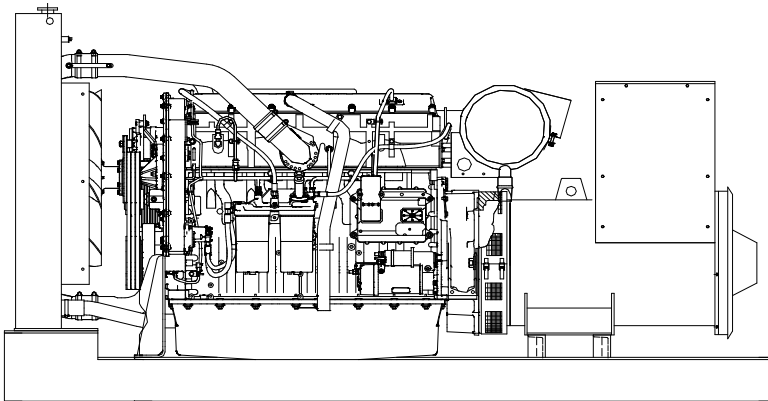


CUKUROVA GENERATOR SYSTEMS

1500 Rpm, 50Hz, 400V

Perkins 2806C-E18TAG2 diesel engine

Marathon Magnamax 573 RSL 4032 alternator



Standard Generator Features

- ◊ AMF, Automatic mains failure unit
- ◊ Heavy duty type, 6 cylinder, water cooled engine
- ◊ 50°C tropical type radiator
- ◊ Starter motor
- ◊ Lead acid battery
- ◊ Charging alternator
- ◊ Battery charge redressor
- ◊ Heavy duty, brushless type alternator
- ◊ Base frame with anti-vibration units
- ◊ Industrial type silencers
- ◊ Flexible exhaust compensator
- ◊ Block water heater unit
- ◊ Control panel with digital-automatic main control module
- ◊ Fan, fan drive, charging alternator drive and all rotating parts covered
- ◊ Radiator matrix covered by metal mesh against the mechanical damages
- ◊ Fabricated and welded steel base frame
- ◊ Anti-vibration mountings
- ◊ Engine and alternator manufacturer test reports
- ◊ Factory load, performance and function tests

Optional Features

- ◊ Automatic load transfer panel
- ◊ Automatic synchronization and power sharing systems
- ◊ Soundproof canopy
- ◊ Container type enclosures
- ◊ Road trailer
- ◊ Job-site trailer
- ◊ Protection circuit breaker
- ◊ Air start
- ◊ Remote type radiator
- ◊ Base fuel tank
- ◊ External type fuel tank
- ◊ Automatic fuel transfer system
- ◊ Residential silencer



Model	Standby		Prime	
	kVA	kW	kVA	kW
CJ700PM	704	563	637	510

APPLICATION DATA

Perkins 2806C-E18TAG2 Engine

Standard Features

Economic power

- ◊Mechanically operated unit fuel injectors with electronic control combined with carefully matched turbocharging give excellent fuel atomisation and combustion with optimum economy
- ◊Low emissions result from electronic control of fuel injected

Reliable power

- ◊Developed and tested using latest engineering techniques and finite element analysis for high reliability, low oil usage and low wear rates
- ◊High compression ratios also ensure clean rapid starting in all conditions
- ◊Support comes from a worldwide network of 4000 distributors and dealers

Compact and efficient power

- ◊Exceptional power to weight ratio and compact size give optimum power density with easier installation and cost effective transportation
- ◊Designed to provide excellent service access for ease of maintenance

Clean Power

- ◊The 2806-E18TAG2 is capable of meeting the requirements of TA luft (1986)

Standards

- ◊ UK MOD, BS5750, ISO9001, BS5514/1-1982, ISO 3046/1, ISO 8528/1

Technical Specifications

Manufacturer	PERKINS
Model	2806C-E18TAG2
Type	4 cycle, water-cooled, diesel engine
Number of cylinders	6
Cylinder arrangement	Vertical in-line
Displacement, Liters	18.1
Bore X Stroke, mm	145 X 183
Compression Ratio	14.5:1
Combustion System	Direct injection
Aspiration	Turbocharged, air-to-air charge cooled
Rotation	Anti-clockwise viewed on flywheel
Gross engine power, kWb	607
Fan Power, kWm	8
BMEP gross, bar	26,98
Combustion air flow, m ³ / min	43
Exhaust gas temp.(after turbo), °C	563
Exhaust gas flow (after turbo),m ³ / min	123
Mean piston speed, m / s	9

Cooling System

Type	Tropical, heavy duty type
Ambient temperature, °C	50
Engine+Radiator coolant cap., Liters	61
Jacket coolant flow, Liters / sec	6.1
Cooling min airflow, m ³ / min	1170 (at 45°C)
◊Gear-driven circulating pump	
◊Mounted belt-driven pusher fan	
◊Radiator incorporating air-to-air charge cooler, (supplied loose)	
◊System designed for ambients up to 50°C	
◊Low coolant level switch	

Model	Standby kW		Prime kW	
	Gross	Net	Gross	Net
2806C-E18TAG2	607	599	550	542

Lubricating System

Type	Pressurized
Capacity, Liters	55.5
Lub oil pressure (min), bar	2
◊Wet sump with filler and dipstick	
◊Full-flow replaceable 'Ecoplus' filter	
◊Oil cooler integral with filter header	

Fuel System

Type of injection system	MEUI
Fuel injection pump	Combined unit injector
Delivery/hour at 1500rev/min, Liters	413
Governor type	Electronic, governing to ISO 8528-5 class G2 with isochronous capability
◊Mechanically actuated electronically controlled unit fuel injectors with full authority electronic control	
◊Replaceable 'Ecoplus' fuel filter elements with primary filter/water separator	
◊Fuel cooler	

Electrical System

Alternator	24 Volt with integral regulator
Starter motor (DC)	24 Volt
Starter motor power	9 kW
◊ECM mounted on engine with wiring looms and sensors	
◊3 level engine protection system	

Fuel Consumption

liters per hour	%110 Load	141 L
	%100 Load	125 L
	%75 Load	92 L
	%50 Load	63 L
grams per kWh	%110 Load	202 g/kWh
	%100 Load	198 g/kWh
	%75 Load	195 g/kWh
	%50 Load	200 g/kWh

Optional Equipments

- ◊Additional speed sensor
- ◊Temperature and pressure sensors for gauges
- ◊Electric hours counter
- ◊Air filter rain hood
- ◊Twin starters/facility for second starter

Marathon Magnamax 573 RSL 4032 Alternator

Standard Features

Permanent Magnet Generator ensures 300% short circuit current during fault conditions and provides the regulator with input power isolated from load distortions.

Digital Voltage Regulator is encapsulated for reliable performance in all environments. The DVR@2000 includes voltage regulation to .25%, three phase RMS sensing, adjustable volts/hertz underspeed protection, advanced engine unloading algorithms, integrated paralleling capabilities, and over-excitation/over-voltage protection.

Unirotor Construction incorporates single piece rotor laminations, a die cast rotor core and amortisseur windings into an integrated rotor assembly. The field winding is wet layer wound to the rotor assembly with thermo setting epoxy for high mechanical and electrical integrity.

Class H Insulation System utilizes an unsaturated polyester varnish for optimal insulation life and superior moisture protection. A tropical insulation is added for increased environmental protection. A vacuum pressure impregnated insulation system is an available option.

Shielded Heavy-Duty Bearings resist contamination and give a minimum B-10 life of 40,000 hours. Regreasing provisions are available on all generators.

Enhanced Ventilation created by a high efficiency fan and optimized internal air flow patterns, maximizes heat transfer and minimizes hot spot differentials for extended winding life.

Fully Guarded for operator safety and generator protection, no rotating or electrically energized parts are exposed. All openings are covered by louvers or screens.

Optimized Windings provide low reactances and exceptional motor starting capability. The stator windings utilize a 2/3 pitch to minimize harmonic distortion and facilitate parallel operation.

Large Conduit Box provides ample space for easy connections and allows load line access from all sides, top, or bottom.

Exciter and PMG Mounting provides easy access and serviceability. The PMG is mounted external to the generator bearing. The exciter is externally mounted on 570 and 740 frame generators.

Design Specs and Agency Approvals are important at Marathon. All MAGNAMAX units meet **NEMA MG1-22, BS5000, CSA C22.2, IEC 34-1** and **VDE 0530** requirements.

Model	Standby		Prime	
	kVA	kW	kVA	kW
Magnamax 573 RSL 4032	806	645	780	624

Technical Specifications

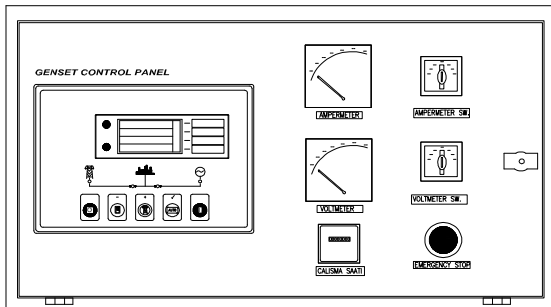
Manufacturer	MARATHON
Model	Magnamax 573 RSL 4032
Type	4-Poles, Rotating Field, Brushless
Standby power at rated voltage, kVA	806
Efficiency, %	94
Power factor	0.8
Phase	3
Frequency, Hz	50
Speed, Rpm	1500
Voltage, V	400
Excitation	Self excited, PMG system
Stator windings	2/3 Pitch factor
Regulation	DVR, Digital Voltage Regulator
Voltage Regulator	DVR 2000
Voltage Regulation, %	± 0.25
Phase Sequence CCW-ODE	ABC
Deviation Factor, %	5.0
Voltage Balance, L-L or L-N, %	0.2
L-L Harmonic Max-Total, %	5.0
L-L Harmonic Max-Single, %	3.0
Overspeed, Rpm	1875
Full load current, amps	992
TIF	Less than 50
THF	< 2%
Insulation class	H
Construction	Single bearing, direct coupled
Coupling	Flexible
Amortisseur Windings	Full
Connection	WYE
Rotor	Dynamic balanced
Protection class	IP22
Shaft Current	< 0.1 ma
Main stator capacitance to ground, mfd	0.03
Cooling air volume, CFM	1135
Heat rejection rate, Btu's/min	2334
Full load torque, Lb-ft	2869

Optional Equipment

- ◊A VAR-PF controller
- ◊SAE adapters
- ◊Anti-condensation space heater
- ◊Two bearing construction
- ◊Droop CT

Control Panel

Standard Equipments



- ◊Deeapse 5220 digital automatic control module
- ◊Hourmeter
- ◊Voltmeter
- ◊Voltmeter commutator
- ◊Ampermeter
- ◊Ampermeter commutator
- ◊Emergency stop button

Deepsea 5220 Control Module

Description

- ◊The model 5220 is an Automatic Mains Failure Control module.
- ◊The modul is used to monitor a mains supply and automatically start a standby generator set.
- ◊The module also provides indication of operational status and fault conditions automatically shutting down the genset and indicating failures by means of an LCD display, and appropriate flashing LED on the front panel.
- ◊Selected timers and alarms can be altered by the user from the front panel.
- ◊Alterations to the system are made using the 810 interface and a PC. This interface also provides real time diagnostic facilities

Specifications

- ◊240mm x 172mm dimensions
- ◊70mm x 40mm dimensions, 4 segment grafical LCD monitor
- ◊Developed 16-bit Microprocessor design
- ◊Easy comprehended display (Hid-Til-Lit SMD LED technology)
- ◊LED mimic diagram
- ◊SMS messaging capability with suitable GSM Modem
- ◊PC software is MS Windows based and allows the operator to control the module from a remote location (P810 Software Kit necessary)
- ◊Easy pushbutton controls
- ◊System parameters can be adjusted manually from the front panel
- ◊kVA,kW ve Cosf measurements
- ◊Communication with MODEM

Pushbutton Controls

STOP / START
 AUTO, TEST, MANUAL
 LCD PAGE

Input Functions display on LCD

Generator Volts	Volts L1-N, L2-N, L3-N
Generator Volts	Volts L1-L2, L2-L3, L3-L1
Generator Amps	Amps L1, L2, L3
Generator Frequency	Hz
Mains Volts	Volts L1-N, L2-N, L3-N
Mains Volts	Volts L1-L2, L2-L3, L3-L1
Mains Frequency	Hz
Engine Speed	RPM
Plant Battery Volts	Volts
Engine Hours Run	Hour
Generator total power	kVA L1, L2, L3,total
Generator total power	kW L1, L2, L3,total
Generator power factor	Cosf L1, L2, L3,total

Optional Input Functions

Engine Oil pressure	kPa
Fuel level	%
Engine Temperature	°C

Alarm Channels

Under/over generator voltage
 Over-current
 Under/over generator frequency
 Under/over speed
 Charge fail
 Emergency stop
 Low oil pressure
 High engine temperature
 Fail to start
 Low/high DC battery voltage
 Reverse power
 Generator phase rotation error
 Generator short-circuit protection
 Loss of speed sensing signal
 Mains out of limits

Environmental Testing Standards

Electromagnetic Compatibility

BS EN 50081-2:1992 and EN 61000-6-4:2000 EMC, Emission Standards for the Industrial Environment

EN 61000-6-2:1999 EMC, Immunity Standards for the Industrial Environment

Vibration

BS EN 60068-2-6 Ten sweeps (up and back down) at 1 octave/minute in each of the three major axes.

5Hz to @ +/-7.5mm constant displacement.

8Hz to 500Hz 2gn constant acceleration.

Temperature

Cold : BS EN 60068-2-1 to -30°C

Hot : BS EN 60068-2-2 to 70°C

Humidity

BS EN 2011 part 2.1 93% RH @ 40° for 48 hours

Shock

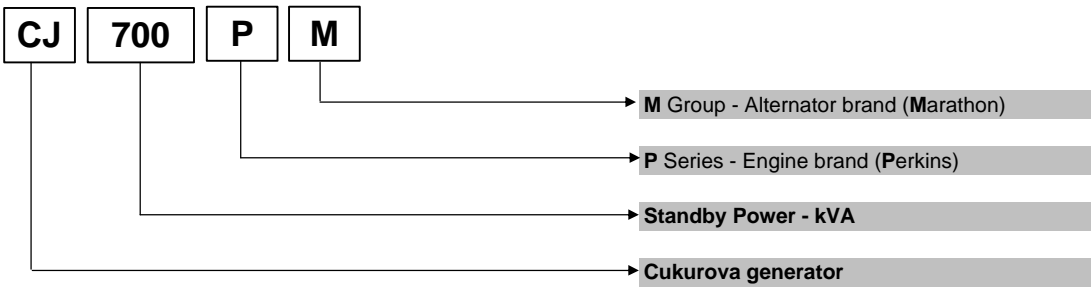
BS EN 6068-2-27 Three half sine shocks in each of the three major axes 15gn amplitude.11mS duration.

Electrical Safety

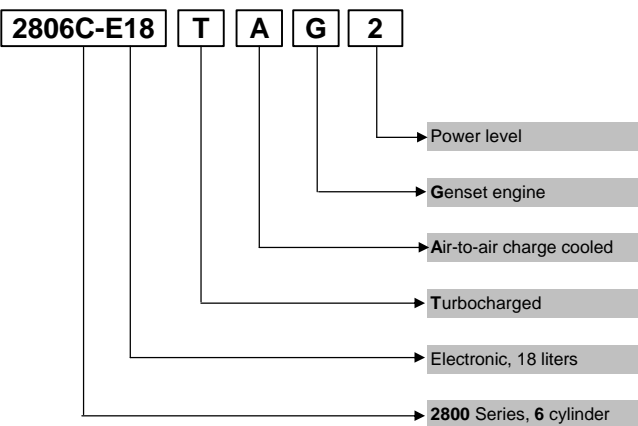
BS EN 60950 Low Voltage Dirctive/Safety of information technology equipments, including electrical business equipment

Model Codes and General Information

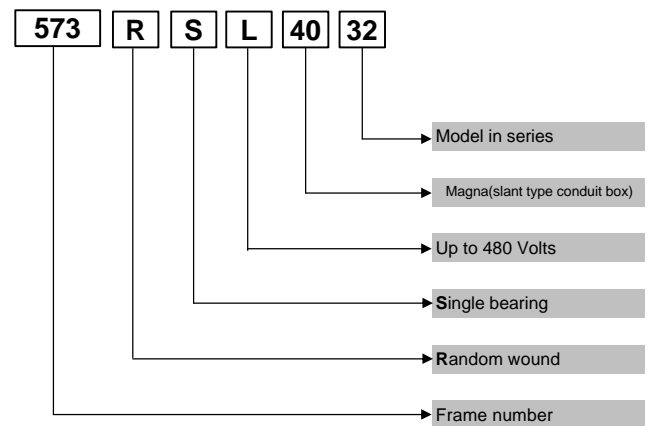
Cukurova Diesel Generator



Perkins 2800 Series Diesel Engine



Marathon Magnamax Alternator



Information

Power Ratings

Standby power rating is for the supply of emergency power at variable load for the duration of the non-availability of the mains power supply.No overload capacity is available at this rating.A standby rated engine should be sized for an average load factor of 80% based on published standby rating for 500 operating hours per year.Standby ratings should never be applied except in true emergency power failure conditions.

Prime power rating is available for unlimited hours per year with a variable load of which the average engine load factor is 80% of the published power rating, incorporation of a 10% overload for 1 hour in every 12 hours of operation which permitted

Continuous power rating is available for continuous full load operation.No overload is permitted.

Acc. To ISO 3046/1, BS 5514, DIN6271

Electric Formulas

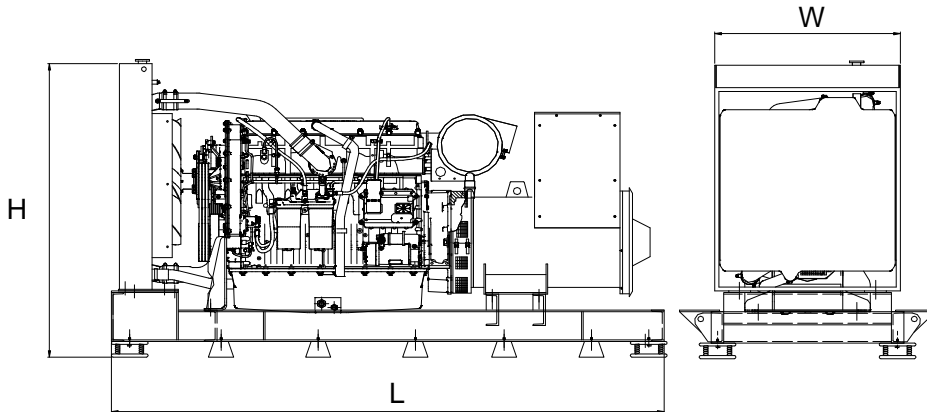
Values	Formula	
kW _e	kW _m X E	
kW _e	$(U \times I \times 1.73 \times pf) / 1000$	kVA x pf
kVA	$(U \times I \times 1.73) / 1000$	kW _e / pf
I (Amp)	$(kW_e \times 1000) / (U \times 1.73 \times pf)$	$(kVA \times 1000) / (U \times 1.73)$
Frequency	$(Rpm \times N^\circ Pole) / (2 \times 60)$	
Rpm	$(2 \times 60 \times Frequency) / N^\circ Pole$	

kW_m: Mechanical Power
kW_e: Electrical Power
pf: Power factor
E: Alternator efficiency

I: Current (A)
U: Voltage (V)
kVA: Power
Rpm: Revolutions per minute

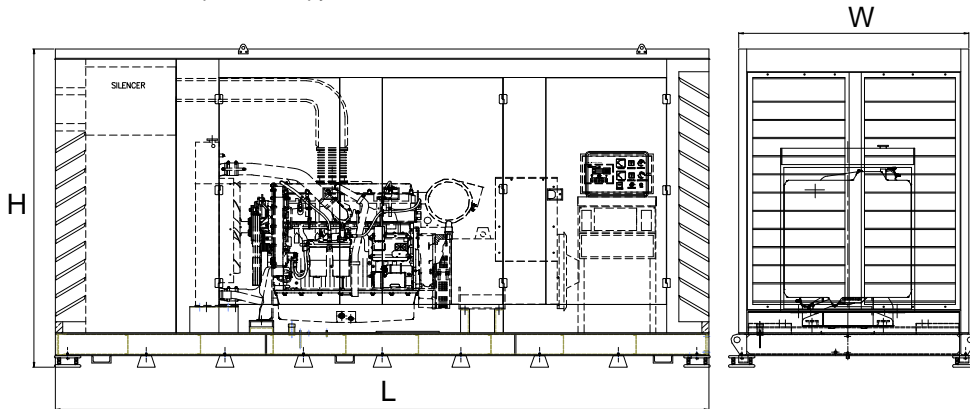
General Dimensions

Standard Generator



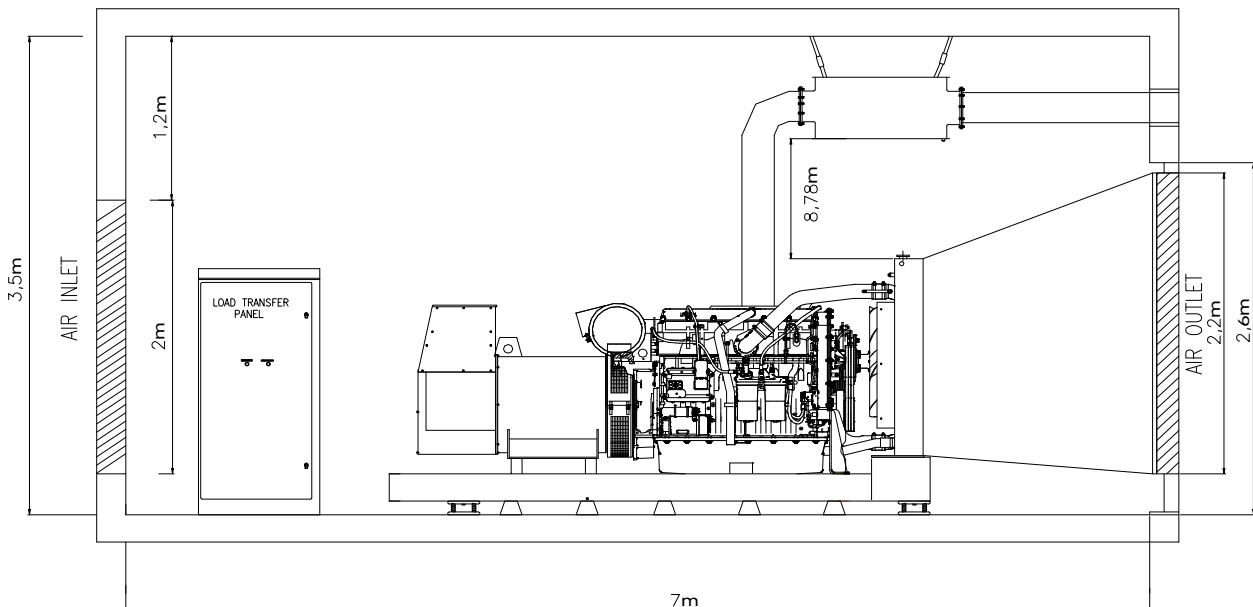
Length, L	3,7 m
Height, H	1,9 m
Width, W	1,11 m
Weight, Total	4500 kg

Generator with Soundproof Canopy



Length, L	5,4 m
Height, H	2,9 m
Width, W	1,9 m
Weight, Total	6670 kg

Generator Room Layout



Above drawings dimensions and weights are only for guidance. For installation design of your specific application, necessary certified drawings, at site consultancy service as well as maintenance and installations manuals will be provided by Cukurova without any charge.

Specifications may change without notice



İSTANBUL	Tel : (0212) 482 16 00 (30 hat)	Faks : (0212) 482 16 60
İSTANBUL	Tel : (0216) 395 34 60 (5 hat)	Faks : (0216) 395 23 75
ADANA	Tel : (0322) 435 11 47 (5 hat)	Faks : (0322) 435 16 59
ANKARA	Tel : (0312) 490 87 77 (6 hat)	Faks : (0312) 490 89 88
İZMİR	Tel : (0232) 478 18 70	Faks : (0232) 476 18 30
ANTALYA	Tel : (0242) 221 49 27	Faks : (0242) 221 49 72
BURSA	Tel : (0224) 441 84 77	Faks : (0224) 441 84 78
DİYARBAKIR	Tel : (0412) 251 21 50 (10 hat)	Faks : (0412) 251 21 88
KAYSERİ	Tel : (0352) 331 74 74	Faks : (0352) 331 74 23
TRABZON	Tel : (0462) 325 70 10 (pixon)	Faks : (0462) 325 77 67