

# DATA SHEET



## Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : Close Coupled Pump NEMA Premium Efficiency Three-Phase      Product code : 11169383

|                     |                  |                             |                           |
|---------------------|------------------|-----------------------------|---------------------------|
| Frame               | : 254JM          | Cooling method              | : IC01 - ODP              |
| 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> | : 110 kg                  |
| Protection degree   | : IP23           | Moment of inertia (J)       | : 0.0878 kgm <sup>2</sup> |
| Design              | : B              |                             |                           |

|                          |                         |                         |                         |                         |                         |                         |                         |
|--------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| Output [HP]              | 15                      | 10                      | 10                      | 10                      | 15                      | 15                      | 15                      |
| Poles                    | 4                       | 4                       | 4                       | 4                       | 4                       | 4                       | 4                       |
| Frequency [Hz]           | 60                      | 50                      | 50                      | 50                      | 50                      | 50                      | 50                      |
| Rated voltage [V]        | 230/460                 | 380                     | 400                     | 415                     | 380                     | 400                     | 415                     |
| Rated current [A]        | 37.2/18.6               | 16.2                    | 16.2                    | 16.2                    | 22.1                    | 21.8                    | 21.8                    |
| L. R. Amperes [A]        | 249/125                 | 110                     | 110                     | 113                     | 119                     | 124                     | 131                     |
| LRC [A]                  | 6.7x(Code H)            | 6.8x(Code J)            | 6.8x(Code J)            | 7.0x(Code K)            | 5.4x(Code F)            | 5.7x(Code G)            | 6.0x(Code G)            |
| No load current [A]      | 18.0/9.00               | 9.20                    | 10.1                    | 10.9                    | 9.20                    | 10.4                    | 11.6                    |
| Rated speed [RPM]        | 1775                    | 1480                    | 1480                    | 1485                    | 1470                    | 1470                    | 1475                    |
| Slip [%]                 | 1.39                    | 1.33                    | 1.33                    | 1.00                    | 2.00                    | 2.00                    | 1.67                    |
| Rated torque [kgfm]      | 6.13                    | 4.90                    | 4.90                    | 4.89                    | 7.41                    | 7.41                    | 7.38                    |
| Locked rotor torque [%]  | 290                     | 270                     | 280                     | 300                     | 180                     | 190                     | 210                     |
| Breakdown torque [%]     | 300                     | 370                     | 390                     | 400                     | 280                     | 310                     | 340                     |
| Service factor           | 1.15                    | 1.15                    | 1.15                    | 1.15                    | 1.15                    | 1.15                    | 1.15                    |
| Temperature rise         | 80 K                    | 80 K                    | 80 K                    | 80 K                    | 80 K                    | 80 K                    | 80 K                    |
| Locked rotor time        | 25s (cold)<br>14s (hot) | 37s (cold)<br>21s (hot) | 34s (cold)<br>19s (hot) | 30s (cold)<br>17s (hot) | 37s (cold)<br>21s (hot) | 34s (cold)<br>19s (hot) | 30s (cold)<br>17s (hot) |
| Noise level <sup>2</sup> | 59.0 dB(A)              |                         |                         |                         |                         |                         |                         |
| Efficiency (%)           | 25%                     |                         |                         |                         |                         |                         |                         |
|                          | 50%                     | 91.7                    | 86.4                    | 86.2                    | 85.9                    | 88.5                    | 88.5                    |
|                          | 75%                     | 92.4                    | 89.2                    | 89.3                    | 89.3                    | 89.5                    | 89.5                    |
|                          | 100%                    | 93.0                    | 90.4                    | 90.5                    | 90.6                    | 91.0                    | 91.0                    |
| Power Factor             | 25%                     |                         |                         |                         |                         |                         |                         |
|                          | 50%                     | 0.60                    | 0.56                    | 0.52                    | 0.50                    | 0.66                    | 0.61                    |
|                          | 75%                     | 0.72                    | 0.70                    | 0.66                    | 0.62                    | 0.77                    | 0.73                    |
|                          | 100%                    | 0.80                    | 0.78                    | 0.74                    | 0.71                    | 0.83                    | 0.80                    |

|                      |                     |                      |                            |
|----------------------|---------------------|----------------------|----------------------------|
|                      | <u>Drive end</u>    | <u>Non drive end</u> | Foundation loads           |
| Bearing type         | : 6309 Z C3         | 6209 Z C3            | Max. traction : 339 kgf    |
| Sealing              | : Without           | Without              | Max. compression : 450 kgf |
|                      | <u>Bearing Seal</u> | <u>Bearing Seal</u>  |                            |
| Lubrication interval | : 20000 h           | 20000 h              |                            |
| Lubricant amount     | : 13 g              | 9 g                  |                            |
| Lubricant type       | : Mobil Polyrex EM  |                      |                            |

Notes  
USABLE @208V 41.1A SF 1.15 SFA 47.3A

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 |                 |           |         |          |
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# LOAD PERFORMANCE CURVE

Three Phase Induction Motor - Squirrel Cage

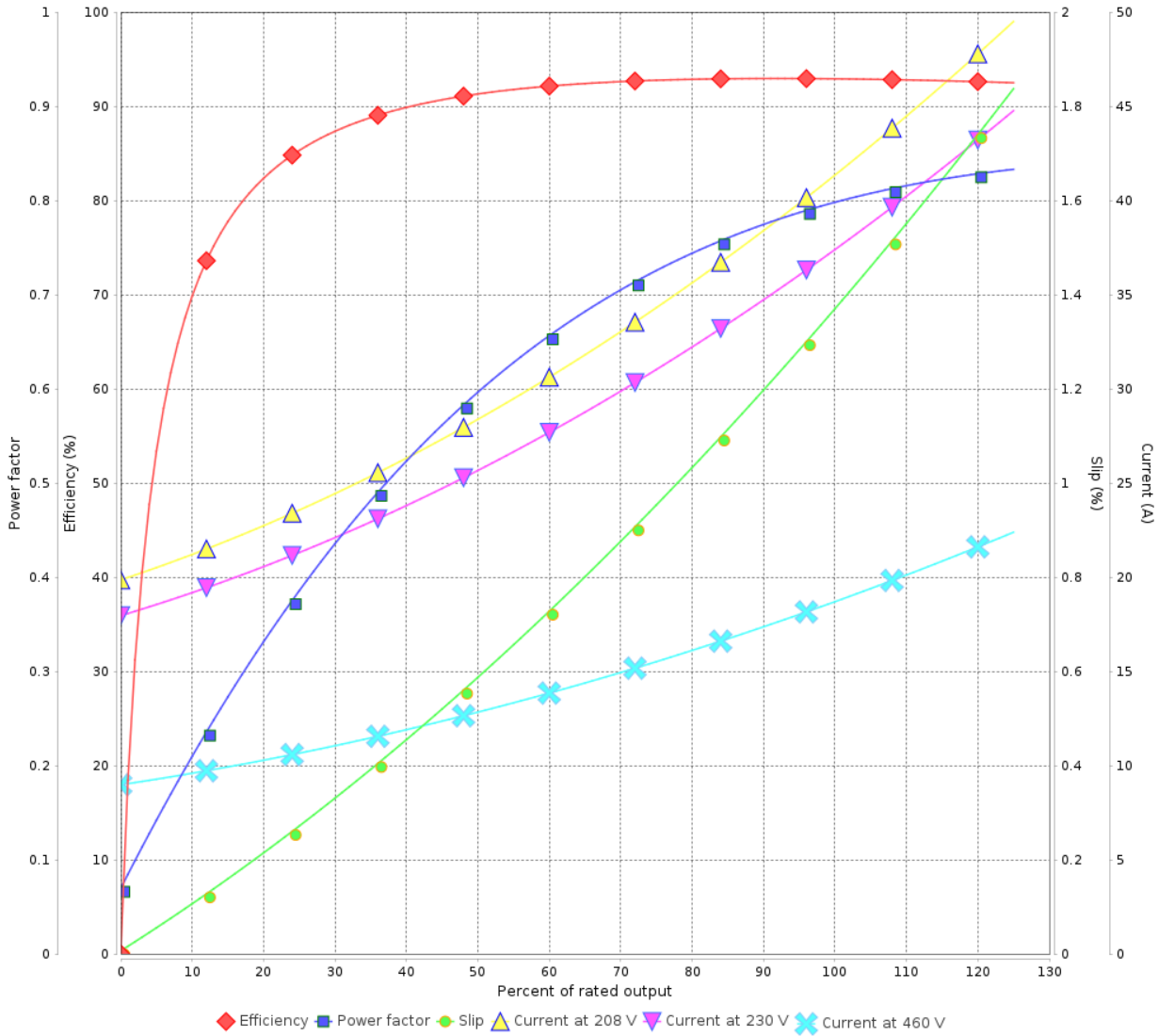


Customer :

Product line : Close Coupled Pump NEMA  
Premium Efficiency Three-Phase

Product code : 11169383

LOAD PERFORMANCE CURVE



Performance : 230/460 V 60 Hz 4P

Rated current : 37.2/18.6 A  
LRC : 6.7  
Rated torque : 6.13 kgfm  
Locked rotor torque : 290 %  
Breakdown torque : 300 %  
Rated speed : 1775 rpm

Moment of inertia (J) : 0.0878 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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# LOAD PERFORMANCE CURVE

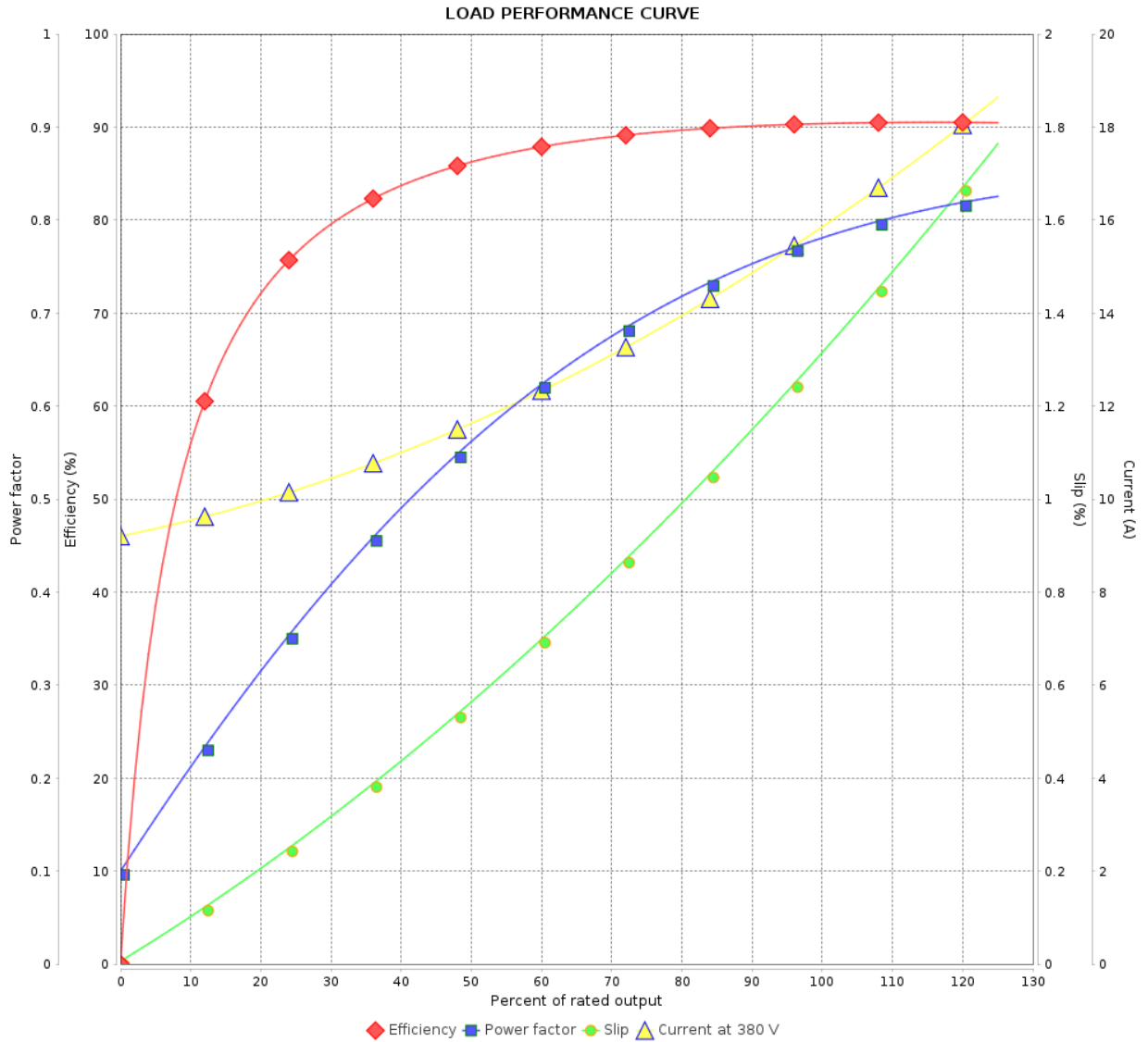
## Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : Close Coupled Pump NEMA  
Premium Efficiency Three-Phase

Product code : 11169383



Performance : 380 V 50 Hz 4P IE3

Rated current : 16.2 A  
 LRC : 6.8  
 Rated torque : 4.90 kgfm  
 Locked rotor torque : 270 %  
 Breakdown torque : 370 %  
 Rated speed : 1480 rpm

Moment of inertia (J) : 0.0878 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 |
|--------------|-----------------|-----------|----------|------|
|              |                 |           |          |      |
| Performed by |                 |           |          |      |
| Checked by   |                 |           |          |      |
| Date         |                 |           |          |      |
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# LOAD PERFORMANCE CURVE

Three Phase Induction Motor - Squirrel Cage

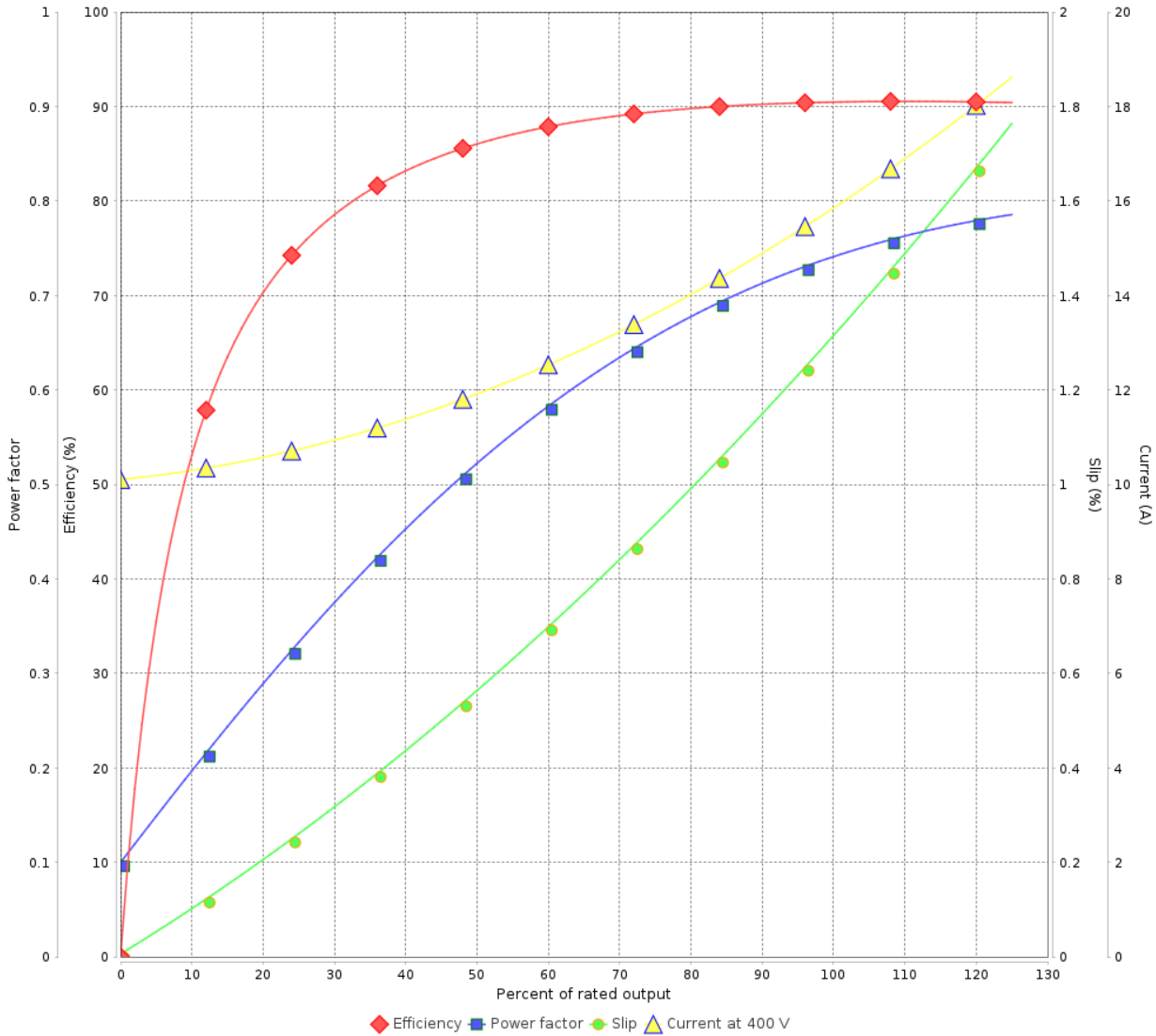


Customer : \_\_\_\_\_

Product line : Close Coupled Pump NEMA  
Premium Efficiency Three-Phase

Product code : 11169383

LOAD PERFORMANCE CURVE



Performance : 400 V 50 Hz 4P IE3

Rated current : 16.2 A  
LRC : 6.8  
Rated torque : 4.90 kgfm  
Locked rotor torque : 280 %  
Breakdown torque : 390 %  
Rated speed : 1480 rpm

Moment of inertia (J) : 0.0878 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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# LOAD PERFORMANCE CURVE

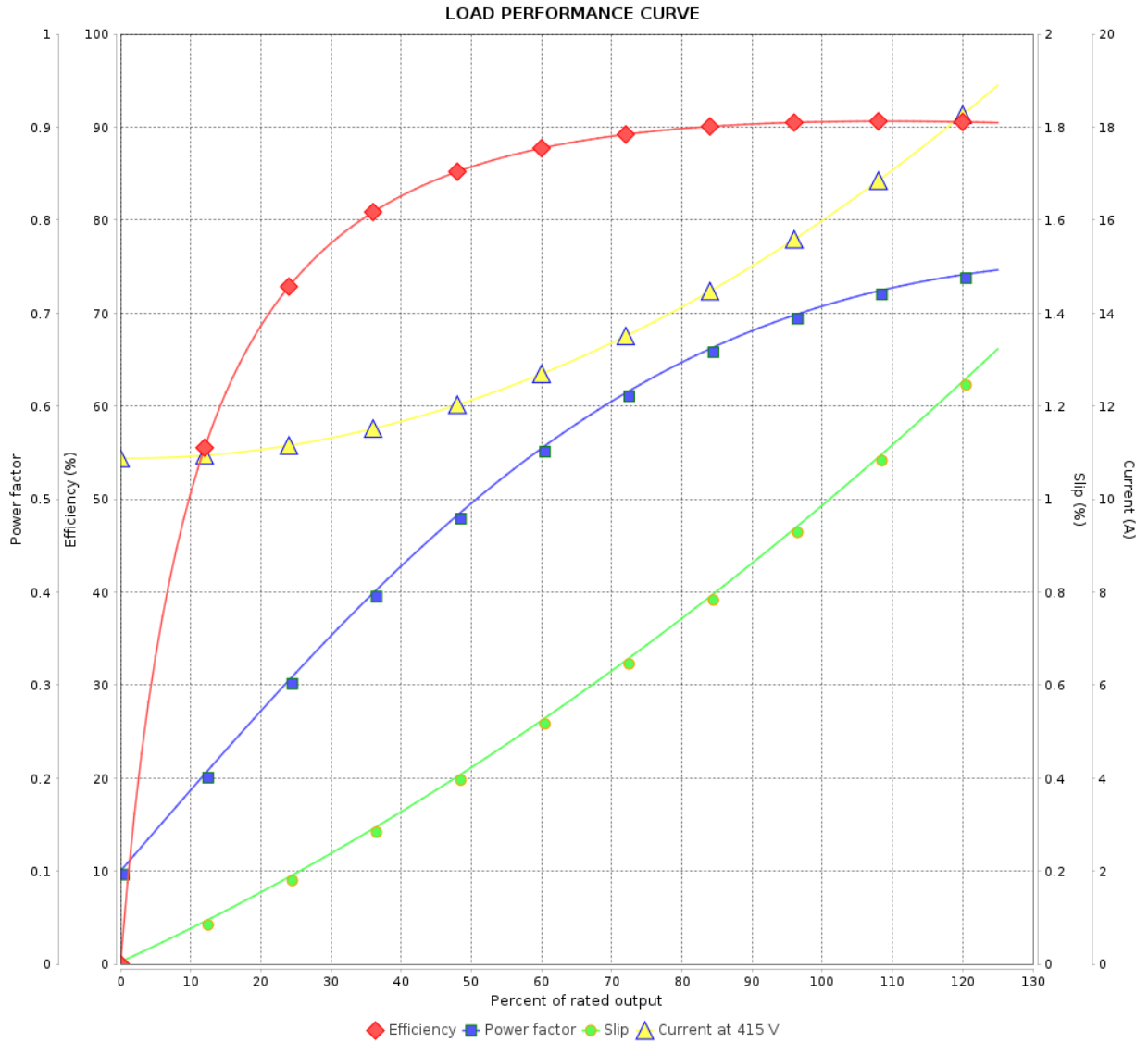
## Three Phase Induction Motor - Squirrel Cage



Customer : \_\_\_\_\_

Product line : Close Coupled Pump NEMA  
Premium Efficiency Three-Phase

Product code : 11169383



Performance : 415 V 50 Hz 4P IE3

Rated current : 16.2 A  
LRC : 7.0  
Rated torque : 4.89 kgfm  
Locked rotor torque : 300 %  
Breakdown torque : 400 %  
Rated speed : 1485 rpm

Moment of inertia (J) : 0.0878 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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| Date         |                 |           |         |          |

# LOAD PERFORMANCE CURVE

Three Phase Induction Motor - Squirrel Cage

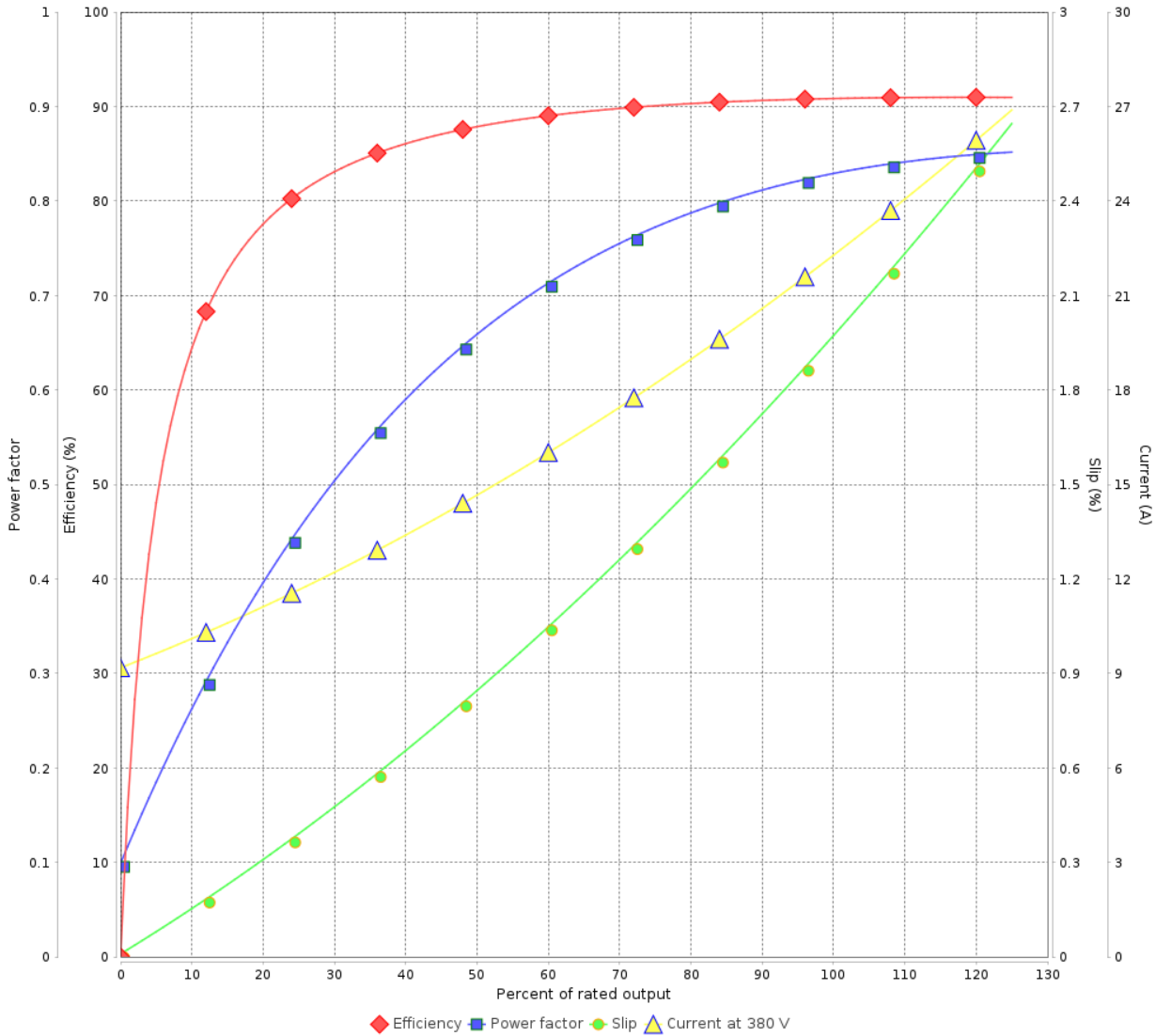


Customer :

Product line : Close Coupled Pump NEMA  
Premium Efficiency Three-Phase

Product code : 11169383

LOAD PERFORMANCE CURVE



Performance : 380 V 50 Hz 4P IE2

Rated current : 22.1 A  
LRC : 5.4  
Rated torque : 7.41 kgfm  
Locked rotor torque : 180 %  
Breakdown torque : 280 %  
Rated speed : 1470 rpm

Moment of inertia (J) : 0.0878 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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# LOAD PERFORMANCE CURVE

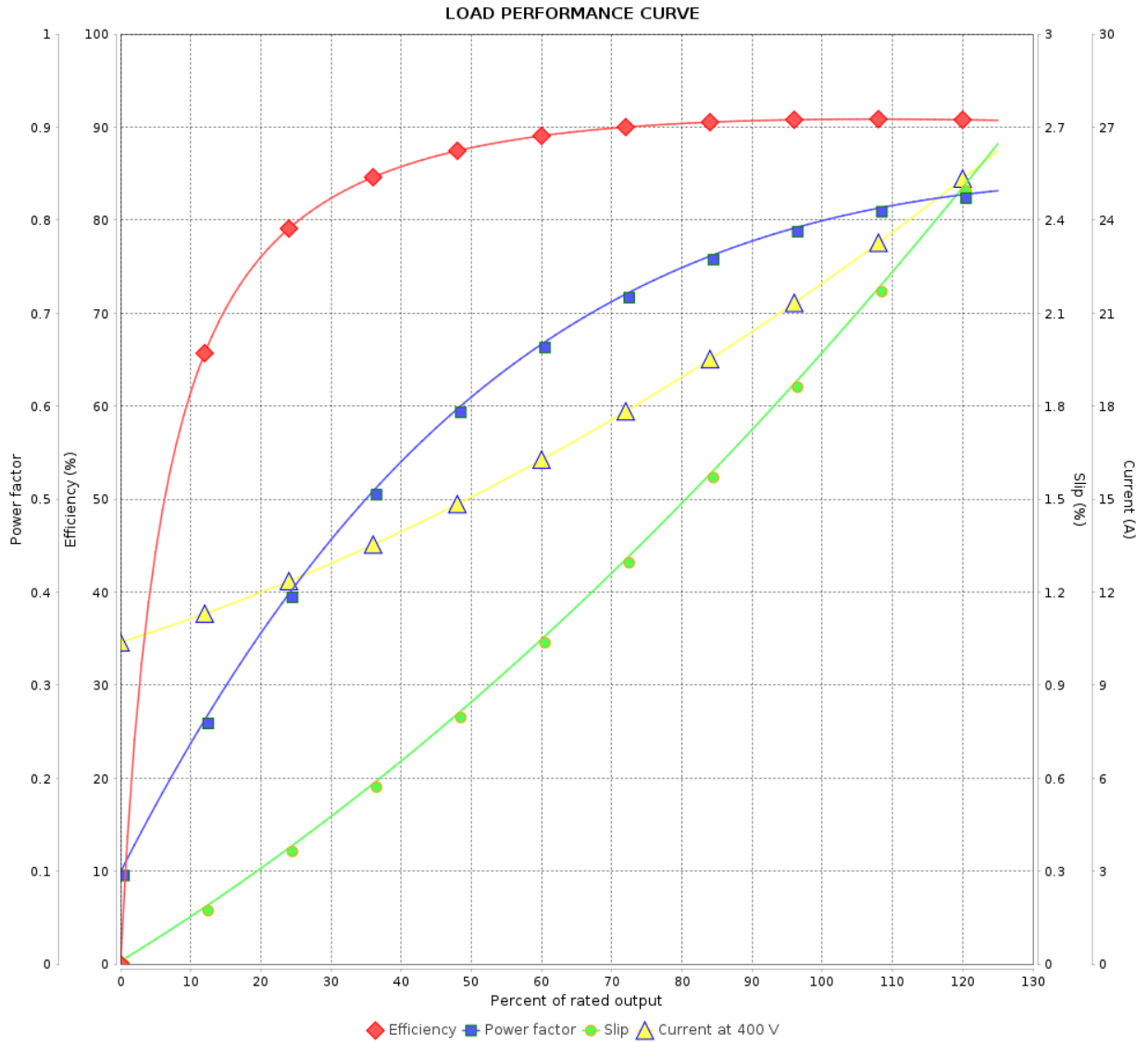
## Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : Close Coupled Pump NEMA  
Premium Efficiency Three-Phase

Product code : 11169383



Performance : 400 V 50 Hz 4P IE2

Rated current : 21.8 A  
LRC : 5.7  
Rated torque : 7.41 kgfm  
Locked rotor torque : 190 %  
Breakdown torque : 310 %  
Rated speed : 1470 rpm

Moment of inertia (J) : 0.0878 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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| Date         |                 |           |         |          |

# LOAD PERFORMANCE CURVE

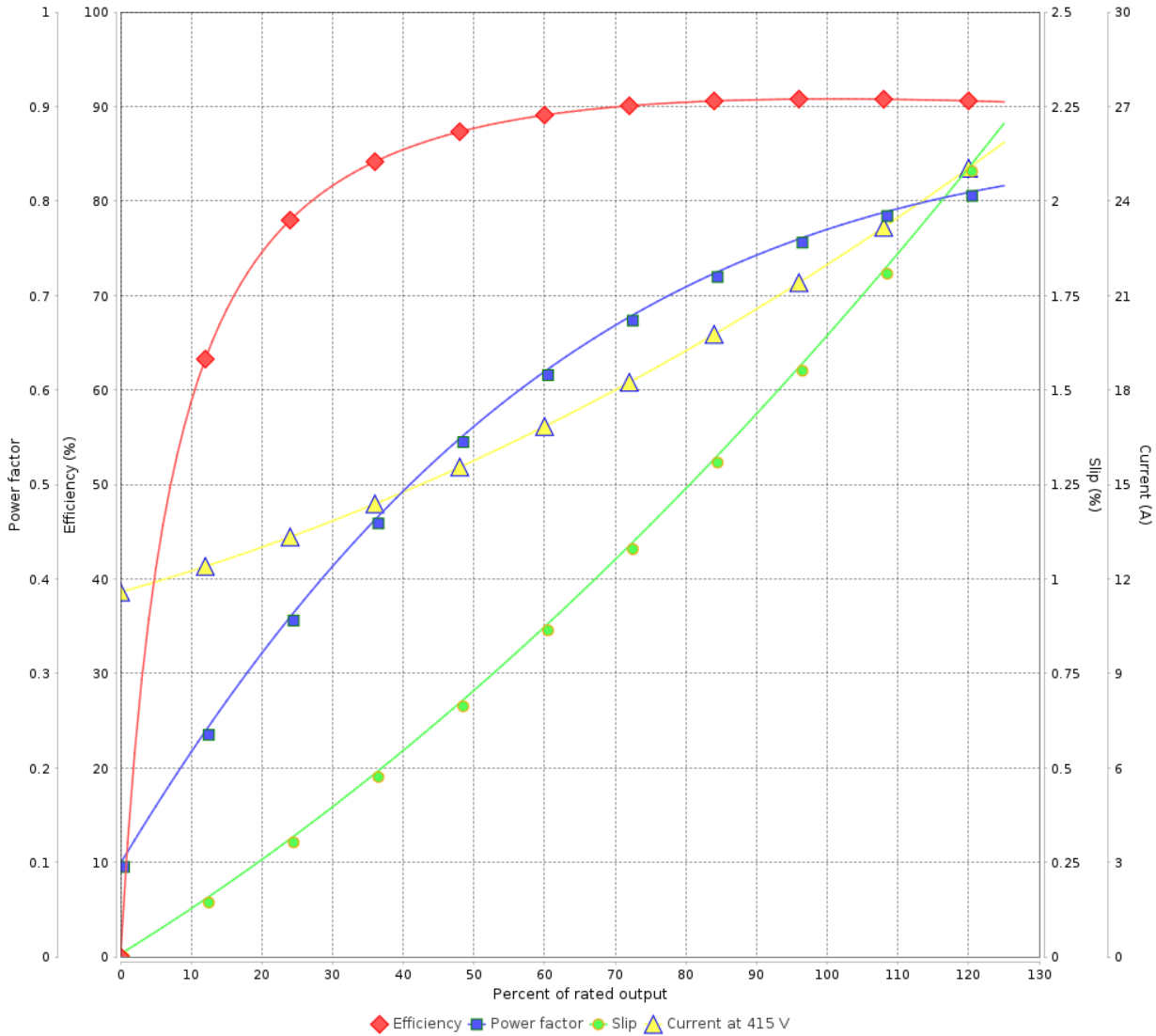
Three Phase Induction Motor - Squirrel Cage



Customer :

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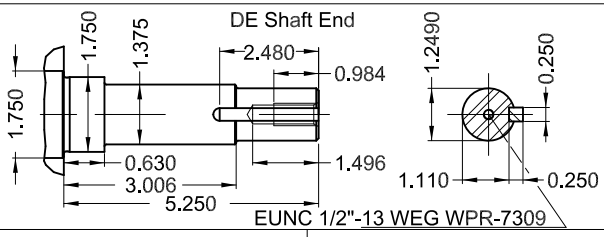
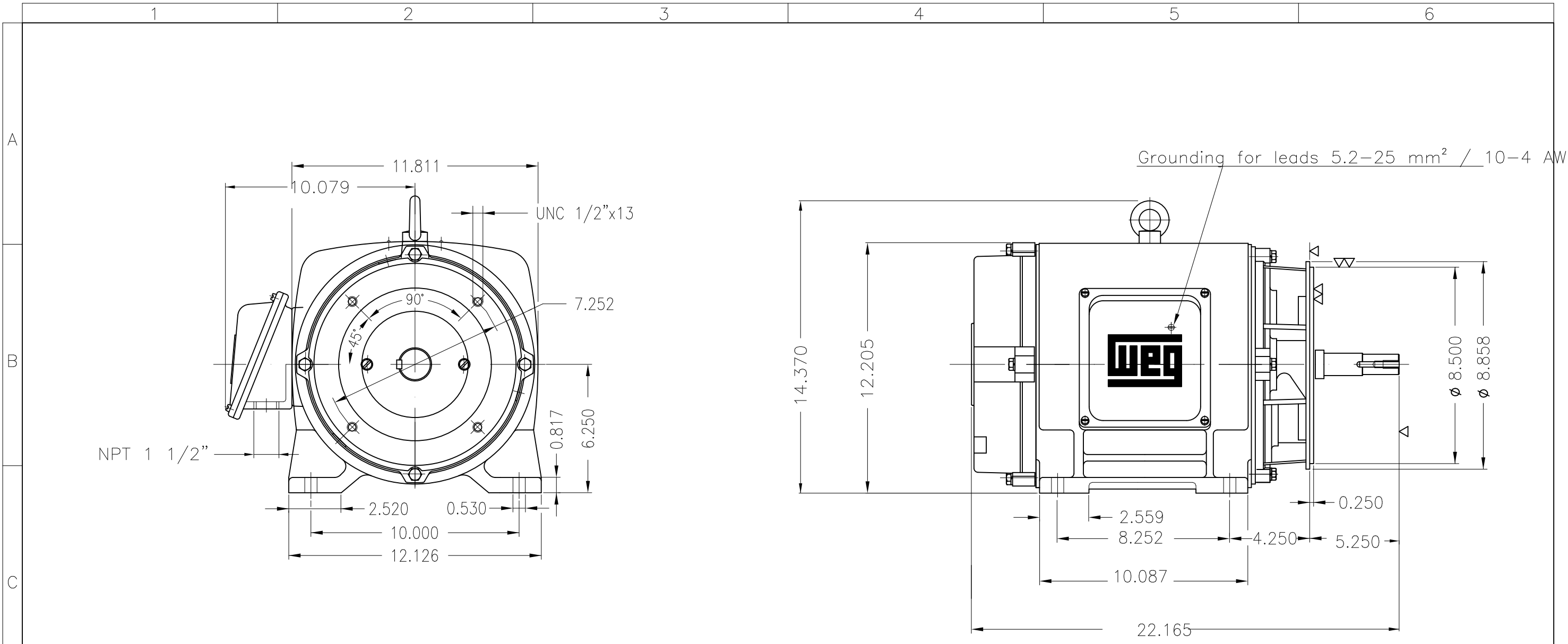


Performance : 415 V 50 Hz 4P IE2

|                     |             |                       |                           |
|---------------------|-------------|-----------------------|---------------------------|
| Rated current       | : 21.8 A    | Moment of inertia (J) | : 0.0878 kgm <sup>2</sup> |
| LRC                 | : 6.0       | Duty cycle            | : Cont.(S1)               |
| Rated torque        | : 7.38 kgfm | Insulation class      | : F                       |
| Locked rotor torque | : 210 %     | Service factor        | : 1.15                    |
| Breakdown torque    | : 340 %     | Temperature rise      | : 80 K                    |
| Rated speed         | : 1475 rpm  | Design                | : B                       |

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Without switch off thermal protection  
 Color RAL 5009  
 Painting plan 203A  
 Mounting B34R(D)

|                      |            |  |                |                     |  |         |          |          |          |        |     |
|----------------------|------------|--|----------------|---------------------|--|---------|----------|----------|----------|--------|-----|
| 15 HP 04 Poles 60 Hz |            |  |                |                     |  |         |          |          |          | A      |     |
| HYBRISUSER           |            |  |                |                     |  |         |          |          |          | 00     |     |
| ECM                  | LOC        | SUMMARY OF MODIFICATIONS                       |                |                     |  |         | EXECUTED | CHECKED  | RELEASED | DATE   | VER |
| EXECUTED             | HYBRISUSER | THREE PH. MOTOR JM/JP/JET PUMP NEMA PREM. EFF. |                |                     |  |         | EXECUTED | CHECKED  | RELEASED | DATE   | VER |
| CHECKED              |            | FRAME 254JM IP23 ODP                           |                |                     |  |         | EXECUTED | CHECKED  | RELEASED | DATE   | VER |
| RELEASED             |            |  |                |                     |  |         | EXECUTED | CHECKED  | RELEASED | DATE   | VER |
| REL. DATE            |            | WMO  | Jaragua do Sul | Product Engineering |  |         | EXECUTED | CHECKED  | RELEASED | DATE   | VER |
|                      |            |  |                |                     |  | PREVIEW |          | WDD   00 |          |        |     |
|                      |            |  |                |                     |  | SHEET   |          | 1 / 1    |          | XME A3 |     |