



Power Generation

# SOLUTION GUIDE

Edition 1/24, valid from 1/2024



A Rolls-Royce  
solution

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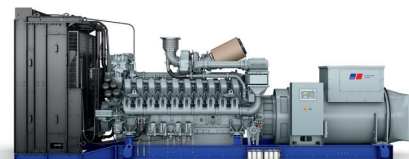
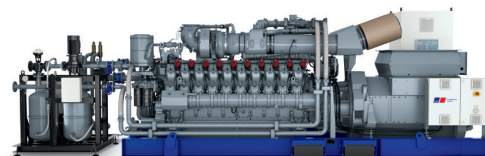
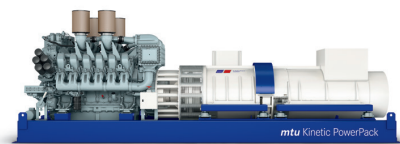
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## PIONEERING THE POWER THAT MATTERS.

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 center 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	mtu Power Generation	ISO 8528-1 (ESP)
<b>Standby power (3D)</b>		
Load	variable	variable
Load factor	≤ 85%	≤ 70%
10% overload (ICXN)	no	not specified
Max. operating hours (per year)	<b>500 h</b>	200 h
Uptime compliant	Tier I & Tier II Tier III & Tier IV <sup>16)</sup>	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)	<b>yes</b>	not specified
Max. operating hours (per year)	<b>500 h</b>	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)	<b>yes</b>	not specified
Max. operating hours (per year)	unlimited <sup>B)</sup>	unlimited
Uptime compliant	Tier I - Tier IV	not specified

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

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
Uptime compliant	Tier I & Tier II Tier III & Tier IV <sup>19)</sup>	not specified

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

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

Standby power – diesel generator sets

STANDBY POWER (3D) –  
50 HZ/1500 RPM.

mtu 1600 DS\*

Power output <sup>1)</sup>		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)
650	520	x			x		x			
715	572	x			x		x			
825	660	x			x		x	x		
880	704				x		x	x		
1000	800	x			x		x	x		

\* available soon, for detailed information please check website

Certifications				Perform. class <sup>2)</sup>		Uptime Institute		Housing		Engine type	Cooling variant <sup>3)</sup>	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 <sup>16)</sup>	x		12V 1600 G70F	A2A	<b>mtu</b> 12V1600 DS650
x	x		x	x	x	x	x <sup>16)</sup>	x		12V 1600 G80F	A2A	<b>mtu</b> 12V1600 DS715
x	x		x	x	x	x	x <sup>16)</sup>	x		12V 1600 G71F	A2A	<b>mtu</b> 12V1600 DS825
x	x		x	x	x	x	x <sup>16)</sup>	x		12V 1600 G81F	A2A	<b>mtu</b> 12V1600 DS880
x	x		x	x	x	x	x <sup>16)</sup>	x		12V 1600 G91F	A2A	<b>mtu</b> 12V1600 DS1000



Standby power - diesel generator sets

STANDBY POWER (3D) -  
50 HZ/1500 RPM.

	Power output <sup>1)</sup>		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)
<b>mtu 2000 DS</b>	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			x					
<b>mtu 4000 DS</b>	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	x <sup>11)</sup>	x	x		x	x		
	4000	3200	x	x <sup>11)</sup>	x	x		x	x		

	Certifications				Perform. class <sup>2)</sup>		Uptime Institute		Housing		Engine type	Cooling variant <sup>3)</sup>	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 <sup>16)</sup>			12V 2000 G76F	A2A	<b>mtu</b> 12V2000 DS825
	x	x	x	x	x	x	x	x <sup>16)</sup>			12V 2000 G86F	A2A	<b>mtu</b> 12V2000 DS1000
	x	x	x	x	x	x	x	x <sup>16)</sup>			16V 2000 G76F	A2A	<b>mtu</b> 16V2000 DS1100
	x	x	x	x	x	x	x	x <sup>16)</sup>			16V 2000 G86F	A2A	<b>mtu</b> 16V2000 DS1250
	x	x	x	x	x	x	x	x <sup>16)</sup>			18V 2000 G76F	A2A	<b>mtu</b> 18V2000 DS1400
	x	x	x	x	x	x	x	x <sup>16)</sup>			16V 2000 G76F	W2A	<b>mtu</b> 16V2000 DS1100
	x	x	x	x	x	x	x	x <sup>16)</sup>			16V 2000 G86F	W2A	<b>mtu</b> 16V2000 DS1250
	x	x	x	x	x	x	x	x <sup>16)</sup>			18V 2000 G76F	W2A	<b>mtu</b> 18V2000 DS1400
	x	x	x	x	x	x	x	x <sup>16)</sup>	C/F		12V 4000 G74F	W2A	<b>mtu</b> 12V4000 DS1650
	x	x	x	x	x	x	x	x <sup>16)</sup>	C/F		12V 4000 G74F	W2A	<b>mtu</b> 12V4000 DS1750
	x	x	x	x	x	x	x	x <sup>16)</sup>	C/F		12V 4000 G84F	W2A	<b>mtu</b> 12V4000 DS2000
	x	x	x	x <sup>11)</sup>	x	x	x	x <sup>16)</sup>	C/F		12V 4000 G94F	W2A	<b>mtu</b> 12V4000 DS2250
	x	x	x	x	x	x	x	x <sup>16)</sup>	C/F		16V 4000 G74F	W2A	<b>mtu</b> 16V4000 DS2250
	x	x	x	x	x	x	x	x <sup>16)</sup>	C/F		16V 4000 G84F	W2A	<b>mtu</b> 16V4000 DS2500
	x	x	x	x <sup>11)</sup>	x	x	x	x <sup>16)</sup>	C/F		16V 4000 G94F	W2A	<b>mtu</b> 16V4000 DS2750
	x	x	x	x	x	x	x	x <sup>16)</sup>	C/F		20V 4000 G64F	W2A	<b>mtu</b> 20V4000 DS2750
	x	x	x	x	x	x	x	x <sup>16)</sup>	C/F		20V 4000 G74F	W2A	<b>mtu</b> 20V4000 DS3100
	x	x	x	x	x	x	x	x <sup>16)</sup>	C/F		20V 4000 G84F	W2A	<b>mtu</b> 20V4000 DS3300
	x	x	x	x <sup>11)</sup>	x	x	x	x <sup>16)</sup>	C/F		20V 4000 G94F	W2A	<b>mtu</b> 20V4000 DS3600
	x	x	x		x	x	x	x <sup>16)</sup>	C/F		20V 4000 G94LF	W2A	<b>mtu</b> 20V4000 DS4000

Standby power – dynamic uninterruptible power supply systems

STANDBY POWER (3D) –  
50 HZ/1500 RPM.

	Power output <sup>1)</sup>				Available voltages		Emissions					Accu arrang.
	no-break kVA	no-break kWe	short-break kVA	short-break kWe	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)	
mtu KP5	500	400			x	x	x	x				single
	630	504			x	x	x	x	x			single
	800	640			x	x	x	x				single
	1000	800			x	x	x	x				single
	1200	960			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	
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 <sup>2)</sup>		Uptime Institute		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 <sup>16)</sup>		x
	x			x		x	x <sup>16)</sup>		x
	x			x		x	x <sup>16)</sup>		x
	x			x		x	x <sup>16)</sup>		x
	x			x		x	x <sup>16)</sup>		x
	x			x		x	x <sup>16)</sup>		x
	x			x		x	x <sup>16)</sup>		x
	x			x		x	x <sup>16)</sup>		x
	x			x		x	x <sup>16)</sup>		x
	x			x		x	x <sup>16)</sup>		x

Standby power - diesel generator sets

STANDBY POWER (3D) -  
60 HZ/1800 RPM.

Power output <sup>1)</sup>		Available voltages											Certifications				
kWe	kVA												ISO 8528	UL2200	NFPA 110	IBC	
		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)
30	37	x	x	x	x	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	x	x	x	x
50	62	x	x	x	x	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	x	x	x	x
80	100	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
100	125	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
125	156	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
150	187	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
180	225	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
200	250	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
230	288	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
230	288	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
250	313	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
250	313	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
275	344	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
275	344	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
300	375	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
300	375	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
350	438	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
400	500	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x

mtu 0096/0113 DS

mtu 0150/0225 DS

Emissions							Uptime Institute		Housing		Engine type	Cooling variant <sup>3)</sup>	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 <sup>16)</sup>	x		3029 TFG89	TC only	mtu 3R0096 DS30
x							x	x <sup>16)</sup>	x		4045 TF280	TC only	mtu 4R0113 DS40
x							x	x <sup>16)</sup>	x		4045 TF280	TC only	mtu 4R0113 DS50
x							x	x <sup>16)</sup>	x		4045 HF280	A2A	mtu 4R0113 DS60
x							x	x <sup>16)</sup>	x		4045 HF285	A2A	mtu 4R0113 DS80
x							x	x <sup>16)</sup>	x		4045 HF285	A2A	mtu 4R0113 DS100
x							x	x <sup>16)</sup>	x		4045 HF285	A2A	mtu 4R0113 DS125
x							x	x <sup>16)</sup>	x		6068 HF285	A2A	mtu 6R0113 DS150
x							x	x <sup>16)</sup>	x		6068 HFG85	A2A	mtu 6R0113 DS180
x							x	x <sup>16)</sup>	x		6068 HFG85	A2A	mtu 6R0113 DS200
							x	x <sup>16)</sup>	x		6090 HF484	A2A	mtu 6R0150 DS230
x							x	x <sup>16)</sup>	x		6090 HFG06	A2A	mtu 6R0150 DS230
x							x	x <sup>16)</sup>	x		6090 HF484	A2A	mtu 6R0150 DS250
x							x	x <sup>16)</sup>	x		6090 HFG06	A2A	mtu 6R0150 DS250
x							x	x <sup>16)</sup>	x		6090 HF484	A2A	mtu 6R0150 DS275
x							x	x <sup>16)</sup>	x		6090 HFG06	A2A	mtu 6R0150 DS275
x							x	x <sup>16)</sup>	x		6090 HFG86	A2A	mtu 6R0150 DS300
x							x	x <sup>16)</sup>	x		6090 HFG06	A2A	mtu 6R0150 DS300
x							x	x <sup>16)</sup>	x		6135 HFG84	A2A	mtu 6R0225 DS350
x							x	x <sup>16)</sup>	x		6135 HFG84	A2A	mtu 6R0225 DS400



Standby power – diesel generator sets

STANDBY POWER (3D) –  
60 HZ/1800 RPM.

mtu 1600 DS

Power output <sup>1)</sup>		Available voltages										Certifications				
kWe	kVA	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)	ISO 8528	UL2200	NFPA 110	IBC
550	688		x	x	x			x	x			x	x	x	x	
600	750		x	x	x			x	x			x	x	x	x	
750			x	x	x			x	x			x	x	x	x	
800			x	x	x			x	x			x	x	x	x	
900			x	x	x			x	x			x	x	x	x	

Emissions						Uptime Institute		Housing		Engine type	Cooling variant <sup>3)</sup>	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 <sup>16)</sup>	x		12V 1600 G70S	A2A	<b>mtu</b> 12V1600 DS550
			x	x		x	x <sup>16)</sup>	x		12V 1600 G80S	A2A	<b>mtu</b> 12V1600 DS600
			x			x	x <sup>16)</sup>	x		12V 1600 G71S	A2A	<b>mtu</b> 12V1600 DS750
			x			x	x <sup>16)</sup>	x		12V 1600 G81S	A2A	<b>mtu</b> 12V1600 DS800
			x			x	x <sup>16)</sup>	x		12V 1600 G91S	A2A	<b>mtu</b> 12V1600 DS900

Standby power - diesel generator sets

STANDBY POWER (3D) -  
60 HZ/1800 RPM.

mtu 2000 DS

mtu 4000 DS

Power output <sup>1)</sup>		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) 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	ISO 8528	UL2200	NFPA 110	IBC
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	x		
1250	1562						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	
1750	2187					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	
2250	2812					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	
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	
3000	3750					x	x	x	x	x	x	x	x	x	x	x	x	
3250	4062								x	x	x	x	x	x	x	x	x	

Emissions					Uptime Institute		Housing		Engine type	Cooling variant <sup>3)</sup>	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			
									16V 2000 G86S	W2A	mtu 16V2000 DS1000
x	x				x	x <sup>16)</sup>	x		16V 2000 G86S	W2A	mtu 16V2000 DS1250
					x	x <sup>16)</sup>			18V 2000 G76S	A2A	mtu 18V2000 DS1250
									12V 4000 G74S	W2A	mtu 12V4000 DS1250
x	x				x	x <sup>16)</sup>			12V 4000 G74S	W2A	mtu 12V4000 DS1500
					x	x <sup>16)</sup>			12V 4000 G84S	W2A	mtu 12V4000 DS1750
x	x				x	x <sup>16)</sup>			16V 4000 G74S	W2A	mtu 16V4000 DS2000
					x	x <sup>16)</sup>			16V 4000 G84S	W2A	mtu 16V4000 DS2250
x	x				x	x <sup>16)</sup>			16V 4000 G94S	W2A	mtu 16V4000 DS2500
					x	x <sup>16)</sup>			20V 4000 G64S	W2A	mtu 20V4000 DS2500
x	x				x	x <sup>16)</sup>			20V 4000 G74S	W2A	mtu 20V4000 DS2800
					x	x <sup>16)</sup>			20V 4000 G94S	W2A	mtu 20V4000 DS3000
x	x				x	x <sup>16)</sup>			20V 4000 G94S	W2A	mtu 20V4000 DS3250



Standby power – gas generator sets

STANDBY POWER (3D) –  
60 HZ/1800 RPM.

mtu 0063 - 0265 GS/natural gas

Power output <sup>1)</sup>		Available voltages										Emissions	Certifications			
kWe	kVA	Dedicated (1 Phase)	Re-connectable (1 Phase)	(3 Phase)	(3 Phase)	(3 Phase)	(3 Phase)	(3 Phase)	(3 Phase)	(3 Phase)	(3 Phase)	EPA Certified	ISO 8528	UL2200	NFPA 110	IBC 2018
		240 V	240 V	208 V	240 V	380 V	480 V	600 V	4160 V	12470 V	13200 V		13800 V			
30	38	x	x	x	x	x	x	x				x	x	x	x	
40	50	x	x	x	x	x	x	x				x	x	x	x	
50	63	x	x	x	x	x	x	x				x	x	x	x	
60	75	x	x	x	x	x	x	x				x	x	x	x	
100	125	x	x	x	x		x	x				x	x	x	x	
130	156	x	x	x	x		x	x				x	x	x	x	
150	187	x	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	x		
600	750			x	x	x	x	x	x			x	x	x		
650	813			x	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	<b>mtu</b> 4R0063 GS30
x		x		2.5LT	<b>mtu</b> 4R0063 GS40
x		x		5.7L	<b>mtu</b> 8V0071 GS50
x		x		5.7L	<b>mtu</b> 8V0071 GS60
x		x		6.2L	<b>mtu</b> 8V0078 GS100
x		x		8.8LT CAC	<b>mtu</b> 8V0110 GS130
x		x		8.8L CAC	<b>mtu</b> 8V0110 GS150
x		x		11.1L CAC	<b>mtu</b> 6R0185 GS200
x		x		14.6L CAC	<b>mtu</b> 8V0183 GS260
x		x		18.3L CAC	<b>mtu</b> 10V0183 GS350
x		x		21.9L CAC	<b>mtu</b> 12V0183 GS400
x				31.8L CAC	<b>mtu</b> 12V0265 GS500
x				31.8L CAC	<b>mtu</b> 12V0265 GS550
x				31.8L CAC	<b>mtu</b> 12V0265 GS600
x				31.8L CAC	<b>mtu</b> 12V0265 GS650

Standby power – gas generator sets

STANDBY POWER (3D) –  
60 HZ/1800 RPM.

mtu 0063 - 0183 GS/propane gas or liquid propane

Power output <sup>1)</sup>		Available voltages										Emissions	Certifications			
kWe	kVA	Dedicated (1 Phase)	Re-connectable (1 Phase)	(3 Phase)	(3 Phase)	(3 Phase)	(3 Phase)	(3 Phase)	(3 Phase)	(3 Phase)	(3 Phase)	EPA Certified	ISO 8528	UL2200	NFPA 110	IBC 2018
		240 V	240 V	208 V	240 V	380 V	480 V	600 V	4160 V	12470 V	13200 V		13800 V			
30	38	x	x	x	x	x	x	x			x	x	x	x		
40	50	x	x	x	x	x	x	x			x	x	x	x		
50	63	x	x	x	x	x	x	x			x	x	x	x		
60	75	x	x	x	x	x	x	x			x	x	x	x		
100	125	x	x	x	x		x	x			x	x	x	x		
130	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			

Fuel type		Housing		Engine type	Genset type
Natural gas	Propane gas/liquid propane	Enclosure	Container		
x	x			2.5L	<b>mtu</b> 4R0063 GS30
x	x			2.5LT	<b>mtu</b> 4R0063 GS40
x	x			5.7L	<b>mtu</b> 8V0071 GS50
x	x			5.7L	<b>mtu</b> 8V0071 GS60
x	x			6.2L	<b>mtu</b> 8V0078 GS100
x	x			8.8L CAC	<b>mtu</b> 8V0110 GS130
x	x			11.1L CAC	<b>mtu</b> 6R0185 GS200
x	x			14.6L CAC	<b>mtu</b> 8V0183 GS260
x	x			18.3L CAC	<b>mtu</b> 10V0183 GS350
x	x			21.9L CAC	<b>mtu</b> 12V0183 GS400
x				31.8L CAC	<b>mtu</b> 12V0265 GS500
x				31.8L CAC	<b>mtu</b> 12V0265 GS550

Standby power - diesel generator sets

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

Power output <sup>1)</sup>		Available voltages								Emissions					
		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)
<b>mtu 1600 DS*</b>	kVA														
	kWe														
	590	472	x	x	x					x	x	x			
	650	520	x	x	x					x	x	x			
	750	600	x	x	x					x		x			
800	640	x	x	x					x		x				
900	720	x	x	x					x		x				
<b>mtu 2000 DS</b>	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		
	<b>mtu 4000 DS</b>	1600	1280	x	x	x					x	x	x		
1700		1360	x	x	x					x	x	x			
1880		1504	x	x	x					x	x	x			
2100		1680	x	x	x					x		x	x		
2160		1728	x	x	x					x	x	x			
2360		1888	x	x	x					x	x	x			
2600		2080	x	x	x					x		x	x		
2640		2112	x	x	x					x	x	x			
2910		2328	x	x	x					x	x	x			
3110		2488	x	x	x					x	x	x			
3630		2904	x	x	x					x		x	x		

\* available soon, for detailed information please check website

Certifications				Perform. class <sup>2)</sup>		Uptime Institute		Housing		Engine type		Cooling variant <sup>3)</sup>	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 <sup>16)</sup>	x		12V 1600 G10F	A2A	<b>mtu</b> 12V1600 DS650	
x	x	x	x	x	x	x	x <sup>16)</sup>	x		12V 1600 G20F	A2A	<b>mtu</b> 12V1600 DS715	
x	x	x	x	x	x	x	x <sup>16)</sup>	x		12V 1600 G11F	A2A	<b>mtu</b> 12V1600 DS825	
x	x	x	x	x	x	x	x <sup>16)</sup>	x		12V 1600 G21F	A2A	<b>mtu</b> 12V1600 DS880	
x	x	x	x	x	x	x	x <sup>16)</sup>	x		12V 1600 G31F	A2A	<b>mtu</b> 12V1600 DS1000	
x	x	x	x	x	x	x	x <sup>16)</sup>			12V 2000 G26F	A2A	<b>mtu</b> 12V2000 DS1000	
x	x	x	x	x	x	x	x <sup>16)</sup>			16V 2000 G16F	A2A	<b>mtu</b> 16V2000 DS1000	
x	x	x	x	x	x	x	x <sup>16)</sup>			16V 2000 G26F	A2A	<b>mtu</b> 16V2000 DS1100	
x	x	x	x	x	x	x	x <sup>16)</sup>			16V 2000 G36F	A2A	<b>mtu</b> 16V2000 DS1250	
x	x	x	x	x	x	x	x <sup>16)</sup>			18V 2000 G26F	A2A	<b>mtu</b> 18V2000 DS1400	
x	x	x	x	x	x	x	x <sup>16)</sup>			16V 2000 G16F	W2A	<b>mtu</b> 16V2000 DS1000	
x	x	x	x	x	x	x	x <sup>16)</sup>			16V 2000 G26F	W2A	<b>mtu</b> 16V2000 DS1100	
x	x	x	x	x	x	x	x <sup>16)</sup>			16V 2000 G36F	W2A	<b>mtu</b> 16V2000 DS1250	
x	x	x	x	x	x	x	x <sup>16)</sup>			18V 2000 G26F	W2A	<b>mtu</b> 18V2000 DS1400	
x	x	x	x	x	x	x	x <sup>16)</sup>	C/F		12V 4000 G14F	W2A	<b>mtu</b> 12V4000 DS1650	
x	x	x	x	x	x	x	x <sup>16)</sup>	C/F		12V 4000 G14F	W2A	<b>mtu</b> 12V4000 DS1750	
x	x	x	x	x	x	x	x <sup>16)</sup>	C/F		12V 4000 G24F	W2A	<b>mtu</b> 12V4000 DS2000	
x	x	x	x <sup>11)</sup>	x	x	x	x <sup>16)</sup>	C/F		12V 4000 G34F	W2A	<b>mtu</b> 12V4000 DS2250	
x	x	x	x	x	x	x	x <sup>16)</sup>	C/F		16V 4000 G14F	W2A	<b>mtu</b> 16V4000 DS2250	
x	x	x	x	x	x	x	x <sup>16)</sup>	C/F		16V 4000 G24F	W2A	<b>mtu</b> 16V4000 DS2500	
x	x	x	x <sup>11)</sup>	x	x	x	x <sup>16)</sup>	C/F		16V 4000 G34F	W2A	<b>mtu</b> 16V4000 DS2750	
x	x	x	x	x	x	x	x <sup>16)</sup>	C/F		20V 4000 G14F	W2A	<b>mtu</b> 20V4000 DS2750	
x	x	x	x	x	x	x	x <sup>16)</sup>	C/F		20V 4000 G24F	W2A	<b>mtu</b> 20V4000 DS3100	
x	x	x	x <sup>11)</sup>	x	x	x	x <sup>16)</sup>	C/F		20V 4000 G34F	W2A	<b>mtu</b> 20V4000 DS3300	
x	x	x	x	x	x	x	x <sup>16)</sup>	C/F		20V 4000 G44LF	W2A	<b>mtu</b> 20V4000 DS4000	



Standby power - diesel generator sets

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

Power output <sup>1)</sup>	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)
590	472	x	x	x						x	x	x			
650	520	x	x	x						x	x	x			
750	600	x	x	x						x		x	x		
800	640	x	x	x						x		x	x		
900	720	x	x	x						x		x	x		
<b>mtu 1600 DS*</b>															
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		
<b>mtu 2000 DS</b>															
1600	1280	x	x	x				x	x	x		x			
1700	1360	x	x	x				x	x	x		x			
1880	1504	x	x	x				x	x	x		x			
2100	1680	x	x	x				x <sup>11)</sup>	x <sup>13)</sup>	x		x	x		
2160	1728	x	x	x				x	x	x		x			
2360	1888	x	x	x				x	x	x		x			
2600	2080	x	x	x				x <sup>11)</sup>	x <sup>13)</sup>	x		x	x		
2640	2112	x	x	x				x	x	x		x			
2910	2328	x	x	x				x	x	x		x			
3110	2488	x	x	x				x	x	x		x			
3390	2712	x	x	x				x <sup>11)</sup>	x <sup>13)</sup>	x <sup>11)</sup>	x	x			
3630	2904	x	x	x				x <sup>11)</sup>	x <sup>11)</sup>	x		x	x		

\* available soon, for detailed information please check website

Certifications				Perform. class <sup>2)</sup>	Uptime Institute	Housing	Engine type	Cooling variant <sup>3)</sup>	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		12V 1600 G10F	A2A	<b>mtu</b> 12V1600 DS650
x	x	x	x	x	x	x	x	x		12V 1600 G20F	A2A	<b>mtu</b> 12V1600 DS715
x	x	x	x	x	x	x	x	x		12V 1600 G11F	A2A	<b>mtu</b> 12V1600 DS825
x	x	x	x	x	x	x	x	x		12V 1600 G21F	A2A	<b>mtu</b> 12V1600 DS880
x	x	x	x	x	x	x	x	x		12V 1600 G31F	A2A	<b>mtu</b> 12V1600 DS1000
<b>mtu 2000 DS</b>												
x	x	x	x	x	x	x	x			16V 2000 G26F	A2A	<b>mtu</b> 16V2000 DS1100
x	x	x	x	x	x	x	x			18V 2000 G26F	A2A	<b>mtu</b> 18V2000 DS1400
x	x	x	x	x	x	x	x			16V 2000 G26F	W2A	<b>mtu</b> 16V2000 DS1100
x	x	x	x	x	x	x	x			18V 2000 G26F	W2A	<b>mtu</b> 18V2000 DS1400
<b>mtu 4000 DS</b>												
x	x	x	x	x	x	x	x	C/F		12V 4000 G14F	W2A	<b>mtu</b> 12V4000 DS1650
x	x	x	x	x	x	x	x	C/F		12V 4000 G14F	W2A	<b>mtu</b> 12V4000 DS1750
x	x	x	x	x	x	x	x	C/F		12V 4000 G24F	W2A	<b>mtu</b> 12V4000 DS2000
x	x	x	x	x	x	x	x	C/F		12V 4000 G34F	W2A	<b>mtu</b> 12V4000 DS2250
x	x	x	x	x	x	x	x	C/F		16V 4000 G14F	W2A	<b>mtu</b> 16V4000 DS2250
x	x	x	x	x	x	x	x	C/F		16V 4000 G24F	W2A	<b>mtu</b> 16V4000 DS2500
x	x	x	x	x	x	x	x	C/F		16V 4000 G34F	W2A	<b>mtu</b> 16V4000 DS2750
x	x	x	x	x	x	x	x	C/F		20V 4000 G14F	W2A	<b>mtu</b> 20V4000 DS2750
x	x	x	x	x	x	x	x	C/F		20V 4000 G24F	W2A	<b>mtu</b> 20V4000 DS3100
x	x	x	x	x	x	x	x	C/F		20V 4000 G34F	W2A	<b>mtu</b> 20V4000 DS3300
x	x	x	x	x	x	x	x	C/F		20V 4000 G44F	W2A	<b>mtu</b> 20V4000 DS3600
x	x	x	x	x	x	x	x	C/F		20V 4000 G44LF	W2A	<b>mtu</b> 20V4000 DS4000

Standby power – dynamic uninterruptible power supply systems

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

	Power output <sup>1)</sup>				Available voltages		Emissions					Accu arrang.
	no-break kVA	no-break kWe	short-break kVA	short-break kWe	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)	
mtu KP5	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
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 <sup>2)</sup>		Uptime Institute		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

Standby power – diesel generator sets

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

	Power output <sup>1)</sup>		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
<b>mtu 2000 DS</b>	900	1125	x	x	x															
<b>mtu 4000 DS</b>	1135	1419				x	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	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 Institute		Housing		Engine type	Cooling variant <sup>3)</sup>	Genset type
ISO 8528	UL2200	NFPA 110	IBC	Tier I & Tier II	Tier III & Tier IV	Enclosure	Container			
x	x	x	x	x	x	x		16V 2000 G26S	W2A	<b>mtu 16V2000 DS1000</b>
x	x	x	x	x	x			12V 4000 G14S	W2A	<b>mtu 12V4000 DS1250</b>
x	x	x	x	x	x			12V 4000 G14S	W2A	<b>mtu 12V4000 DS1500</b>
x	x	x	x	x	x			12V 4000 G24S	W2A	<b>mtu 12V4000 DS1750</b>
x	x	x	x	x	x			16V 4000 G14S	W2A	<b>mtu 16V4000 DS2000</b>
x	x	x	x	x	x			16V 4000 G24S	W2A	<b>mtu 16V4000 DS2250</b>
x	x	x	x	x	x			20V 4000 G14S	W2A	<b>mtu 20V4000 DS2500</b>
x	x	x	x	x	x			20V 4000 G24S	W2A	<b>mtu 20V4000 DS2800</b>
x	x	x	x	x	x			20V 4000 G44S	W2A	<b>mtu 20V4000 DS3000</b>

Standby power – dynamic uninterruptible power supply systems

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

	Power output <sup>1)</sup>				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
<b>mtu</b> KP5	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
<b>mtu</b> KP7	2500	2000			x	x			x	x	x	single
	3000	2400			x	x			x	x	x	single

Certifications				Uptime Institute		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

Continuous/prime/grid stability power – diesel generator sets

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

mtu 2000 DS

Power output <sup>1)</sup>		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					

Certifications				Perform. class <sup>2)</sup>		Uptime Institute		Housing		Engine type	Cooling variant <sup>3)</sup>	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	<b>mtu</b> 12V2000 DS1000
x	x	x	x	x	x	x	x			16V 2000 B26F	A2A	<b>mtu</b> 16V2000 DS1250
x	x	x	x	x	x	x	x			18V 2000 B26F	A2A	<b>mtu</b> 18V2000 DS1400
x	x	x	x	x	x	x	x			16V 2000 B26F	W2A	<b>mtu</b> 16V2000 DS1250
x	x	x	x	x	x	x	x			18V 2000 B26F	W2A	<b>mtu</b> 18V2000 DS1400

Continuous/prime/grid stability power – gas generator sets

## CONTINUOUS POWER + CHP (3A) – 50 HZ (NO<sub>x</sub> 500 MG/NM<sup>3</sup> @ 5% O<sub>2</sub> DRY).

	Fuel type				Output				Energy input <sup>9)</sup>	Efficiency				
	Ambient condition	Natural gas	Biogas, sewage gas, landfill gas	Propane	Electr. <sup>6)</sup> kW <sub>el</sub>	Therm. <sup>7)</sup> kW <sub>th</sub>	Exhaust <sup>8)</sup> kW <sub>th</sub> (°C)	Reference temp. for exhaust gas heat (°C)		Low Temp. kW <sub>th</sub> (°C)	Mixture cooling water temp. (°C)	kW	Electr. n <sub>el</sub> (%)	Therm. n <sub>th</sub> (%)
mtu 4000 GS	ISO	x			999	522	490	120	68	43	2260	44,2	44,7	89
	ISO	x			1012	530	494	120	69	43	2287	44,3	44,7	89
	ISO	x			1521	788	742	120	115	43	3443	44,2	44,4	88,6
	ISO	x			2028	1060	995	120	145	43	4583	44,3	44,8	89,2
	ISO	x			2547	1355	1236	120	211	43	5781	44,1	44,8	88,9
	ISO		x		776	400	407	120	76	40	1806	43	48,9	87,7
	ISO		x		800	401	404	120	78	40	1861	43	43,3	86,3
	ISO		x		1168	602	618	120	106	40	2716	43	44,9	87,9
	ISO		x		1560	847	821	120	136	40	3616	43,1	46,2	89,3
	ISO		x		1950	1057	1074	120	100	40	4493	43,4	47,3	90,8
	ISO			x	580	328	348	120	45	40	1423	40,7	47,6	88,3
	ISO			x	873	484	511	120	62	40	2107	41,5	47,2	88,7
	ISO			x	1168	683	720	120	88	40	2887	40,5	48,6	89,1
	ISO			x	1462	857	890	120	118	40	3600	40,6	49,1	89,1

Methane number <sup>10)</sup>	NO <sub>x</sub> raw gas @5% O <sub>2</sub> dry		Options							Engine type	Genset type	
	Reference	500 mg/Nm <sup>3</sup>	250 mg/Nm <sup>3</sup>	400V alternator	415V alternator	6300V alternator	10500V alternator	11000V alternator	120s FAST Start			Heat recovery unit
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
72	x	x		x	x	x	x	x		x	L64FNER	mtu 12V4000 GS
72	x	x		x	x	x	x	x	x	x	L64FNER	mtu 16V4000 GS
72	x	x		x	x	x	x	x	x	x	L64FNER	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	L32FB	mtu 12V4000 GS
120	x			x	x	x	x	x		x	L32FB	mtu 16V4000 GS
120	x			x	x	x	x	x		x	L32FB	mtu 20V4000 GS
32		x		x						x	L64FNER	mtu 8V4000 GS
32		x		x						x	L64FNER	mtu 8V4000 GS
32		x		x		x	x	x		x	L64FNER	mtu 16V4000 GS
32		x		x		x	x	x		x	L64FNER	mtu 20V4000 GS



Continuous/prime/grid stability power – gas generator sets

CONTINUOUS POWER + CHP (3A) –  
50 HZ (NO<sub>x</sub> 500 MG/NM<sup>3</sup> @ 5% O<sub>2</sub> DRY).

Fuel type	Output							Energy input <sup>9)</sup>	Efficiency					
	Ambient condition	Natural gas	Biogas, sewage gas, landfill gas	Propane	Electr. <sup>6)</sup> kW <sub>el</sub>	Therm. <sup>7)</sup> kW <sub>th</sub>	Exhaust <sup>8)</sup> kW <sub>th</sub>		Reference temp. for exhaust gas heat (°C)	Low Temp. kW <sub>th</sub> (°C)	Mixture cooling water temp. (°C)	kW	Electr. n <sub>el</sub> (%)	Therm. n <sub>th</sub> (%)
H&H	x				999	595	476	120	50	58	2300	43,4	46,6	90
H&H	x				1012	604	480	120	51	58	2329	43,5	46,5	90
H&H	x				1521	849	717	120	79	58	3428	44,4	45,7	90,1
H&H	x				2028	1173	974	120	93	58	4622	44	46,4	90,4
H&H	x				2542	1477	1206	120	161	58	5781	44	46,4	90,4
H&H		x			776	430	424	120	67	53	1854	41,9	46	87,9
H&H		x			1012	624	482	120	42	64	2348	43,1	47,1	90,2
H&H		x			1169	636	631	120	90	53	2755	42,4	46	88,4
H&H		x			1521	882	703	120	70	64	3446	44,1	48,1	92,2
H&H		x			1560	877	815	120	119	53	3652	42,7	46,4	89,1
H&H		x			2032	1221	974	120	78	64	4675	43,5	46,9	90,4
H&H		x			1950	1039	1044	120	84	53	4576	42,6	45,5	88,1
H&H		x			2547	1538	1243	120	128	64	5913	43,1	47	90,4
H&H			x		532	635	326	120	34	47	1317	40,4	48,2	88,6
H&H			x		803	435	480	120	49	47	1960	41	47,7	88,7
H&H			x		1071	640	674	120	68	47	2669	40,1	49,3	89,4
H&H			x		1345	808	866	120	86	47	3370	39,9	49,7	89,6
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

mtu 4000 GS

Methane number <sup>10)</sup>	NOx raw gas @5% O <sub>2</sub> dry		Options						Engine type	Genset type		
	Reference	500 mg/Nm <sup>3</sup>	250 mg/Nm <sup>3</sup>	400V alternator	415V alternator	6300V alternator	10500V alternator	11000V alternator			120s FAST Start	Heat recovery unit
80	x	x		x	x	x	x	x		x	L64FNER	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	L64FNER	mtu 12V4000 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
130	x			x	x	x	x	x		x	L64FB	mtu 8V4000 GS
120	x			x	x	x	x	x		x	L32FB	mtu 12V4000 GS
130	x			x	x	x	x	x		x	L64FB	mtu 12V4000 GS
120	x			x	x	x	x	x		x	L32FB	mtu 16V4000 GS
130	x			x	x	x	x	x		x	L64FB	mtu 16V4000 GS
120	x			x	x	x	x	x		x	L32FB	mtu 20V4000 GS
130	x			x	x	x	x	x		x	L64FB	mtu 20V4000 GS
32		x		x						x	L64FNER	mtu 8V4000 GS
32		x		x						x	L64FNER	mtu 8V4000 GS
32		x		x		x	x	x		x	L64FNER	mtu 16V4000 GS
32		x		x		x	x	x		x	L64FNER	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 power + CHP (3A)

Continuous/prime/grid stability power – gas generator sets

CONTINUOUS POWER + CHP (3A) –  
60 HZ (NO<sub>x</sub> 500 MG/NM<sup>3</sup> @ 5% O<sub>2</sub> DRY).

Fuel type	Output							Energy input <sup>9)</sup>	Efficiency					
	Ambient condition	Natural gas	Biogas, sewage gas, landfill gas	Propane	Electr. <sup>6)</sup> kW <sub>el</sub>	Therm. <sup>7)</sup> kW <sub>th</sub>	Exhaust <sup>8)</sup> kW <sub>th</sub>		Reference temp. for exhaust gas heat (°C)	Low Temp. kW <sub>in</sub>	Mixture cooling water temp. (°C)	kW	Electr. n <sub>el</sub> (%)	Therm. n <sub>th</sub> (%)
mtu 4000 GS	ISO	x			997	540	494	120	69	43	2287	43,6	45,2	88,8
	ISO	x			1507	801	742	120	115	43	3443	43,8	44,8	88,6
	ISO	x			2015	1072	995	120	145	43	4583	44	45,1	89,1
	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	36	79,1
	ISO			x	574	328	348	120	45	40	1423	40,3	47,6	87,9
	ISO			x	864	484	511	120	62	40	2107	41	47,2	88,2
	ISO			x	1156	683	720	120	88	40	2887	40	48,6	88,6
	ISO			x	1447	857	890	120	118	40	3600	40,2	49,1	89,3
	H&H	x			997	614	480	120	51	58	2329	42,8	47,0	89,8
	H&H	x			1506	861	717	120	79	58	3428	43,9	46,0	90,0
	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		997	624	482	120	42	64	2348	42,5	47,1	89,6
H&H		x		1155	647	519	180	90	53	2755	41,9	42,3	84,2	
H&H		x		1507	895	703	120	70	64	3446	43,7	48,4	82,1	
H&H		x		1549	677	671	180	330	53	3652	42,4	46	88,4	
H&H		x		1934	775	856	180	425	53	4576	42,3	35,6	77,9	
H&H		x		2007	1221	974	120	78	64	4675	42,9	46,9	89,8	
H&H		x		2521	1538	1243	120	128	64	5913	42,6	47	89,6	
H&H			x	526	635	326	120	34	47	1317	39,9	48,2	88,1	
H&H			x	790	464	480	120	49	47	1960	40,3	48,2	88,5	
H&H			x	1060	640	674	120	68	47	2669	39,7	49,3	89	
H&H			x	1331	808	866	120	86	47	3370	39,5	49,7	89,2	
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 <sup>10)</sup>	NOx raw gas				Options							Engine type	Genset type	
	Reference	500 mg/Nm <sup>3</sup> @5%O <sub>2</sub> dry	1 g/bhp-hr	250 mg/Nm <sup>3</sup> @5%O <sub>2</sub> dry	0,5 g/bhp-hr	480V alternator	600V alternator	4160V alternator	12470V alternator	13200/13800V altern.	120s FAST Start			Heat recovery unit
72	x		x			x	x						L64FNER	mtu 8V4000 GS
72	x		x			x	x	x	x	x			L64FNER	mtu 12V4000 GS
72	x		x			x	x	x	x	x			L64FNER	mtu 16V4000 GS
72	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			L32FB	mtu 12V4000 GS
120	x	x				x	x	x	x	x			L32FB	mtu 16V4000 GS
120	x	x				x	x	x	x	x			L32FB	mtu 20V4000 GS
32			x	x		x	x						L64FNER	mtu 8V4000 GS
32			x	x		x	x						L64FNER	mtu 8V4000 GS
32			x	x		x	x	x	x	x			L64FNER	mtu 16V4000 GS
32			x	x		x	x	x	x	x			L64FNER	mtu 20V4000 GS
80	x	x	x	x		x							L64FNER	mtu 8V4000 GS
80	x	x	x	x		x	x	x	x	x			L64FNER	mtu 12V4000 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
130	x	x				x	x	x	x	x			L64FB	mtu 8V4000 GS
120	x	x				x	x	x	x	x			L32FB	mtu 12V4000 GS
130	x	x				x	x	x	x	x			L64FB	mtu 12V4000 GS
120	x	x				x	x	x	x	x			L32FB	mtu 16V4000 GS
130	x	x				x	x	x	x	x			L64FB	mtu 16V4000 GS
120	x	x				x	x	x	x	x			L32FB	mtu 20V4000 GS
130	x	x				x	x	x	x	x			L64FB	mtu 20V4000 GS
32			x	x		x	x						L64FNER	mtu 8V4000 GS
32			x	x		x	x						L64FNER	mtu 12V4000 GS
32			x	x		x	x	x	x	x			L64FNER	mtu 16V4000 GS
32			x	x		x	x	x	x	x			L64FNER	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

Continuous power + CHP (3A)

Continuous/prime/grid stability power – diesel generator sets

## PRIME POWER (3B) – 50 HZ/1500 RPM.

	Power output <sup>1)</sup>		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)
<b>mtu</b> 0080/0113 DS	50	40	x							x	
	60	48	x							x	
	75	60	x							x	
	84	67	x			x					
<b>mtu</b> 1600 DS*	590	472	x			x	x	x			
	650	520	x			x	x	x			
	750	600	x			x		x	x		
	800	640	x			x		x	x		
	900	720	x			x		x	x		

\* available soon, for detailed information please check website

Certifications				Perform. class <sup>2)</sup>		Uptime Institute		Housing		Engine type	Cooling variant <sup>3)</sup>	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	<b>mtu</b> 4R0080 DS55
x	x			x		x				NEF45 SM 1A	A2A	<b>mtu</b> 4R0113 DS63
x	x			x		x				NEF45 SM 2A	A2A	<b>mtu</b> 4R0113 DS80
x	x			x		x				NEF45 SM 5	A2A	<b>mtu</b> 4R0113 DS94
x	x	x		x	x	x		x		12V 1600 G10F	A2A	<b>mtu</b> 12V1600 DS650
x	x	x		x	x	x		x		12V 1600 G20F	A2A	<b>mtu</b> 12V1600 DS715
x	x	x		x	x	x	x <sup>16)</sup>	x		12V 1600 G11F	A2A	<b>mtu</b> 12V1600 DS825
x	x	x		x	x	x	x <sup>16)</sup>	x		12V 1600 G21F	A2A	<b>mtu</b> 12V1600 DS880
x	x	x		x	x	x	x <sup>16)</sup>	x		12V 1600 G31F	A2A	<b>mtu</b> 12V1600 DS1000

Continuous/prime/grid stability power – diesel generator sets

# PRIME POWER (3B) – 50 HZ/1500 RPM.

	Power output <sup>1)</sup>		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)
<b>mtu 2000 DS</b>	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		
	1250	1000	x			x	x	x	x		
<b>mtu 4000 DS</b>	1600	1280	x		x	x	x	x			
	1700	1360	x		x	x	x	x			
	1880	1504	x		x	x	x	x			
	2100	1680	x		x	x		x	x		
	2160	1728	x		x	x	x	x			
	2360	1888	x		x	x	x	x			
	2600	2080	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	x <sup>11)</sup>	x	x		x	x		
3630	2904	x	x <sup>11)</sup>	x	x		x	x			

Certifications				Perform. class <sup>2)</sup>		Uptime Institute		Housing		Engine type	Cooling variant <sup>3)</sup>	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 <sup>16)</sup>			12V 2000 G26F	A2A	<b>mtu</b> 12V2000 DS1000
x	x	x	x	x	x	x	x <sup>16)</sup>			16V 2000 G16F	A2A	<b>mtu</b> 16V2000 DS1000
x	x	x	x	x	x	x	x <sup>16)</sup>			16V 2000 G26F	A2A	<b>mtu</b> 16V2000 DS1100
x	x	x	x	x	x	x	x <sup>16)</sup>			16V 2000 G36F	A2A	<b>mtu</b> 16V2000 DS1250
x	x	x	x	x	x	x	x <sup>16)</sup>			18V 2000 G26F	A2A	<b>mtu</b> 18V2000 DS1400
x	x	x	x	x	x	x	x <sup>16)</sup>			16V 2000 G16F	W2A	<b>mtu</b> 16V2000 DS1000
x	x	x	x	x	x	x	x <sup>16)</sup>			16V 2000 G26F	W2A	<b>mtu</b> 16V2000 DS1100
x	x	x	x	x	x	x	x <sup>16)</sup>			16V 2000 G36F	W2A	<b>mtu</b> 16V2000 DS1250
x	x	x	x	x	x	x	x <sup>16)</sup>			18V 2000 G26F	W2A	<b>mtu</b> 18V2000 DS1400
x	x	x	x	x	x	x	x <sup>16)</sup>	C/F		12V 4000 G14F	W2A	<b>mtu</b> 12V4000 DS1650
x	x	x	x	x	x	x	x <sup>16)</sup>	C/F		12V 4000 G14F	W2A	<b>mtu</b> 12V4000 DS1750
x	x	x	x	x	x	x	x <sup>16)</sup>	C/F		12V 4000 G24F	W2A	<b>mtu</b> 12V4000 DS2000
x	x	x	x	x	x	x	x <sup>16)</sup>	C/F		12V 4000 G34F	W2A	<b>mtu</b> 12V4000 DS2250 <sup>11)</sup>
x	x	x	x	x	x	x	x <sup>16)</sup>	C/F		16V 4000 G14F	W2A	<b>mtu</b> 16V4000 DS2250
x	x	x	x	x	x	x	x <sup>16)</sup>	C/F		16V 4000 G24F	W2A	<b>mtu</b> 16V4000 DS2500
x	x	x	x	x	x	x	x <sup>16)</sup>	C/F		16V 4000 G34F	W2A	<b>mtu</b> 16V4000 DS2750 <sup>11)</sup>
x	x	x	x	x	x	x	x <sup>16)</sup>	C/F		20V 4000 G14F	W2A	<b>mtu</b> 20V4000 DS2750
x	x	x	x	x	x	x	x <sup>16)</sup>	C/F		20V 4000 G24F	W2A	<b>mtu</b> 20V4000 DS3100
x	x	x	x	x	x	x	x <sup>16)</sup>	C/F		20V 4000 G34F	W2A	<b>mtu</b> 20V4000 DS3300
x	x	x	x <sup>11)</sup>	x	x	x	x <sup>16)</sup>	C/F		20V 4000 G44F	W2A	<b>mtu</b> 20V4000 DS3600
x	x	x	x <sup>11)</sup>	x	x	x	x <sup>16)</sup>	C/F		20V 4000 G44LF	W2A	<b>mtu</b> 20V4000 DS4000 <sup>11)</sup>

Prime power (3B)

Continuous/prime/grid stability power – diesel generator sets

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

mtu 2000 DS  
mtu 1600 DS\* / mtu 0096 DS

Power output <sup>1)</sup>		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)
30	24	x	x	x	x	x					x					
40	32	x	x	x	x	x					x					
50	40	x	x	x	x	x					x					
590	472		x	x	x						x	x	x			
650	520		x	x	x						x	x	x			
1250	1000		x	x	x	x					x					

\* available soon, for detailed information please check website

Certifications				Perform. class <sup>2)</sup>	Uptime Institute	Housing		Engine type	Cooling variant <sup>3)</sup>	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	x	x	x		12V 1600 G10F	A2A	mtu 12V1600 DS650
x	x	x	x	x	x	x		12V 1600 G20F	A2A	mtu 12V1600 DS715
x				x	x	x		18V 2000 G26F	A2A	mtu 18V2000 DS1400

Prime power (3B)

Continuous/prime/grid stability power – diesel generator sets

PRIME POWER (3B) –  
60 HZ/1800 RPM.

mtu 0096/0113 DS

Power output <sup>1)</sup>		Available voltages											Emissions					
kWe	kVA	240 V (1 Phase) Dedicated	240 V (1 Phase) Re-connectable	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 Tier 4	US EPA stationary EMERG Tier 2 (40 CF 60)	US EPA Nonroad Tier 2 compliant	Fuel consumption optimized
27	33	x	x	x	x	x		x	x					x				
40	50		x	x	x	x		x	x					x				
45	56	x	x	x	x	x		x	x					x				
55	68	x	x	x	x	x		x	x					x				
80	100	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				
180	225	C/F	C/F	x	x			x	x					x				
210	263		x	x	x			x	x						x			
210	263		x	x	x			x	x					x				
230	288			x	x			x	x					x				
230	288			x	x			x	x						x			
250	313			x	x			x	x					x				
250	313			x	x			x	x						x			
265	331			x	x			x	x						x			

Certifications				Uptime Institute		Housing		Engine type	Cooling variant <sup>3)</sup>	Genset type
ISO 8528	UL2200	NFPA 110	IBC	Tier I & Tier II	Tier III & Tier IV	Enclosure	Container			
x	x	x	x	x		x		3029 TFG89	TC only	<b>mtu</b> 3R0096 DS30
x	x	x	x	x		x		4045 TF280	TC only	<b>mtu</b> 4R0113 DS40
x	x	x	x	x		x		4045 TF280	TC only	<b>mtu</b> 4R0113 DS50
x	x	x	x	x		x		4045 HF280	A2A	<b>mtu</b> 4R0113 DS60
x	x	x		x		x		4045 HF285	A2A	<b>mtu</b> 4R0113 DS80
x	x	x		x		x		4045 HF285	A2A	<b>mtu</b> 4R0113 DS100
x	x	x		x		x		4045 HF285	A2A	<b>mtu</b> 4R0113 DS125
x	x	x		x		x		6068 HF285	A2A	<b>mtu</b> 6R0113 DS150
x	x	x	x	x		x		6068 HFG85	A2A	<b>mtu</b> 6R0113 DS180
x	x	x	x	x		x		6090 HFG06	A2A	<b>mtu</b> 6R0150 DS230
x	x	x	x	x		x		6090 HF484	A2A	<b>mtu</b> 6R0150 DS230
x	x	x	x	x		x		6090 HF484	A2A	<b>mtu</b> 6R0150 DS250
x	x	x	x	x		x		6090 HFG06	A2A	<b>mtu</b> 6R0150 DS250
x	x	x	x	x		x		6090 HF484	A2A	<b>mtu</b> 6R0150 DS275
x	x	x	x	x		x		6090HFG06	A2A	<b>mtu</b> 6R0150 DS275
x	x	x	x	x		x		6090HFG06	A2A	<b>mtu</b> 6R0150 DS300





Continuous/prime/grid stability power – gas generator sets

## PRIME POWER (3B) – 60 HZ/1800 RPM.

mtu 0135 - 0185 GS

Power output <sup>1)</sup>		Available voltages										Emissions	
kWe	kVA	Dedicated (1 Phase)		Re-connectable (1 Phase)		(3 Phase)		(3 Phase)		(3 Phase)		EPA certified	
		240 V	240 V	208 V	240 V	380 V	480 V	600 V	4160 V	12470 V	13200 V		13800 V
175	218	x	x	x	x		x	x					x
235	293		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	Natural gas	Propane gas	Enclosure	Container		
x	x	x		x		x		11.1L CAC	<b>mtu</b> 6R0185 GS200
x	x	x		x		x		14.6L CAC	<b>mtu</b> 8V0183 GS260
x	x	x		x		x		21.9L CAC	<b>mtu</b> 12V0183 GS400

Continuous/prime/grid stability power – diesel generator sets

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

Power output <sup>1)</sup>		Available voltages								Emissions					
		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)
<b>mtu 2000 DS</b>	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			
<b>mtu 4000 DS</b>	1600 1280	x	x	x			x	x	x	x	x				
	1700 1360	x	x	x			x	x	x	x	x				
	1880 1504	x	x	x			x	x	x	x	x				
	2160 1728	x	x	x			x	x	x	x	x				
	2360 1888	x	x	x			x	x	x	x	x				
	2640 2112	x	x	x			x	x	x	x	x				
	2910 2328	x	x	x			x	x	x	x	x				
	3110 2488	x	x	x			x	x	x	x	x				

Certifications				Perform. class <sup>2)</sup>		Uptime Institute		Housing		Engine type	Cooling variant <sup>3)</sup>	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			16V 2000 G26F	A2A	<b>mtu</b> 16V2000 DS1100
x	x	x	x	x	x	x	x			18V 2000 G26F	A2A	<b>mtu</b> 18V2000 DS1400
x	x	x	x	x	x	x	x			16V 2000 G26F	W2A	<b>mtu</b> 16V2000 DS1100
x	x	x	x	x	x	x	x			18V 2000 G26F	W2A	<b>mtu</b> 18V2000 DS1400
x	x	x	x	x	x	x				12V 4000 G14F	W2A	<b>mtu</b> 12V4000 DS1650
x	x	x	x	x	x	x				12V 4000 G14F	W2A	<b>mtu</b> 12V4000 DS1750
x	x	x	x	x	x	x				12V 4000 G24F	W2A	<b>mtu</b> 12V4000 DS2000
x	x	x	x	x	x	x				16V 4000 G14F	W2A	<b>mtu</b> 16V4000 DS2250
x	x	x	x	x	x	x				16V 4000 G24F	W2A	<b>mtu</b> 16V4000 DS2500
x	x	x	x	x	x	x				20V 4000 G14F	W2A	<b>mtu</b> 20V4000 DS2750
x	x	x	x	x	x	x				20V 4000 G24F	W2A	<b>mtu</b> 20V4000 DS3100
x	x	x	x	x	x	x				20V 4000 G34F	W2A	<b>mtu</b> 20V4000 DS3300

## Diesel generator sets

ENCLOSURES –  
50 HZ/1500 RPM.

	Dimensions			Noise level <sup>4)</sup> Standard		Fuel tank (option)	Genset type
	Length (mm)	Width (mm)	Height (mm)	Level 1 (dBA @ 7m)	Level 2 (dBA @ 7m)	Capacity (l)	
mtu 1600 DS*	5400	2180	2175	77	C/F	800	<b>mtu</b> 12V1600 DS650
	5400	2180	2175	77	C/F	800	<b>mtu</b> 12V1600 DS715
	5800	2200	2530	77	C/F	950	<b>mtu</b> 12V1600 DS825
	5800	2200	2530	77	C/F	950	<b>mtu</b> 12V1600 DS880
	5800	2200	2530	77	C/F	950	<b>mtu</b> 12V1600 DS1000

\* 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	IBC
<b>mtu 0060/0113 DS</b>	79,2	72,4	69,6	79,2	72,4	69,6	x	x	x
	84,3	77,0	71,0	84,3	77,0	71,0	x	x	x
	84,6	76,7	71,5	84,6	76,7	71,5	x	x	x
	83,9	77,2	73,4	83,9	77,2	73,4	x	x	x
	78,9	75,2	70,9	78,9	75,2	70,9	x	x	x
	79,0	74,9	70,9	78,9	75,2	70,9	x	x	x
	82,5	81,8	71,9	82,8	81,7	72,0	x	x	x
	84,3	82,9	73,1	84,5	83,0	73,4	x	x	x
	85,1	83,0	73,9	85,1	83,0	73,9	x	x	x
	<b>mtu 0120 DS</b>	82,0	81,7	73,6	82,2	81,5	73,7	x	x
82,1		81,8	74,1	82,2	81,3	74,4	x	x	x
82,7		81,8	74,4	82,2	81,8	74,5	x	x	x
91,1		88,7	72,5	91,2	88,4	72,8	x	x	x
91,1		88,7	72,7	91,2	88,7	73,0	x	x	x
91,1		88,7	73,0	91,2	88,7	73,1	x	x	x

Genset type
<b>mtu 4R0060 DS30</b>
<b>mtu 4R0113 DS40</b>
<b>mtu 4R0113 DS50</b>
<b>mtu 4R0113 DS60</b>
<b>mtu 4R0113 DS80</b>
<b>mtu 4R0113 DS100</b>
<b>mtu 4R0113 DS125</b>
<b>mtu 6R0113 DS150</b>
<b>mtu 6R0113 DS180</b>
<b>mtu 4R0120 DS80</b>
<b>mtu 4R0120 DS100</b>
<b>mtu 4R0120 DS125</b>
<b>mtu 6R0120 DS150</b>
<b>mtu 6R0120 DS180</b>
<b>mtu 6R0120 DS200</b>

## 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	IBC
<b>mtu 1600 DS</b>	92,8	88,0	81,0	92,9	88,0	81,2	x	x	x
	92,9	88,0	81,2	92,8	89,0	81,5	x	x	x
<b>mtu 2000 DS</b>	92,0	86,0	74,7	92,0	86,4	74,7	x	x	x
	N/A	N/A	N/A	93,0	86,0	75,0	x	x	x

Genset type
<b>mtu 12V1600 DS550</b>
<b>mtu 12V1600 DS600</b>
<b>mtu 16V2000 DS1000</b>
<b>mtu 16V2000 DS1250</b>



## Diesel generator sets

POWER MODULES<sup>14)</sup> - 50/60 HZ -  
EUROPE, AFRICA, ASIA AND AUSTRALIA

	Power output <sup>1)</sup>		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)
mtu 4000 DS	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		<sup>1)</sup>	40ft HC	12192	2438	2896
	1440	1800		x			x		<sup>1)</sup>	40ft HC	12192	2438	2896

Frequency		Application			Certifications			Engine type	Cooling variant <sup>3)</sup>	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 <sup>1)</sup> kWe	Available voltages		Emissions NOx<500 mg/Nm <sup>3</sup> NOx<250 mg/Nm <sup>3</sup>	Dimensions				Frequency	
	400 V	480 V		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									
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	<b>mtu</b> 8V4000 GS
x	L32/L33/L64/L64FNER	NG/NNG	<b>mtu</b> 12V4000 GS
x	L32/L33/L64/L64FNER	NG/NNG	<b>mtu</b> 16V4000 GS
x	L32/L33/L64/L64FNER	NG/NNG	<b>mtu</b> 20V4000 GS
x	L32/L33/L64/L64FNER	NG/NNG	<b>mtu</b> 8V4000 GS
x	L32/L33/L64/L64FNER	NG/NNG	<b>mtu</b> 12V4000 GS
x	L32/L33/L64/L64FNER	NG/NNG	<b>mtu</b> 16V4000 GS
x	L32/L33/L64/L64FNER	NG/NNG	<b>mtu</b> 20V4000 GS

mtu EnergyPack

## BATTERY STORAGE.

Nominal capacity	Nominal apparent power	C-Rates	Nominal power factor	Frequency
$kWh_{nom}$	$kVA_{nom}$	C	$\lambda_{nom}$	Hz
312 - 624	200 - 400	0.5 / 1	-1 to 1	50/60
1042 - 2084	1000 - 2000	0.5 / 1	-1 to 1	50/60
2240 - 19500	2200 - 8800	0.25 - 1.00	-1 to 1	50/60

Overall dimensions				Certifications		Battery storage type
Size	Length (mm)	Width (mm)	Height (mm)	UL	CE	
Enclosure	3300	2220	2530	x	x	mtu EnergyPack QS
40ft. HC	12192	2438	2896	no	x	mtu EnergyPack QL
modular	project specific site layout			x	x	mtu EnergyPack QG <sup>15)</sup>

## 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 <sup>2</sup>
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 <sub>2</sub> O	= 0.0981 mbar (9.81 Pa)
1 inch	= 2.540 cm	T (K)	= t (°C) + 273.15
1 sq. inch	= 6.542 cm <sup>2</sup>	t (°C)	= 5/9 x (t (°F) - 32)
1 cu. inch	= 16.387 cm <sup>3</sup>	t (°C)	= 5/4 x t (°R)
1 foot	= 3.048 dm	1 foot	= 12 inches
1 sq. foot	= 9.290 dm <sup>2</sup>	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 <sup>3</sup>
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 <sup>2</sup>		
Pressure:	1 Pa = 1 N/m <sup>2</sup> (1 bar = 10 <sup>5</sup> Pa)		
MEP (bar)	$= \frac{P_{cyl}(kW) \times 1200}{n(l/min) \times V_{cyl}(l)}$		
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

**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:<br/>A2A: air-to-air charge air cooling (TD)<br/>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 ± 8%</p> | <p>(8) Heat output from exhaust with tolerance of ± 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) Per base unit</p> <p>(16) With manufacturer letter</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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