

# DATA SHEET

## Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : W22 NEMA Premium Efficiency Three-Phase Product code : 11355210

|                     |                  |                             |                           |
|---------------------|------------------|-----------------------------|---------------------------|
| Frame               | : 364/5TC        | 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> | : 401 kg                  |
| Protection degree   | : IP55           | Moment of inertia (J)       | : 0.9448 kgm <sup>2</sup> |
| Design              | : B              |                             |                           |

|                          |                         |                         |                         |                         |                         |                         |                         |
|--------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| Output [HP]              | 60                      | 50                      | 50                      | 50                      | 60                      | 60                      | 60                      |
| 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]        | 143/71.6                | 71.0                    | 69.1                    | 67.4                    | 86.5                    | 82.6                    | 80.2                    |
| L. R. Amperes [A]        | 888/444                 | 447                     | 477                     | 499                     | 450                     | 479                     | 497                     |
| LRC [A]                  | 6.2x(Code G)            | 6.3x(Code G)            | 6.9x(Code H)            | 7.4x(Code J)            | 5.2x(Code E)            | 5.8x(Code F)            | 6.2x(Code G)            |
| No load current [A]      | 56.0/28.0               | 27.6                    | 29.8                    | 31.6                    | 27.6                    | 29.8                    | 31.6                    |
| Rated speed [RPM]        | 1780                    | 1480                    | 1482                    | 1484                    | 1470                    | 1475                    | 1477                    |
| Slip [%]                 | 1.11                    | 1.33                    | 1.20                    | 1.07                    | 2.00                    | 1.67                    | 1.53                    |
| Rated torque [kgfm]      | 24.5                    | 24.5                    | 24.5                    | 24.5                    | 29.6                    | 29.5                    | 29.5                    |
| Locked rotor torque [%]  | 220                     | 200                     | 220                     | 240                     | 160                     | 180                     | 200                     |
| Breakdown torque [%]     | 240                     | 240                     | 260                     | 280                     | 200                     | 210                     | 229                     |
| 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        | 27s (cold)<br>15s (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> | 67.0 dB(A)              | 63.0 dB(A)              | 63.0 dB(A)              | 63.0 dB(A)              | 63.0 dB(A)              | 63.0 dB(A)              | 63.0 dB(A)              |
| Efficiency (%)           | 25%                     |                         |                         |                         |                         |                         |                         |
|                          | 50%                     | 94.1                    | 93.7                    | 93.3                    | 93.4                    | 94.1                    | 94.1                    |
|                          | 75%                     | 94.5                    | 93.9                    | 93.9                    | 94.2                    | 93.6                    | 94.1                    |
|                          | 100%                    | 95.0                    | 94.2                    | 94.2                    | 94.3                    | 93.0                    | 94.1                    |
| Power Factor             | 25%                     |                         |                         |                         |                         |                         |                         |
|                          | 50%                     | 0.71                    | 0.71                    | 0.68                    | 0.65                    | 0.76                    | 0.70                    |
|                          | 75%                     | 0.80                    | 0.80                    | 0.78                    | 0.76                    | 0.82                    | 0.80                    |
|                          | 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)   | 5.1 | 5.1 | 5.1 | 5.1 | 5.1 | 5.1 |
|            | P2 (0,5;1,0)   | 4.1 | 4.1 | 4.1 | 4.1 | 4.1 | 4.1 |
|            | P3 (0,25;1,0)  | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 |
|            | P4 (0,9;0,5)   | 2.6 | 2.6 | 2.6 | 2.6 | 2.6 | 2.6 |
|            | P5 (0,5;0,5)   | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 |
|            | P6 (0,5;0,25)  | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 |
|            | P7 (0,25;0,25) | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 |

|                      |                    |                      |                            |
|----------------------|--------------------|----------------------|----------------------------|
|                      | <u>Drive end</u>   | <u>Non drive end</u> | Foundation loads           |
| Bearing type         | : 6314 C3          | 6314 C3              | Max. traction : 561 kgf    |
| Sealing              | : Oil Seal         | Oil Seal             | Max. compression : 962 kgf |
| Lubrication interval | : 12000 h          | 12000 h              |                            |
| Lubricant amount     | : 27 g             | 27 g                 |                            |
| Lubricant type       | : Mobil Polyrex EM |                      |                            |

This revision replaces and cancel the previous one, which must be eliminated.  
(1) Looking the motor from the shaft end.

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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# DATA SHEET

## Three Phase Induction Motor - Squirrel Cage



Customer :

Notes  
USABLE @208V 151A SF 1.10 SFA 166A

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# LOAD PERFORMANCE CURVE

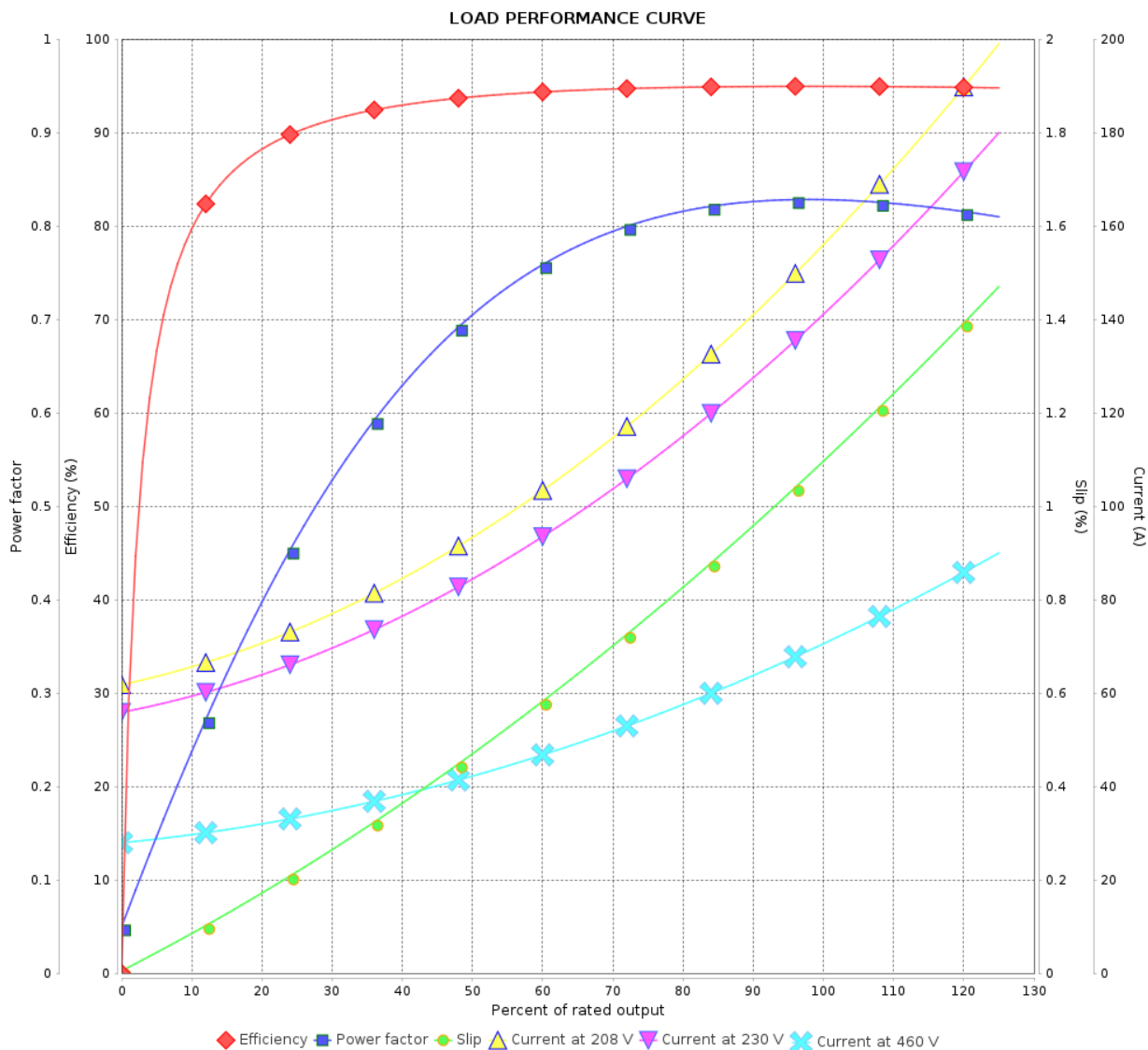
## Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : W22 NEMA Premium Efficiency  
Three-Phase

Product code : 11355210



Performance : 230/460 V 60 Hz 4P

Rated current : 143/71.6 A  
LRC : 6.2  
Rated torque : 24.5 kgfm  
Locked rotor torque : 220 %  
Breakdown torque : 240 %  
Rated speed : 1780 rpm

Moment of inertia (J) : 0.9448 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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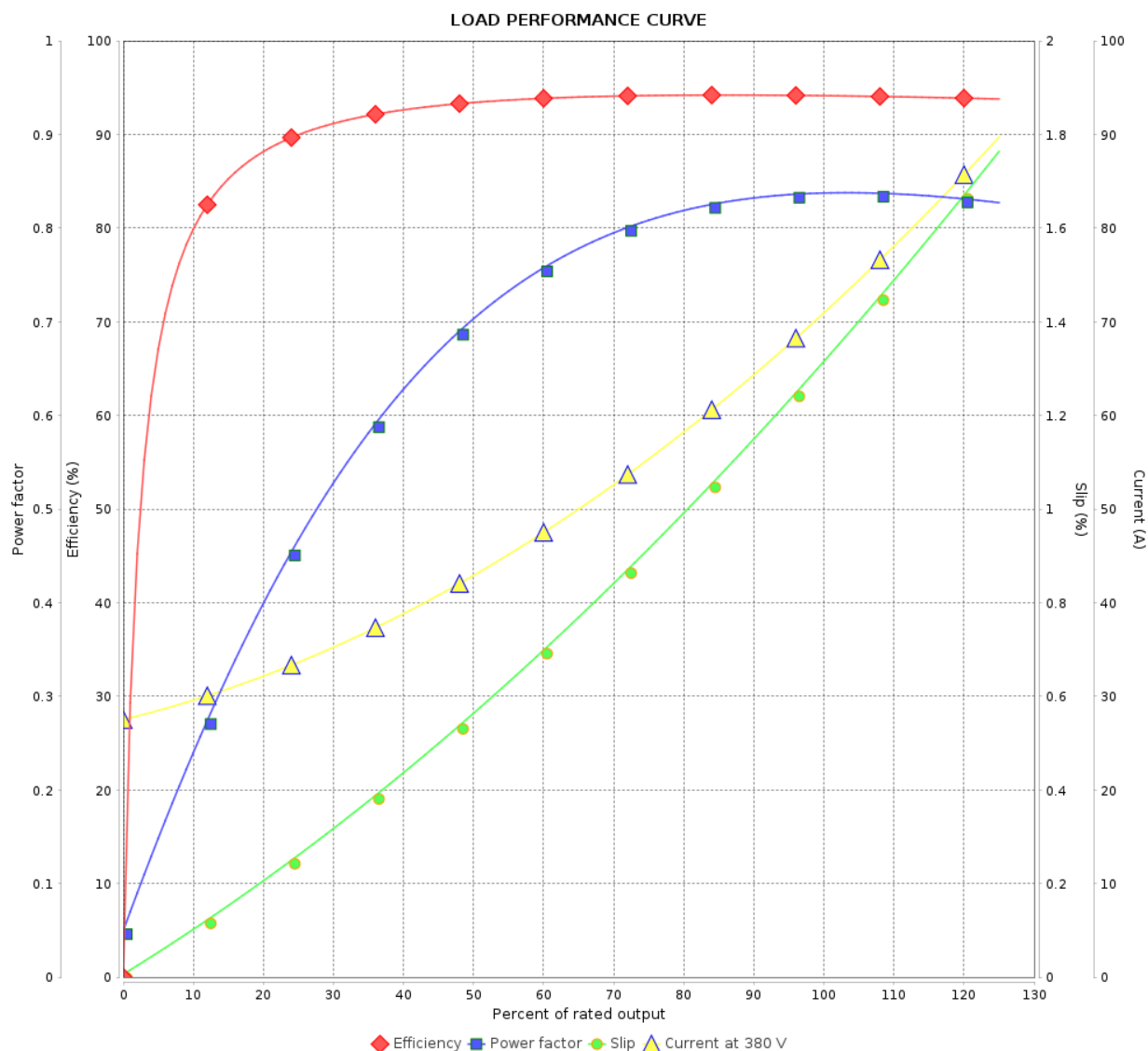
## Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : W22 NEMA Premium Efficiency  
Three-Phase

Product code : 11355210



Performance : 380 V 50 Hz 4P IE3

Rated current : 71.0 A  
LRC : 6.3  
Rated torque : 24.5 kgfm  
Locked rotor torque : 200 %  
Breakdown torque : 240 %  
Rated speed : 1480 rpm

Moment of inertia (J) : 0.9448 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

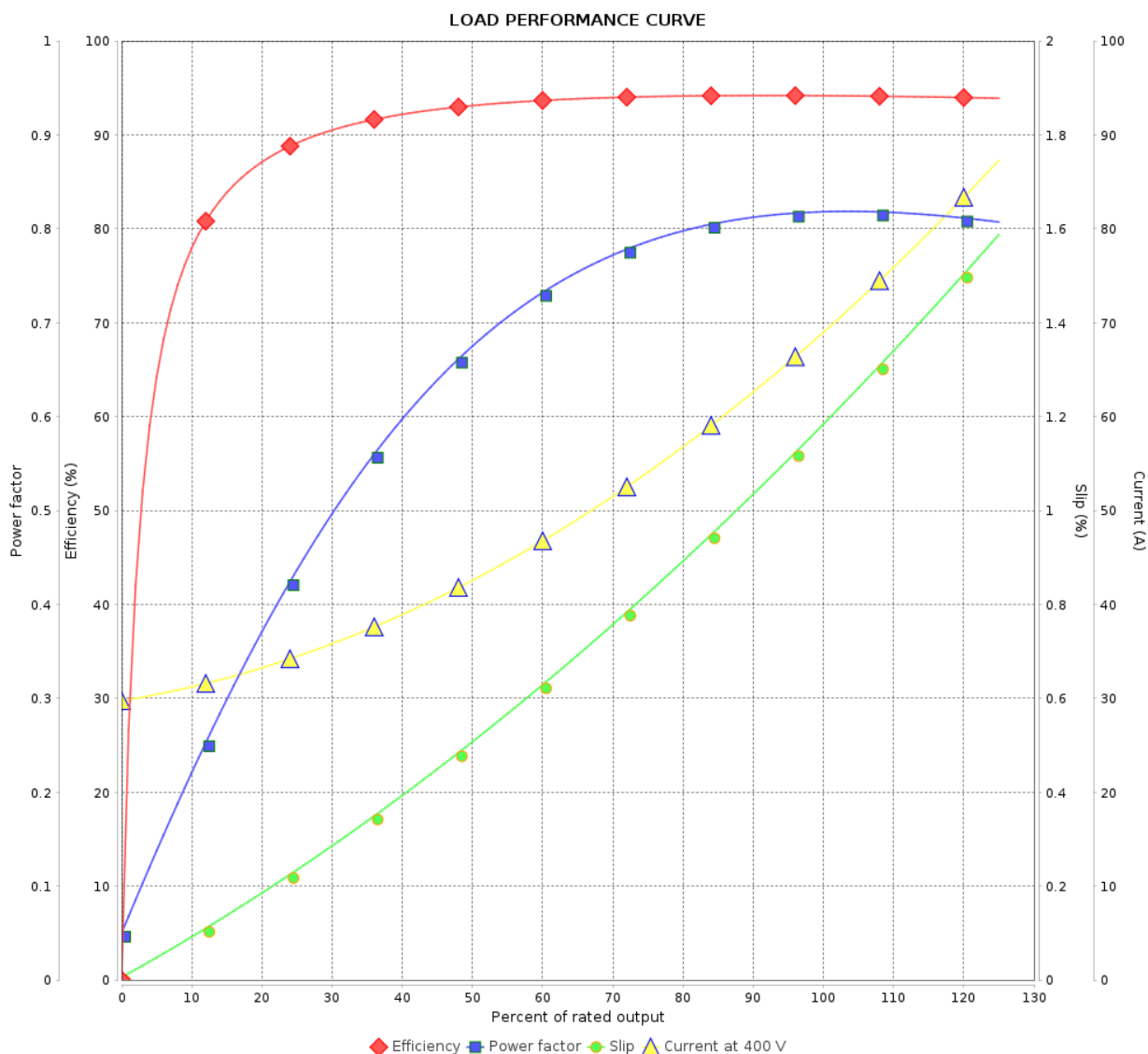
## Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : W22 NEMA Premium Efficiency  
Three-Phase

Product code : 11355210



Performance : 400 V 50 Hz 4P IE3

Rated current : 69.1 A  
LRC : 6.9  
Rated torque : 24.5 kgfm  
Locked rotor torque : 220 %  
Breakdown torque : 260 %  
Rated speed : 1482 rpm

Moment of inertia (J) : 0.9448 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

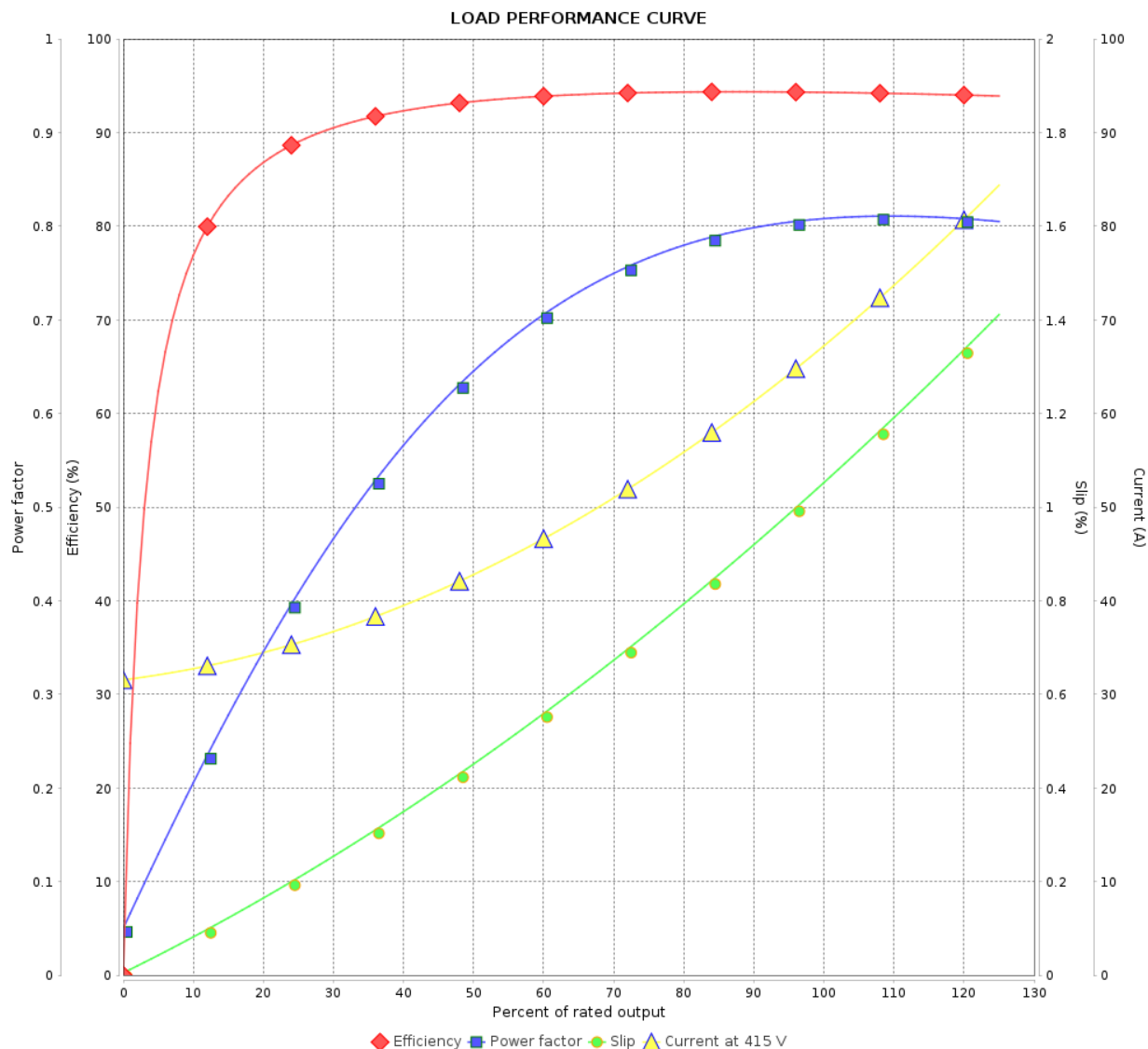
## Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : W22 NEMA Premium Efficiency  
Three-Phase

Product code : 11355210



Performance : 415 V 50 Hz 4P IE3

Rated current : 67.4 A  
LRC : 7.4  
Rated torque : 24.5 kgfm  
Locked rotor torque : 240 %  
Breakdown torque : 280 %  
Rated speed : 1484 rpm

Moment of inertia (J) : 0.9448 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

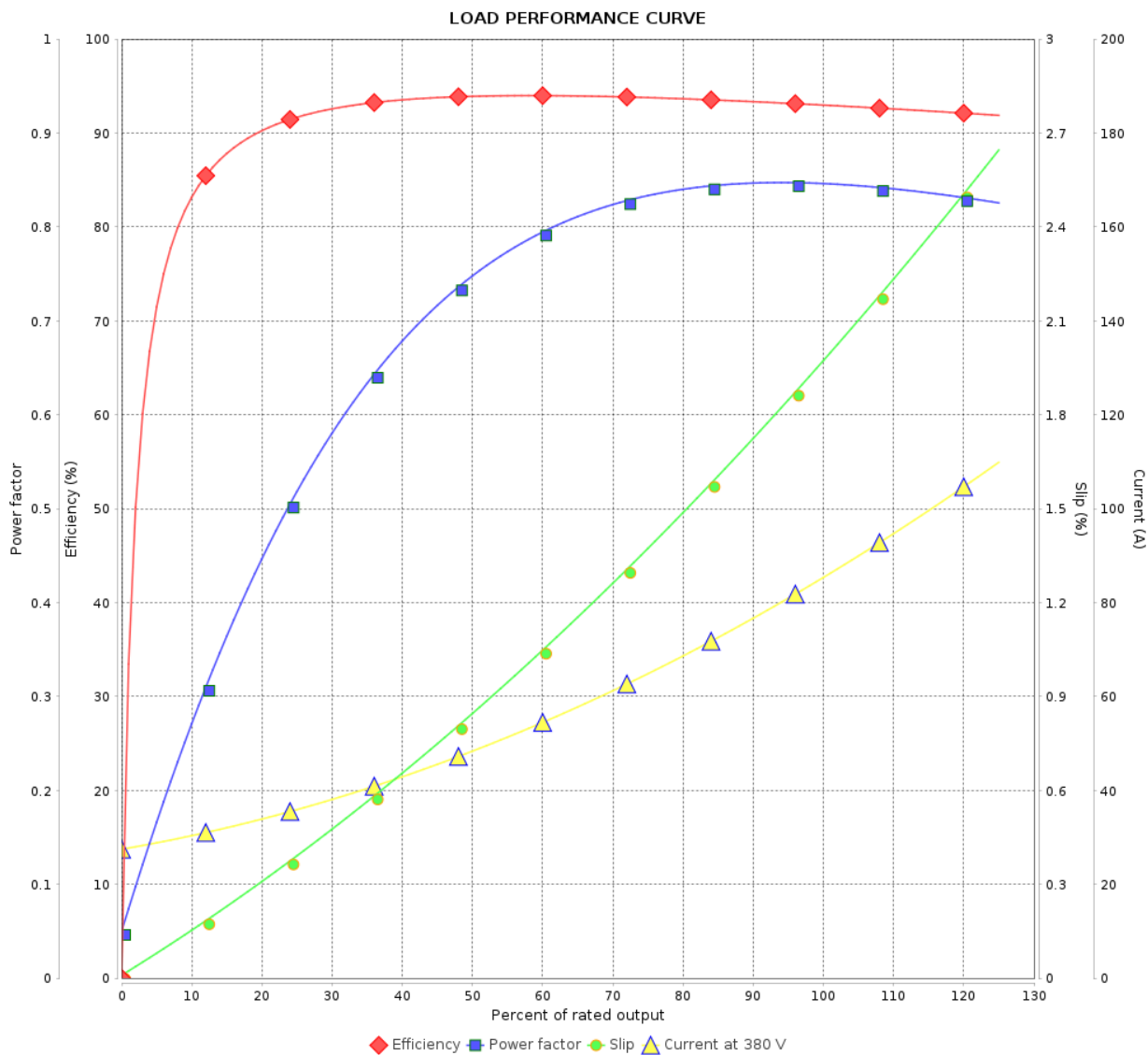
## Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : W22 NEMA Premium Efficiency  
Three-Phase

Product code : 11355210



Performance : 380 V 50 Hz 4P IE1

Rated current : 86.5 A  
LRC : 5.2  
Rated torque : 29.6 kgfm  
Locked rotor torque : 160 %  
Breakdown torque : 200 %  
Rated speed : 1470 rpm

Moment of inertia (J) : 0.9448 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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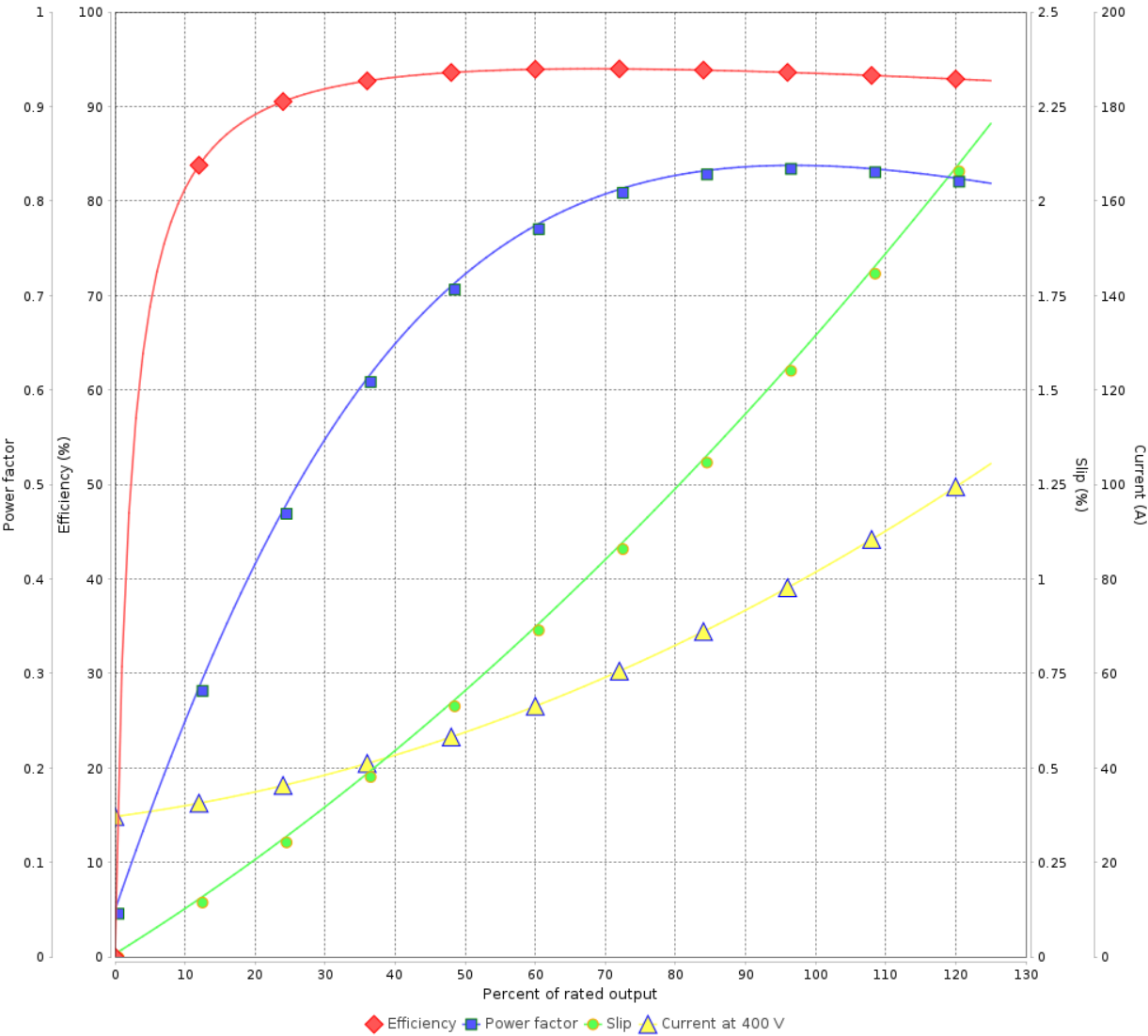
Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : W22 NEMA Premium Efficiency Three-Phase      Product code : 11355210

LOAD PERFORMANCE CURVE



|                                  |             |                       |                           |
|----------------------------------|-------------|-----------------------|---------------------------|
| Performance : 400 V 50 Hz 4P IE2 |             |                       |                           |
| Rated current                    | : 82.6 A    | Moment of inertia (J) | : 0.9448 kgm <sup>2</sup> |
| LRC                              | : 5.8       | Duty cycle            | : Cont.(S1)               |
| Rated torque                     | : 29.5 kgfm | Insulation class      | : F                       |
| Locked rotor torque              | : 180 %     | Service factor        | : 1.00                    |
| Breakdown torque                 | : 210 %     | Temperature rise      | : 105 K                   |
| Rated speed                      | : 1475 rpm  | Design                | : B                       |

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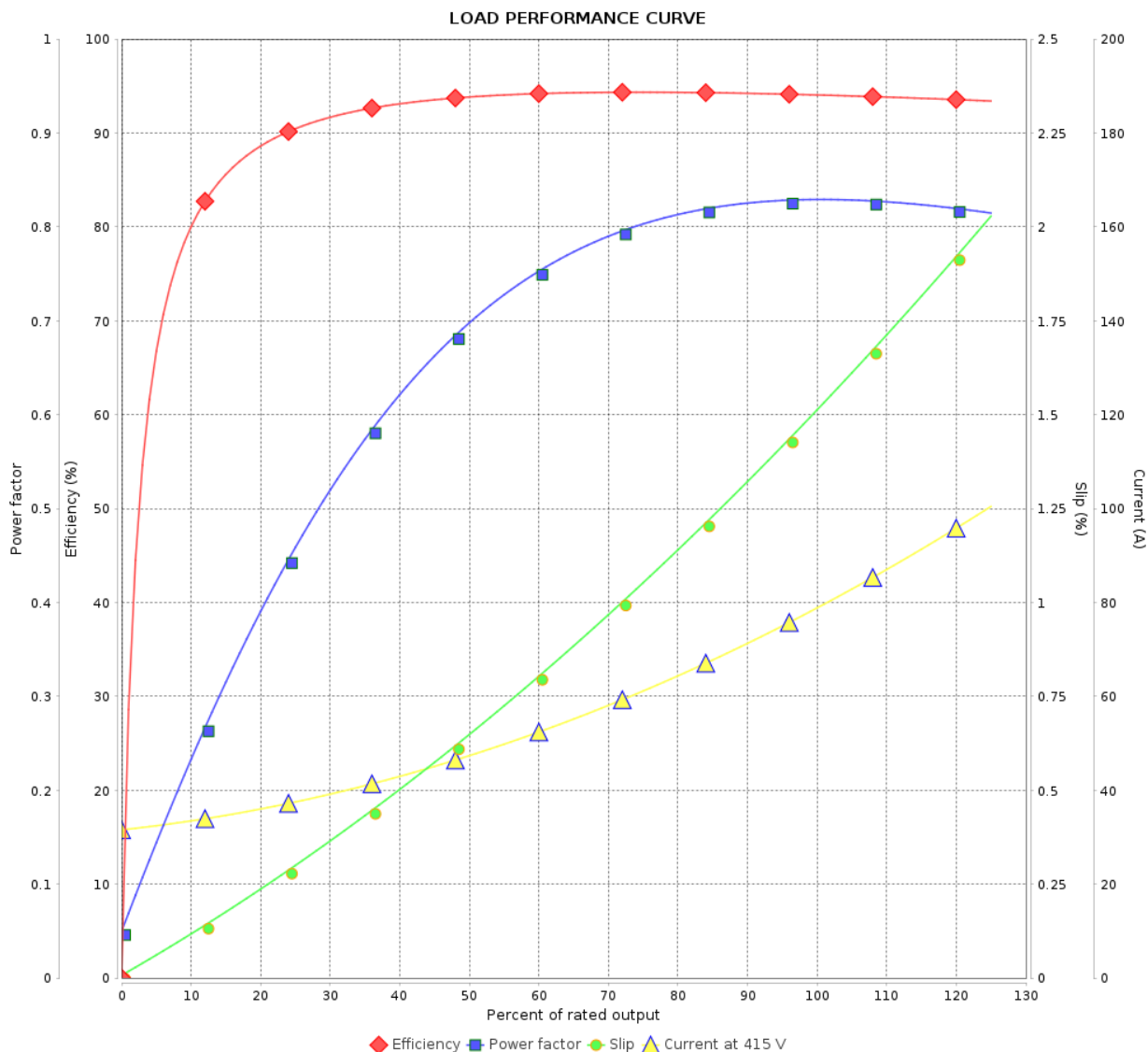
## Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : W22 NEMA Premium Efficiency  
Three-Phase

Product code : 11355210

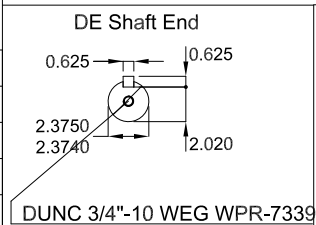
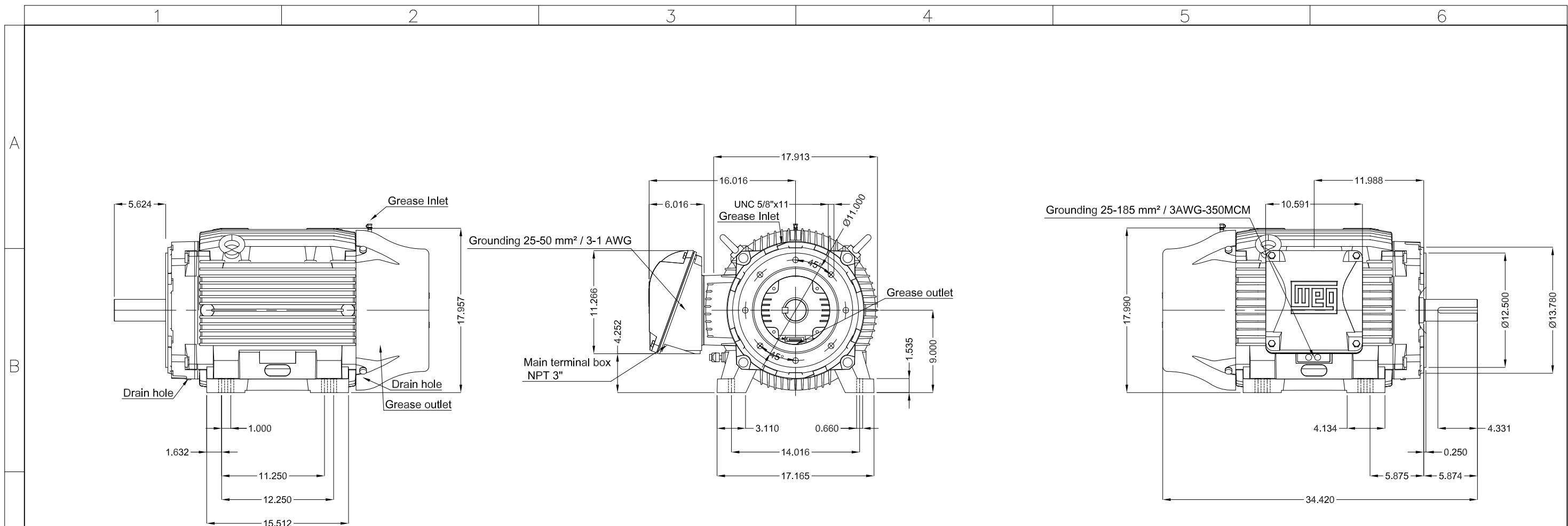


Performance : 415 V 50 Hz 4P IE2

Rated current : 80.2 A  
LRC : 6.2  
Rated torque : 29.5 kgfm  
Locked rotor torque : 200 %  
Breakdown torque : 229 %  
Rated speed : 1477 rpm

Moment of inertia (J) : 0.9448 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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|                            |            |                                                                                                                                                                             |  |  |            |                     |         |                                                                                       |      |     |         |
|----------------------------|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|------------|---------------------|---------|---------------------------------------------------------------------------------------|------|-----|---------|
| 60 HP    04 Poles    60 Hz |            |                                                                                                                                                                             |  |  |            |                     |         |                                                                                       |      |     | A       |
|                            |            |                                                                                                                                                                             |  |  |            |                     |         |                                                                                       |      |     |         |
|                            |            |                                                                                                                                                                             |  |  |            |                     |         |                                                                                       |      |     |         |
|                            |            |                                                                                                                                                                             |  |  | HYBRISUSER |                     |         |                                                                                       |      |     | 00      |
| ECM                        | LOC        | SUMMARY OF MODIFICATIONS                                                                                                                                                    |  |  |            | EXECUTED            | CHECKED | RELEASED                                                                              | DATE | VER |         |
| EXECUTED                   | HYBRISUSER | <div></div> <div>THREE PH. MOTOR W22 NEMA PREM. EFF.<br/>FRAME 364/5TC IP55 TEFC</div> |  |  |            | PREVIEW<br>WDD   00 |         |  |      |     |         |
| CHECKED                    |            |                                                                                                                                                                             |  |  |            |                     |         |                                                                                       |      |     |         |
| RELEASED                   |            |                                                                                                                                                                             |  |  |            |                     |         |                                                                                       |      |     |         |
| REL. DATE                  |            |                                                                                                                                                                             |  |  |            |                     |         |                                                                                       |      |     | SHEET / |