

50 Hz

| Voltage |     |     | Continuous   |      |      |       |               |      |       |       | Standby       |      |       |       |               |      |       |       |
|---------|-----|-----|--------------|------|------|-------|---------------|------|-------|-------|---------------|------|-------|-------|---------------|------|-------|-------|
|         |     |     | F - 105/40°C |      |      |       | H - 125 /40°C |      |       |       | H - 150 /40°C |      |       |       | H - 163 /27°C |      |       |       |
| C       | Y   | Δ   | kWm          | %    | kWe  | kVA   | kWm           | %    | kWe   | kVA   | kWm           | %    | kWe   | kVA   | kWm           | %    | kWe   | kVA   |
| 380     | 190 | 220 | 96.8         | 90.9 | 88.0 | 110.0 | 110.7         | 90.3 | 100.0 | 125.0 | 112.9         | 90.0 | 101.6 | 127.0 | 114.9         | 89.8 | 103.2 | 129.0 |
| 400     | 200 | 230 | 96.4         | 91.3 | 88.0 | 110.0 | 110.4         | 90.6 | 100.0 | 125.0 | 116.9         | 90.3 | 105.6 | 132.0 | 119.7         | 90.2 | 108.0 | 135.0 |
| 415     | 208 | 240 | 96.2         | 91.5 | 88.0 | 110.0 | 109.8         | 91.1 | 100.0 | 125.0 | 111.9         | 90.8 | 101.6 | 127.0 | 113.8         | 90.7 | 103.2 | 129.0 |
| 440     | 220 | 254 | N/A          | N/A  | N/A  | N/A   | N/A           | N/A  | N/A   | N/A   | N/A           | N/A  | N/A   | N/A   | N/A           | N/A  | N/A   | N/A   |

60 Hz

| Voltage |     |     | Continuous   |      |       |       |               |      |       |       | Standby       |      |       |       |               |      |       |       |
|---------|-----|-----|--------------|------|-------|-------|---------------|------|-------|-------|---------------|------|-------|-------|---------------|------|-------|-------|
|         |     |     | F - 105/40°C |      |       |       | H - 125 /40°C |      |       |       | H - 150 /40°C |      |       |       | H - 163 /27°C |      |       |       |
| C       | Y   | Δ   | kWm          | %    | kWe   | kVA   | kWm           | %    | kWe   | kVA   | kWm           | %    | kWe   | kVA   | kWm           | %    | kWe   | kVA   |
| 416     | 208 | 240 | 116.2        | 90.9 | 105.6 | 132.0 | 126.4         | 90.5 | 114.4 | 143.0 | 133.0         | 90.2 | 120.0 | 150.0 | 137.6         | 90.1 | 124.0 | 155.0 |
| 440     | 220 | 254 | 120.2        | 91.2 | 109.6 | 137.0 | 132.2         | 90.8 | 120.0 | 150.0 | 138.6         | 90.6 | 125.6 | 157.0 | 144.2         | 90.4 | 130.4 | 163.0 |
| 460     | 230 | 265 | 119.8        | 91.5 | 109.6 | 137.0 | 131.6         | 91.2 | 120.0 | 150.0 | 138.0         | 91.0 | 125.6 | 157.0 | 143.6         | 90.8 | 130.4 | 163.0 |
| 480     | 240 | 277 | 124.9        | 91.6 | 114.4 | 143.0 | 140.2         | 91.3 | 128.0 | 160.0 | 147.5         | 91.1 | 134.4 | 168.0 | 150.3         | 91.0 | 136.8 | 171.0 |

50 Hz

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|                              | THF<2%  |         |         |         | TIF<50                            |         |         |         |
|------------------------------|---|---------|---------|---------|-----------------------------------|---------|---------|---------|
|                              | 0.514 m <sup>3</sup> /sec 1090 cfm                  |         |         |         | 0.617m <sup>3</sup> /sec 1308 cfm |         |         |         |
|                              | 380/220   | 400/231 | 415/240 | 440/254 | 416/240                           | 440/254 | 460/266 | 480/277 |
| Telephone Interference       |   |         |         |         |                                   |         |         |         |
| Cooling Air                  |   |         |         |         |                                   |         |         |         |
| Voltage Series Star          |   |         |         |         |                                   |         |         |         |
| kVA Base Rating              | 125   | 125     | 125     | N/A     | 143.0                             | 150     | 150.0   | 160     |
| Xd Dir. Axis Synchronous     | 2.250   | 2.090   | 1.910   | -       | 2.610                             | 2.450   | 2.210   | 2.190   |
| X'd Dir. Axis Transient      | 0.190   | 0.180   | 0.170   | -       | 0.230                             | 0.220   | 0.190   | 0.180   |
| X''d Dir. Axis Subtransient  | 0.130   | 0.120   | 0.110   | -       | 0.160                             | 0.150   | 0.140   | 0.130   |
| Xq Quad. Axis Reactance      | 1.450   | 1.350   | 1.210   | -       | 1.540                             | 1.460   | 1.390   | 1.360   |
| X''d Quad. Axis Subtransient | 0.160   | 0.160   | 0.140   | -       | 0.210                             | 0.200   | 0.180   | 0.180   |
| XL Leakage Reactance         | 0.070   | 0.060   | 0.060   | -       | 0.080                             | 0.070   | 0.070   | 0.070   |
| X2 Negative Sequence         | 0.150   | 0.130   | 0.120   | -       | 0.180                             | 0.170   | 0.150   | 0.150   |
| X0 Zero Sequence             | 0.090   | 0.080   | 0.070   | -       | 0.100                             | 0.090   | 0.090   | 0.080   |
| Reactances Are Saturated     | Values are per unit at rating and voltage indicated |         |         |         |                                   |         |         |         |
| T'd Transient Time Const.    | 0.031s  |         |         |         |                                   |         |         |         |
| T''d Sub-Transtime Const.    | 0.01s   |         |         |         |                                   |         |         |         |
| T'do O.C. Field Time Const.  | 0.85s   |         |         |         |                                   |         |         |         |
| Ta Armature Time Const.      | 0.0073s   |         |         |         |                                   |         |         |         |
| Short Circuit Ratio          | 1/Xd  |         |         |         |                                   |         |         |         |

|                             |  |                               |
|-----------------------------|--|-------------------------------|
| A.V.R. (Voltage Regulation) | Self Excited   | R4/4 ( ± 1.0 % ) - Standard   |
|                             | AUX Excited  | R6/4G2 ( ± 0.5 % ) - Optional |
| Substained Short Circuit    | SELF EXCITED MACHINES DO NOT SUSTAIN A SHORT CIRCUIT CURRENT |                               |
| Enclosure                   | IP23   |                               |
| Stator WDG. Resistance      | 0.038 Ohms PER PHASE AT 22°C SERIES STAR CONNECTED           |                               |
| Rotor WDG. Resistance       | 1.26 Ohms at 22°C  |                               |
| Exciter Stator Resistance   | 20 Ohms at 22°C  |                               |
| Exciter Rotor Resistance    | 0.091 Ohms PER PHASE AT 22°C                                 |                               |
| Waveform Distortion         | NO LOAD < 1.5% NON-DISTORTING BALANCED LINEAR LOAD < 5.0%    |                               |
| Maximum Overspeed           | 2250 rpm   |                               |
| Bearing Drive End           | BALL. 6315 (ISO)   |                               |
| Bearing Non-drive End       | BALL. 6310 (ISO)   |                               |

**COMPLIANCE WITH STANDARDS**

- MBH industrial generators meet the requirements of IEC 60034, GB755, BS 5000, NEMA MG 1.22, VDE 0530 & CSA. These are manufactured in an ISO 9001 environment 2000 version & can be integrated in a "CE" marked machine.

**ELECTRICAL PERFORMANCE**

- The Main Stator is wound to 2/3 pitch. This eliminates triplen (3rd, 9th, 15th ...) harmonics on the voltage waveform, which is an optimum design for trouble-free supply of non-linear loads.

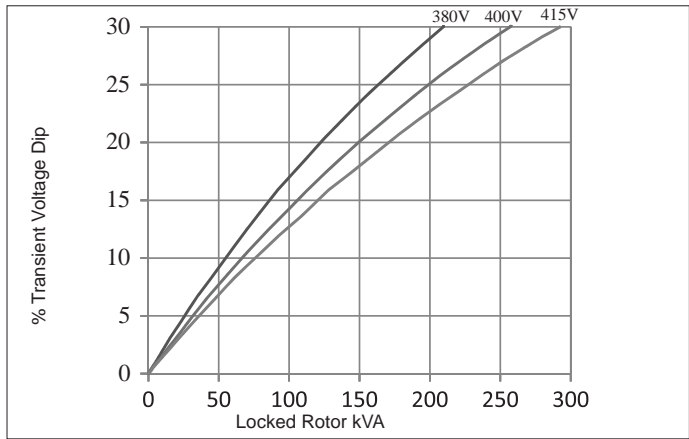
**VOLTAGE REGULATORS**

- R4/4 AVR - STANDARD: With this self excited control system the main stator supplies power via the Automatic Voltage Regulator (AVR) to the exciter stator. The exciter rotor output is fed to the main rotor through a three phase full wave bridge rectifier.
- R6/4G2 AVR - OPTION: This AVR is incorporated into AUX winding control system. The AUX winding provides power via the AVR to the main exciter, giving a source of constant excitation power independent of generator output. Additional feature of permitting parallel operation with other ac generators, using a 'droop kit'.

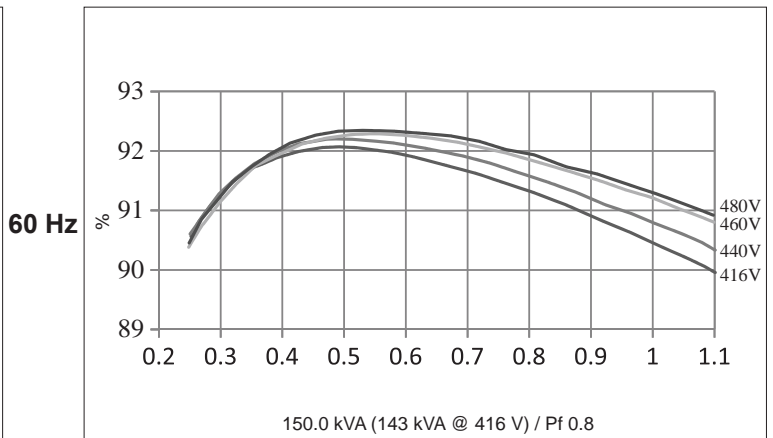
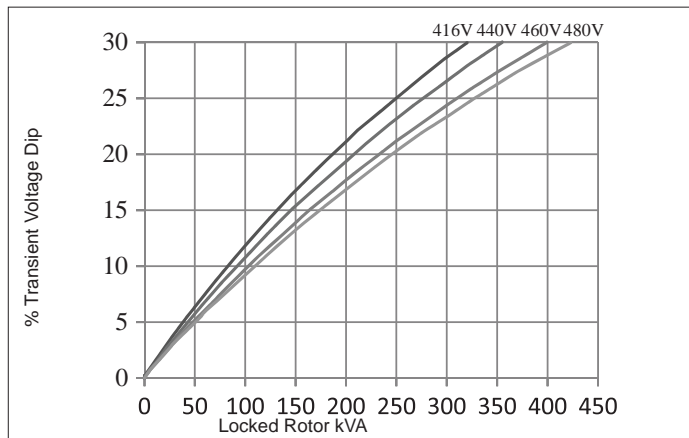
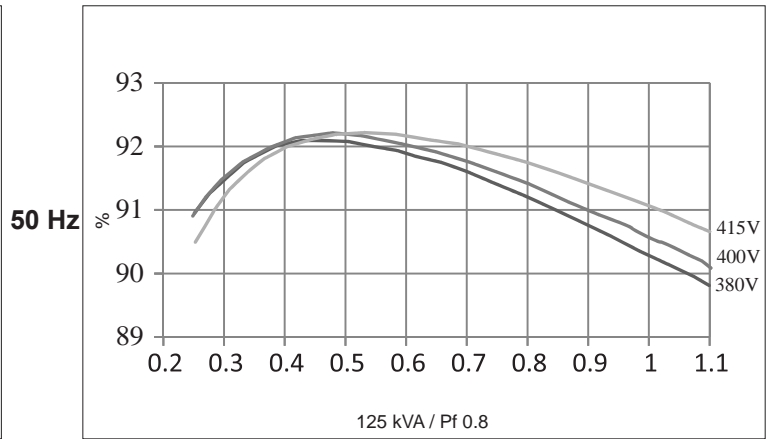
**INSULATION / IMPREGNATION**

- The insulation system is class 'H'.

**LOCKED ROTOR MOTOR STARTING CURVE**



**THREE PHASE EFFICIENCY CURVES**



|           | Weight Comp. Generator | WR <sup>2</sup> Inertia | Shipping Weights in a crate | Packing Crate Size |
|-----------|------------------------|-------------------------|-----------------------------|--------------------|
| 1 BEARING | 450 kg                 | 1.1962 kgm <sup>2</sup> | 490 kg                      | 84 x 62 x 96 (cm)  |
| 2 BEARING | 450 kg                 | 1.1455 kgm <sup>2</sup> | 490 kg                      | 92 x 52 x 96 (cm)  |

Specifications may change without notice. Check with your distributor for more information.

Ref. DS-D2XI4-01-B