

# DATA SHEET



## Three Phase Induction Motor - Squirrel Cage

|  |   |                             |                           |  |                         |                         |                         |
|--|---|-----------------------------|---------------------------|--|-------------------------|-------------------------|-------------------------|
| Customer :   |   |                             |                           |  |                         |                         |                         |
| Product line   | : W22 IEEE 841 NEMA Premium Efficiency<br>Three-Phase | Product code :              | 12070752                  |  |                         |                         |                         |
| Frame  | : 213/5T  | 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> | : 85.8 kg                 |  |                         |                         |                         |
| Protection degree  | : IP56  | Moment of inertia (J)       | : 0.0636 kgm <sup>2</sup> |  |                         |                         |                         |
| Design   | : B   |                             |                           |  |                         |                         |                         |
| Output [HP]  | 10  | 7.5                         | 7.5                       | 7.5  | 10                      | 10                      | 10                      |
| Poles  | 4   | 4                           | 4                         | 4  | 4                       | 4                       | 4                       |
| Frequency [Hz]   | 60  | 50                          | 50                        | 50   | 50                      | 50                      | 50                      |
| Rated voltage [V]  | 460   | 380                         | 400                       | 415  | 380                     | 400                     | 415                     |
| Rated current [A]  | 12.4  | 11.2                        | 11.0                      | 10.9   | 15.0                    | 14.2                    | 13.8                    |
| L. R. Amperes [A]  | 79.4  | 75.0                        | 78.1                      | 81.7   | 76.5                    | 79.5                    | 82.8                    |
| LRC [A]  | 6.4x(Code H)  | 6.7x(Code H)                | 7.1x(Code J)              | 7.5x(Code J)   | 5.1x(Code F)            | 5.6x(Code F)            | 6.0x(Code G)            |
| No load current [A]  | 5.65  | 5.60                        | 6.00                      | 6.35   | 5.60                    | 6.00                    | 6.35                    |
| Rated speed [RPM]  | 1765  | 1465                        | 1470                      | 1470   | 1450                    | 1455                    | 1460                    |
| Slip [%]   | 1.94  | 2.33                        | 2.00                      | 2.00   | 3.33                    | 3.00                    | 2.67                    |
| Rated torque [kgfm]  | 4.11  | 3.72                        | 3.70                      | 3.70   | 5.01                    | 4.99                    | 4.97                    |
| Locked rotor torque [%]  | 200   | 200                         | 240                       | 260  | 150                     | 180                     | 190                     |
| Breakdown torque [%]   | 295   | 300                         | 340                       | 360  | 220                     | 250                     | 270                     |
| Service factor   | 1.25  | 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  | 30s (cold)<br>17s (hot)                               | 25s (cold)<br>14s (hot)     | 25s (cold)<br>14s (hot)   | 25s (cold)<br>14s (hot)  | 25s (cold)<br>14s (hot) | 25s (cold)<br>14s (hot) | 25s (cold)<br>14s (hot) |
| Noise level <sup>2</sup>   | 58.0 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%   | 91.0                        | 90.0                      | 89.2   | 88.7                    | 90.3                    | 90.3                    |
|  | 75%   | 91.7                        | 90.0                      | 89.9   | 89.8                    | 90.2                    | 90.2                    |
|  | 100%  | 91.7                        | 89.8                      | 90.1   | 90.3                    | 88.5                    | 89.5                    |
| Power Factor   | 25%   |                             |                           |  |                         |                         |                         |
|  | 50%   | 0.66                        | 0.62                      | 0.58   | 0.55                    | 0.73                    | 0.69                    |
|  | 75%   | 0.77                        | 0.76                      | 0.73   | 0.70                    | 0.82                    | 0.80                    |
|  | 100%  | 0.83                        | 0.83                      | 0.80   | 0.78                    | 0.86                    | 0.85                    |
| Losses at normative operating points (speed;torque), in percentage of rated output power                                   |   |                             |                           |  |                         |                         |                         |
| Losses (%)   | P1 (0,9;1,0)  | 8.8                         | 8.8                       | 8.8  | 8.8                     | 8.8                     | 8.8                     |
|  | P2 (0,5;1,0)  | 7.3                         | 7.3                       | 7.3  | 7.3                     | 7.3                     | 7.3                     |
|  | P3 (0,25;1,0)   | 7.0                         | 7.0                       | 7.0  | 7.0                     | 7.0                     | 7.0                     |
|  | P4 (0,9;0,5)  | 4.6                         | 4.6                       | 4.6  | 4.6                     | 4.6                     | 4.6                     |
|  | P5 (0,5;0,5)  | 3.2                         | 3.2                       | 3.2  | 3.2                     | 3.2                     | 3.2                     |
|  | P6 (0,5;0,25)   | 2.3                         | 2.3                       | 2.3  | 2.3                     | 2.3                     | 2.3                     |
|  | P7 (0,25;0,25)  | 1.6                         | 1.6                       | 1.6  | 1.6                     | 1.6                     | 1.6                     |
| Bearing type   | : Drive end : 6308 C3<br>Non drive end : 6207 C3      | Foundation loads            |                           | Max. traction : 205 kgf  |                         |                         |                         |
| Sealing  | : Inpro/Seal  | Max. compression            |                           | : 291 kgf  |                         |                         |                         |
| Lubrication interval   | : 20000 h   |                             |                           |  |                         |                         |                         |
| Lubricant amount   | : 11 g  |                             |                           |  |                         |                         |                         |
| Lubricant type   | : Mobil Polyrex EM                                    |                             |                           |  |                         |                         |                         |
| This revision replaces and cancel the previous one, which must be eliminated.<br>(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                    |                         |
| Performed by   |   |                             |                           |  |                         |                         |                         |
| Checked by   |   |                             |                           |  | Page                    | Revision                |                         |
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## Three Phase Induction Motor - Squirrel Cage



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

Notes

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# LOAD PERFORMANCE CURVE

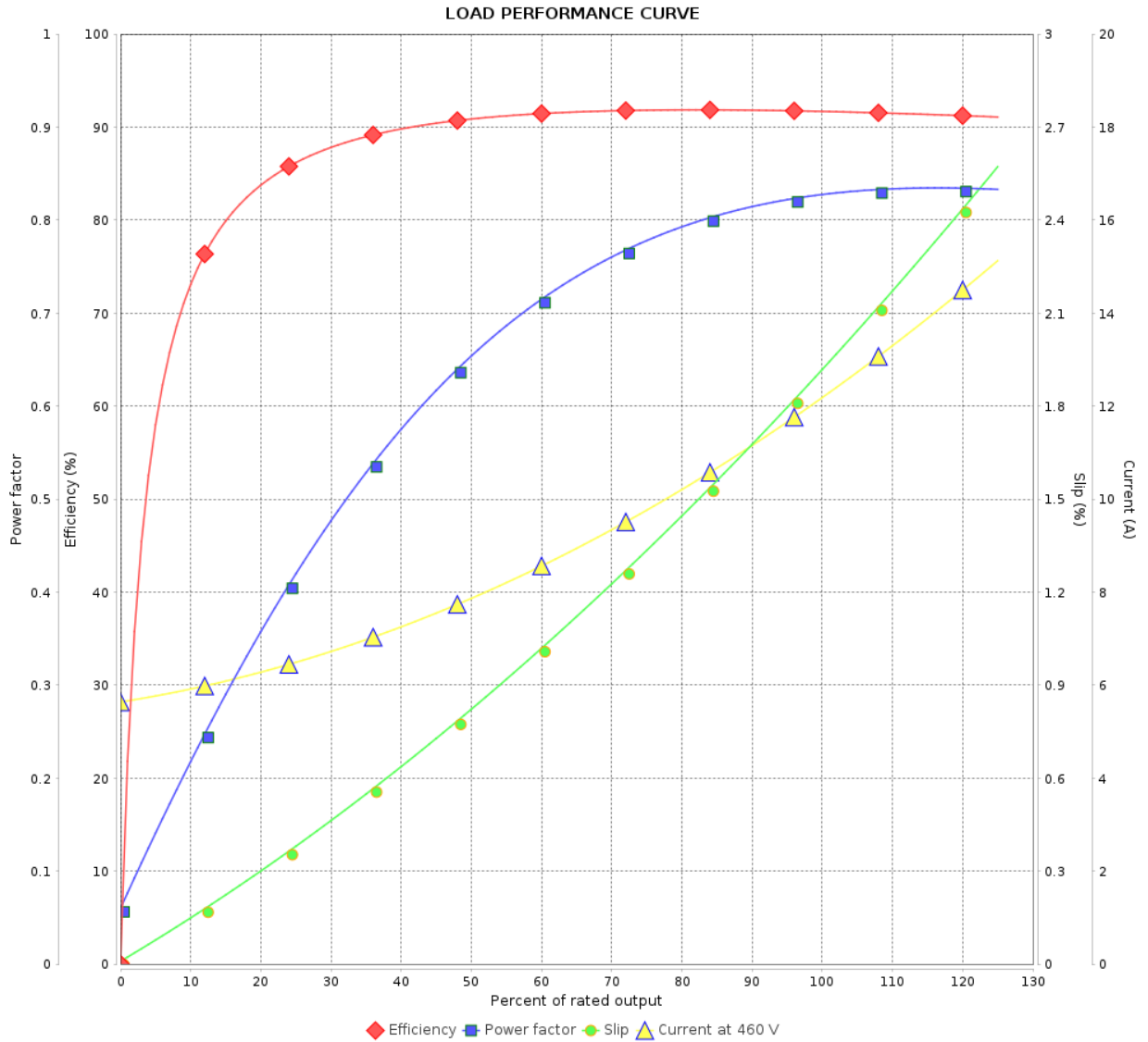
## Three Phase Induction Motor - Squirrel Cage



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

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

Product code : 12070752



Performance : 460 V 60 Hz 4P

Rated current : 12.4 A  
 LRC : 6.4  
 Rated torque : 4.11 kgfm  
 Locked rotor torque : 200 %  
 Breakdown torque : 295 %  
 Rated speed : 1765 rpm

Moment of inertia (J) : 0.0636 kgm<sup>2</sup>  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.25  
 Temperature rise : 80 K  
 Design : B

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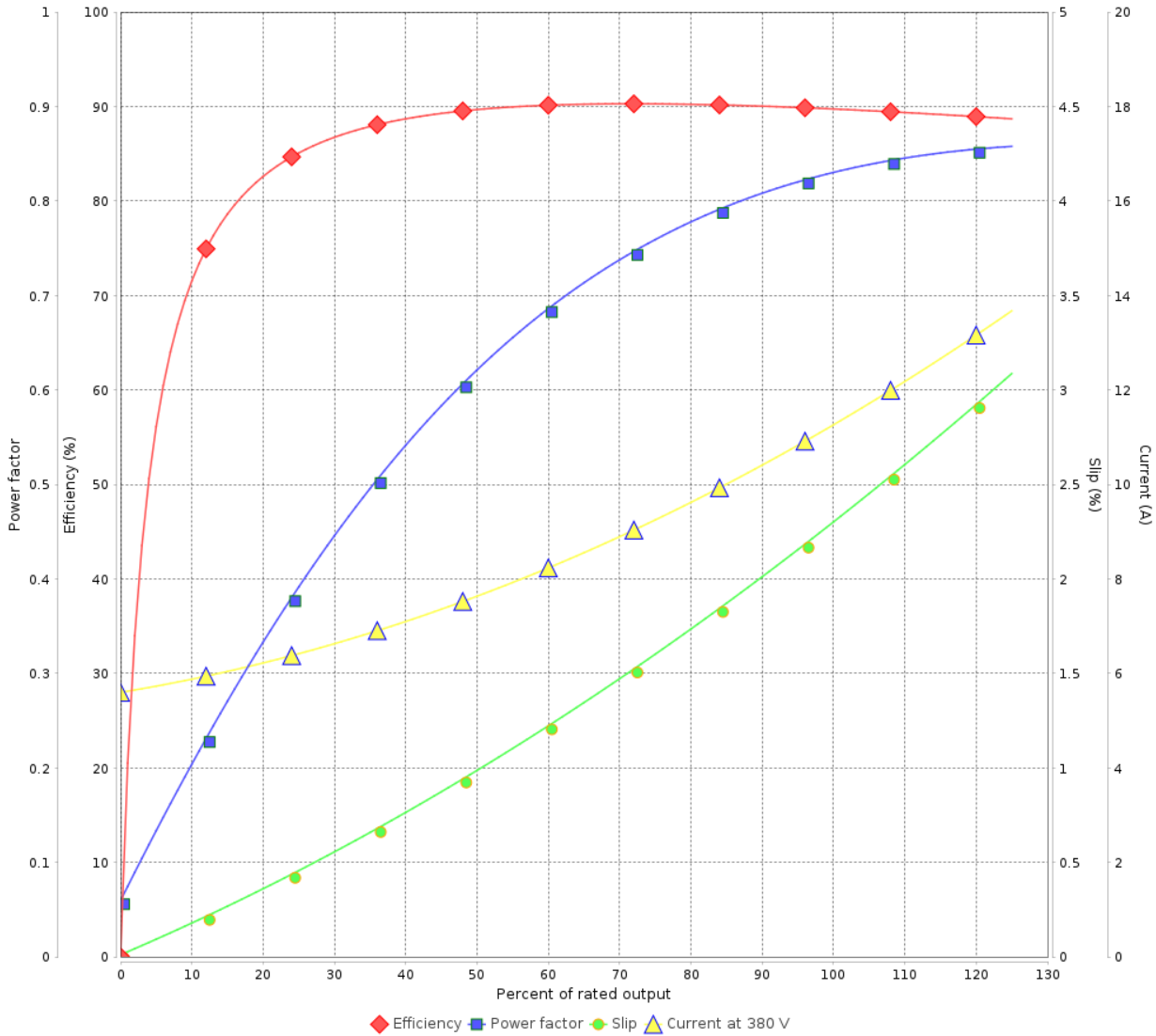
Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : W22 IEEE 841 NEMA Premium Efficiency Three-Phase      Product code : 12070752

LOAD PERFORMANCE CURVE



Performance : 380 V 50 Hz 4P IE3

|                     |             |                       |                           |
|---------------------|-------------|-----------------------|---------------------------|
| Rated current       | : 11.2 A    | Moment of inertia (J) | : 0.0636 kgm <sup>2</sup> |
| LRC                 | : 6.7       | Duty cycle            | : Cont.(S1)               |
| Rated torque        | : 3.72 kgfm | Insulation class      | : F                       |
| Locked rotor torque | : 200 %     | Service factor        | : 1.15                    |
| Breakdown torque    | : 300 %     | Temperature rise      | : 80 K                    |
| Rated speed         | : 1465 rpm  | Design                | : B                       |

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# LOAD PERFORMANCE CURVE

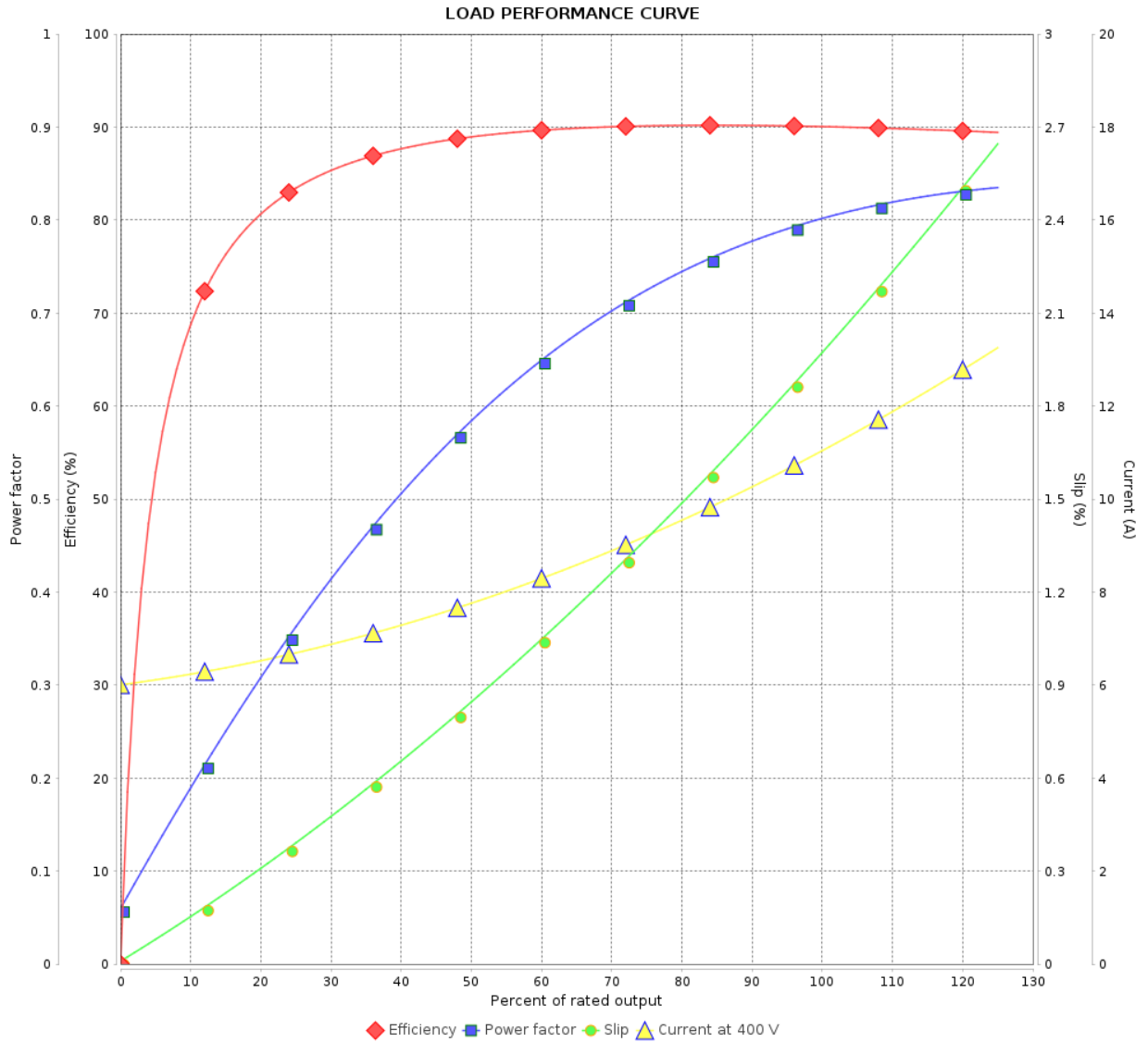
Three Phase Induction Motor - Squirrel Cage



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

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

Product code : 12070752



Performance : 400 V 50 Hz 4P IE3

Rated current : 11.0 A  
 LRC : 7.1  
 Rated torque : 3.70 kgfm  
 Locked rotor torque : 240 %  
 Breakdown torque : 340 %  
 Rated speed : 1470 rpm

Moment of inertia (J) : 0.0636 kgm<sup>2</sup>  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.15  
 Temperature rise : 80 K  
 Design : B

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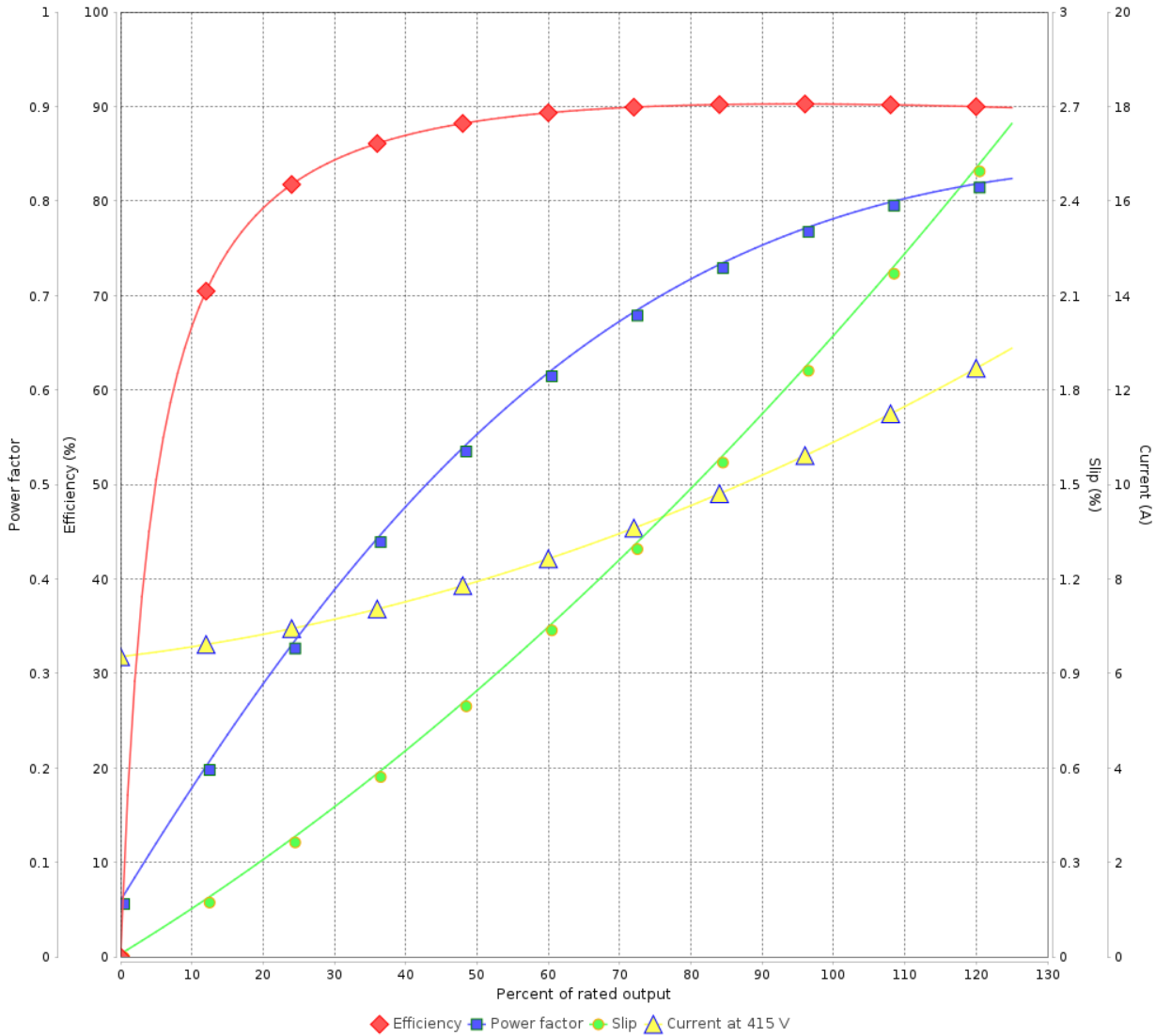
Three Phase Induction Motor - Squirrel Cage



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

Product line : W22 IEEE 841 NEMA Premium Efficiency Three-Phase      Product code : 12070752

LOAD PERFORMANCE CURVE



Performance : 415 V 50 Hz 4P IE3

|                     |             |                       |                           |
|---------------------|-------------|-----------------------|---------------------------|
| Rated current       | : 10.9 A    | Moment of inertia (J) | : 0.0636 kgm <sup>2</sup> |
| LRC                 | : 7.5       | Duty cycle            | : Cont.(S1)               |
| Rated torque        | : 3.70 kgfm | Insulation class      | : F                       |
| Locked rotor torque | : 260 %     | Service factor        | : 1.15                    |
| Breakdown torque    | : 360 %     | Temperature rise      | : 80 K                    |
| Rated speed         | : 1470 rpm  | Design                | : B                       |

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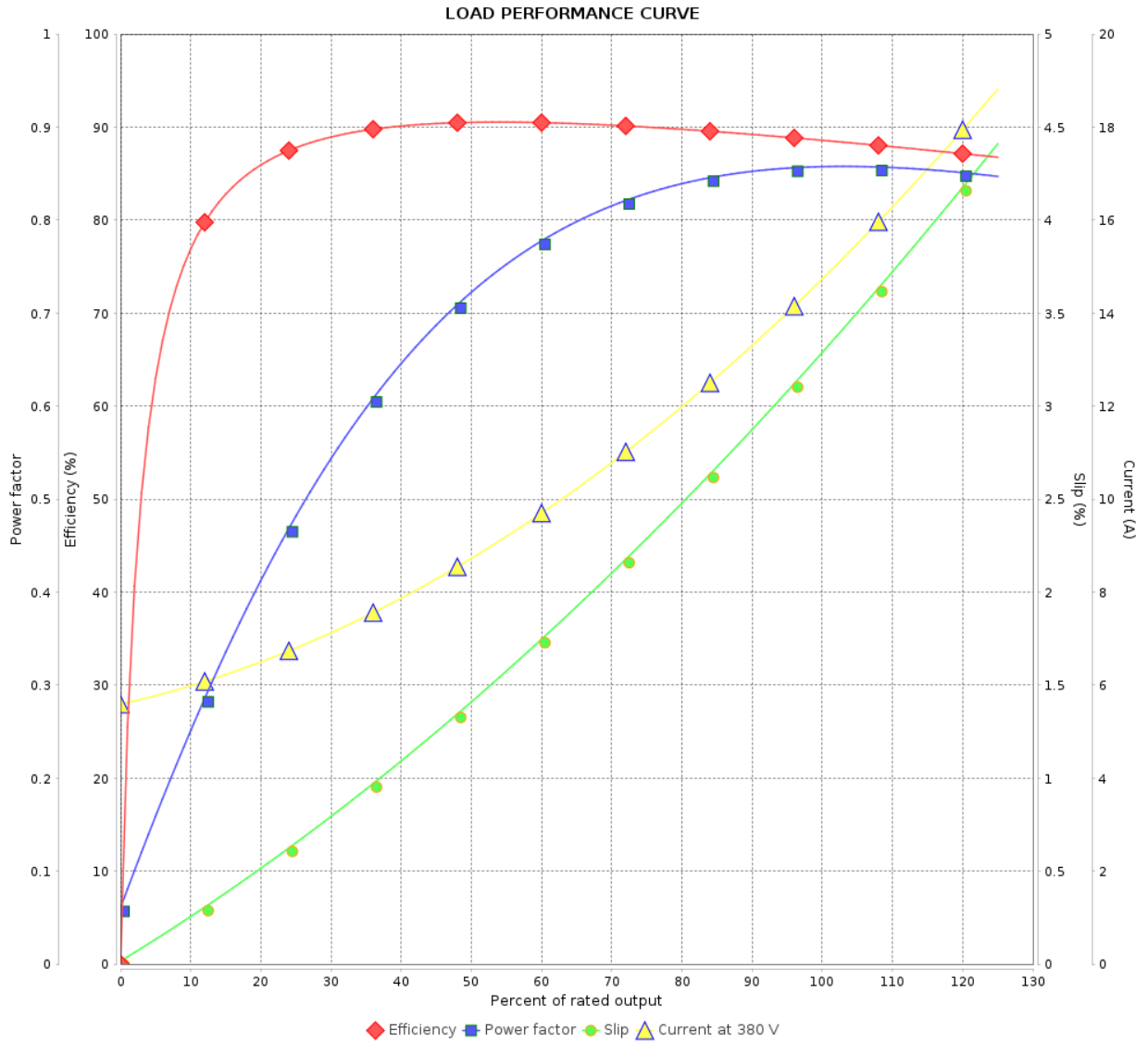
## Three Phase Induction Motor - Squirrel Cage



Customer :

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

Product code : 12070752



Performance : 380 V 50 Hz 4P IE1

Rated current : 15.0 A  
 LRC : 5.1  
 Rated torque : 5.01 kgfm  
 Locked rotor torque : 150 %  
 Breakdown torque : 220 %  
 Rated speed : 1450 rpm

Moment of inertia (J) : 0.0636 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

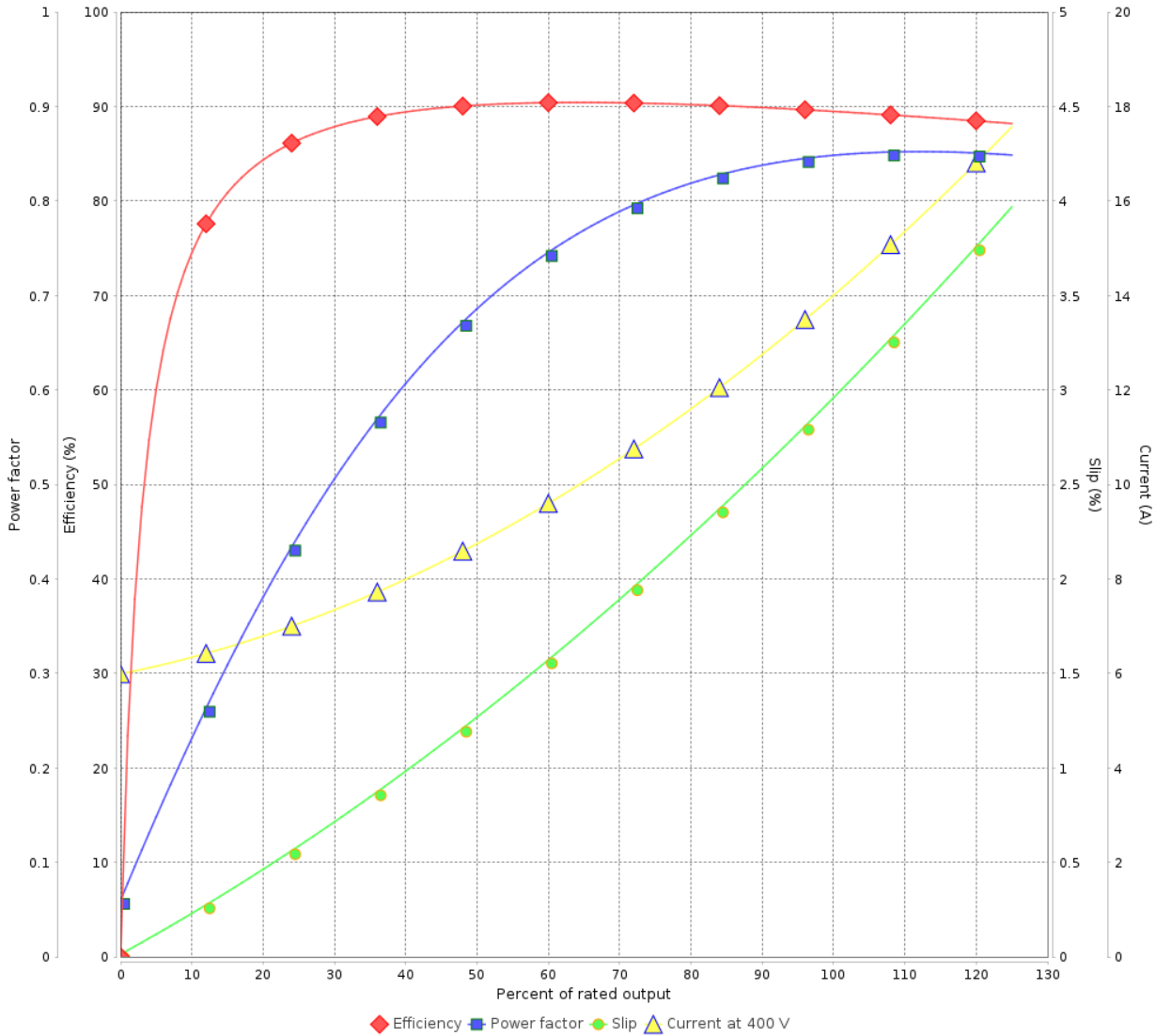
Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : W22 IEEE 841 NEMA Premium Efficiency Three-Phase      Product code : 12070752

LOAD PERFORMANCE CURVE



Performance : 400 V 50 Hz 4P IE2

|                     |             |                       |                           |
|---------------------|-------------|-----------------------|---------------------------|
| Rated current       | : 14.2 A    | Moment of inertia (J) | : 0.0636 kgm <sup>2</sup> |
| LRC                 | : 5.6       | Duty cycle            | : Cont.(S1)               |
| Rated torque        | : 4.99 kgfm | Insulation class      | : F                       |
| Locked rotor torque | : 180 %     | Service factor        | : 1.15                    |
| Breakdown torque    | : 250 %     | Temperature rise      | : 80 K                    |
| Rated speed         | : 1455 rpm  | Design                | : B                       |

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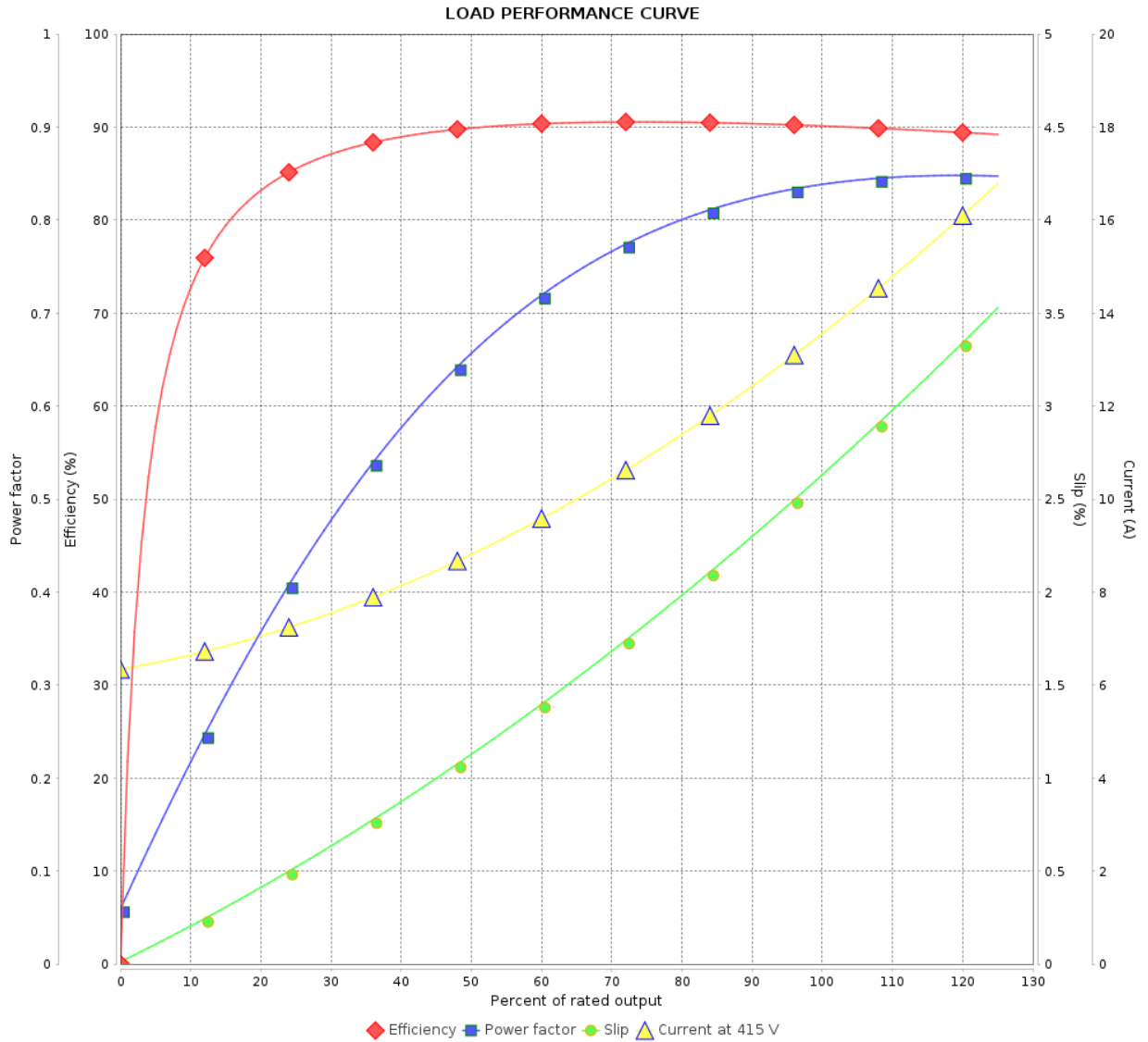
Three Phase Induction Motor - Squirrel Cage



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

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

Product code : 12070752



Performance : 415 V 50 Hz 4P IE2

Rated current : 13.8 A  
 LRC : 6.0  
 Rated torque : 4.97 kgfm  
 Locked rotor torque : 190 %  
 Breakdown torque : 270 %  
 Rated speed : 1460 rpm

Moment of inertia (J) : 0.0636 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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