x	x	x	x			16V 2000 G26S	W2A	mtu 16V2000 DS1000
x	x	x	x	x	x			12V 4000 G14S	W2A	mtu 12V4000 DS1250
x	x	x	x	x	x			12V 4000 G15S	W2A	mtu 12V4000 DS1500
x	x	x	x	x	x			12V 4000 G14S	W2A	mtu 12V4000 DS1500
x	x	x	x	x	x			12V 4000 G25S	W2A	mtu 12V4000 DS1750
x	x	x	x	x	x			12V 4000 G24S	W2A	mtu 12V4000 DS1750
x	x	x	x	x	x			16V 4000 G14S	W2A	mtu 16V4000 DS2000
x	x	x	x	x	x			16V 4000 G24S	W2A	mtu 16V4000 DS2250
x	x	x	x	x	x			20V 4000 G14S	W2A	mtu 20V4000 DS2500
x	x	x	x	x	x			20V 4000 G24S	W2A	mtu 20V4000 DS2800
x	x	x	x	x	x			20V 4000 G44S	W2A	mtu 20V4000 DS3000

Standby power – dynamic uninterruptible power supply systems

DATA CENTER CONTINUOUS POWER (3F) –
60 HZ/1800 RPM.

Power output ¹⁾				Available voltages		Emissions					Accu arrang.	
	no-break	no-break	short-break	short-break	low voltage 208 - 480V (3 Phase)	medium voltages 4 - 36 kV (3 Phase)	US EPA stationary EMERG Tier 3 (40 CF 60)	US Nonroad Tier 3 compliant	US EPA stationary EMERG Tier 2 (40 CF 60)	US Nonroad Tier 2 compliant	Fuel consumption optimized	
	kVA	kWe	kVA	kWe								
mtu KP5	500	400			x	x			x	x		single
	625	500			x	x			x	x		single
	1500	1200			x	x			x	x	x	single
	1700	1360			x	x			x	x	x	single
	1875	1500	1125	900	x	x			x	x	x	single
	2000	1600			x	x			x	x	x	single
	2000	1600	500	400	x	x			x	x	x	bi
	2500	2000			x	x			x	x	x	bi
	3000	2400			x	x			x	x	x	bi
mtu KP7												
	2500	2000			x	x			x	x	x	single
	3000	2400			x	x			x	x	x	single

Certifications				Uptime compl.		Housing	
ISO 8528	UL2200	NFPA 110	IBC 2012	Tier I & Tier II	Tier III & Tier IV	Enclosure	Container
	x			x	x		x
	x			x	x		x
	x			x	x		x
	x			x	x		x
	x			x	x		x
	x			x	x		x
	x			x	x		x
	x			x	x		x
	x			x	x		x
	x			x	x		x

Continuous/prime/grid stability power – diesel generator sets

CONTINUOUS POWER + CHP (3A) – 50 HZ/1500 RPM.

mtu 2000 DS

Power output ¹⁾		Available voltages								Emissions					
kVA	kWe	380 V (3 Phase)	400 V (3 Phase)	415 V (3 Phase)	6300 V (3 Phase)	6600 V (3 Phase)	10000 V (3 Phase)	10500 V (3 Phase)	11000 V (3 Phase)	Fuel consumption optimized	NOx emission optimized	NEA Singapore for ORDE	US EPA Tier 2 compliant	EU Nonroad Stage II compliant (97/68/EC)	EU Nonroad Stage IIIA compliant (97/68/EC)
750	600	x	x	x						x					
800	640	x	x	x						x					
1000	800	x	x	x						x					
800	640	x	x	x						x					
1000	800	x	x	x						x					

* available soon, for detailed information please check website

Certifications				Perform. class ²⁾		Uptime compl.		Housing		Engine type	Cooling variant ³⁾	Genset type
ISO 8528	CE/IEC	NFPA 110	VDE-AR-N 4110 (German Grid Code)	ISO 8528-5 - G2	ISO 8528-5 - G3	Tier I & Tier II	Tier III & Tier IV	Enclosure	Container			
x	x	x	x	x	x	x	x			12V 2000 B26F	A2A	mtu 12V2000 DS1000
x	x	x	x	x	x	x	x			16V 2000 B26F	A2A	mtu 16V2000 DS1250
x	x	x	x	x	x	x	x			18V 2000 B26F	A2A	mtu 18V2000 DS1400
x	x	x	x	x	x	x	x			16V 2000 B26F	W2A*	mtu 16V2000 DS1250
x	x	x	x	x	x	x	x			18V 2000 B26F	W2A*	mtu 18V2000 DS1400

Continuous/prime/grid stability power – gas generator sets

CONTINUOUS POWER + CHP (3A) –
50 HZ (NO_x 500 MG/NM³ @ 5% O₂ DRY).

	Fuel type			Output					Energy input ⁹⁾	Efficiency			
	Ambient condition	Natural gas	Biogas, sewage gas, landfill gas	Electr. ⁶⁾ kW _{el}	Therm. ⁷⁾ kW _{th}	Exhaust ⁸⁾ kW _{th} (°C)	Reference temp. for exhaust gas heat (°C)	Low Temp. kW _{th} (°C)	Mixture cooling water temp. (°C)	kW	Electr. n _e (%)	Therm. n _{th} (%)	Total n _{tot} (%)
mtu 400 GS	ISO	x		182	126	143	120	23	70	506	36,0	53,2	89,1
	ISO	x		192	106	149	120	29	50	534	36,0	47,8	83,7
	ISO	x		202	109	154	120	36	40	560	36,1	47,0	83,0
	ISO	x		221	120	134	120	17	40	558	39,6	45,5	85,1
	ISO	x		357	235	256	120	38	70	952	37,5	51,6	89,1
	ISO	x		370	194	263	120	52	50	988	37,4	46,3	83,7
	ISO	x		390	233	241	120	28	40	995	39,2	47,6	86,8
	ISO	x		420	247	257	120	31	40	1064	39,5	47,4	86,8
	ISO		x	221	130	132	120	17	40	559	39,5	46,9	86,4
	ISO		x	370	190	235	120	48	50	943	39,2	45,1	84,3
	ISO		x	400	245	262	120	29	40	1015	39,4	50,0	89,4
Cogeneration module 100°/80°C heating water circuit													
ISO	x		166	114	130	120	13	80	465	35,7	52,5	88,2	
ISO	x		323	206	250	120	25	80	879	36,7	51,9	88,6	
ISO	x		352	182	267	120	49	50	954	36,9	47,1	84,0	
ISO	x		420	239	269	120	36	40	1068	39,3	47,6	86,9	
mtu 500 GS	ISO	x		250	131	129	120	26	38	598	41,8	43,4	85,2
	ISO	x		360	188	193	120	31	38	846	42,6	45,0	87,6
	ISO	x		499	263	271	120	46	38	1188	42,1	45,0	87,1
	ISO	x		550	287	290	120	51	38	1290	42,6	44,8	87,4

Methane number ¹⁰⁾	NOx raw gas @5% O ₂ dry		Options							Engine type	Genset type
	500 mg/Nm ³	250 mg/Nm ³	400V alternator	415V alternator	6300V alternator	10500V alternator	11000V alternator	120s FAST Start	Heat recovery unit		
Reference											
70	x		x						x	L9	mtu 6R400 GS
70	x		x						x	L9	mtu 6R400 GS
70	x		x						x	L9	mtu 6R400 GS
80	x		x						x	Z5	mtu 6R400 GS
70	x		x						x	L9	mtu 12V400 GS
70	x		x						x	L9	mtu 12V400 GS
70	x		x						x	Z6	mtu 12V400 GS
80	x		x						x	Z6	mtu 12V400 GS
120	x		x						x	Z8	mtu 6R400 GS
120	x		x						x	L8	mtu 12V400 GS
120	x		x						x	Z7	mtu 12V400 GS
70	x	x	x						x	LH9	mtu 6R400 GS
70	x		x						x	LH9	mtu 12V400 GS
70	x		x						x	LH9	mtu 12V400 GS
80	x		x						x	ZH6	mtu 12V400 GS
80	x	x	x						x	E406-ct80	mtu 6RA500 GS
80	x	x	x						x	E408-ct80	mtu 8VA500 GS
80	x	x	x						x	E412-ct80	mtu 12VA500 GS
80	x	x	x						x	E412-ct80	mtu 12VA500 GS

Continuous/prime/grid stability power – gas generator sets

CONTINUOUS POWER + CHP (3A) –
50 HZ (NO_x 500 MG/NM³ @ 5% O₂ DRY).

mtu 4000 GS

Fuel type			Output						Energy input ⁹⁾	Efficiency		
Ambient condition	Natural gas	Biogas, sewage gas, landfill gas	Electr. ⁶⁾ kW _{el}	Therm. ⁷⁾ kW _{th}	Exhaust ⁸⁾ kW _{th} (°C)	Reference temp. for exhaust gas heat (°C)	Low Temp. kW _{th} (°C)	Mixture cooling water temp. (°C)	kW	Electr. n _{el} (%)	Therm. n _{th} (%)	Total n _{tot} (%)
ISO	x		776	414	422	120	47	40	1832	42,4	45,6	88,0
ISO	x		854	422	435	120	51	43	1967	43,4	43,6	87,0
ISO	x		999	522	490	120	68	43	2258	44,2	44,8	89,1
ISO	x		1013	530	494	120	69	43	2287	44,3	44,8	89,1
ISO	x		1286	703	650	120	90	40	2949	43,6	45,9	89,5
ISO	x		1521	788	742	120	115	43	3443	44,2	44,4	88,6
ISO	x		1712	1015	825	120	127	40	3979	43,0	46,3	89,3
ISO	x		2028	1060	995	120	145	43	4583	44,3	44,8	89,1
ISO	x		2145	1196	1078	120	142	40	4985	43,0	45,6	88,6
ISO	x		2538	1241	1212	120	176	43	5751	44,1	42,7	86,8
ISO	x		2540	1241	1212	120	176	43	5751	44,2	42,7	86,8
ISO	x		776	390	396	120	74	40	1806	43,0	43,5	86,5
ISO	x		800	401	402	180	78	40	1861	43,0	43,1	86,1
ISO	x		1169	586	602	120	103	40	2716	43,0	43,8	86,8
ISO	x		1560	825	800	120	133	40	3616	43,1	45,0	88,1
ISO	x		1950	1030	1046	120	97	40	4493	43,4	46,2	89,6

Methane number ¹⁰⁾	NOx raw gas @5% O ₂ dry		Options							Engine type	Genset type
Reference	500 mg/Nm ³	250 mg/Nm ³	400V alternator	415V alternator	6300V alternator	10500V alternator	11000V alternator	120s FAST Start	Heat recovery unit		
70	x	x	x						x	L33	mtu 8V4000 GS
70	x	x	x	x	x	x	x		x	L64	mtu 8V4000 GS
72	x	x	x	x	x	x	x		x	L64FNER	mtu 8V4000 GS
72	x	x	x	x	x	x	x		x	L64FNER	mtu 8V4000 GS
80	x	x	x	x	x	x	x		x	L33	mtu 12V4000 GS
72	x	x	x	x	x	x	x		x	L64FNER	mtu 12V4000 GS
80	x	x	x	x	x	x	x		x	L33	mtu 16V4000 GS
72	x	x	x	x	x	x	x	x	x	L64FNER	mtu 16V4000 GS
80	x	x	x	x	x	x	x		x	L33	mtu 20V4000 GS
80	x	x	x	x	x	x	x	x	x	L64FNER	mtu 20V4000 GS
80	x	x	x	x	x	x	x		x	L64	mtu 20V4000 GS
120	x		x						x	L32FB	mtu 8V4000 GS
120	x		x						x	L32FB	mtu 8V4000 GS
120	x	x	x	x	x	x	x		x	L32FB	mtu 12V4000 GS
120	x	x	x	x	x	x	x		x	L32FB	mtu 16V4000 GS
120	x		x	x	x	x	x		x	L32FB	mtu 20V4000 GS

Continuous/prime/grid stability power – gas generator sets

CONTINUOUS POWER + CHP (3A) –
50 HZ (NO_x 500 MG/NM³ @ 5% O₂ DRY).

Fuel type			Output						Energy input ⁹⁾	Efficiency		
Ambient condition	Natural gas	Biogas, sewage gas, landfill gas	Electr. ⁶⁾ kW _{el}	Therm. ⁷⁾ kW _{th}	Exhaust ⁸⁾ kW _{th}	Reference temp. for exhaust gas heat (°C)	Low Temp. kW _{th} (°C)	Mixture cooling water temp. (°C)	kW	Electr. n _{el} (%)	Therm. n _{th} (%)	Total n _{tot} (%)
mtu 4000 GS	H&H	x	776	460	420	120	32	53	1853	41,9	47,5	89,4
	H&H	x	999	595	476	120	50	58	2300	43,4	46,6	90,0
	H&H	x	1169	680	624	120	58	53	2732	42,8	47,7	90,5
	H&H	x	1521	849	717	120	79	58	3428	44,4	45,7	90,1
	H&H	x	1560	954	802	120	79	53	3661	42,6	48,0	90,6
	H&H	x	1948	1068	1101	120	78	53	4577	42,6	47,3	89,9
	H&H	x	2028	1173	974	120	93	58	4622	43,9	46,5	90,3
	H&H	x	2540	1441	1243	120	150	58	5781	43,9	46,4	90,4
	H&H	x	776	430	424	120	67	53	1854	41,9	46,0	87,9
	H&H	x	1169	636	631	120	90	53	2755	42,4	46,0	88,4
	H&H	x	1560	877	815	120	119	53	3652	42,7	46,4	89,1
	H&H	x	1950	1039	1044	120	84	53	4576	42,6	45,5	88,1
	LM	x	1560	951	937	120	99	53	3848	40,5	49,1	89,6
	LM	x	1948	1180	1181	120	99	53	4812	40,5	49,1	89,6

H&H = Hot & Humid, LM = Low Methan

Methane number ¹⁰⁾	NOx raw gas @5% O ₂ dry		Options							Engine type	Genset type
	500 mg/Nm ³	250 mg/Nm ³	400V alternator	415V alternator	6300V alternator	10500V alternator	11000V alternator	120s FAST Start	Heat recovery unit		
80	x	x	x						x	L32	mtu 8V4000 GS
80	x	x	x	x	x	x	x		x	L64FNER	mtu 8V4000 GS
80	x	x	x	x	x	x	x		x	L32	mtu 12V4000 GS
80	x	x	x	x	x	x	x		x	L64FNER	mtu 12V4000 GS
80	x	x	x	x	x	x	x		x	L32	mtu 16V4000 GS
80	x	x	x	x	x	x	x		x	L32	mtu 20V4000 GS
80	x	x	x	x	x	x	x		x	L64FNER	mtu 16V4000 GS
80	x	x	x	x	x	x	x		x	L64FNER	mtu 20V4000 GS
120	x		x						x	L32FB	mtu 8V4000 GS
120	x	x	x	x	x	x	x		x	L32FB	mtu 12V4000 GS
120	x	x	x	x	x	x	x		x	L32FB	mtu 16V4000 GS
120	x		x	x	x	x	x		x	L32FB	mtu 20V4000 GS
60	x		x	x	x	x	x			L32ER	mtu 16V4000 GS
60	x		x	x	x	x	x			L32ER	mtu 20V4000 GS

Continuous/prime/grid stability power – gas generator sets

CONTINUOUS POWER + CHP (3A) –
60 HZ (NO_x 500 MG/NM³ @ 5% O₂ DRY).

mtu 400 GS

mtu 500 GS*

Fuel type			Output						Energy input ⁹⁾	Efficiency		
Ambient condition	Natural gas	Biogas, sewage gas, landfill gas	Electr. ⁶⁾ kW _{el}	Therm. ⁷⁾ kW _{th}	Exhaust ⁸⁾ kW _{th}	Reference temp. for exhaust gas heat (°C)	Low Temp. kW _{th}	Mixture cooling water temp. (°C)	kW	Electr. n _{el} (%)	Therm. n _{th} (%)	Total n _{tot} (%)
ISO	x		349	212	282	180		70	951	36,8	49,6	88,6
ISO	x		250	143	144	120	21	38	618	40,5	46,4	86,9
ISO	x		360	189	211	120	33	38	882	40,8	45,4	86,2
ISO	x		550	304	325	120	51	38	1359	40,5	46,3	86,8

* available soon, for detailed information please check website

Methane number ¹⁰⁾	NOx raw gas					Options						Engine type	Genset type
Reference	500 mg/Nm ³ @5%O ₂ dry	1 g/bhp-hr	250 mg/Nm ³ @5%O ₂ dry	0.5 g/bhp-hr		480V alternator	600V alternator	4160V alternator	12470V alternator	13200/13800V altern.	120s FAST Start	Heat recovery unit	
120	x	x				x					x		mtu 12V400 GS
80		x		x		x					x		mtu 6RA500 GS
80		x		x		x					x		mtu 8VA500 GS
80		x		x		x					x		mtu 12VA500 GS

Continuous/prime/grid stability power – gas generator sets

CONTINUOUS POWER + CHP (3A) –
60 HZ (NO_x 500 MG/NM³ @ 5% O₂ DRY).

	Fuel type			Output					Energy input ⁹⁾	Efficiency			
	Ambient condition	Natural gas	Biogas, sewage gas, landfill gas	Electr. ⁶⁾ kW _{el}	Therm. ⁷⁾ kW _{th}	Exhaust ⁸⁾ kW _{th}	Reference temp. for exhaust gas heat (°C)	Low Temp. kW _{th}		Mixture cooling water temp. (°C)	Electr. η_{el} (%)	Therm. η_{th} (%)	Total η_{tot} (%)
mtu 4000 GS	ISO	x		842	452	448	120	49	40	1993	42,2	45,2	87,4
	ISO	x		997	540	494	120	69	43	2287	43,6	45,2	88,8
	ISO	x		1272	675	659	120	88	43	2974	42,8	44,9	87,6
	ISO	x		1506	800	742	120	115	43	3456	43,6	44,6	88,2
	ISO	x		1705	974	821	120	113	40	3991	42,7	45,0	87,7
	ISO	x		2014	1072	995	120	145	43	4583	43,9	45,1	89,0
	ISO	x		2129	1208	1077	120	142	40	4985	42,7	45,8	88,5
	ISO	x		2519	1368	1236	120	211	43	5781	43,6	45,0	88,6
	ISO		x	764	388	321	180	74	40	1806	42,3	39,3	81,6
	ISO		x	1152	581	488	180	103	40	2716	42,5	39,4	81,9
	ISO		x	1549	638	652	180	313	40	3616	42,8	35,7	78,5
	ISO		x	1934	745	873	180	373	40	4493	43,0	36,0	79,1
H&H	x		764	454	420	120	32	53	1853	41,2	47,2	88,4	
H&H	x		997	614	480	120	51	58	2329	42,8	47,0	89,8	
H&H	x		1155	642	638	120	43	53	2747	42,0	46,6	88,6	
H&H	x		1506	861	717	120	79	58	3428	43,9	46,0	90,0	
H&H	x		1549	901	805	120	76	53	3651	42,4	46,7	89,2	
H&H	x		1934	1046	1101	120	78	53	4577	42,3	46,9	89,2	
H&H	x		2014	1185	974	120	93	58	4622	43,6	46,7	90,3	
H&H	x		2519	1454	1243	120	150	58	5781	43,6	46,6	90,2	
H&H		x	764	427	349	180	67	53	1854	41,2	41,9	83,1	
H&H		x	1155	647	519	180	90	53	2755	41,9	42,3	84,2	
H&H		x	1549	677	671	180	330	53	3652	42,4	46,0	88,4	
H&H		x	1934	775	856	180	425	53	4576	42,3	35,6	77,9	
LM	x		1547	932	937	120	84	53	3848	40,2	48,6	88,8	
LM	x		1934	1154	1181	120	99	53	4812	40,2	48,5	88,7	

H&H = Hot & Humid, LM = Low Methan

Methane number ¹⁰⁾	NOx raw gas				Options							Engine type	Genset type
Reference	500 mg/Nm ³ @5%O ² dry	1 g/bhp-hr	250 mg/Nm ³ @5%O ² dry	0.5 g/bhp-hr	480V alternator	600V alternator	4160V alternator	12470V alternator	13200/13800V altern.	120s FAST Start	Heat recovery unit		
80	x	x	*	*	x	x					*	L33	mtu 8V4000 GS
72	x	x	x	x	x						*	L64FNER	mtu 8V4000 GS
80	x	x	*	*	x	x	x	x	x		*	L33	mtu 12V4000 GS
72	x	x	x	x	x	x	x	x	x		*	L64FNER	mtu 12V4000 GS
80	x	x	*	*	x	x	x	x	x		*	L33	mtu 16V4000 GS
72	x	x	x	x	x	x	x	x	x		*	L64FNER	mtu 16V4000 GS
80	x	x	*	*	x	x	x	x	x		*	L33	mtu 20V4000 GS
72	x	x	x	x	x	x	x	x	x		*	L64FNER	mtu 20V4000 GS
120	x	x			x	x					*	L32FB	mtu 8V4000 GS
120	x	x	x		x	x	x	x	x		*	L32FB	mtu 12V4000 GS
120	x	x	x		x	x	x	x	x		*	L32FB	mtu 16V4000 GS
120	x	x			x	x	x	x	x		*	L32FB	mtu 20V4000 GS
80	x	x	*	*	x	x					*	L32	mtu 8V4000 GS
80	x	x	x	x	x						*	L64FNER	mtu 8V4000 GS
80	x	x	*	*	x	x	x	x	x		*	L32	mtu 12V4000 GS
80	x	x	x	x	x	x	x	x	x		*	L64FNER	mtu 12V4000 GS
80	x	x	*	*	x	x	x	x	x		*	L32	mtu 16V4000 GS
80	x	x	*	*	x	x	x	x	x		*	L32	mtu 20V4000 GS
80	x	x	x	x	x	x	x	x	x		*	L64FNER	mtu 16V4000 GS
80	x	x	x	x	x	x	x	x	x		*	L64FNER	mtu 20V4000 GS
120	x	x			x	x					*	L32FB	mtu 8V4000 GS
120	x	x	x		x	x	x	x	x		*	L32FB	mtu 12V4000 GS
120	x	x	x		x	x	x	x	x		*	L32FB	mtu 16V4000 GS
120	x	x			x	x	x	x	x		*	L32FB	mtu 20V4000 GS
60	x	x			x	x	x	x	x		*	L32ER	mtu 16V4000 GS
60	x	x			x	x	x	x	x		*	L32ER	mtu 20V4000 GS

* on request

Continuous/prime/grid stability power – diesel generator sets

PRIME POWER (3B) –
50 HZ/1500 RPM.

mtu 0080/0113 DS

mtu 1600 DS*

Power output ¹⁾		Available voltages			Emissions					
25°C kVA	25°C kWe	380 - 415V (3 Phase)	6300 - 6600 kV (3 Phase)	10000 -11000 V (3 Phase)	Fuel consumption optimized	NOx emission optimized	NEA Singapore for ORDE	US EPA Tier 2 compliant	EU Nonroad Stage II compliant (97/68/EC)	EU Nonroad Stage IIIA compliant (97/68/EC)
50	40	x							x	
60	48	x							x	
75	60	x							x	
84	67	x			x					
450	360	x			x	x	x			x
500	400	x			x	x	x			x
590	472	x			x	x	x			
650	520	x			x	x	x			

* available soon, for detailed information please check website

Certifications				Perform. class ²⁾		Uptime compl.		Housing		Engine type		Cooling variant ³⁾		Genset type	
ISO 8528	CE/IEC	NFPA 110	VDE-AR-N 4110 (German Grid Code)	ISO 8528-5 - G2	ISO 8528-5 - G3	Tier I & Tier II	Tier III & Tier IV	Enclosure	Container						
x	x			x		x				F32 TM 1A	A2A	mtu 4R0080 DS55			
x	x			x		x				NEF45 SM 1A	A2A	mtu 4R0113 DS63			
x	x			x		x				NEF45 SM 2A	A2A	mtu 4R0113 DS80			
x	x			x		x				NEF45 SM 5	A2A	mtu 4R0113 DS94			
x	x	x		x	x	x		x		10V 1600 G10F	A2A	mtu 10V1600 DS500			
x	x	x		x	x	x		x		10V 1600 G20F	A2A	mtu 10V1600 DS540			
x	x	x		x	x	x		x		12V 1600 G10F	A2A	mtu 12V1600 DS650			
x	x	x		x	x	x		x		12V 1600 G20F	A2A	mtu 12V1600 DS720			

Continuous/prime/grid stability power – diesel generator sets

PRIME POWER (3B) –
50 HZ/1500 RPM.

	Power output ¹⁾		Available voltages			Emissions					
	kVA	kWe	380 - 415V (3 Phase)	6300 - 6600 kV (3 Phase)	10000 -11000 V (3 Phase)	Fuel consumption optimized	NOx emission optimized	NEA Singapore for ORDE	US EPA Tier 2 compliant	EU Nonroad Stage II compliant (97/68/EC)	EU Nonroad Stage IIIA compliant (97/68/EC)
mtu 2000 DS	800	640	x			x	x	x	x		
	910	730	x			x	x	x	x		
	1000	800	x			x	x	x	x		
	1135	900	x			x	x	x	x		
	1250	1000	x			x	x	x	x		
	910	730	x			x	x	x	x		
	1000	800	x			x	x	x	x		
	1135	900	x			x	x	x	x		
mtu 4000 DS	1250	1000	x			x	x	x	x		
	1600	1280	x		x	x	x	x			
	1700	1360	x		x	x	x	x			
	1880	1504	x		x	x	x	x			
	2160	1728	x		x	x	x	x			
	2360	1888	x		x	x	x	x			
	2640	2112	x		x	x	x	x			
	2910	2328	x		x	x	x	x			
	3110	2488	x		x	x	x	x			
	3390	2712		x ¹¹⁾	x	x		x	x		

* available soon, for detailed information please check website

Certifications				Perform. class ²⁾		Uptime compl.		Housing		Engine type	Cooling variant ³⁾	Genset type
ISO 8528	CE/IEC	NFPA 110	VDE-AR-N 4110 (German Grid Code)	ISO 8528-5 - G2	ISO 8528-5 - G3	Tier I & Tier II	Tier III & Tier IV	Enclosure	Container			
x	x	x	x	x	x	x				12V 2000 G26F	A2A	mtu 12V2000 DS1000
x	x	x	x	x	x	x				16V 2000 G16F	A2A	mtu 16V2000 DS1000
x	x	x	x	x	x	x				16V 2000 G26F	A2A	mtu 16V2000 DS1100
x	x	x	x	x	x	x				16V 2000 G36F	A2A	mtu 16V2000 DS1250
x	x	x	x	x	x	x				18V 2000 G26F	A2A	mtu 18V2000 DS1400
x	x	x	x	x	x	x				16V 2000 G16F	W2A*	mtu 16V2000 DS1000
x	x	x	x	x	x	x				16V 2000 G26F	W2A*	mtu 16V2000 DS1100
x	x	x	x	x	x	x				16V 2000 G36F	W2A*	mtu 16V2000 DS1250
x	x	x	x	x	x	x				18V 2000 G26F	W2A*	mtu 18V2000 DS1400
x	x	x	x	x	x	x				12V 4000 G14F	W2A	mtu 12V4000 DS1650
x	x	x	x	x	x	x				12V 4000 G14F	W2A	mtu 12V4000 DS1750
x	x	x	x	x	x	x				12V 4000 G24F	W2A	mtu 12V4000 DS2000
x	x	x	x	x	x	x				16V 4000 G14F	W2A	mtu 16V4000 DS2250
x	x	x	x	x	x	x				16V 4000 G24F	W2A	mtu 16V4000 DS2500
x	x	x	x	x	x	x				20V 4000 G14F	W2A	mtu 20V4000 DS2750
x	x	x	x	x	x	x				20V 4000 G24F	W2A	mtu 20V4000 DS3100
x	x	x	x	x	x	x				20V 4000 G34F	W2A	mtu 20V4000 DS3300
x	x	x	x ¹¹⁾	x	x	x				20V 4000 G44F	W2A	mtu 20V4000 DS3600

Continuous/prime/grid stability power – diesel generator sets

PRIME POWER (3B) – 50 HZ/1500 RPM –
NORTH AND LATIN AMERICA

	Power output ¹⁾		Available voltages									Emissions					
	kVA	kWe	220 V (1 Phase)	220 V (3 Phase)	380 V (3 Phase)	400 V (3 Phase)	415 V (3 Phase)	3300 V (3 Phase)	10000 V (3 Phase)	10500 V (3 Phase)	11000 V (3 Phase)	Fuel consumption optimized	NOx emission optimized	NEA Singapore for ORDE	US EPA Tier 2 compliant	EU Nonroad Stage II compliant (97/68/EC)	EU Nonroad Stage IIIA compliant (97/68/EC)
mtu 0096 DS	34	27	x	x	x	x	x					x					
	44	35	x	x	x	x	x					x					
	55	44	x	x	x	x	x					x					
mtu 1600 DS	450	360			x	x	x					x	x				
	500	400			x	x	x					x	x				
	590	472			x	x	x					x	x				
	650	520			x	x	x					x	x				
mtu 2000 DS	1250	1000			x	x	x	x				x					

Certifications				Perform. class ²⁾		Uptime compl.		Housing		Engine type	Cooling variant ³⁾	Genset type
ISO 8528	CE/IEC	NFPA 110	VDE-AR-N 4110 (German Grid Code)	ISO 8528-5 - G2	ISO 8528-5 - G3	Tier I & Tier II	Tier III & Tier IV	Enclosure	Container			
x	x			x		x				3029 TFG89	TC only	mtu 3R0096 DS34
x	x			x		x				4045 TF280	TC only	mtu 3R0096 DS44
x	x			x		x				4045 HF280	TC only	mtu 3R0096 DS55
x	x			x		x				10V 1600 G10F	A2A	mtu 10V1600 DS500
x	x			x		x				10V 1600 G20F	A2A	mtu 10V1600 DS550
x	x			x		x				12V 1600 G10F	A2A	mtu 12V1600 DS650
x	x			x		x				12V 1600 G20F	A2A	mtu 12V1600 DS715
x	x			x	x	x				18V 2000 G26F	A2A	mtu 18V2000 DS1400

Continuous/prime/grid stability power – diesel generator sets

PRIME POWER (3B) –
60 HZ/1800 RPM.

	Power output ¹⁾		Available voltages										Emissions				
	kWe	kVA	Dedicated (1 Phase) Re-connectable (1 Phase)	240 V (3 Phase)	240 V (3 Phase)	240 V (3 Phase)	240 V (3 Phase)	240 V (3 Phase)	240 V (3 Phase)	240 V (3 Phase)	240 V (3 Phase)	240 V (3 Phase)	US EPA stationary EMERG Tier 3 (40 CF 60)	US EPA Nonroad Tier 3 compliant	US EPA stationary EMERG Tier 2 (40 CF 60)	US EPA Nonroad Tier 2 compliant	Fuel consumption optimized
mtu 0096/0113 DS	27	33	x	x	x	x	x	x	x	x	x	x	x				
	40	50		x	x	x	x	x	x	x	x	x	x				
	45	56	x	x	x	x	x	x	x	x	x	x	x				
	55	68	x	x	x	x	x	x	x	x	x	x	x				
	80	100	x	x	x	x						x	x				
	90	113	x	x	x	x						x	x				
	111	139	x	x	x	x						x	x				
	135	169	x	x	x	x						x	x				
	180	225	C/F	C/F	x	x						x	x				
	210	263		x	x	x						x	x				
	230	288			x	x						x	x				
	250	313			x	x						x	x				
mtu 0120 DS	72	90	x	x	x	x	x					x	x				
	90	113	x	x	x	x	x					x	x				
	111	139	x	x	x	x	x					x	x				
	135	169	x	x	x	x	x					x	x				
	163	204	x	x	x	x	x					x	x				
	180	225	x	x	x	x	x					x	x				

Certifications				Uptime compl.		Housing		Engine type	Cooling variant ³⁾	Genset type
ISO 8528	UL2200	NFPA 110	IBC 2012	Tier I & Tier II	Tier III & Tier IV	Enclosure	Container			
x	x	x	x	x		x		3029 TFG89	TC only	mtu 3R0096 DS30
x	x	x	x	x		x		4045 TF280	TC only	mtu 4R0113 DS40
x	x	x	x	x		x		4045 TF280	TC only	mtu 4R0113 DS50
x	x	x	x	x		x		4045 HF280	A2A	mtu 4R0113 DS60
x	x	x		x		x		4045 HF285	A2A	mtu 4R0113 DS80
x	x	x		x		x		4045 HF285	A2A	mtu 4R0113 DS100
x	x	x		x		x		4045 HF285	A2A	mtu 4R0113 DS125
x	x	x		x		x		6068 HF285	A2A	mtu 6R0113 DS150
x	x	x		x		x		6068 HFG85	A2A	mtu 6R0113 DS180
x	x	x		x		x		6090 HF484	A2A	mtu 6R0150 DS230
x	x	x		x		x		6090 HF484	A2A	mtu 6R0150 DS250
x	x	x		x		x		6090 HF484	A2A	mtu 6R0150 DS275
x	x	x	x	x		x		4R 924 G10S	A2A	mtu 4R0120 DS80
x	x	x	x	x		x		4R 924 G20S	A2A	mtu 4R0120 DS100
x	x	x	x	x		x		4R 924 G20S	A2A	mtu 4R0120 DS125
x	x	x	x	x		x		6R 926 G10S	A2A	mtu 6R0120 DS150
x	x	x	x	x		x		6R 926 G20S	A2A	mtu 6R0120 DS180
x	x	x	x	x		x		6R 926 G30S	A2A	mtu 6R0120 DS200

Continuous/prime/grid stability power – diesel generator sets

PRIME POWER (3B) –
60 HZ/1800 RPM.

	Power output ¹⁾		Available voltages											Emissions					
	kWe	kVA	Dedicated (1 Phase) Re-connectable (1 Phase)	240 V (3 Phase)	208 V (3 Phase)	240 V (3 Phase)	380 V (3 Phase)	440 V (3 Phase)	480 V (3 Phase)	600 V (3 Phase)	4160 V (3 Phase)	12470 V (3 Phase)	13200 V (3 Phase)	13800 V (3 Phase)	US EPA stationary EMERG Tier 3 (40 CF 60)	US EPA Nonroad Tier 3 compliant	US EPA stationary EMERG Tier 2 (40 CF 60)	US EPA Nonroad Tier 2 compliant	Fuel consumption optimized
mtu 1600 DS	400	500		x	x	x	x	x	x	x					x				
	450	563		x	x	x	x	x	x	x								x	
	500	625		x	x	x	x	x	x	x								x	
	550	687		x	x	x	x	x	x	x								x	
mtu 2000 DS	900	1125		x	x	x		x	x	x	x						x	x	
	1000	1250					x		x	x	x								x
	1125	1406					x		x	x	x						x		
	1400	1750					x		x	x	x						x		
mtu 4000 DS	1600	2000					x		x	x	x						x		
	1800	2250					x		x	x	x	x	x	x			x		
	2045	2556					x		x	x	x	x	x	x			x		
	2250	2812					x		x	x	x	x	x	x			x		
	2500	3125					x		x	x	x	x	x	x			x		
	2800	3500					x		x	x	x	x	x	x			x		

Certifications				Uptime compl.		Housing		Engine type	Cooling variant ³⁾	Genset type
ISO 8528	UL2200	NFPA 110	IBC 2012	Tier I & Tier II	Tier III & Tier IV	Enclosure	Container			
x	x	x	x	x		x		10V 1600 G10S	A2A	mtu 10V1600 DS450
x	x	x	x	x		x		10V 1600 G20S	A2A	mtu 10V1600 DS500
x	x	x	x	x		x		12V 1600 G10S	A2A	mtu 12V1600 DS550
x	x	x	x	x		x		12V 1600 G20S	A2A	mtu 12V1600 DS600
x	x	x	x	x				16V 2000 G26S	W2A	mtu 16V2000 DS1000
x	x	x	x	x				18V 2000 B76	A2A	mtu 18V2000 DS1250
x	x	x	x	x		x		12V 4000 G14S	W2A	mtu 12V4000 DS1250
x	x	x	x	x		x		12V 4000 G14S	W2A	mtu 12V4000 DS1500
x	x	x	x	x		x		12V 4000 G24S	W2A	mtu 12V4000 DS1750
x	x	x	x	x		x		16V 4000 G14S	W2A	mtu 16V4000 DS2000
x	x	x	x	x				16V 4000 G24S	W2A	mtu 16V4000 DS2250
x	x	x	x	x				20V 4000 G14S	W2A	mtu 20V4000 DS2500
x	x	x	x	x				20V 4000 G24S	W2A	mtu 20V4000 DS2800
x	x	x	x	x				20V 4000 G44S	W2A	mtu 20V4000 DS3000

Continuous/prime/grid stability power – gas generator sets

PRIME POWER (3B) – 60 HZ/1800 RPM.

mtu 0135 - 0185 GS

Power output ¹⁾		Available voltages											Emissions	
		Dedicated (1 Phase)	Re-connectable (1 Phase)	(3 Phase)	(3 Phase)	(3 Phase)	(3 Phase)	(3 Phase)	(3 Phase)	(3 Phase)	(3 Phase)	(3 Phase)	(3 Phase)	EPA certified
kWe	kVA	240 V	240 V	208 V	240 V	380 V	480 V	600 V	4160 V	12470 V	13200 V	13800 V		
130	162	x	x	x	x		x	x					x	
175	218	x	x	x	x		x	x					x	
235	293		x	x	x		x	x					x	
300	375		x	x	x		x	x					x	
355	443		x	x	x		x	x					x	

Certifications				Fuel type		Housing		Engine type	Genset type
ISO 8528	UL2200	NFPA 110	IBC 2012	Natural gas	Propane gas	Enclosure	Container		
x	x	x		x		x		8.1L CAC	mtu 6R0135 GS150
x	x	x		x		x		11.1L CAC	mtu 6R0185 GS200
x	x	x		x		x		14.6L CAC	mtu 8V0183 GS260
x	x	x		x		x		18.3L CAC	mtu 10V0183 GS350
x	x	x		x		x		21.9L CAC	mtu 12V0183 GS400

Continuous/prime/grid stability power – diesel generator sets

GRID STABILITY POWER (3G) – 50 HZ/1500 RPM.

	Power output ¹⁾		Available voltages								Emissions					
	kVA	kWe	380 V (3 Phase)	400 V (3 Phase)	415 V (3 Phase)	6300 V (3 Phase)	6600 V (3 Phase)	10000 V (3 Phase)	10500 V (3 Phase)	11000 V (3 Phase)	Fuel consumption optimized	NOx emission optimized	NEA Singapore for ORDE	US EPA Tier 2 compliant	EU Nonroad Stage II compliant (97/68/EC)	EU Nonroad Stage IIIA compliant (97/68/EC)
mtu 2000 DS	1000	800	x	x	x						x	x	x	x		
	1250	1000	x	x	x						x	x	x	x		
	1000	800	x	x	x						x	x	x	x		
	1250	1000	x	x	x						x	x	x	x		
mtu 4000 DS	1600	1280	x	x	x			x	x	x	x	x	x			
	1700	1360	x	x	x			x	x	x	x	x	x			
	1880	1504	x	x	x			x	x	x	x	x	x			
	2160	1728	x	x	x			x	x	x	x	x	x			
	2360	1888	x	x	x			x	x	x	x	x	x			
	2640	2112	x	x	x			x	x	x	x	x	x			
	2910	2328	x	x	x			x	x	x	x	x	x			
	3110	2488	x	x	x			x	x	x	x	x	x			

* available soon, for detailed information please check website

Certifications				Perform. class ²⁾	Uptime compl.	Housing	Engine type	Cooling variant ³⁾	Genset type	
ISO 8528	CE/IEC	NFPA 110	VDE-AR-N 4110 (German Grid Code)	ISO 8528-5 - G2	ISO 8528-5 - G3	Tier I & Tier II Tier III & Tier IV	Enclosure Container			
x	x	x	x	x	x	x		16V 2000 G26F	A2A	mtu 16V2000 DS1100
x	x	x	x	x	x	x		18V 2000 G26F	A2A	mtu 18V2000 DS1400
x	x	x	x	x	x	x		16V 2000 G26F	W2A*	mtu 16V2000 DS1100
x	x	x	x	x	x	x		18V 2000 G26F	W2A*	mtu 18V2000 DS1400
x	x	x	x	x	x	x		12V 4000 G14F	W2A	mtu 12V4000 DS1650
x	x	x	x	x	x	x		12V 4000 G14F	W2A	mtu 12V4000 DS1750
x	x	x	x	x	x	x		12V 4000 G24F	W2A	mtu 12V4000 DS2000
x	x	x	x	x	x	x		16V 4000 G14F	W2A	mtu 16V4000 DS2250
x	x	x	x	x	x	x		16V 4000 G24F	W2A	mtu 16V4000 DS2500
x	x	x	x	x	x	x		20V 4000 G14F	W2A	mtu 20V4000 DS2750
x	x	x	x	x	x	x		20V 4000 G24F	W2A	mtu 20V4000 DS3100
x	x	x	x	x	x	x		20V 4000 G34F	W2A	mtu 20V4000 DS3300

Diesel generator sets

ENCLOSURES –
50 HZ/1500 RPM.

	Dimensions			Noise level ⁴⁾ Standard		Fuel tank (option)	Genset type
	Length (mm)	Width (mm)	Height (mm)	Level 1 (dBA @ 7m)	Level 2 (dBA @ 7m)	Capacity (l)	
mtu 0080/0113 DS	2100	957	1349	60,0	-	100	mtu 4R0080 DS45
	2300	1050	1458	59,3	-	130	mtu 4R0080 DS55
	2750	1100	1760	61,2	-	288	mtu 4R0113 DS63
	2750	1100	1760	61,3	-	288	mtu 4R0113 DS80
	2750	1100	1760	61,5	-	288	mtu 4R0113 DS94
mtu 0120 DS	2750	1100	1760	C/F	-	288	mtu 4R0120 DS90
	2750	1100	1760	C/F	-	288	mtu 4R0120 DS110
	2750	1100	1760	C/F	-	288	mtu 4R0120 DS140
	C/F	C/F	C/F	C/F	-	C/F	mtu 6R0120 DS175
	C/F	C/F	C/F	C/F	-	C/F	mtu 6R0120 DS200
	C/F	C/F	C/F	C/F	-	C/F	mtu 6R0120 DS235
	C/F	C/F	C/F	C/F	-	C/F	mtu 6R0120 DS250
mtu 1600 DS*	5400	2140	2852	70	75	800	mtu 10V1600 DS500
	5400	2140	2852	70	75	800	mtu 10V1600 DS540
	5400	2140	2852	70	75	800	mtu 12V1600 DS650
	5400	2140	2852	70	75	800	mtu 12V1600 DS720

* available soon, for detailed information please check website

Diesel generator sets

ENCLOSURES –
60 HZ/1800 RPM.

	Prime power			Standby power			Certifications			
	Level 1 (dBA @ 7m)	Level 2 (dBA @ 7m)	Level 3 (dBA @ 7m)	Level 1 (dBA @ 7m)	Level 2 (dBA @ 7m)	Level 3 (dBA @ 7m)	UL 2200	CSA	ISO 9001:2008	IBC 2012/OSHDPD
mtu 0060/0113 DS	79,2	72,4	69,6	79,2	72,4	69,6	x	x	x	x
	84,2	76,7	70,8	84,2	76,7	70,8	x	x	x	x
	84,3	77,0	71,0	84,3	77,0	71,0	x	x	x	x
	84,6	76,7	71,5	84,6	76,7	71,5	x	x	x	x
	83,9	77,2	73,4	83,9	77,2	73,4	x	x	x	x
	78,9	75,2	70,9	78,9	75,2	70,9	x	x	x	x
	79,0	74,9	70,9	78,9	75,2	70,9	x	x	x	x
	82,5	81,8	71,9	82,8	81,7	72,0	x	x	x	x
	84,3	82,9	73,1	84,5	83,0	73,4	x	x	x	x
	85,1	83,0	73,9	85,1	83,0	73,9	x	x	x	x
mtu 0120 DS	82,0	81,7	73,6	82,2	81,5	73,7	x	x	x	x
	82,1	81,8	74,1	82,2	81,3	74,4	x	x	x	x
	82,7	81,8	74,4	82,2	81,8	74,5	x	x	x	x
	91,1	88,7	72,5	91,2	88,4	72,8	x	x	x	x
	91,1	88,7	72,7	91,2	88,7	73,0	x	x	x	x
	91,1	88,7	73,0	91,2	88,7	73,1	x	x	x	x

Genset type
mtu 4R0060 DS30
mtu 4R0113 DS35
mtu 4R0113 DS40
mtu 4R0113 DS50
mtu 4R0113 DS60
mtu 4R0113 DS80
mtu 4R0113 DS100
mtu 4R0113 DS125
mtu 6R0113 DS150
mtu 6R0113 DS180
mtu 4R0120 DS80
mtu 4R0120 DS100
mtu 4R0120 DS125
mtu 6R0120 DS150
mtu 6R0120 DS180
mtu 6R0120 DS200

Diesel generator sets

ENCLOSURES –
60 HZ/1800 RPM.

	Prime power			Standby power			Certifications			
	Level 1 (dBA @ 7m)	Level 2 (dBA @ 7m)	Level 3 (dBA @ 7m)	Level 1 (dBA @ 7m)	Level 2 (dBA @ 7m)	Level 3 (dBA @ 7m)	UL 2200	CSA	ISO 9001:2008	IBC 2012/OSHDPD
mtu 1600 DS	88,0	79,7	73,9	88,5	80,5	74,1	x	x	x	x
	88,5	80,5	74,1	88,6	80,1	74,6	x	x	x	x
	88,6	80,1	74,6	88,3	80,6	74,3	x	x	x	x
	N/A	N/A	N/A	90,3	81,9	75,1	x	x	x	x
	N/A	N/A	N/A	89,5	80,9	75,6	x	x	x	x
	N/A	N/A	N/A	90,1	81,1	76,2	x	x	x	x
	N/A	N/A	N/A	89,9	81,6	76,5	x	x	x	x
	N/A	N/A	N/A	91,0	82,1	75,5	x	x	x	x
	90,7	86,0	74,0	91,0	86,5	74,5	x	x	x	x
	91,0	86,5	74,5	91,0	86,6	74,9	x	x	x	x
	92,8	88,0	81,0	92,9	88,0	81,2	x	x	x	x
	92,9	88,0	81,2	92,8	89,0	81,5	x	x	x	x
mtu 2000 DS	95,0	87,0	75,2	95,0	87,0	75,2	x	x	x	x
	94,0	87,0	75,2	94,0	87,0	75,2	x	x	x	x
	92,0	86,0	74,7	92,0	86,4	74,7	x	x	x	x
	N/A	N/A	N/A	93,0	86,0	75,0	x	x	x	x

Genset type
mtu 6R0150 DS230
mtu 6R0150 DS250
mtu 6R0150 DS275
mtu 6R0150 DS300
mtu 6R0225 DS350 ⁽²⁾
mtu 6R0225 DS350 ⁽²⁾
mtu 6R0225 DS350
mtu 6R0225 DS400
mtu 10V1600 DS450
mtu 10V1600 DS500
mtu 12V1600 DS550
mtu 12V1600 DS600
mtu 12V2000 DS750
mtu 12V2000 DS800
mtu 16V2000 DS1000
mtu 16V2000 DS1250

Diesel generator sets

POWER MODULES¹⁴⁾ - 50/60 HZ -
EUROPE, AFRICA, ASIA AND AUSTRALIA

mtu 4000 DS	Power output ¹⁾		Available voltages				Emissions		Noise level	Dimensions			
	kWe	kVA	280 V	400 V	480 V	600 V	Fuel consumption optimized	US EPA Nonroad Tier 2 compliant	dBA @ 1m	Size	Length (mm)	Width (mm)	Height (mm)
	1531	1914	x				x		99	40ft HC	12192	2438	2896
	1807	2259		x			x		103	40ft HC	12192	2438	2896
	1836	2295	x				x		99	40ft HC	12192	2438	2896
	2109	2636			x		x		103	40ft HC	12192	2438	2896
	2048	2560	x				x		99	40ft HC	12192	2438	2896
	2321	2901			x		x		105	40ft HC	12192	2438	2896
	1888	2360			x		x		11)	40ft HC	12192	2438	2896
	1440	1800			x		x		11)	40ft HC	12192	2438	2896

Frequency		Application			Certifications			Engine type	Cooling variant ³⁾	Genset type
Hz	50/60Hz switchable	Continuous power	Prime power	Standby power	ISO 8528	NFPA 110	CSC certification			
50	x	x			x		x	16V 4000 B24F	W2A	mtu 16V4000 DS2560
60	x	x			x		x	16V 4000 B24S	W2A	mtu 16V4000 DS2560
50	x		x		x		x	16V 4000 G24F	W2A	mtu 16V4000 DS2560
60	x		x		x		x	16V 4000 G24S	W2A	mtu 16V4000 DS2560
50	x			x	x		x	16V 4000 G84F	W2A	mtu 16V4000 DS2560
60	x			x	x		x	16V 4000 G84S	W2A	mtu 16V4000 DS2560
60			x		x		x	16V 4000 G24S	Tabletop radiator	Caribic configuration
60		x			x		x	16V 4000 B24S	Tabletop radiator	Caribic configuration

Gas generator sets – continuous/prime/grid stability power

POWER MODULES - 50/60 HZ.

Power output ¹⁾	Available voltages		Emissions	Dimensions				Frequency	
kWe	400 V	480 V	NOx<500 mg/Nm ³ NOx<250 mg/Nm ³	Size	Length (mm)	Width (mm)	Height (mm)	50 Hz	60 Hz
Power application									
762 - 1013	x		x	40ft HC	12203	2438	2896	x	
1151 - 1523	x	x	x	40ft HC	12203	2438	2896	x	x
1537 - 2030	x		x	40ft HC	12203	2438	2896	x	
1948 - 2535	x		x	40ft HC	12203	2438	2896	x	
CHP application									
180 - 220	x	x	x	30+	12203	2438	2896	x	x
				40ft HC	9000	3000	3000		
245 - 420	x	x	x	31+	12203	2438	2896	x	x
				40ft HC	9000	3000	3000		
762 - 1013	x		x	40+	12203	3200	3200	x	
1151 - 1523	x		x	40+	12203	3200	3200	x	
1537 - 2030	x		x	47+	14200	3200	3200	x	
1948 - 2535	x		x	47+	14200	3200	3200	x	

Application	Engine type	Fuel type	Genset type
Continuous power		NG = Natural gas NNG = Non-natural Gas (biogas/ sewage/landfill)	
x	L32/L33/L64/L64FNER	NG/NNG	mtu 8V4000 GS
x	L32/L33/L64/L64FNER	NG/NNG	mtu 12V4000 GS
x	L32/L33/L64/L64FNER	NG/NNG	mtu 16V4000 GS
x	L32/L33/L64/L64FNER	NG/NNG	mtu 20V4000 GS
x	L/Z	NG/NNG	mtu 6R400 GS
x	L/Z	NG/NNG	mtu 12V400 GS
x	L32/L33/L64/L64FNER	NG/NNG	mtu 8V4000 GS
x	L32/L33/L64/L64FNER	NG/NNG	mtu 12V4000 GS
x	L32/L33/L64/L64FNER	NG/NNG	mtu 16V4000 GS
x	L32/L33/L64/L64FNER	NG/NNG	mtu 20V4000 GS

mtu EnergyPack

BATTERY STORAGE.

Nominal capacity	Nominal apparent power	C-Rates ¹⁵⁾	Nominal power factor	Frequency
kWh_{nom}	kVA_{nom}	C	λ_{nom}	Hz
up to 600	40 - 400	0.5 / 1 / 2	-1 to 1	50/60
300 - 800	300 - 800	0.5 / 1 / 2	-1 to 1	50/60
500 - 2,200	300 - 2,000	0.5 / 1 / 2	-1 to 1	50/60

Overall dimensions ¹⁶⁾				Certifications		Battery storage type
Size	Length (mm)	Width (mm)	Height (mm)	UL	CE	
Enclosure	3.000	2.230	2.400	on request	x	mtu EnergyPack QS
20ft. HC	6.096	2.438	2.896	on request	x	mtu EnergyPack QM
40ft. HC	12.192	2.438	2.896	on request	x	mtu EnergyPack QL

Classification for data center continuous power

ACCORDING TO THE UPTIME INSTITUTE.

Tier I

Tier I is composed of a single path for power and cooling distribution, without redundant components.

Tier II

Tier II is composed of a single path for power and cooling distribution, with redundant components.

Tier III

Tier III is composed of multiple active power and cooling distribution paths, but only one active path has redundant components and is concurrently maintainable.

Tier IV

Tier IV is composed of multiple active power and cooling distribution paths, has redundant components and is fault tolerant.

	Tier I	Tier II	Tier III	Tier IV
Delivery paths	One	One	One active + one passive	Two active
Redundant components	No	Yes	Yes (for active path)	Yes (for two active path)
Simultaneously maintainable	No	No	Yes	Yes
Fault tolerance (single event)	No	No	No	Yes
Compartmentalisation	No	No	No	Yes
Suitable <i>mtu</i> power generation application	Standby power (3D) Prime power for stationary emergency (3E) Prime power (3B) Grid stability power (3G)		Data center continuous power (3F) Continuous power (3A)	

For complete definition see <http://uptimeinstitute.com/>

Conversion table

NUMBERS TO BACK YOU UP.

1 kW	= 1.360 PS	g	= 9.80665 m/s ²
1 kW	= 1.341 bhp	л	= 3.14159
1 bhp	= 1.014 PS	e	= 2.71828
1 oz	= 28.35 g		
1 lb	= 453.59 g	1 lb	= 16 oz
1 short ton	= 907.18 kg	1 short ton	= 2000 lbs
1 lb/bhp	= 447.3 g/PSH	1 ft lb	= 1.356 Nm
1 lb/bhp	= 608.3 g/kWh	1 ft/min	= 0.00508 m/s
1 gal/bhp (US)	= 4264 g/kWh	pDiesel	= 0.83 kg/l
1 kWh	= 860 kcal	1 lb/sqin	= 0.069 bar (1 psi)
1 cal	= 4.187 J	1 mm Hg	= 1.333 mbar (133.3 Pa)
1 BTU	= 1.055 kJ	1 mm H ₂ O	= 0.0981 mbar (9.81 Pa)
1 inch	= 2.540 cm	T (K)	= t (°C) + 273.15
1 sq. inch	= 6.542 cm ²	t (°C)	= 5/9 x (t (°F) - 32)
1 cu. inch	= 16.387 cm ³	t (°C)	= 5/4 x t (°R)
1 foot	= 3.048 dm	1 foot	= 12 inches
1 sq. foot	= 9.290 dm ²	1 yard	= 3 feet
1 mile	= 1.609 km	1 mile	= 5280 feet
1 naut. mile	= 1.853 km	1 naut. mile	= 6080 feet
1 UK Gallon	= 4.546 l	1 US Barrel	= 0.159 m ³
1 US Gallon	= 3.785 l		= 42 US Gallons
Energy:	1 J = 1 Ws = 1 VAs = 1 Nm		
Power:	1 W = 1 VA = 1 Nm/s		
Force:	1 N = 1 kgm/s ²		
Pressure:	1 Pa = 1 N/m ² (1 bar = 10 ⁵ Pa)		
MEP (bar)	$= \frac{P_{cyl}(kW)}{n(l/min) \times V_{cyl}(l)}$		
Torque (Nm)	$= \frac{P_{ges}(kW) \times 30000}{n(l/min) \times \pi}$		

FOOTNOTES.

- A Only available for 50Hz markets
 B Unlimited hours in data center application where a reliable grid/utility is present.

Application descriptions, e.g. load factor, applies to *mtu* powered equipment.

- | | |
|---|---|
| <p>(1) Power output based on 400V, fuel consumption opt. emission level and standard or optional generator. For arrangements with other emissions, voltages and/or optional generators, ratings may vary. Series 4000 without cooling package.</p> <p>(2) Ambient conditions and load application acc. to ISO 8528</p> <p>(3) Cooling variants:
 A2A: air-to-air charge air cooling (TD)
 W2A: water-to-air charge air cooling (TB)</p> <p>(4) Sound levels in accordance with European Noise Directive (2000/14/EC), for further information on acoustic data see datasheets</p> <p>(5) Power available up to 25°C intake air temperature / 100m site altitude above sea level</p> <p>(6) Rated power at nominal voltage, power factor = 1,0 and nominal frequency</p> <p>(7) Heat output from engine cooling with tolerance of $\pm 8\%$</p> | <p>(8) Heat output from exhaust with tolerance of $\pm 8\%$</p> <p>(9) Performance data in accordance with ISO 3046/I-2002 with tolerance of 5%</p> <p>(10) Referenced methane number</p> <p>(11) Availability on request</p> <p>(12) Single-phase units only</p> <p>(13) Availability on request only for VDE-AR-N 4110</p> <p>(14) Datacenter configuration available level</p> <p>(15) C-Rate availability dependend on requested capacity-power combination</p> <p>(16) Transformer can be within shown dimensions or additional, dependend on requested capacity-power combination. For details please submit request.</p> <p>* available soon, for detailed information please check website</p> |
|---|---|

50Hz – Power available up to:

Standard:

Site altitude above sea level: 400 m
 Intake air temperature: 40°C

NOx emission optimized:

Site altitude above sea level: 100 m
 Intake air temperature: 25°C

NEA Singapore:

Site altitude above sea level: 100 m
 Intake air temperature: 40°C

60Hz – Power available up to:

Standard:

Site altitude above sea level: 400 m
 Intake air temperature: 25°C

Available power for battery storage solutions:

Standard:

Site altitude above sea level: 2000 m
 Ambient temperature: -20°C to 40°C

C/F: Consult factory

D: Lambda = 1 with 2-way-catalyst

L: Leanburn with single stage intercooling

Z: Leanburn with two stage intercooling

Cooling variants:

A2A: air-to-air charge air cooling (TD)

W2A: water-to-air charge air cooling (TB)



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