

# DATA SHEET

## Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : W21 Explosion Proof NEMA Premium Efficiency Three-Phase Product code : 11439868

|                                      |                                               |
|--------------------------------------|-----------------------------------------------|
| Frame : 404/5T                       | Cooling method : IC411 - TEFC                 |
| Insulation class : F                 | Mounting : F-1                                |
| Duty cycle : Cont.(S1)               | Rotation <sup>1</sup> : Both (CW and CCW)     |
| Ambient temperature : -20°C to +40°C | Starting method : Direct On Line              |
| Altitude : 1000 m.a.s.l.             | Approx. weight <sup>3</sup> : 561 kg          |
| Protection degree : IP55             | Moment of inertia (J) : 1.11 kgm <sup>2</sup> |
| Design : B                           |                                               |

|                          |                      |                      |                      |                      |
|--------------------------|----------------------|----------------------|----------------------|----------------------|
| Output [HP]              | 100                  | 75                   | 75                   | 75                   |
| Poles                    | 4                    | 4                    | 4                    | 4                    |
| Frequency [Hz]           | 60                   | 50                   | 50                   | 50                   |
| Rated voltage [V]        | 230/460              | 380                  | 400                  | 415                  |
| Rated current [A]        | 226/113              | 103                  | 100                  | 98.7                 |
| L. R. Amperes [A]        | 1627/814             | 773                  | 840                  | 898                  |
| LRC [A]                  | 7.2x(Code H)         | 7.5x(Code H)         | 8.4x(Code J)         | 9.1x(Code K)         |
| No load current [A]      | 78.0/39.0            | 39.0                 | 42.0                 | 45.0                 |
| Rated speed [RPM]        | 1780                 | 1480                 | 1485                 | 1485                 |
| Slip [%]                 | 1.11                 | 1.33                 | 1.00                 | 1.00                 |
| Rated torque [kgfm]      | 40.8                 | 36.8                 | 36.7                 | 36.7                 |
| Locked rotor torque [%]  | 270                  | 270                  | 300                  | 320                  |
| Breakdown torque [%]     | 280                  | 310                  | 360                  | 370                  |
| Service factor           | 1.15                 | 1.00                 | 1.00                 | 1.00                 |
| Temperature rise         | 80 K                 | 80 K                 | 80 K                 | 80 K                 |
| Locked rotor time        | 23s (cold) 13s (hot) | 21s (cold) 12s (hot) | 21s (cold) 12s (hot) | 21s (cold) 12s (hot) |
| Noise level <sup>2</sup> | 75.0 dB(A)           | 70.0 dB(A)           | 70.0 dB(A)           | 70.0 dB(A)           |
| Efficiency (%)           | 25%                  | 94.0                 | 93.9                 | 93.4                 |
|                          | 50%                  | 94.5                 | 94.0                 | 93.6                 |
|                          | 75%                  | 95.0                 | 94.5                 | 94.5                 |
|                          | 100%                 | 95.4                 | 94.5                 | 94.5                 |
| Power Factor             | 25%                  | 0.47                 | 0.44                 | 0.38                 |
|                          | 50%                  | 0.72                 | 0.69                 | 0.62                 |
|                          | 75%                  | 0.82                 | 0.80                 | 0.75                 |
|                          | 100%                 | 0.87                 | 0.86                 | 0.82                 |

|                        |                  |                      |                             |
|------------------------|------------------|----------------------|-----------------------------|
|                        | <u>Drive end</u> | <u>Non drive end</u> | Foundation loads            |
| Bearing type :         | 6217 C3          | 6314 C3              | Max. traction : 1057 kgf    |
| Sealing :              | Oil Seal         | Lip Seal             | Max. compression : 1611 kgf |
| Lubrication interval : | 9149 h           | 9789 h               |                             |
| Lubricant amount :     | 21 g             | 27 g                 |                             |
| Lubricant type :       | Mobil Polyrex EM |                      |                             |

### Notes

USABLE @208V 250A SF 1.00 SFA 250A

This revision replaces and cancel the previous one, which must be eliminated.

- (1) Looking the motor from the shaft end.
- (2) Measured at 1m and with tolerance of +3dB(A).
- (3) Approximate weight subject to changes after manufacturing process.
- (4) At 100% of full load.

These are average values based on tests with sinusoidal power supply, subject to the tolerances stipulated in NEMA MG-1.

| Rev.         | Changes Summary | Performed | Checked | Date |
|--------------|-----------------|-----------|---------|------|
|              |                 |           |         |      |
| Performed by |                 |           |         |      |
| Checked by   |                 |           |         |      |
| Date         | 29/10/2024      |           |         |      |

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Revision

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Three Phase Induction Motor - Squirrel Cage



Customer :

Thermal protection

| ID | Application | Type                 | Quantity  | Sensing Temperature |
|----|-------------|----------------------|-----------|---------------------|
| 1  | Winding     | Thermostat - 2 wires | 1 x Phase | 155 °C              |

|              |                 |  |           |                       |      |
|--------------|-----------------|--|-----------|-----------------------|------|
| Rev.         | Changes Summary |  | Performed | Checked               | Date |
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| Performed by |                 |  |           | Page<br>2 / 6Revision |      |
| Checked by   |                 |  |           |                       |      |
| Date         | 29/10/2024      |  |           |                       |      |

# LOAD PERFORMANCE CURVE

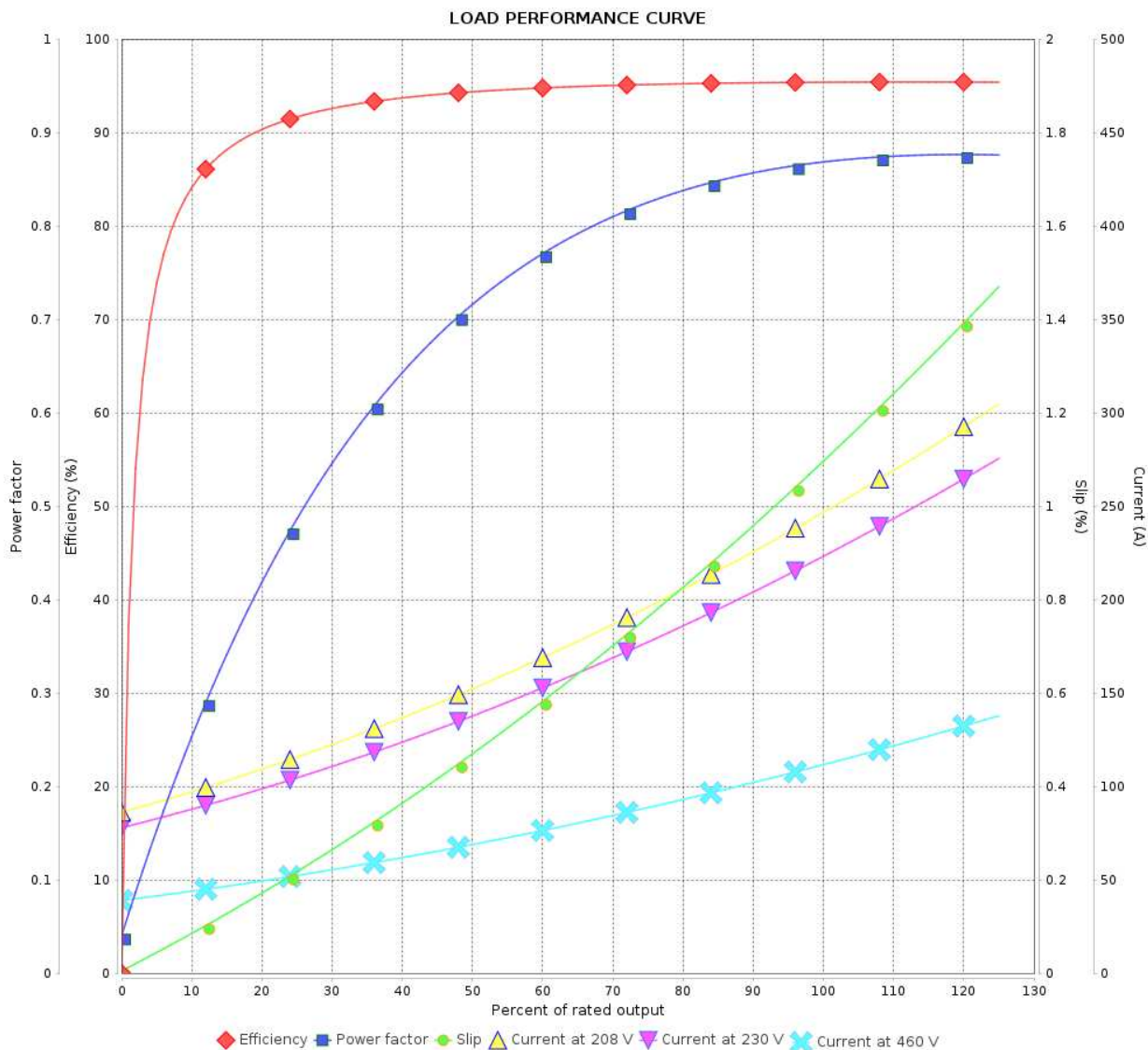
## Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : W21 Explosion Proof NEMA  
Premium Efficiency Three-Phase

Product code : 11439868



Performance : 230/460 V 60 Hz 4P

Rated current : 226/113 A  
LRC : 7.2  
Rated torque : 40.8 kgfm  
Locked rotor torque : 270 %  
Breakdown torque : 280 %  
Rated speed : 1780 rpm

Moment of inertia (J) : 1.11 kgm<sup>2</sup>  
Duty cycle : Cont.(S1)  
Insulation class : F  
Service factor : 1.15  
Temperature rise : 80 K  
Design : B

| Rev.         | Changes Summary |  | Performed | Checked       | Date     |
|--------------|-----------------|--|-----------|---------------|----------|
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| Checked by   |                 |  |           |               |          |
| Date         | 29/10/2024      |  |           |               |          |

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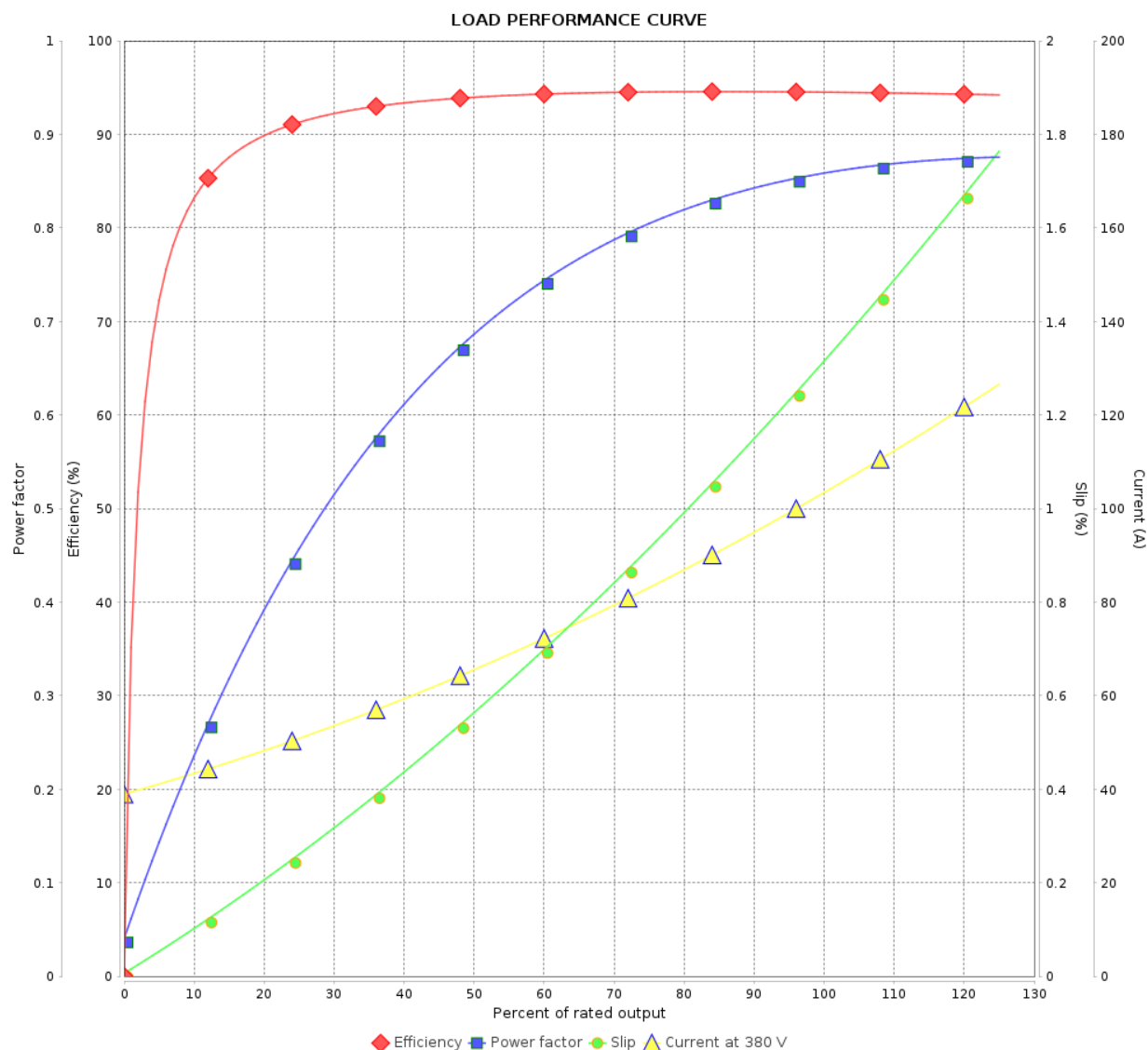
## Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : W21 Explosion Proof NEMA  
Premium Efficiency Three-Phase

Product code : 11439868



Performance : 380 V 50 Hz 4P IE2

Rated current : 103 A  
LRC : 7.5  
Rated torque : 36.8 kgfm  
Locked rotor torque : 270 %  
Breakdown torque : 310 %  
Rated speed : 1480 rpm

Moment of inertia (J) : 1.11 kgm<sup>2</sup>  
Duty cycle : Cont.(S1)  
Insulation class : F  
Service factor : 1.00  
Temperature rise : 80 K  
Design : B

| Rev.         | Changes Summary | Performed              | Checked | Date |
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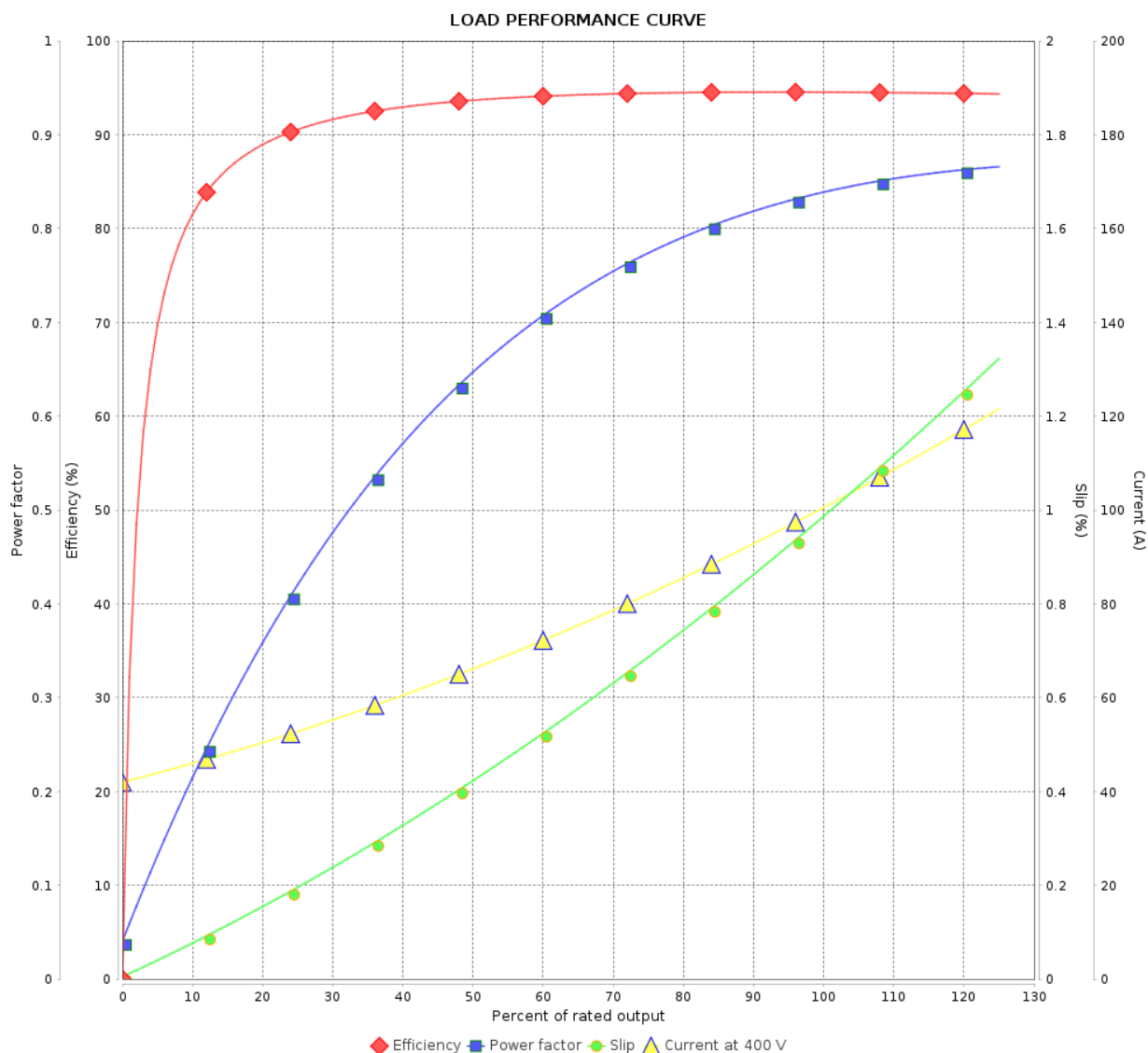
## Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : W21 Explosion Proof NEMA  
Premium Efficiency Three-Phase

Product code : 11439868



Performance : 400 V 50 Hz 4P IE2

Rated current : 100 A  
LRC : 8.4  
Rated torque : 36.7 kgfm  
Locked rotor torque : 300 %  
Breakdown torque : 360 %  
Rated speed : 1485 rpm

Moment of inertia (J) : 1.11 kgm<sup>2</sup>  
Duty cycle : Cont.(S1)  
Insulation class : F  
Service factor : 1.00  
Temperature rise : 80 K  
Design : B

| Rev.         | Changes Summary | Performed | Checked | Date |
|--------------|-----------------|-----------|---------|------|
|              |                 |           |         |      |
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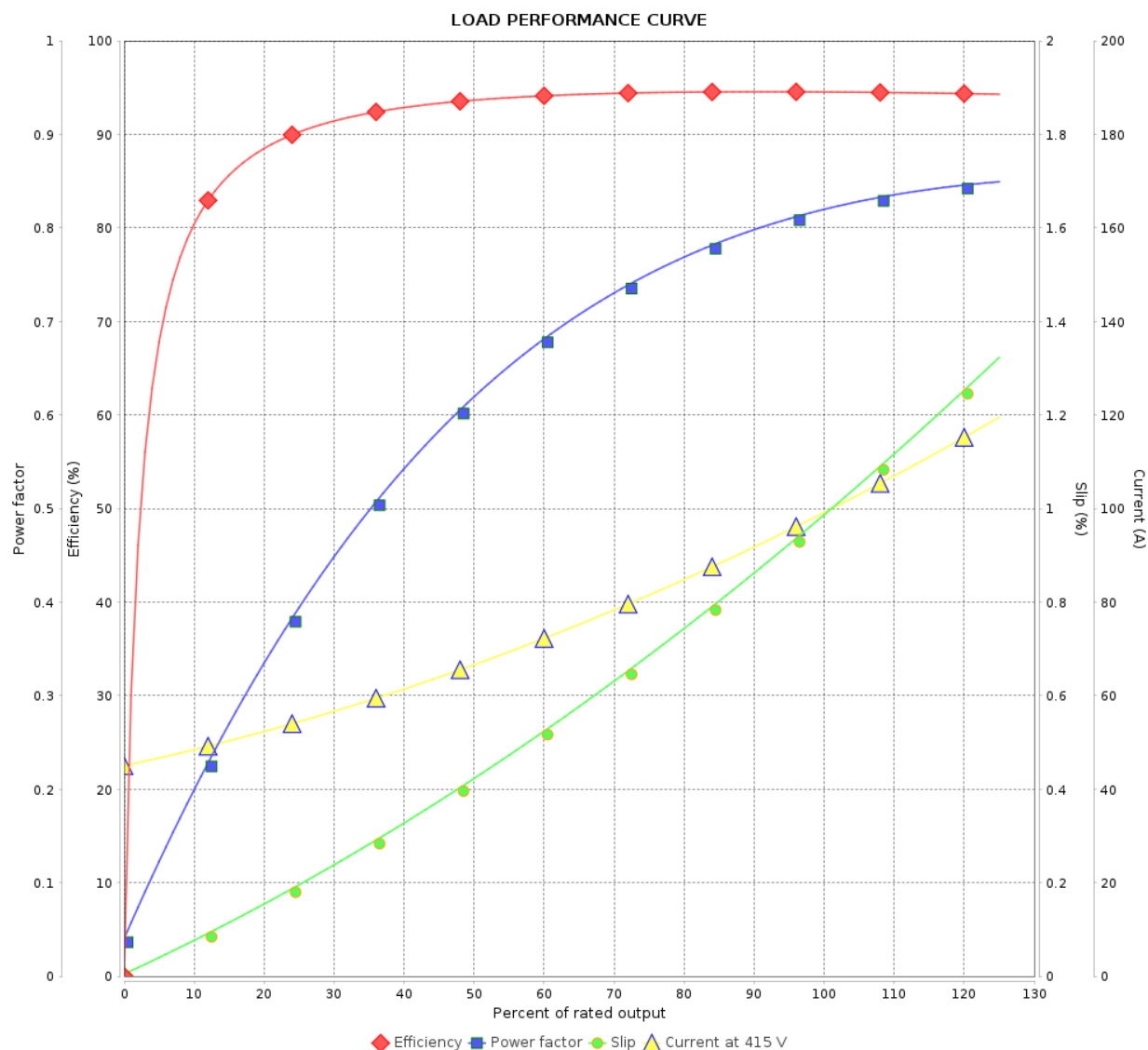
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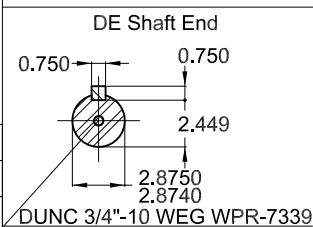
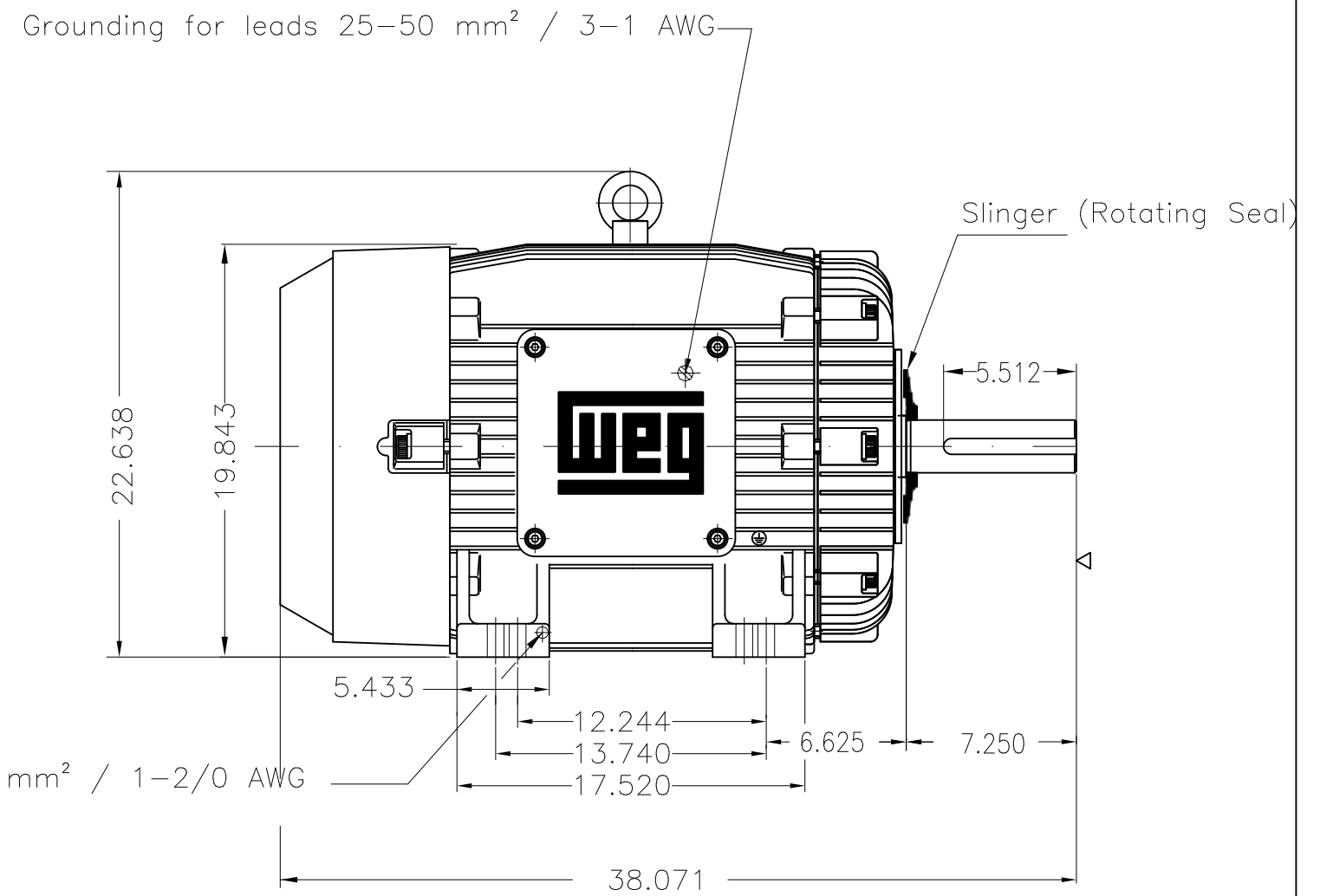
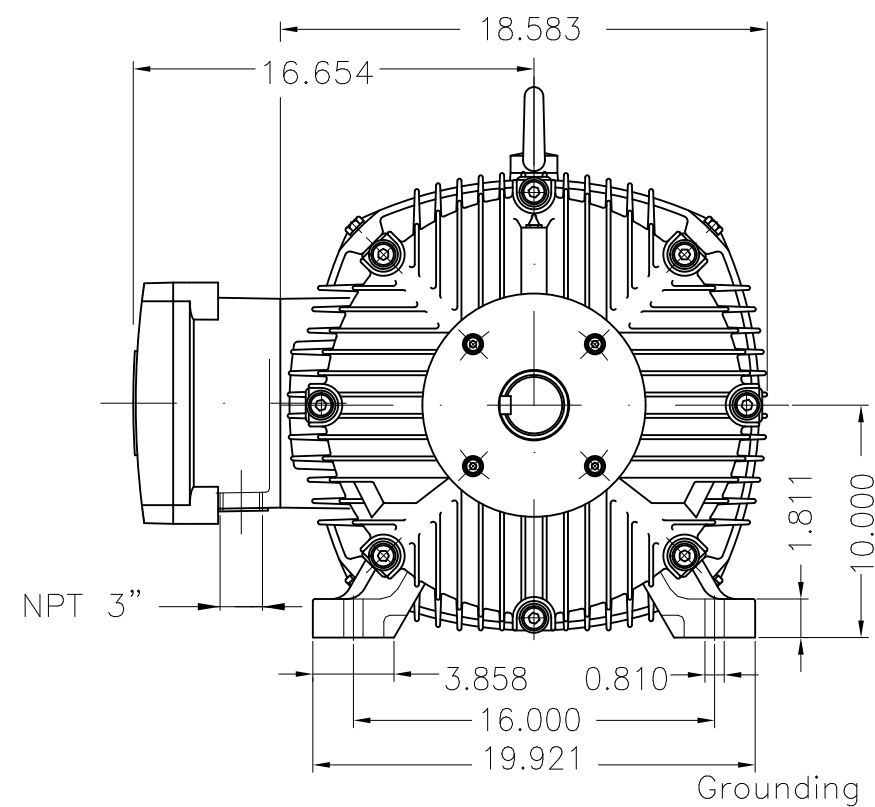


Performance : 415 V 50 Hz 4P IE2

Rated current : 98.7 A  
LRC : 9.1  
Rated torque : 36.7 kgfm  
Locked rotor torque : 320 %  
Breakdown torque : 370 %  
Rated speed : 1485 rpm

Moment of inertia (J) : 1.11 kgm<sup>2</sup>  
Duty cycle : Cont.(S1)  
Insulation class : F  
Service factor : 1.00  
Temperature rise : 80 K  
Design : B

| Rev.         | Changes Summary |  | Performed | Checked | Date     |
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|                    |
|--------------------|
| Color RAL 5009     |
| Painting plan 202P |
| Mounting B3R(D)    |

|                             |  |            |                                                                                       |                                                                           |  |  |                     |          |                     |          |      |     |                                                                                       |
|-----------------------------|--|------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------|--|--|---------------------|----------|---------------------|----------|------|-----|---------------------------------------------------------------------------------------|
| 100 HP    04 Poles    60 Hz |  |            |                                                                                       |                                                                           |  |  |                     |          |                     | A        |      |     |                                                                                       |
|                             |  |            |                                                                                       |                                                                           |  |  |                     |          |                     |          |      |     |                                                                                       |
|                             |  |            |                                                                                       |                                                                           |  |  |                     |          |                     |          |      |     |                                                                                       |
|                             |  |            |                                                                                       |                                                                           |  |  |                     |          |                     |          |      |     |                                                                                       |
|                             |  |            |                                                                                       |                                                                           |  |  | HYBRISUSER          |          |                     |          | 00   |     |                                                                                       |
| ECM                         |  | LOC        | SUMMARY OF MODIFICATIONS                                                              |                                                                           |  |  |                     | EXECUTED | CHECKED             | RELEASED | DATE | VER |                                                                                       |
| EXECUTED                    |  | HYBRISUSER |  | THREE PH. MOTOR EXPLOSION PROOF NEMA PREM. EFF.<br>FRAME 404/5T IP55 TEFC |  |  |                     |          | PREVIEW<br>WDD   00 |          |      |     |  |
| CHECKED                     |  |            |                                                                                       |                                                                           |  |  |                     |          |                     |          |      |     |                                                                                       |
| RELEASED                    |  |            |                                                                                       |                                                                           |  |  |                     |          |                     |          |      |     |                                                                                       |
| REL. DATE                   |  |            | WMO                                                                                   | Jaragua do Sul                                                            |  |  | Product Engineering |          | SHEET               | 1 / 1    |      |     |                                                                                       |