# MARATHON ELECTRIC GENERATORS

## TYPICAL SUBMITTAL DATA

**MODEL : 283PSL1507**

**BASE MODEL: 283PSL1507** **Winding WC- 1507**

**Submittal Data: 480 Volts*, 30 kW, 37.5 kVA, 0.8 P.F., 1800 RPM, 60 Hz, 3 Phase**

**10/31/2001**

| **Kilowatt ratings at** | **1800 RPM** | **60 Hertz** | **12 LEADS** | **Standard 3 phase** |
|---|---|---|---|---|
| **kW (kVA)** | **3 Phase** | **0.8 Power Factor** | | **Dripproof or Open Enclosure** |

| | **Class B** | **Class F** | | | | | **Class H** | | |
|---|---|---|---|---|---|---|---|---|---|
| **Voltage*** | **80º C ① Continuous** | **90º C ① Lloyds** | **95º C ① ABS** | **105º C British Standard** | **105º C Continuous** | **130º C ① Standby** | **125º C British Standard** | **125º C Continuous** | **150º C ① Standby** |
| **480/240** | 25 (31.3) | 25 (31.3) | 26 (32.5) | 27 (33.8) | 28 (35) | 30 (37.5) | 30 (37.5) | 30 (37.5) | 33 (41.3) |
| **460/230** | 25 (31.3) | 25 (31.3) | 26 (32.5) | 27 (33.8) | 28 (35) | 30 (37.5) | 30 (37.5) | 30 (37.5) | 33 (41.3) |
| **440/220** | 25 (31.3) | 25 (31.3) | 26 (32.5) | 27 (33.8) | 28 (35) | 30 (37.5) | 30 (37.5) | 30 (37.5) | 32 (40) |
| **416/208** | 25 (31.3) | 25 (31.3) | 26 (32.5) | 27 (33.8) | 28 (35) | 30 (37.5) | 30 (37.5) | 30 (37.5) | 31 (38.8) |
| **380/190** | 22 (27.5) | 22 (27.5) | 23 (28.8) | 25 (31.3) | 25 (31.3) | 27 (33.8) | 26 (32.5) | 27 (33.8) | 28 (35) |

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

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| **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 |
| | PMG Stator | NS** |
| 401.1a | Stator Resistance, Line to Line | |
| | High Wye Connection | 0.48 Ohms |
| | Rotor Resistance | 0.758 Ohms |
| | Exciter Stator | 23 Ohms |
| | Exciter Rotor | 0.12 Ohms |
| | PMG Stator | NS** |
| 410.1a | No Load Exciter Field Amps | 0.52 A DC |
| | at 240/480 Volts Line to Line | |
| 420.1a | Short Circuit Ratio | 0.642 |
| 421.1a | Xd Synchronous Reactance | 1.93 p.u. |
| | | 11.886 ohms |
| 422.1a | X2 Negative Sequence React. | 0.181 pu |
| | | 1.115 ohms |
| 423.1a | X0 Zero Sequence Reactance | 0.044 pu |
| | | 0.271 ohms |
| 425.1a | X'd Transient Reactance | 0.124 pu |
| | | 0.764 ohms |
| 426.1a | X"d Subtransient Reactance | 0.102 pu |
| | | 0.628 ohms |
| -- | Xq Quadrature Synch. React. | Not Available |
| 427.1a | T'd Transient Short Circuit | |
| | Time Constant | 0.033 sec. |
| 428.1a | T"d Subtransient Short Circuit | |
| | Time Constant | 0.008 sec. |
| 430.1a | T'do Transient Open Circuit | |
| | Time Constant | 0.52 sec. |
| 432.1a | Ta Short Circuit Time | |
| | Constant of Armature Winding | 0.009 sec. |

| **Mil-Std-705B Method** | **Description** | **Value** |
|---|---|---|
| 505.3b | Overspeed | 2250 RPM |
| 507.1c | Phase Sequence CCW-ODE | ABC |
| 508.1c | Voltage Balance, L-L or L-N | 0.20% |
| 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 |
| --- | THF (IEC, BS & NEMA Weightings) | < 2 % |
| 652.1a | Shaft Current | < 0.1 ma |
| --- | Main Stator Capacitance to ground | @NA mfd |

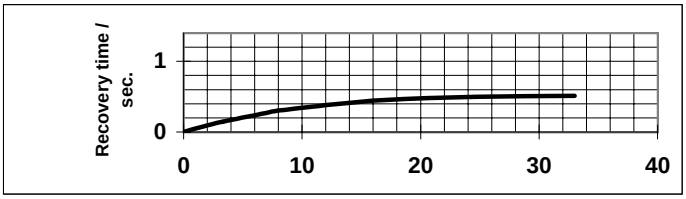
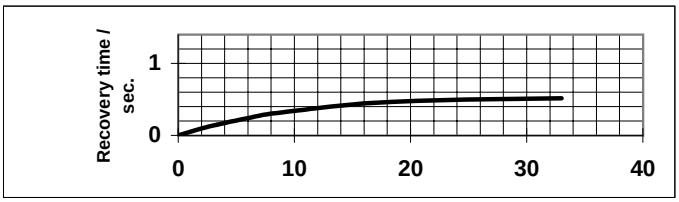
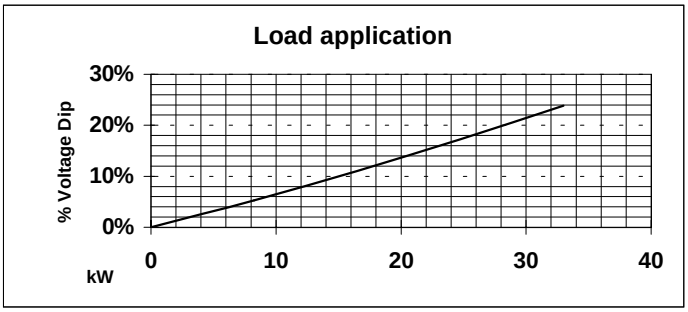
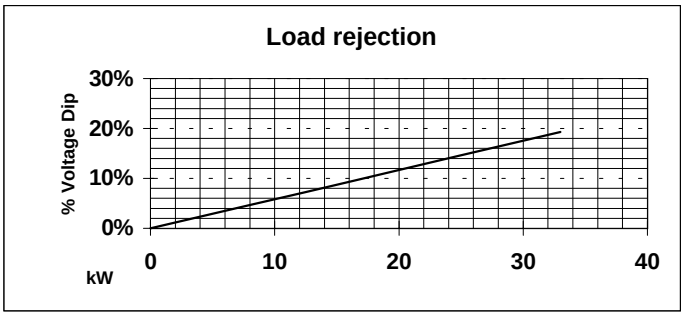
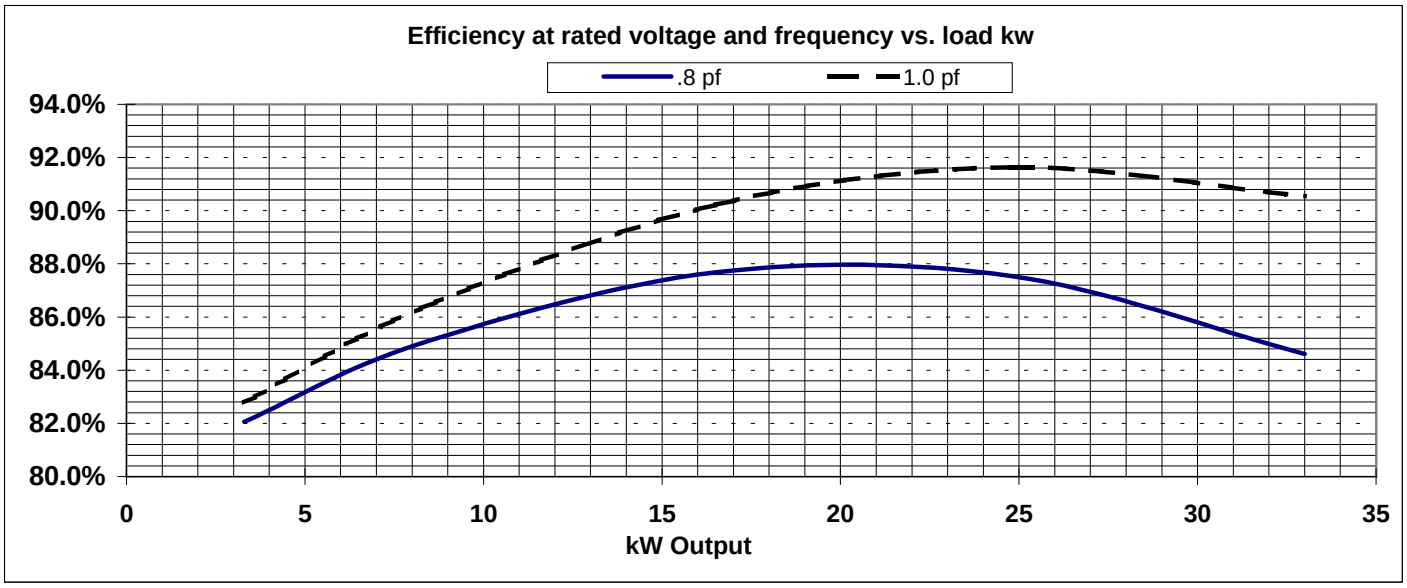
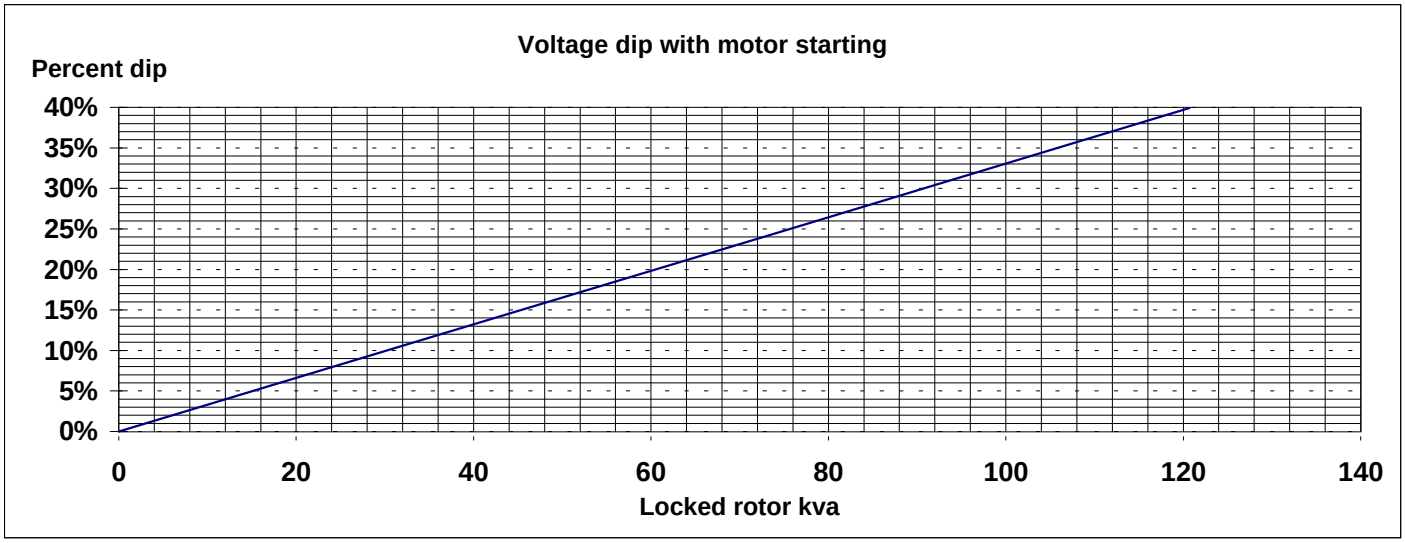
**Additional Prototype Mil-Std Methods are Available on Request.**

| | | |
|---|---|---|
| -- | Generator Frame | 283 |
| -- | Type | MAGNAPLUS |
| -- | Insulation | Class H |
| -- | Coupling - Single Bearing | Flexible |
| -- | Amortisseur Windings | Full |
| -- | Excitation | Ext. Voltage Regulated, Brushless |
| -- | Voltage Regulator | SE350 |
| -- | Voltage Regulation | 1.00% |
| -- | Cooling Air Volume | 250 CFM |
| -- | Heat rejection rate | 278 Btu's/min |
| -- | Full load current | 45 amps |
| -- | Minimum Input hp required | 46.8 |
| | Efficiency at rated load : | 86.0% |
| -- | Full load torque | 137 Lb-ft |

*(3) Excitation support system or PMG required to sustain short circuit currents.*
** Voltages refer to wye (star) connection, unless otherwise specified.*
*** Not supplied as standard equipment.*

Data rev. : 09/01/98
Version : 2001.2

# MARATHON ELECTRIC GENERATORS

## TYPICAL DYNAMIC CHARACTERISTICS

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