

# DATA SHEET

## Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : W22 IEEE 841 NEMA Premium Efficiency Three-Phase      Product code : 11943378

|                     |                  |                             |                         |
|---------------------|------------------|-----------------------------|-------------------------|
| 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> | : 0.0 kg                |
| Protection degree   | : IP55           | Moment of inertia (J)       | : 1.69 kgm <sup>2</sup> |
| Design              | : B              |                             |                         |

|                          |                         |                         |                         |                         |                         |                         |                         |
|--------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| Output [HP]              | 60                      | 50                      | 50                      | 50                      | 60                      | 60                      | 60                      |
| Poles                    | 8                       | 8                       | 8                       | 8                       | 8                       | 8                       | 8                       |
| Frequency [Hz]           | 60                      | 50                      | 50                      | 50                      | 50                      | 50                      | 50                      |
| Rated voltage [V]        | 460                     | 380                     | 400                     | 415                     | 380                     | 400                     | 415                     |
| Rated current [A]        | 73.0                    | 72.9                    | 70.9                    | 69.2                    | 89.2                    | 85.0                    | 82.9                    |
| L. R. Amperes [A]        | 475                     | 445                     | 475                     | 505                     | 455                     | 485                     | 514                     |
| LRC [A]                  | 6.5x(Code H)            | 6.1x(Code G)            | 6.7x(Code H)            | 7.3x(Code J)            | 5.1x(Code E)            | 5.7x(Code F)            | 6.2x(Code G)            |
| No load current [A]      | 30.0                    | 29.7                    | 32.0                    | 33.9                    | 29.7                    | 32.0                    | 33.9                    |
| Rated speed [RPM]        | 880                     | 725                     | 730                     | 730                     | 720                     | 725                     | 725                     |
| Slip [%]                 | 2.22                    | 3.33                    | 2.67                    | 2.67                    | 4.00                    | 3.33                    | 3.33                    |
| Rated torque [kgfm]      | 49.5                    | 50.1                    | 49.7                    | 49.7                    | 60.5                    | 60.1                    | 60.1                    |
| Locked rotor torque [%]  | 180                     | 180                     | 210                     | 229                     | 150                     | 170                     | 190                     |
| Breakdown torque [%]     | 270                     | 250                     | 290                     | 310                     | 210                     | 240                     | 260                     |
| Service factor           | 1.25                    | 1.00                    | 1.00                    | 1.00                    | 1.00                    | 1.00                    | 1.00                    |
| Temperature rise         | 80 K                    | 80 K                    | 80 K                    | 80 K                    | 105 K                   | 105 K                   | 105 K                   |
| Locked rotor time        | 23s (cold)<br>13s (hot) | 18s (cold)<br>10s (hot) | 18s (cold)<br>10s (hot) | 18s (cold)<br>10s (hot) | 18s (cold)<br>10s (hot) | 18s (cold)<br>10s (hot) | 18s (cold)<br>10s (hot) |
| Noise level <sup>2</sup> | 60.0 dB(A)              | 56.0 dB(A)              | 56.0 dB(A)              | 56.0 dB(A)              | 56.0 dB(A)              | 56.0 dB(A)              | 56.0 dB(A)              |
| Efficiency (%)           | 25%                     |                         |                         |                         |                         |                         |                         |
|                          | 50%                     | 93.0                    | 92.4                    | 91.9                    | 91.9                    | 92.4                    | 92.4                    |
|                          | 75%                     | 93.0                    | 92.1                    | 92.1                    | 92.2                    | 91.7                    | 91.7                    |
|                          | 100%                    | 93.0                    | 91.8                    | 91.8                    | 91.8                    | 90.2                    | 91.0                    |
| Power Factor             | 25%                     |                         |                         |                         |                         |                         |                         |
|                          | 50%                     | 0.68                    | 0.67                    | 0.64                    | 0.61                    | 0.74                    | 0.68                    |
|                          | 75%                     | 0.78                    | 0.79                    | 0.77                    | 0.74                    | 0.82                    | 0.78                    |
|                          | 100%                    | 0.83                    | 0.84                    | 0.82                    | 0.81                    | 0.85                    | 0.83                    |

Losses at normative operating points (speed;torque), in percentage of rated output power

|            |                |     |     |     |     |     |     |
|------------|----------------|-----|-----|-----|-----|-----|-----|
| Losses (%) | P1 (0,9;1,0)   | 7.3 | 7.3 | 7.3 | 7.3 | 7.3 | 7.3 |
|            | P2 (0,5;1,0)   | 6.4 | 6.4 | 6.4 | 6.4 | 6.4 | 6.4 |
|            | P3 (0,25;1,0)  | 6.4 | 6.4 | 6.4 | 6.4 | 6.4 | 6.4 |
|            | P4 (0,9;0,5)   | 3.1 | 3.1 | 3.1 | 3.1 | 3.1 | 3.1 |
|            | P5 (0,5;0,5)   | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 |
|            | P6 (0,5;0,25)  | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 |
|            | P7 (0,25;0,25) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |

|                      |                    |               |           |                  |            |
|----------------------|--------------------|---------------|-----------|------------------|------------|
| Bearing type         | : 6316 C3          | Non drive end | 6314 C3   | Foundation loads |            |
| Sealing              | : Taconite         |               | Taconite  | Max. traction    | : 1538 kgf |
|                      | : Labyrinth        |               | Labyrinth | Max. compression | : 1538 kgf |
| Lubrication interval | : 20000 h          |               | 20000 h   |                  |            |
| Lubricant amount     | : 34 g             |               | 27 g      |                  |            |
| Lubricant type       | : Mobil Polyrex EM |               |           |                  |            |

|              |                 |           |         |          |
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# DATA SHEET

## Three Phase Induction Motor - Squirrel Cage



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

Notes

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     |
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| Date         | 22/10/2024      |  |           |         |          |

# LOAD PERFORMANCE CURVE

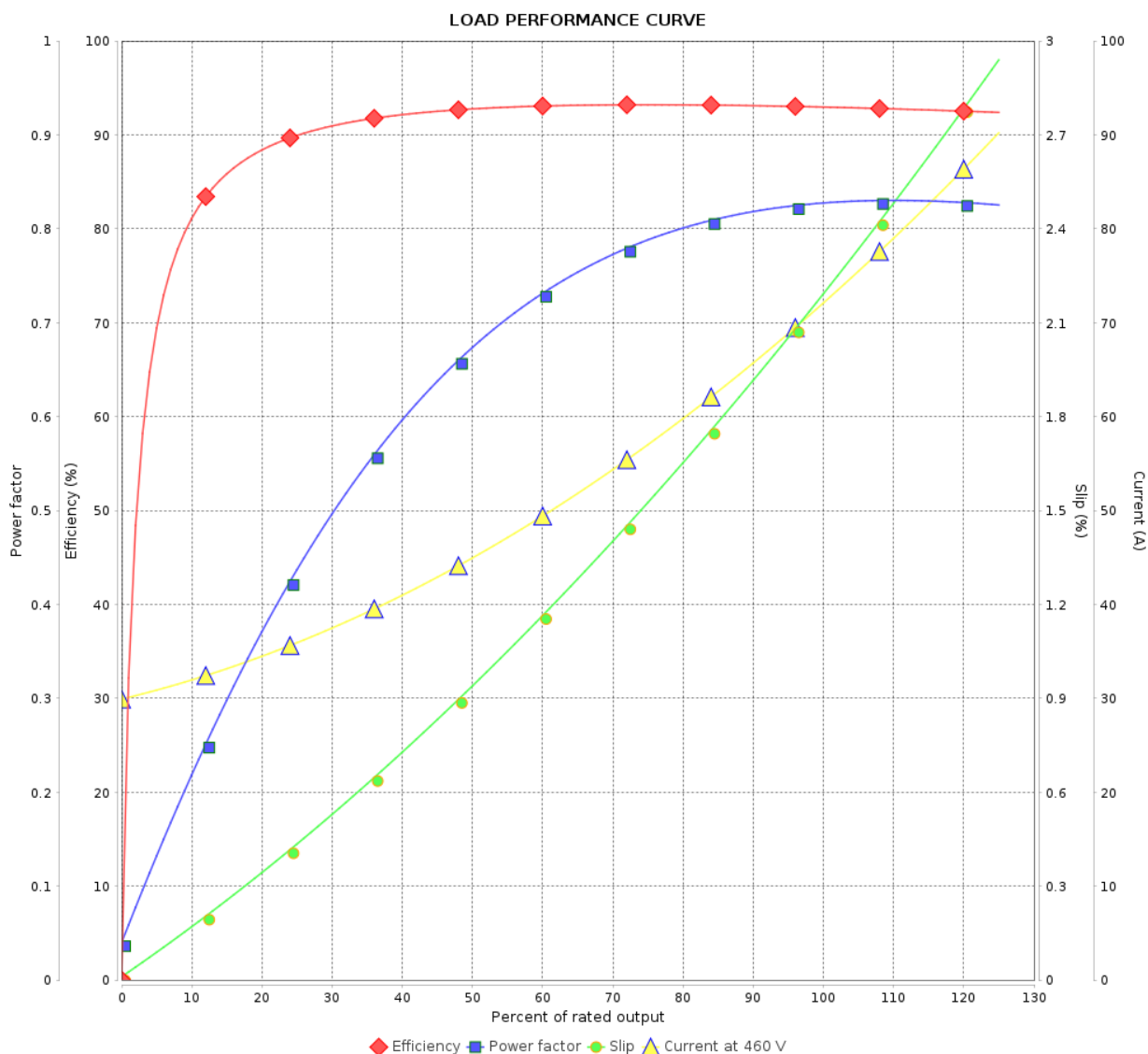
## Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : W22 IEEE 841 NEMA Premium  
Efficiency Three-Phase

Product code : 11943378



Performance : 460 V 60 Hz 8P

Rated current : 73.0 A  
LRC : 6.5  
Rated torque : 49.5 kgfm  
Locked rotor torque : 180 %  
Breakdown torque : 270 %  
Rated speed : 880 rpm

Moment of inertia (J) : 1.69 kgm<sup>2</sup>  
Duty cycle : Cont.(S1)  
Insulation class : F  
Service factor : 1.25  
Temperature rise : 80 K  
Design : B

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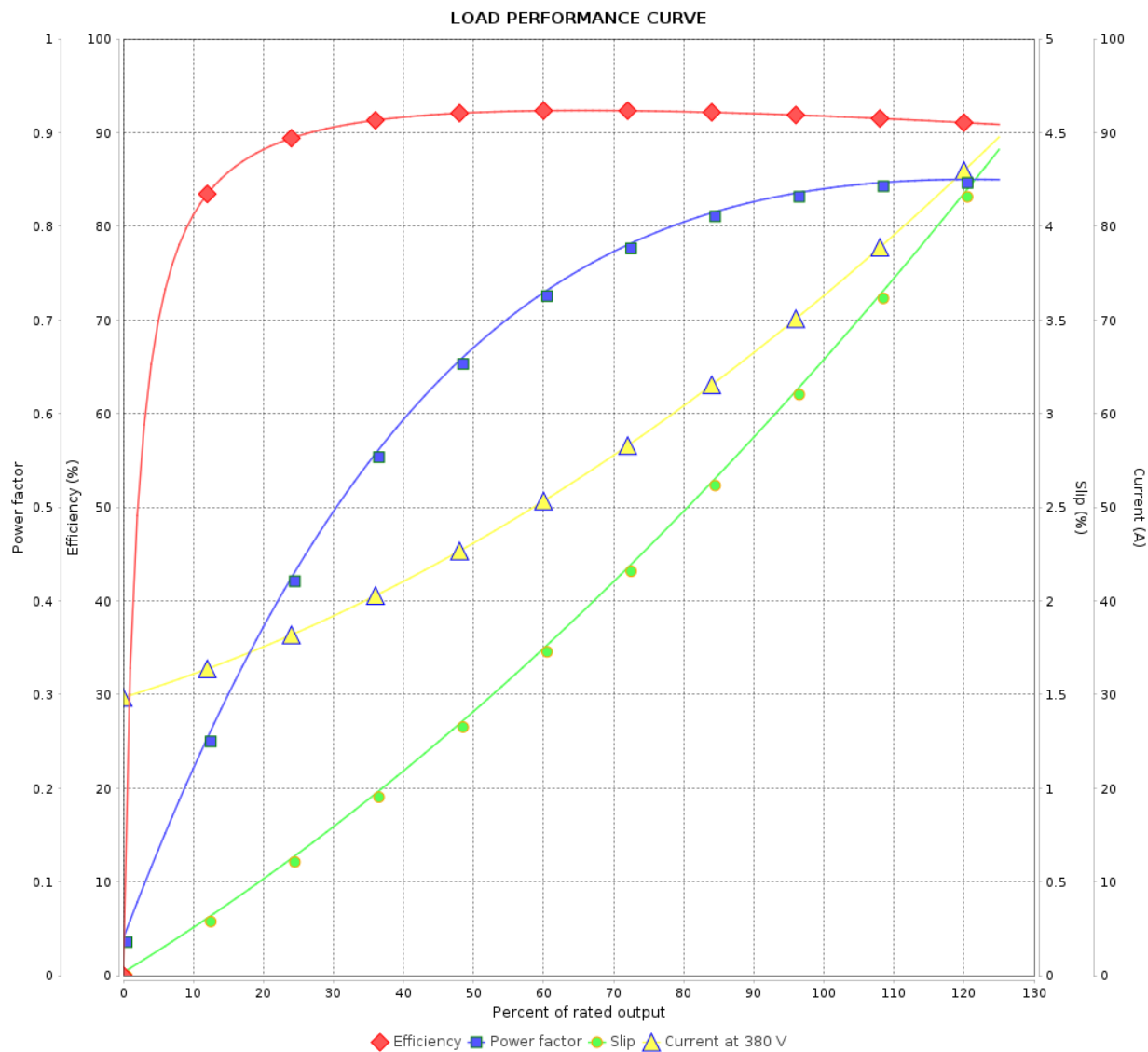
## Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : W22 IEEE 841 NEMA Premium  
Efficiency Three-Phase

Product code : 11943378



Performance : 380 V 50 Hz 8P IE3

Rated current : 72.9 A  
LRC : 6.1  
Rated torque : 50.1 kgfm  
Locked rotor torque : 180 %  
Breakdown torque : 250 %  
Rated speed : 725 rpm

Moment of inertia (J) : 1.69 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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| Date         | 22/10/2024      |  |           |               |          |

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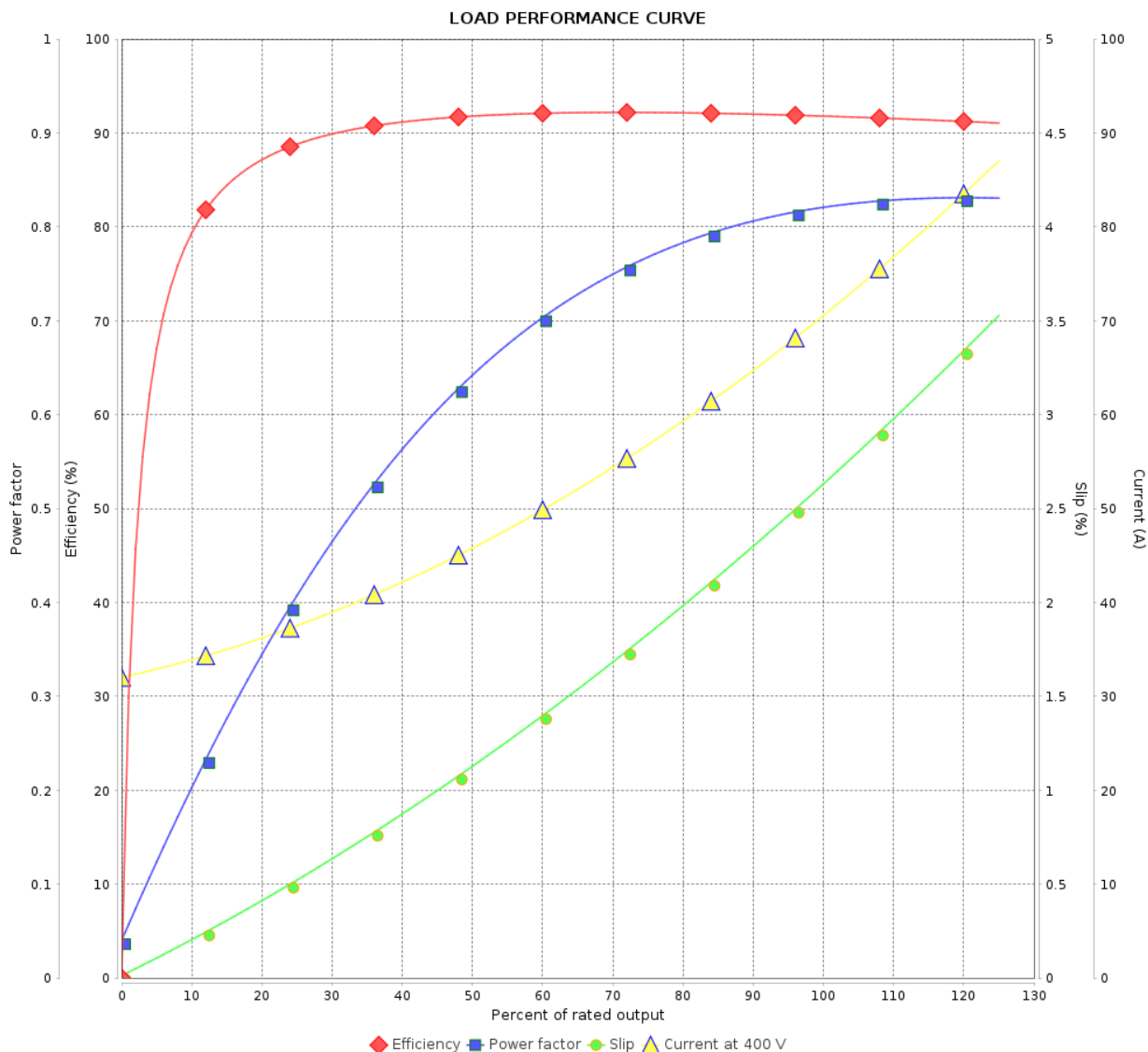
## Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : W22 IEEE 841 NEMA Premium  
Efficiency Three-Phase

Product code : 11943378



Performance : 400 V 50 Hz 8P IE3

Rated current : 70.9 A  
LRC : 6.7  
Rated torque : 49.7 kgfm  
Locked rotor torque : 210 %  
Breakdown torque : 290 %  
Rated speed : 730 rpm

Moment of inertia (J) : 1.69 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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# LOAD PERFORMANCE CURVE

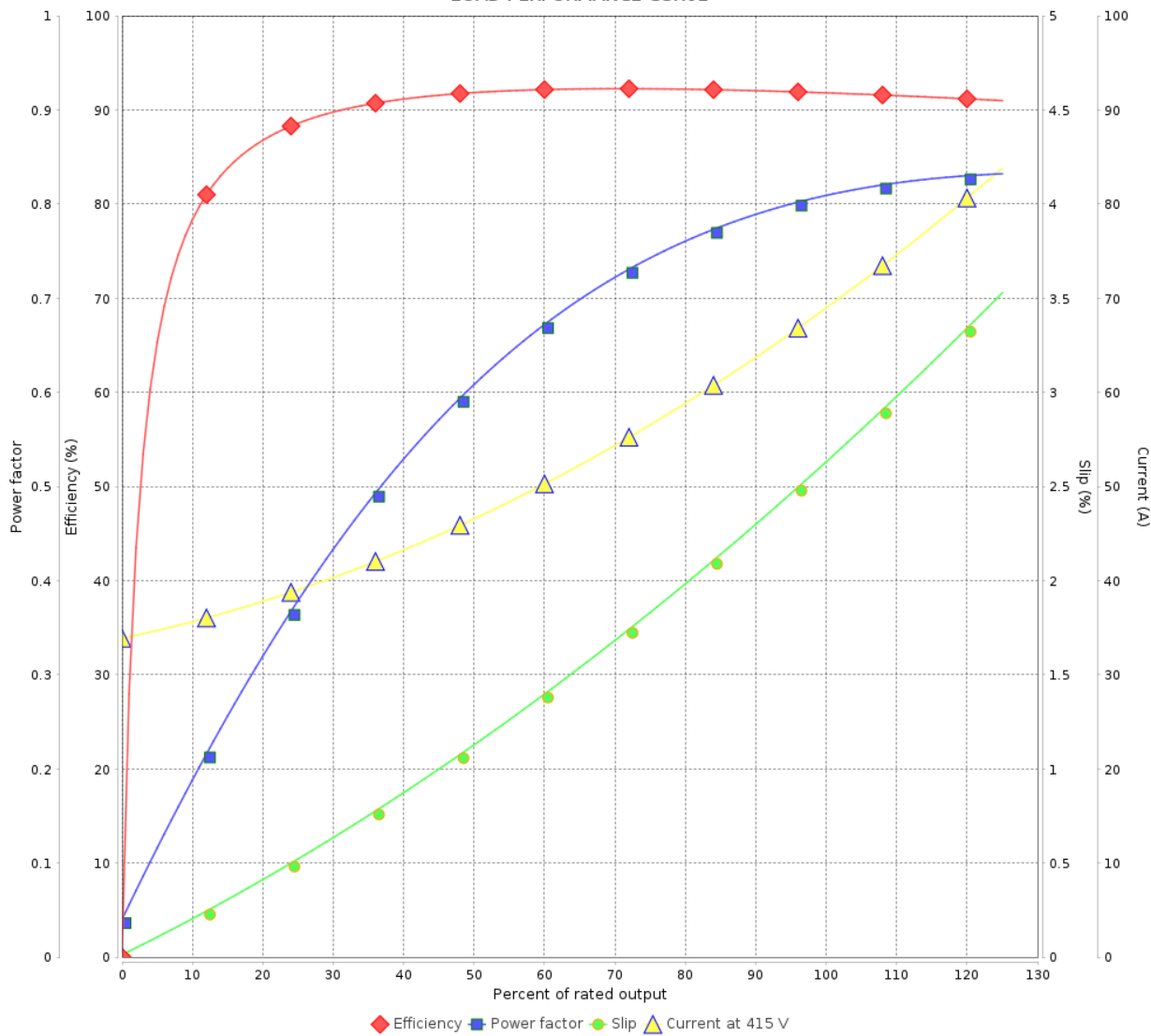
Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : W22 IEEE 841 NEMA Premium Efficiency Three-Phase      Product code : 11943378

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|                                  |             |                       |                         |
|----------------------------------|-------------|-----------------------|-------------------------|
| Performance : 415 V 50 Hz 8P IE3 |             |                       |                         |
| Rated current                    | : 69.2 A    | Moment of inertia (J) | : 1.69 kgm <sup>2</sup> |
| LRC                              | : 7.3       | Duty cycle            | : Cont.(S1)             |
| Rated torque                     | : 49.7 kgfm | Insulation class      | : F                     |
| Locked rotor torque              | : 229 %     | Service factor        | : 1.00                  |
| Breakdown torque                 | : 310 %     | Temperature rise      | : 80 K                  |
| Rated speed                      | : 730 rpm   | Design                | : B                     |

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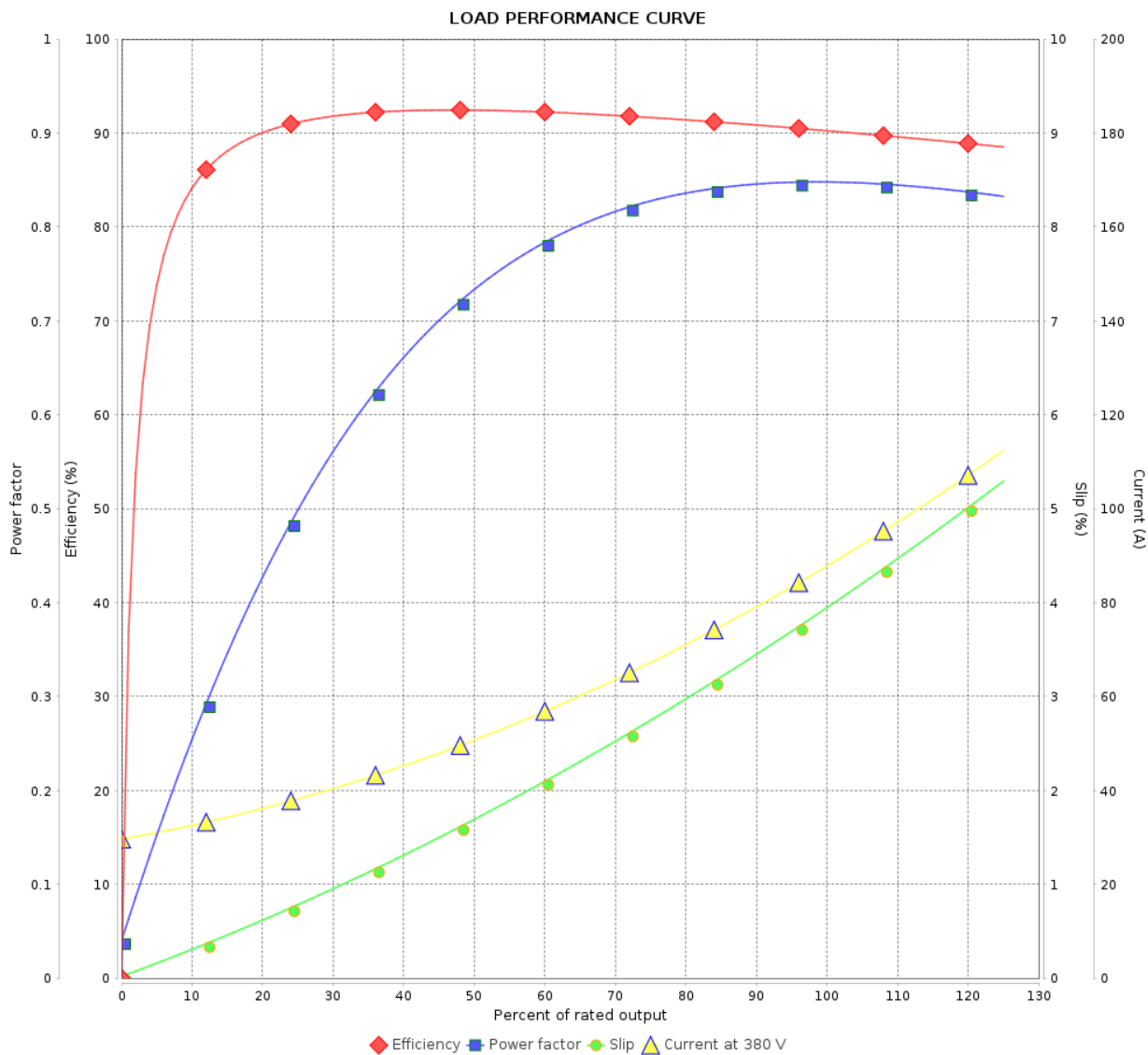
## Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : W22 IEEE 841 NEMA Premium  
Efficiency Three-Phase

Product code : 11943378



Performance : 380 V 50 Hz 8P IE1

Rated current : 89.2 A  
LRC : 5.1  
Rated torque : 60.5 kgfm  
Locked rotor torque : 150 %  
Breakdown torque : 210 %  
Rated speed : 720 rpm

Moment of inertia (J) : 1.69 kgm<sup>2</sup>  
Duty cycle : Cont.(S1)  
Insulation class : F  
Service factor : 1.00  
Temperature rise : 105 K  
Design : B

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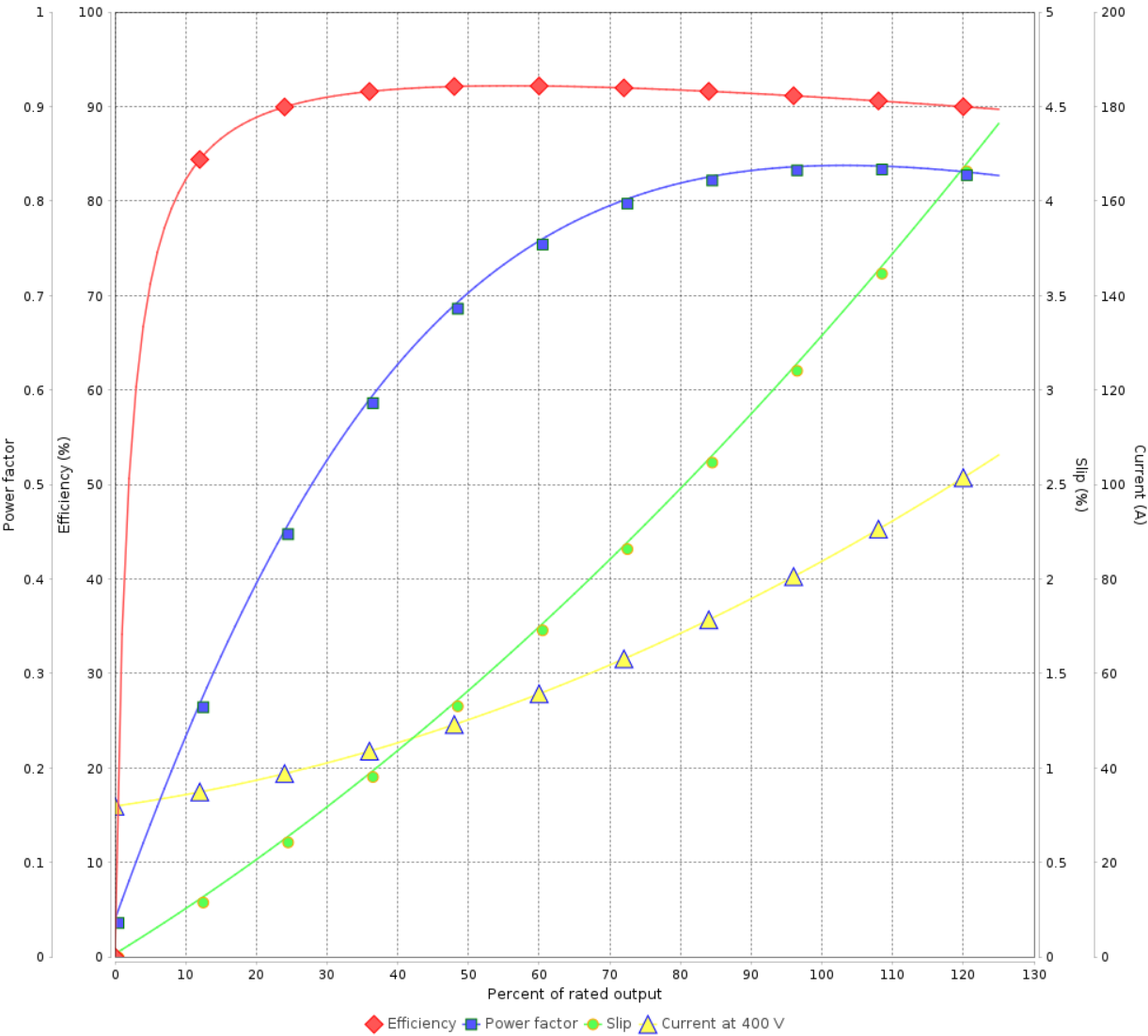
Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : W22 IEEE 841 NEMA Premium Efficiency Three-Phase      Product code : 11943378

LOAD PERFORMANCE CURVE



Performance : 400 V 50 Hz 8P IE2

|                     |             |                       |                         |
|---------------------|-------------|-----------------------|-------------------------|
| Rated current       | : 85.0 A    | Moment of inertia (J) | : 1.69 kgm <sup>2</sup> |
| LRC                 | : 5.7       | Duty cycle            | : Cont.(S1)             |
| Rated torque        | : 60.1 kgfm | Insulation class      | : F                     |
| Locked rotor torque | : 170 %     | Service factor        | : 1.00                  |
| Breakdown torque    | : 240 %     | Temperature rise      | : 105 K                 |
| Rated speed         | : 725 rpm   | Design                | : B                     |

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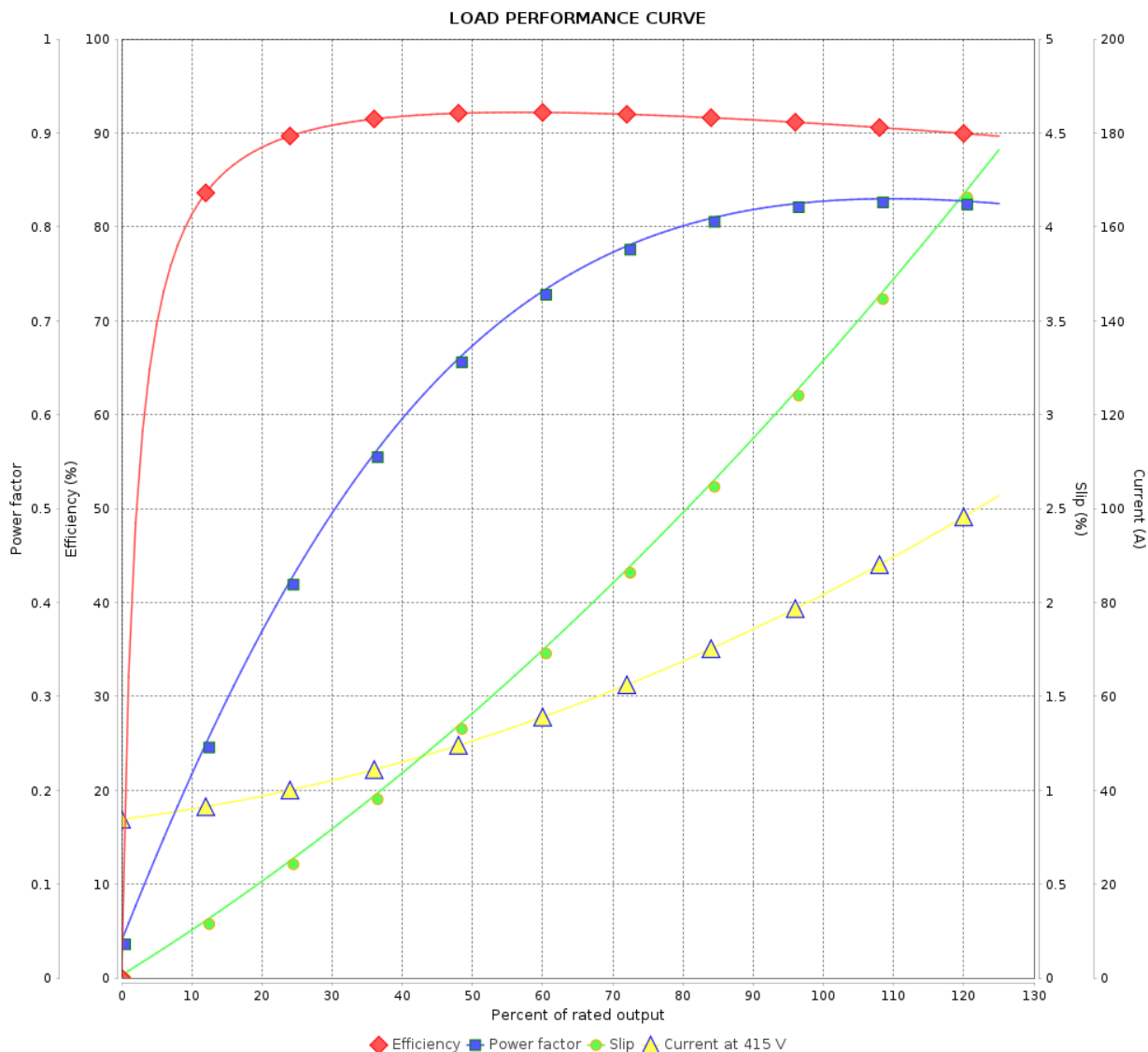
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Customer :

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Efficiency Three-Phase

Product code : 11943378

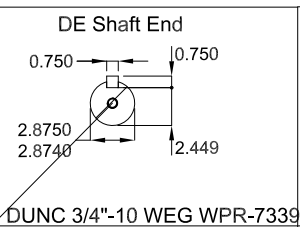
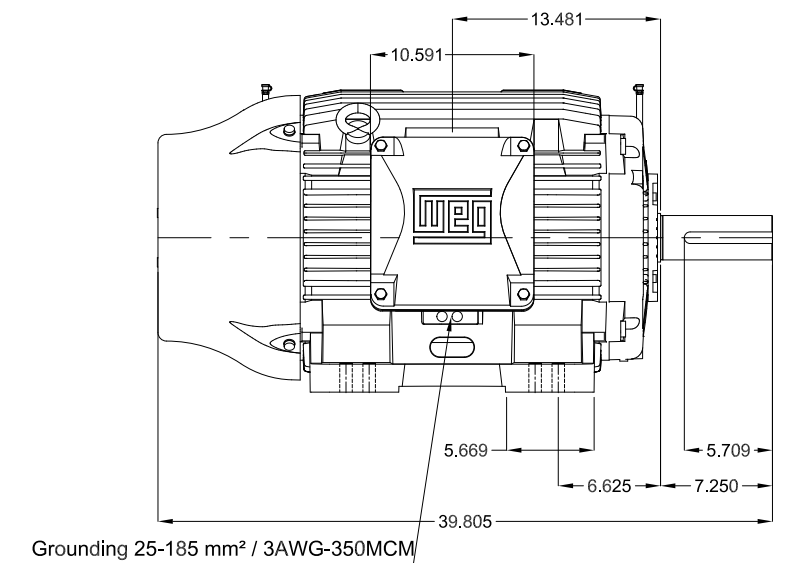
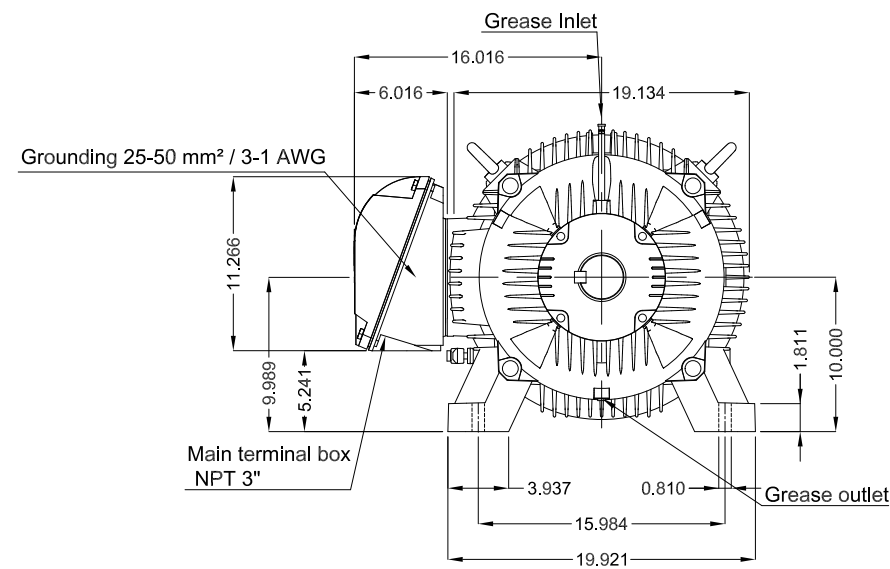
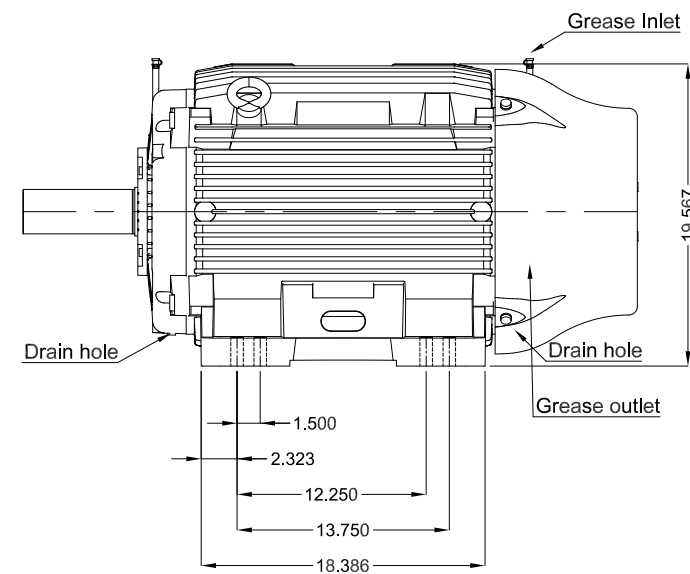


Performance : 415 V 50 Hz 8P IE2

Rated current : 82.9 A  
LRC : 6.2  
Rated torque : 60.1 kgfm  
Locked rotor torque : 190 %  
Breakdown torque : 260 %  
Rated speed : 725 rpm

Moment of inertia (J) : 1.69 kgm<sup>2</sup>  
Duty cycle : Cont.(S1)  
Insulation class : F  
Service factor : 1.00  
Temperature rise : 105 K  
Design : B

| Rev.         | Changes Summary | Performed             | Checked | Date |
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|--------------------------|------------|---------------------------------------------------------------------------------------|--------------------------------------------------------------------------|--|--|--|------------|------------------------|----------|---------------------------------------------------------------------------------------|-----|
| 60 HP   08 Poles   60 Hz |            |                                                                                       |                                                                          |  |  |  |            |                        |          | A                                                                                     |     |
|                          |            |                                                                                       |                                                                          |  |  |  |            |                        |          |                                                                                       |     |
|                          |            |                                                                                       |                                                                          |  |  |  |            |                        |          |                                                                                       |     |
|                          |            |                                                                                       |                                                                          |  |  |  | HYBRISUSER |                        |          |                                                                                       | 00  |
| ECM                      |            | LOC                                                                                   | SUMMARY OF MODIFICATIONS                                                 |  |  |  | EXECUTED   | CHECKED                | RELEASED | DATE                                                                                  | VER |
| EXECUTED                 | HYBRISUSER |  | THREE PH. MOTOR IEEE 841 W22   NEMA PREM. EFF.<br>FRAME 404/5T IP55 TEFC |  |  |  |            | PREVIEW<br>WDD      00 |          |  |     |
| CHECKED                  |            |                                                                                       |                                                                          |  |  |  |            |                        |          |                                                                                       |     |
| RELEASED                 |            |                                                                                       |                                                                          |  |  |  |            |                        |          |                                                                                       |     |
| REL. DATE                |            |                                                                                       |                                                                          |  |  |  |            |                        |          |                                                                                       |     |
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