

### DESIGN SPECIFICATIONS

- ✓ High quality, reliable and complete power unit
- ✓ Compact design
- ✓ Easy start and maintenance possibility
- ✓ Every generating set is subjected to a comprehensive test programme which includes full load testing and checking and providing of all control and safety shut down functions testing
- ✓ Full engineered with a wide range of options and accessories: Canopy, soundproof canopy and mobile units



231/400 V-50 Hz	Generating Set Model		AC 250	ACL 250	AC 275	AC 350	AC 400	AC 440
Power Pf. 0,8	Standby	kVA	250	250	275	350	400	440
	Prime	kVA	225	225	250	316	356	400

**Standby** : Continuous running at variable load for duration of an emergency. No overload is permitted on these ratings. In accordance with ISO 3046, BS 5514.  
**Prime** : Continuous running at variable load for unlimited periods with 10% overload available for 1 hour in any 12 hour period. In accordance with ISO 8528, ISO 3046, BS 5514.  
 Contact us for the other running periods.  
 Power ratings based on a 40°C (104 °F) ambient temperature reference.

### STANDARD GENSET SPECIFICATIONS

#### ENGINE

- CUMMINS heavy duty diesel engine
- Four cycle, water cooled, turbo charged
- Electronic Governor Control System
- Direct injection fuel system
- Replaceable wet type cylinder liners
- 4 Valves per cylinder (Except AC 250)
- 24 Vdc starter and charge alternator (AC 250 is 12 Vdc)
- Replaceable fuel filters, oil filters and dry element air filters
- Cooling radiator and fan
- Starter battery (with lead acid) including Rack and Cables
- Flexible fuel connection hoses and manual sump oil drain valve
- Industrial capacity exhaust silencer and steel bellow
- Jacket water heater (at automatic models)
- Operation manuals and circuit diagrams documents

#### ALTERNATOR

- Brushless, single bearing system, 4 poles
- Insulation class H
- Standart degree of protection IP21
- Self-exciting and self-regulating
- Stator windings with 2/3 pitch for improved harmonics
- Impregnation with tropicalised epoxy varnish
- Solid state Automatic Voltage Regulator

#### CHASSIS

- The complete generating set is mounted as whole on a heavy-duty fabricated, steel base frame. Antivibration pads are fixed between the engine/alternator feet and the base frame
- The generating set can be lifted or carefully pushed / pulled by the base frame
- Base frame design in corporates an integral fuel tank
- Dial type fuel guage and drain bung on the fuel tank

#### CANOPY

- All canopy parts are designed with modular principles
- Without welding assembly
- All metal canopy parts are painted by electrostatic polyester powder paint
- Exhaust silencer is protected agains environment influences
- Thermally insulated engine exhaust system
- Emergency stop push button is installed outside of canopy
- Easy lifting and moving
- Easy maintenance and operation

#### QUALITY STANDARDS

- The equipment meets the following standards: ISO 3046, VDE 0530, BS 4999, BS 5000, IEC 34. The generating set is manufactured by a full accredited NQA ISO 9001.



#### CONTROL SYSTEM

Control supervision and protection panel is mounted on the genset base frame. The control panel is equipped as follows:

##### Control Modules Common Features

- Automatic controls generating set, start and shutdown
- Front panel programming of the module settings
- Remote communication via RS 232 port or RS 485 "modbus" output.
- Scrolling digital LCD display
- Event logging of shutdown alarms

##### Common Metering via LCD display

- Generator Volts (F-F / F-N)
- Generator Amperes (L1, L2, L3)
- Generator Frequency (Hz)
- Generator kVA
- Generator kW
- Generator Cos
- Engine oil pressure (PSI & Bar)
- Engine Temperature (°C & °F)
- Engine speed RPM
- Engine hours run
- Plant battery volts

##### Common Alarms

- Under / over generator volts
- Under / over generator frequency
- Over current
- Low oil pressure
- High engine temperature
- Under / over speed
- Low coolant level
- Fail to start
- Fail to stop
- Emergency Stop
- Charge fail
- Low / high battery volts

##### 1 - Auto Mains Failure Control System P 2020

- Control with DSE model 5220 module
- Static battery charger
- Emergency stop push button

##### Additional Features

- Monitoring AC mains supply
- Provides signal to change over switch gear
- Easy push button control
- Stop / Reset - Auto - Manual - Test - Start



DSE 5220

##### Additional Metering

- Mains volts (F-F / F-N)
- Mains Frequency (Hz)

##### Additional Alarms

- Under / over mains volts
- Under / over mains frequency
- Can data fail
- Can ECU fail

##### 2 - Auto Start Control System P 2010

- Control with DSE model 5010 module
- Emergency stop push button

##### Additional Features

- Provides signal to load transfer
- Easy push button control
- Stop / Reset - Auto - Manual - Test - Start



DSE 5210

## TECHNICAL DATA

DIESEL GENERATING SETS 231/400 V - 50 Hz																		
GROUP	MODEL			AC 250	ACL 250	AC 275	AC 350	AC 400	AC 440									
	Power Pf. 0,8	Standby	kVA	250	250	275	350	400	440									
			kW	200	200	220	280	320	352									
Prime	Prime	kVA	225	225	250	316	356	400										
		kW	180	180	200	253	284	320										
DIESEL ENGINE	Engine make			Cummins	Cummins	Cummins	Cummins	Cummins	Cummins									
	Model			6 CTA 8,3 G 2	LTA 10 G2	LTA 10 G3	NT 855 G6	NTA 855 G4	NTA 855 G7									
	Gross Engine Power Output (at rated rpm)		kWm	231	231	246	310	351	391									
			hp	310	310	330	415	470	525									
	Air Cooling			Turbo After cooled	Turbo After cooled	Turbo After cooled	Turbo charged	Turbo After cooled	Turbo After cooled									
	Cubic Capacity		Litre	8,3	10	10	14	14	14									
	Cylinders and Build			6 - In line	6 - In line	6 - In line	6 - In line	6 - In line	6 - In line									
	Rated Engine Speed		rpm	1500	1500	1500	1500	1500	1500									
	Bore and Stroke		mmxmm	114 x 135	125x136	125x136	140x152	140x152	140x152									
	Compression Ratio			16,7:1	16,0:1	16,0:1	14,0:1	14,0:1	14,0:1									
	Governor Type			Electronic	Electronic	Electronic	Electronic	Electronic	Electronic									
	Fuel Consumption		Load	1/2 3/4 Full	1/2 3/4 Full	1/2 3/4 Full	1/2 3/4 Full	1/2 3/4 Full	1/2 3/4 Full									
			L/hr	25 38 51,8	26 37 48	26,9 39 51	36 52 69	39 57 76	45 65 88									
	Fuel Tank Capacity		Litre	370	420	420	420	420	420									
	Total Oil Capacity		Litre	23,8	36	36	38	38	36									
	Coolant Capacity (radiator and Engine)		Litre	40	50	50	70	70	70									
	Radiator Cooling Air		m <sup>3</sup> /min	186	336	336	456	498	498									
	Air Intake - Engine		m <sup>3</sup> /min	15,3	13,6	14,2	21,6	24,5	31,5									
	Exhaust Gas Flow		m <sup>3</sup> /min	41	36,5	38,8	64	67,6	84									
	Exhaust Gas Temperature		°C	565	502	510	574	524	553									
Heat Radiated to Ambient		kW	24	29	31	57	65	75										
Engine derating - altitude			4% per 300m above 1000m	4% per 300m above 1525m	4% per 300m above 1525m	4% per 300m above 1525m	4% per 300m above 1525m	4% per 300m above 600m										
Engine derating - temperature			6% per 10°C above 40°C	2% per 11°C above 40°C	2% per 11°C above 40°C	2% per 11°C above 40°C	2% per 11°C above 40°C	15% per 10°C above 40°C										
Alternator Voltage Regulation			± 1 %	± 1 %	± 1 %	± 1 %	± 1 %	± 1 %										

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### Open Type



















Dimensions (length x width x height)	m	2,4x1,13x1,73	2,9x1,15x1,73	2,9x1,15x1,73	3,23x1,1x2,0	3,23x1,1x2,0	3,23x1,1x2,15
Dry weight	kg	1950	2020	2180	2620	2830	3850

### Sound Attenuated Type

Canopy Model		ASM 7			AS 400		
Dimensions (length x width x height)	m	4,0x1,21x2,05			4,4x1,43x2,27		
Dry Weight	kg	2900	2970	3030	3740	4100	4120
Sound Level (at full load)	7m / dB(A)	74	74	75	75	75	75

Manufacturer reserves the right to make changes in model, technical specifications, color, equipment and accessories without prior notice.

## OPTIONAL EQUIPMENTS

-  Fuel-water separator filter
-  Automatic fuel filling system
-  Engine oil heater
-  Manual sump oil drain pump
-  Residential silencer
-  Enclosure, sound proof canopy
-  Trailer
-  Low fuel level alarm
-  Charge ammeter
-  Anti condensation heater for alternator
-  Main fuel tank
-  Remote radiator (Except AC250)
-  3 pole alternator case circuit breaker (only for automatic models)
-  4 pole contactor
-  Tool Kit
-  Over sized alternator
-  Automatic transfer switch by contactor or motorized circuit breaker
-  Automatic Synchronising and power control system



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