ottomotores

# 403C-15G
# 404C-22G Series

This range has been designed to meet particular market needs.

The most suitable application is on constructions sites, where durability are requiered to supply constat power to applications such as cranes, machinary, running lighting systems.

With low noise emissions, they are also suitable for powering sites not connected to a mains power supply this range is also ideal for open activities, such as shows or sporting events


## Large autonomy

High capacity fuel tank for longer running time without fuel refilling.

## Certification

Production sites according to ISO9001:2000 by Det NorskeVeritas DNV

## Security

Moving and rotating parts protection against accidental contacts.

Hot parts protection against accidental contacts.

Industrial Silencer to reduce engine noise emissions.

## Facility of use

Generating sets are delivered ready to start and they require no special foundations, so that they can be installed anywhere.

A large number of options available for any kind of special application.

## Reliability

Engine and alternator ensure a constant, high quality power supply for the most demanding applications.

Perkins engines extremely high load acceptable capacity ensures instant electricity supply.

• **TECHNICAL DATA**

**403C-15G**

- kWe : **14 - Stdby 1800rpm / 11 Prime 1500rpm**
- kVA at 0.8 fp: **17.5- Stdby / 13 Prime 1500rpm**
- Engine: Perkins **403C-15G**
- Fuel Consump at 100% load lts/hr: **4.8- Stdby / 3.7-Prime**
- Times: **4**
- Cylinders: **3**
- Aspiration: **Natural**
- Engine Speed: **1800 rpm / 1500 rpm**
- Diesel capacity in tank: **70 lts.**
- Alternator: **Marathon Electric or Stamford**
- Voltage: **220/127V. 3 Phase**

**Reconnectable: 3 Phase 440/254 V.**
**Single phase 220-110 V.**
**Single phase 240-120V.**

- Frequency: **60Hz. /50hz**
- Leads in Alternator: **12**
- Connection in Alternator: **[Y] 3 phase or Zig Zag for single phase**
- Total weight (Dry): **575.00 kgs.**

• **TECHNICAL DATA**

**404C-22G**

- kWe : **20 - Stdby 1800rpm / 16 Prime 1500rpm**
- kVA at 0.8 fp: **25- Stdby / 20 Prime 1500rpm**
- Engine: Perkins **404C-22G**
- Fuel Consump at 100% load lts/hr: **7.3- Stdby / 5.4-Prime**
- Times: **4**
- Cylinders: **3**
- Aspiration: **Natural**
- Engine Speed: **1800 rpm / 1500 rpm**
- Diesel capacity in tank: **70 lts.**
- Alternator: **Marathon Electric or Stamford**
- Voltage: **220/127V. 3 Phase**

**Reconnectable: 3 Phase 440/254 V.**
**Single phase 220-110 V.**
**Single phase 240-120V.**

- Frequency: **60Hz. /50hz**
- Leads in Alternator: **12**
- Connection in Alternator: **[Y] 3 phase or Zig Zag for single phase**
- Total weight (Dry): **579.00 kgs.**

• **MANUAL CONTROL PANEL**

The generating set is suppied with a manual control panel, mounted on the genset. The panel on the base frame, in open set or in canopy, includes a manual control unit (push button), main circuit breaker (under request), and all auxiliary controls and alarms.

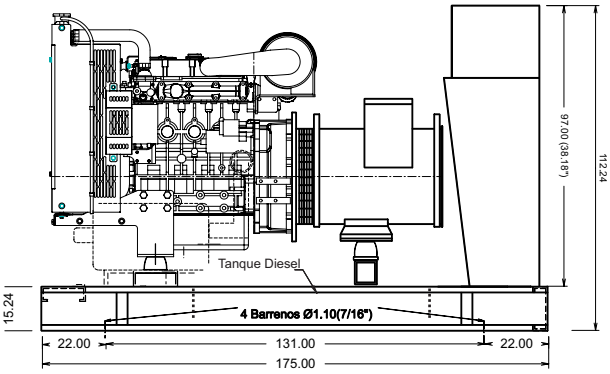
• **AUTOMATIC CONTROL PANEL**

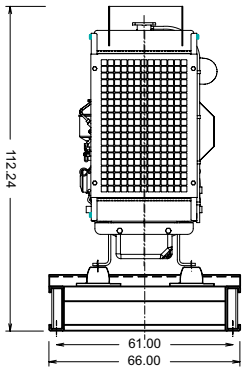
The generating set is suppied with an automatic control panel, mounted on the genset. The panel on the base frame, in open set or in canopy, includes an automatic control unit that starts the genset in case of mains failure (it can be started manually too), main circuit breaker (under request),and all auxiliary controls and alarms.All controls are wired for an easy external Load Transfer Switch.

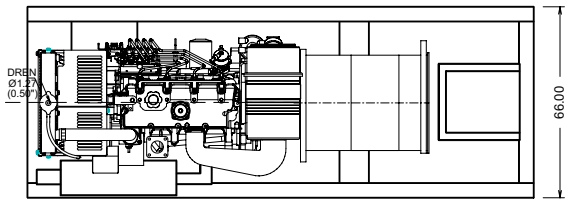
• **OPTIONAL EQUIPMENT**

- Acustic Enclouse 78dB(A)@7 mts
- Waterproff canopy(NO acustic)
- Aditional Diesel Tank.

• **DIMENSIONS**

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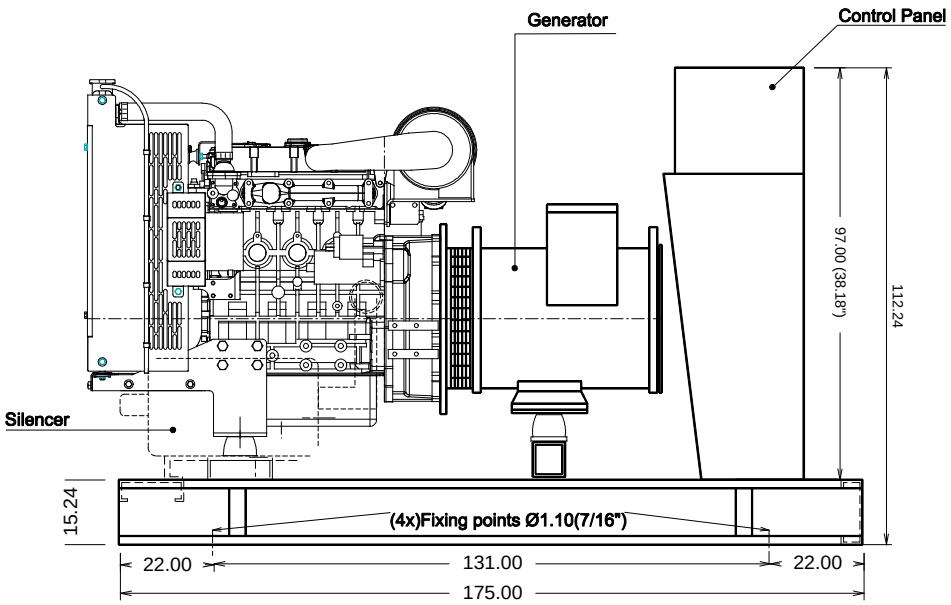
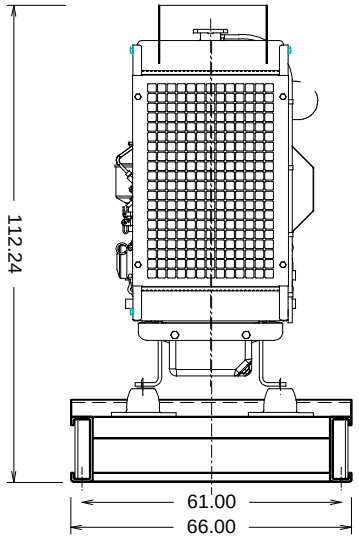
Energía que Mueve al Mundo.

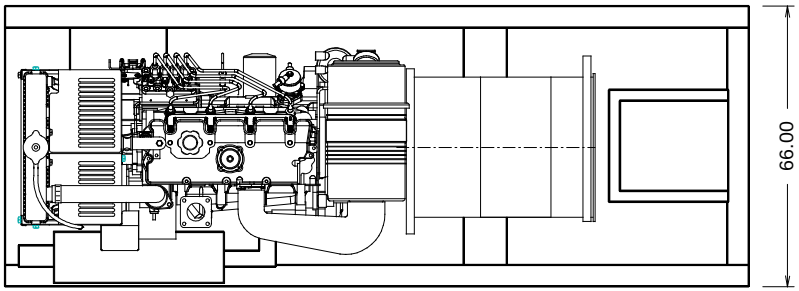
| MODELS |
|---|
| PNE 15 |
| PNY 15 |




## SIDE VIEW




## FRONT VIEW




## TOP VIEW

| DESCRIPTION | |
|---|---|
| RADIATOR: | OT5/60 |
| ENGINE: | 403C-15G |
| GENERATOR : | PSL1706 |
| BASE FRAME: | BMT-02 |
| TOTAL WEIGHT: DRY-573.00 Kgs. | |
| AVMS SPRING | 4 PZS |

-THE GENSET DIMENSIONS ARE THE SAME BY FAMILY MODEL, THERE COULD BE ONLY DIFFERENCES ON THE ALTERNATOR LENGHT SEE SPECIFIC GENERAL ARRAGEMENT DRAWING OF CERTEIN MODEL

-TOTAL WEIGHT COULD VARY CHECK RATING CHART FOR EACH MODEL

Customer: S/O:

| Rev. | Description | Date | Certificated |
|---|---|---|---|
| | | | |

Reviews

Title: ***GENERAL ARRANGEMENT PERKINS ENGINE 403C-15G MARATHON ALTERNATOR***

| Draw: E.A.C. Date: JUL 21th 2008 | Revised: R.G.C. Date: JUL 21th 2008 | Certificated: ING. V.F.F. Date: JUL 21th 2008 | Code: **PNE/Y-01** Dept.: Engineering |
|---|---|---|---|

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Marks: cms Scale: s/e

Draw: **N/A** Of: **N/A**

The Perkins 400 Series provides compact power from a robust family of 2, 3 and 4 cylinder diesel engines, designed to meet today's uncompromising demands within the power generation industry.

The 403C-15G is a compact 3-cylinder naturally aspirated diesel engine. It's premium features provide economic and durable operation for standby duty, low gaseous emissions, overall performance and reliability.

# 400 Series

## 403C-15G

### Diesel Engine – ElectropaK

13.3 kWm 1500 rev/min
15.9 kWm 1800 rev/min
22.9 kWm 3000 rev/min

### Compact, efficient power

A class-leading engine package coupled with an innovative, newly designed cooling pack provides optimum power density, making installation and transportation easier and cheaper. This package has been specially designed to hit the key power nodes required by the power generation industry.

### Quiet, clean power

The 403C-15G has an exceptionally low noise signature making it the ideal choice for power generation in any environment. A high compression ratio also ensures clean rapid starting in all conditions. Design features ensure maximum cleanliness in terms of emissions throughout the engines operating life.

### Reliable power

Developed and tested using the latest engineering techniques this engine reliably provides power when you need it.
Operating and maintenance costs are reduced through excellent fuel and oil economy whilst whole-life costs are enhanced by a 500 hour service interval and a 2 year warranty.
Excellent service access further improves maintenance and support is provided by a worldwide network of 4000 distributors and dealers.

| Engine Speed (rev/min) | Type of Operation | Typical Generator Output (Net) | | Engine Power | | | |
|---|---|---|---|---|---|---|---|
| | | | | Gross | | Net | |
| | | kVA | kWe | kWm | bhp | kWm | bhp |
| 1500 | Prime Power | 13.3 | 10.6 | 12.2 | 16.4 | 12.0 | 16.1 |
| | Standby (maximum) | 14.5 | 11.6 | 13.5 | 18.1 | 13.3 | 17.8 |
| 1800 | Prime Power | 16.1 | 12.9 | 14.7 | 19.7 | 14.4 | 19.3 |
| | Standby (maximum) | 17.5 | 14.0 | 16.2 | 21.7 | 15.9 | 21.2 |
| 3000 | Prime Power | 22.4 | 17.9 | 21.7 | 29.1 | 20.7 | 27.8 |
| | Standby (maximum) | 24.1 | 19.2 | 23.9 | 32.1 | 22.9 | 31.0 |

The above ratings represent the engine performance capabilities to conditions specified in ISO 8528/1, ISO 3046/1:1986, BS 5514/1.

Derating may be required for conditions outside these; consult Perkins Engines Company Limited.
Generator powers are typical and are based on typical alternator efficiencies and a power factor (cos θ) of 0.8.

**Fuel specification:** BS 2869: Part 2 1998 Class A2 or ASTM D975 D2.
**Lubricating oil:** To API CH4/ACEA E5.

Rating Definitions
**Prime Power:** Power available at variable load in lieu of a main power network. Overload of 10% is permitted for 1 hour in every 12 hours operation.
**Standby (maximum):** Power available at variable load in the event of a main power network failure. No overload is permitted.



Publication No. 1663/10/05 Produced in England 

# 400 Series

## 403C-15G

### Standard ElectropaK Specification

#### Air inlet
- Mounted air filter

#### Fuel system
- Mechanically governed cassette type fuel injection pump
- Split element fuel filter

#### Lubrication system
- Wet steel sump with filler and dipstick
- Spin-on full-flow lub oil filter

#### Cooling system
- Thermostatically-controlled system with belt driven circulating pump and pusher fan
- Mounted radiator piping and guards

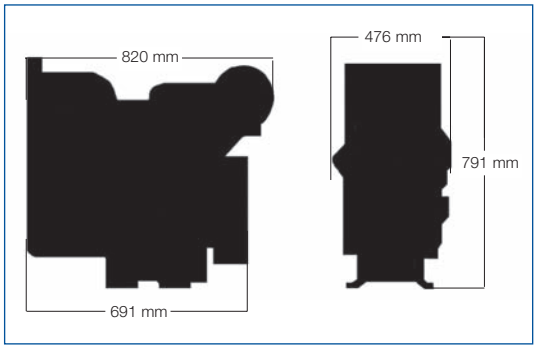
#### Electrical equipment
- 12 volt starter motor and 12 volt 55 amp alternator with DC output
- Oil pressure and coolant temperature switches
- 12 volt shut off solenoid energised to run
- Glow plug cold start aid and heater/starter switch

#### Flywheel and housing
1500/1800 rev/min
- High inertia flywheel to SAE J620 Size 7½ Heavy
- Flywheel housing SAE 4 Long

3000/3600 rev/min
- High inertia flywheel to SAE J620 Size 7½ Light
- Flywheel housing SAE 4 Short

#### Mountings
- Front and rear engine mounting bracket

#### Literature
- User's Handbook




### General Data

| | |
|---|---|
| Number of cylinders | 3 |
| Cylinder arrangement | Vertical in-line |
| Cycle | 4 stroke |
| Induction system | Natural aspiration |
| Combustion system | Indirect injection |
| Cooling system | Water-cooled |
| Bore and stroke | 84 x 90 mm |
| Displacement | 1496cc |
| Compression ratio | 22.5:1 |
| Direction of rotation | Anti-clockwise viewed on flywheel |
| Total coolant capacity | 5.98 litres |
| Length | 820 mm |
| Width | 476 mm |
| Height | 791 mm |
| Dry weight (engine) | 197 kg (1500/1800 rev/min) 175 kg (3000/3600 rev/min) |

Final weight and dimensions will depend on completed specification.

### Optional Equipment
- Exhaust silencer
- Workshop manual
- Parts book

| Fuel Consumption | | | | | | |
|---|---|---|---|---|---|---|
| Engine Speed | 1500 rev/min | | 1800 rev/min | | 3000 rev/min | |
| | g/kWh | l/hr | g/kWh | l/hr | g/kWh | l/hr |
| At Standby Power | 258 | 4.1 | 249 | 4.8 | 264 | 7.5 |
| At Prime Power | 254 | 3.7 | 247 | 4.3 | 264 | 6.8 |
| At 75% of Prime Power | 258 | 2.8 | 249 | 3.3 | 284 | 5.5 |
| At 50% of Prime Power | 291 | 2.1 | 275 | 2.4 | 338 | 4.4 |

Perkins®

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75 years 1932-2007

Distributed by

MAGNAPLUS®

**MARATHON ELECTRIC**
**SYNCHRONOUS AC GENERATOR**
**TYPICAL SUBMITTAL DATA**

**Basic Model 283CSL1507** **Date: 03/10/05**

**Kilowatt ratings at** **1800** RPM **60** Hertz **12** Leads

**kW (kVA)** **3** Phase **0.8** Power Factor **Dripproof or Open** Enclosure

| | Class B | Class F | | | | | Class H | | |
|---|---|---|---|---|---|---|---|---|---|
| Voltage* | 80° C ① Continuous | 90° C ① Lloyds | 95° C ① ABS | 105° C † British Standard | 105° C ① Continuous | 130° C ① Standby | 125° C † British Standard | 125° C ① Continuous | 150° C ① Standby |
| 240/480 | 27.0 (33.8) | 28.0 (35.0) | 28.0 (35.0) | 31.0 (38.8) | 31.0 (38.8) | 33.0 (41.3) | 33.0 (41.3) | 33.0 (41.3) | 35.0 (43.8) |
| 230/460 | 26.0 (32.5) | 27.0 (33.8) | 27.0 (33.8) | 30.0 (37.5) | 30.0 (37.5) | 32.0 (40.0) | 32.0 (40.0) | 32.0 (40.0) | 34.0 (42.5) |
| 220/440 | 25.0 (31.3) | 26.0 (32.5) | 26.0 (32.5) | 28.0 (35.0) | 28.0 (35.0) | 31.0 (38.8) | 31.0 (38.8) | 31.0 (38.8) | 33.0 (41.3) |
| 208/416 | 24.0 (30.0) | 25.0 (31.2) | 25.0 (31.2) | 27.0 (33.8) | 27.0 (33.8) | 30.0 (37.5) | 30.0 (37.5) | 30.0 (37.5) | 32.0 (40.0) |
| 190/380 | 22.0 (27.5) | 23.0 (28.8) | 23.0 (28.8) | 25.0 (31.3) | 25.0 (31.3) | 27.0 (33.8) | 27.0 (33.8) | 27.0 (33.8) | 29.0 (36.3) |

① *Rise by resistance method, Mil-Std-705, Method 680.1b.* † *Rating per BS 5000.*

**Submittal Data: 480 Volts, 37.5 kVA, 1800 RPM, 60 Hz, 3 Phase**

| Mil-Std-705B Method | Description | Value |
|---|---|---|
| 301.1b | Insulation Resistance | > 1.5 Meg |
| 302.1a | High Potential Test | |
| | Main Stator | 2000 Volts |
| | Main Rotor | 1500 Volts |
| | Exciter Stator | 1500 Volts |
| | Exciter Rotor | 1500 Volts |
| 401.1a | Stator Resistance, Line to Line | |
| | High Wye Connection | 0.438 Ohms |
| | Rotor Resistance | 1.183 Ohms |
| | Exciter Stator | 18.83 Ohms |
| | Exciter Rotor | 0.127 Ohms |
| 410.1a | No Load Exciter Field Amps | |
| | at 480 Volts Line to Line | 0.49 A DC |
| 420.1a | Short Circuit Ratio | 0.78 |
| 421.1a | Xd Synchronous Reactance | 1.91 pu |
| 422.1a | X2 Negative Sequence | |
| | Reactance | 0.215 pu |
| 423.1a | X0 Zero Sequence Reactance | 0.04 pu |
| 425.1a | X'd Transient Reactance | 0.0689 pu |
| 426.1a | X"d Subtransient Reactance | 0.0645 pu |
| 427.1a | T'd Transient Short Circuit | |
| | Time Constant | 0.025 sec. |
| 428.1a | T"d Subtransient Short Circuit | |
| | Time Constant | 0.008 sec. |
| 430.1a | T'do Transient Open Circuit | |
| | Time Constant | 0.8 sec. |
| 432.1a | Ta Short Circuit Time | |
| | Constant of Armature Winding | 0.0167 sec. |

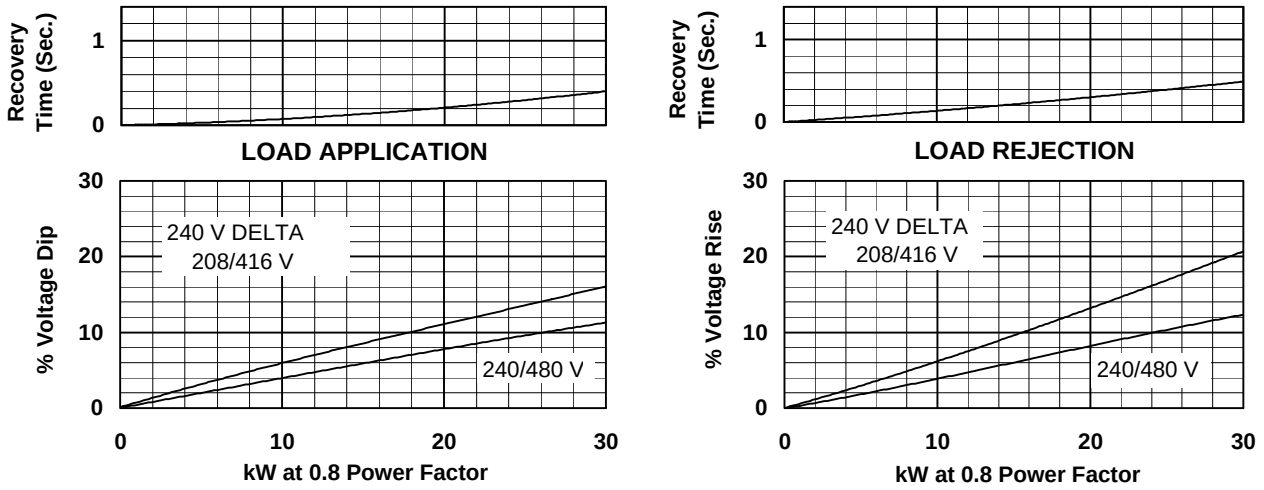
| Mil-Std-705B Method | Description | Value |
|---|---|---|
| 505.3b | Overspeed | 2250 RPM |
| 507.1c | Phase Sequence CCW-ODE | ABC |
| 601.4a | L-L Harmonic Maximum - Total | 3.0% |
| | (Distortion Factor) | |
| 601.4a | L-L Harmonic Maximum - Single | 2.5% |
| 601.1c | Deviation Factor | 6.0% |
| --- | TIF (1960 Weightings) | <50 |
| | **Additional Prototype Mil-Std Methods are Available on Request.** | |
| -- | Generator Frame | 280 |
| -- | Type | Ext. Voltage Regulated, Brushless |
| -- | Insulation | Class H |
| -- | Coupling - Single Bearing | Flexible |
| -- | Amortisseur Windings | Full |
| -- | Cooling Air Volume | 250 CFM |
| -- | Exciter | Rotating |
| -- | Voltage Regulator | SE350 |
| -- | Voltage Regulation | 1% |

* Voltage refers to wye (star) connection, unless otherwise specified.

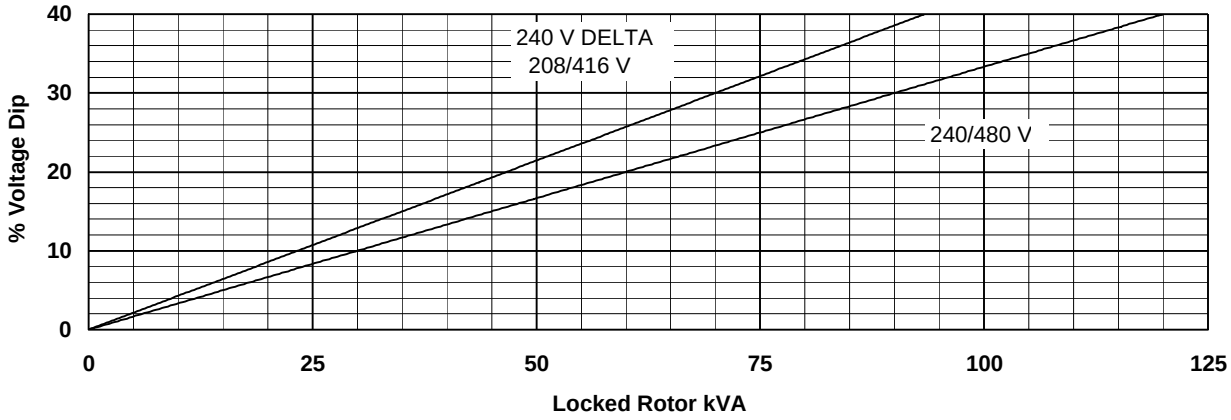
# MARATHON ELECTRIC
# SYNCHRONOUS AC GENERATOR
# TYPICAL DYNAMIC CHARACTERISTICS

**Basic Model 283CSL1507** **Date: 03/10/05**

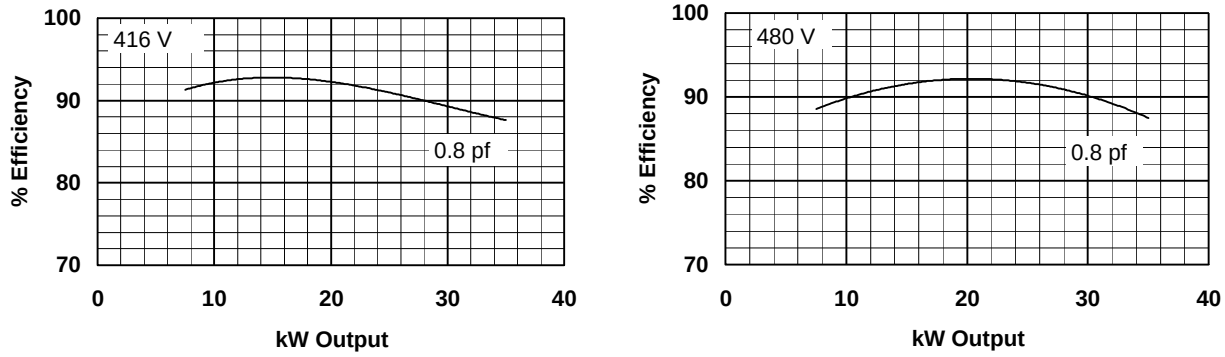
## 60 HERTZ




### TYPICAL MOTOR STARTING CHARACTERISTICS




### TYPICAL GENERATOR EFFICIENCY




Voltage refers to wye (star) connection, unless otherwise specified.