

# DATA SHEET

## Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : W22 NEMA Premium Efficiency Three-Phase Product code : 11783909

|                                      |                                                 |
|--------------------------------------|-------------------------------------------------|
| Frame : 143/5T                       | 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> : 24.7 kg           |
| Protection degree : IP55             | Moment of inertia (J) : 0.0026 kgm <sup>2</sup> |
| Design : B                           |                                                 |

|                          |                         |                         |                         |                         |                         |                         |                         |
|--------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| Output [HP]              | 3                       | 2                       | 2                       | 2                       | 3                       | 3                       | 3                       |
| Poles                    | 2                       | 2                       | 2                       | 2                       | 2                       | 2                       | 2                       |
| Frequency [Hz]           | 60                      | 50                      | 50                      | 50                      | 50                      | 50                      | 50                      |
| Rated voltage [V]        | 230/460                 | 380                     | 400                     | 415                     | 380                     | 400                     | 415                     |
| Rated current [A]        | 7.42/3.71               | 3.24                    | 3.17                    | 3.15                    | 4.44                    | 4.26                    | 4.13                    |
| L. R. Amperes [A]        | 60.1/30.1               | 27.9                    | 29.2                    | 29.9                    | 27.1                    | 28.5                    | 29.3                    |
| LRC [A]                  | 8.1x(Code J)            | 8.6x(Code L)            | 9.2x(Code M)            | 9.5x(Code M)            | 6.1x(Code G)            | 6.7x(Code H)            | 7.1x(Code H)            |
| No load current [A]      | 2.60/1.30               | 1.28                    | 1.43                    | 1.55                    | 1.28                    | 1.43                    | 1.55                    |
| Rated speed [RPM]        | 3460                    | 2890                    | 2905                    | 2910                    | 2820                    | 2840                    | 2850                    |
| Slip [%]                 | 3.89                    | 3.67                    | 3.17                    | 3.00                    | 6.00                    | 5.33                    | 5.00                    |
| Rated torque [kgfm]      | 0.629                   | 0.502                   | 0.500                   | 0.499                   | 0.772                   | 0.767                   | 0.764                   |
| Locked rotor torque [%]  | 330                     | 400                     | 459                     | 490                     | 260                     | 300                     | 320                     |
| Breakdown torque [%]     | 360                     | 400                     | 459                     | 509                     | 260                     | 300                     | 330                     |
| Service factor           | 1.25                    | 1.25                    | 1.00                    | 1.00                    | 1.25                    | 1.00                    | 1.00                    |
| Temperature rise         | 80 K                    | 80 K                    | 80 K                    | 80 K                    | 80 K                    | 80 K                    | 80 K                    |
| Locked rotor time        | 25s (cold)<br>14s (hot) | 25s (cold)<br>14s (hot) | 23s (cold)<br>13s (hot) | 23s (cold)<br>13s (hot) | 25s (cold)<br>14s (hot) | 23s (cold)<br>13s (hot) | 23s (cold)<br>13s (hot) |
| Noise level <sup>2</sup> | 68.0 dB(A)              | 62.0 dB(A)              | 62.0 dB(A)              | 62.0 dB(A)              | 62.0 dB(A)              | 62.0 dB(A)              | 62.0 dB(A)              |
| Efficiency (%)           | 25%                     |                         |                         |                         |                         |                         |                         |
|                          | 50%                     | 85.5                    | 81.9                    | 82.0                    | 82.2                    | 84.0                    | 85.0                    |
|                          | 75%                     | 86.5                    | 84.0                    | 84.4                    | 84.8                    | 85.0                    | 86.0                    |
|                          | 100%                    | 86.5                    | 84.8                    | 85.3                    | 85.9                    | 84.6                    | 86.2                    |
| Power Factor             | 25%                     |                         |                         |                         |                         |                         |                         |
|                          | 50%                     | 0.70                    | 0.63                    | 0.58                    | 0.55                    | 0.76                    | 0.69                    |
|                          | 75%                     | 0.81                    | 0.76                    | 0.72                    | 0.69                    | 0.85                    | 0.80                    |
|                          | 100%                    | 0.86                    | 0.83                    | 0.80                    | 0.77                    | 0.89                    | 0.86                    |

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

|            |                |      |      |      |      |      |      |      |
|------------|----------------|------|------|------|------|------|------|------|
| Losses (%) | P1 (0,9;1,0)   | 14.8 | 14.8 | 14.8 | 14.8 | 14.8 | 14.8 | 14.8 |
|            | P2 (0,5;1,0)   | 12.3 | 12.3 | 12.3 | 12.3 | 12.3 | 12.3 | 12.3 |
|            | P3 (0,25;1,0)  | 11.7 | 11.7 | 11.7 | 11.7 | 11.7 | 11.7 | 11.7 |
|            | P4 (0,9;0,5)   | 6.8  | 6.8  | 6.8  | 6.8  | 6.8  | 6.8  | 6.8  |
|            | P5 (0,5;0,5)   | 4.3  | 4.3  | 4.3  | 4.3  | 4.3  | 4.3  | 4.3  |
|            | P6 (0,5;0,25)  | 2.6  | 2.6  | 2.6  | 2.6  | 2.6  | 2.6  | 2.6  |
|            | P7 (0,25;0,25) | 1.7  | 1.7  | 1.7  | 1.7  | 1.7  | 1.7  | 1.7  |

|                        |                  |                      |                           |
|------------------------|------------------|----------------------|---------------------------|
|                        | <u>Drive end</u> | <u>Non drive end</u> | Foundation loads          |
| Bearing type :         | 6205 ZZ          | 6204 ZZ              | Max. traction : 59 kgf    |
| Sealing :              | V'Ring           | V'Ring               | Max. compression : 84 kgf |
| Lubrication interval : | -                | -                    |                           |
| Lubricant amount :     | -                | -                    |                           |
| 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

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# LOAD PERFORMANCE CURVE

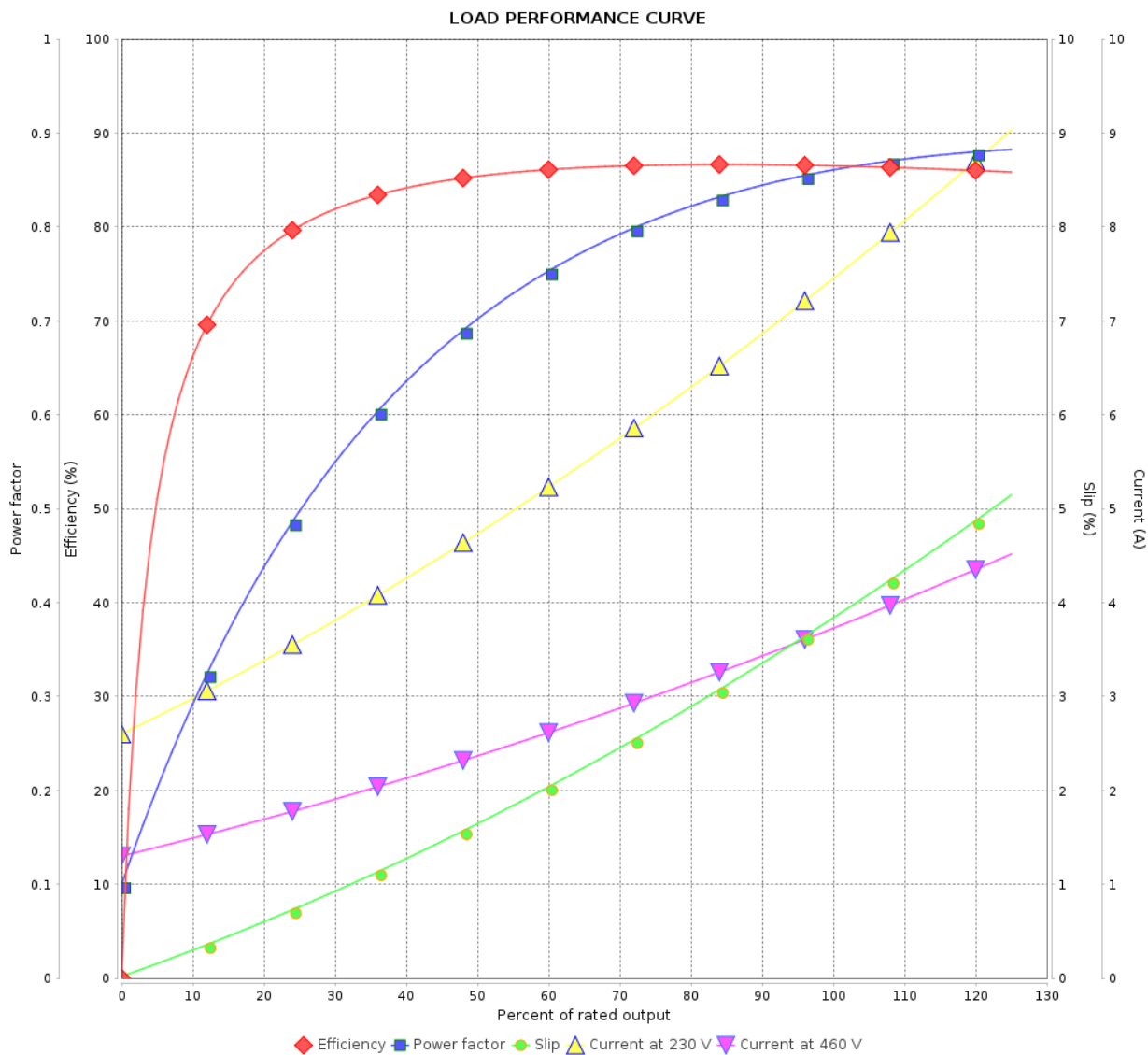
## Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : W22 NEMA Premium Efficiency  
Three-Phase

Product code : 11783909



Performance : 230/460 V 60 Hz 2P

Rated current : 7.42/3.71 A  
LRC : 8.1  
Rated torque : 0.629 kgfm  
Locked rotor torque : 330 %  
Breakdown torque : 360 %  
Rated speed : 3460 rpm

Moment of inertia (J) : 0.0026 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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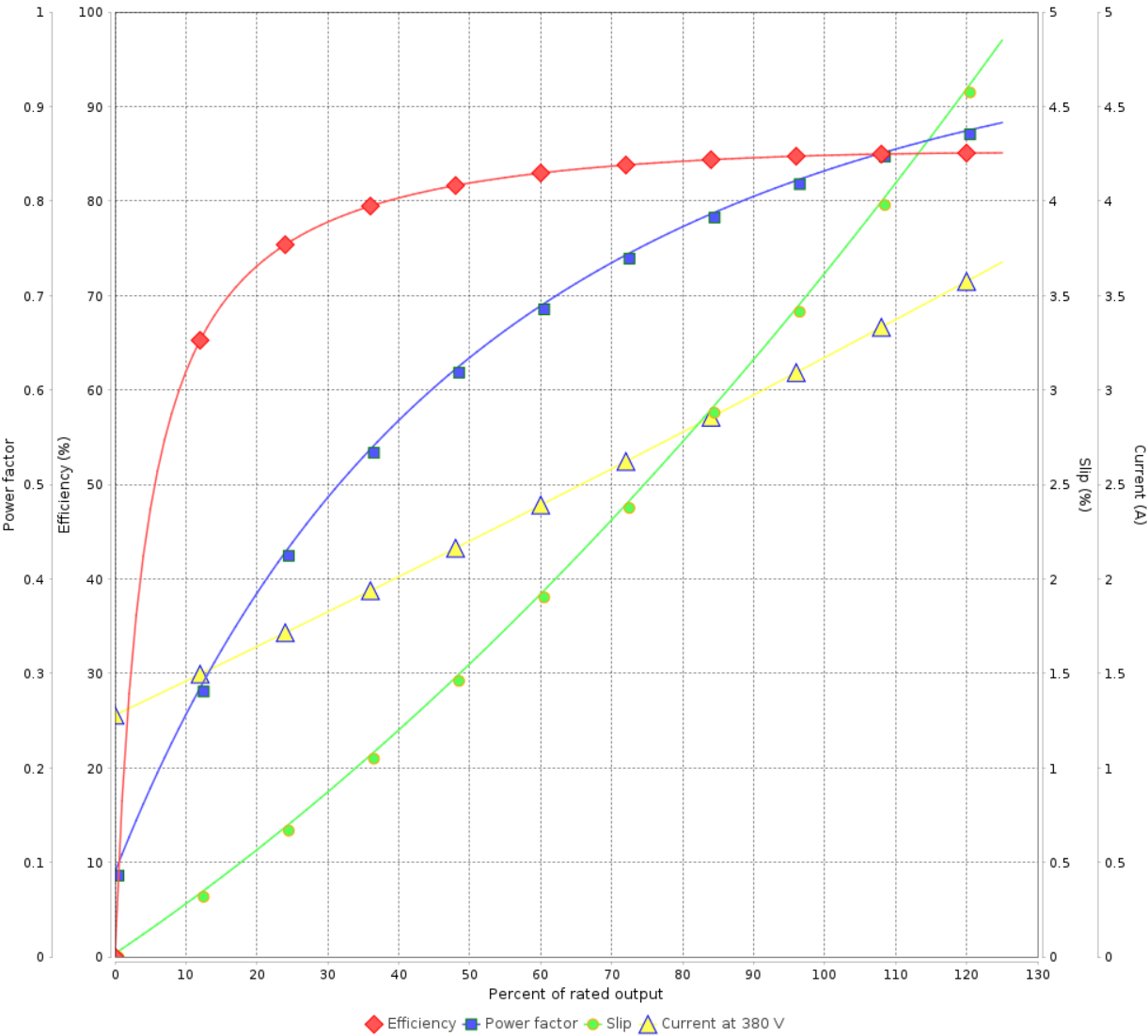
Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : W22 NEMA Premium Efficiency      Product code : 11783909  
Three-Phase

LOAD PERFORMANCE CURVE



Performance : 380 V 50 Hz 2P IE3

|                     |              |                       |                           |
|---------------------|--------------|-----------------------|---------------------------|
| Rated current       | : 3.24 A     | Moment of inertia (J) | : 0.0026 kgm <sup>2</sup> |
| LRC                 | : 8.6        | Duty cycle            | : Cont.(S1)               |
| Rated torque        | : 0.502 kgfm | Insulation class      | : F                       |
| Locked rotor torque | : 400 %      | Service factor        | : 1.25                    |
| Breakdown torque    | : 400 %      | Temperature rise      | : 80 K                    |
| Rated speed         | : 2890 rpm   | Design                | : B                       |

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# LOAD PERFORMANCE CURVE

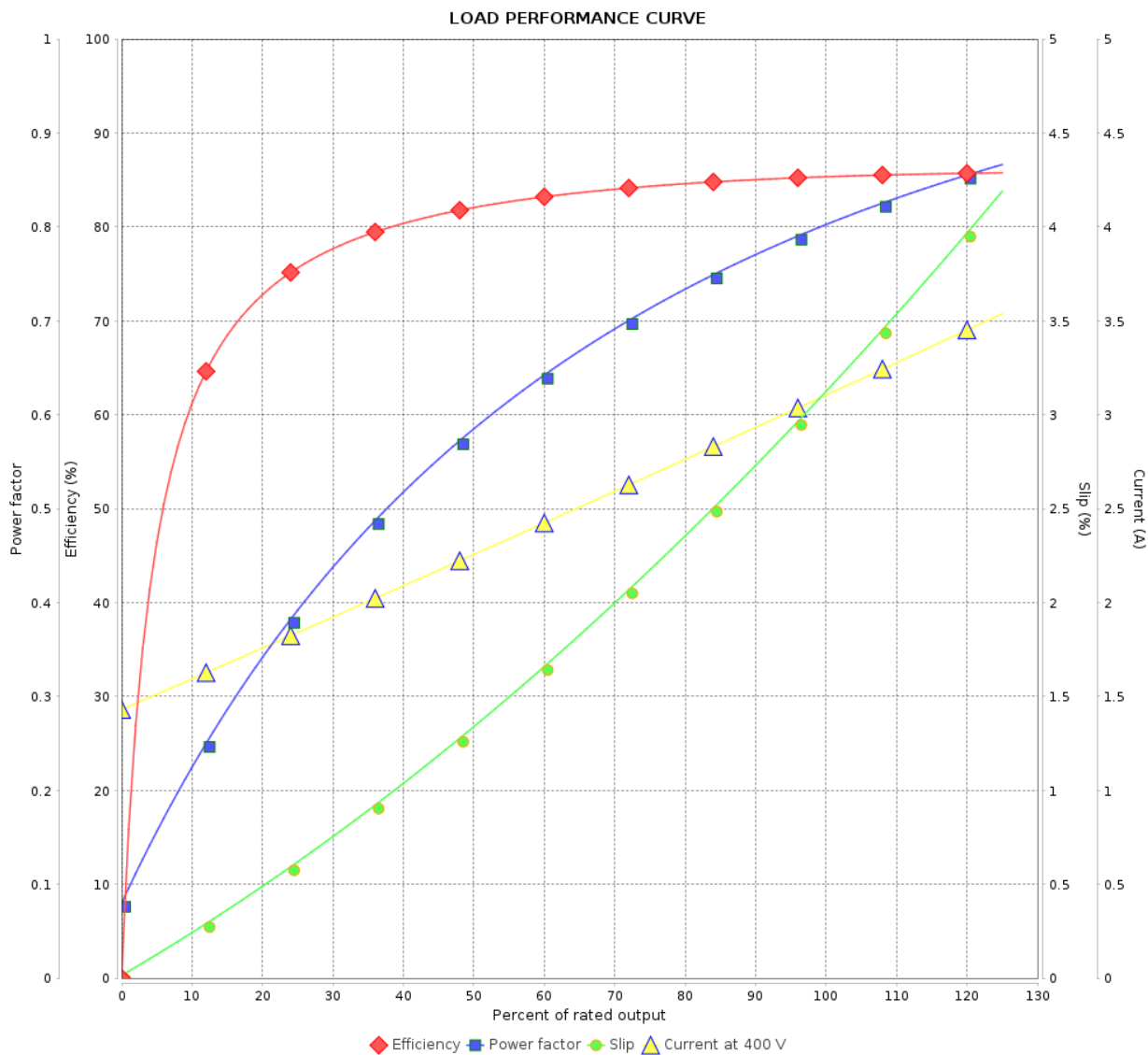
## Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : W22 NEMA Premium Efficiency  
Three-Phase

Product code : 11783909



Performance : 400 V 50 Hz 2P IE3

Rated current : 3.17 A  
LRC : 9.2  
Rated torque : 0.500 kgfm  
Locked rotor torque : 459 %  
Breakdown torque : 459 %  
Rated speed : 2905 rpm

Moment of inertia (J) : 0.0026 kgm<sup>2</sup>  
Duty cycle : Cont.(S1)  
Insulation class : F  
Service factor : 1.00  
Temperature rise : 80 K  
Design : B

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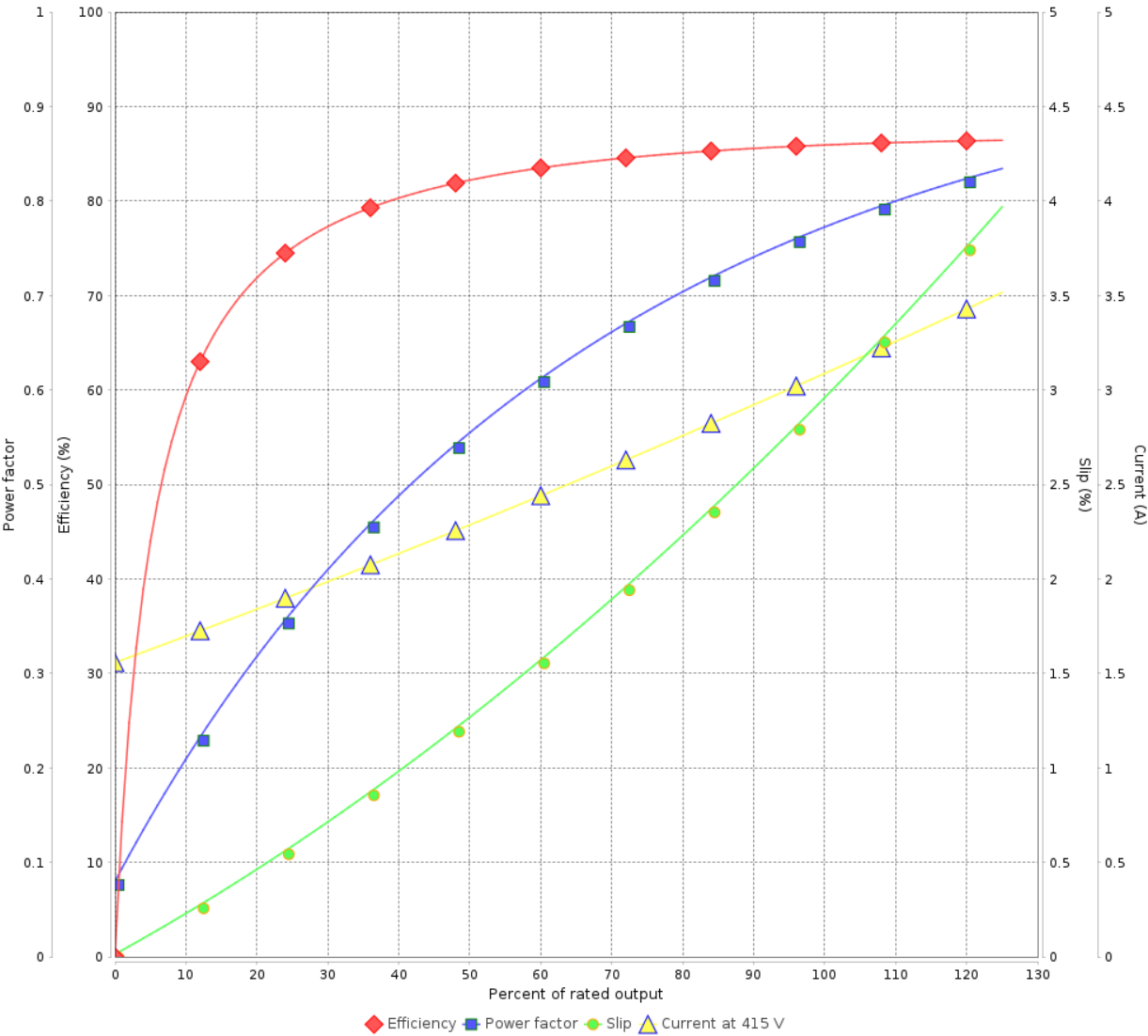
Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : W22 NEMA Premium Efficiency Three-Phase      Product code : 11783909

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Performance : 415 V 50 Hz 2P IE3

|                     |              |                       |                           |
|---------------------|--------------|-----------------------|---------------------------|
| Rated current       | : 3.15 A     | Moment of inertia (J) | : 0.0026 kgm <sup>2</sup> |
| LRC                 | : 9.5        | Duty cycle            | : Cont.(S1)               |
| Rated torque        | : 0.499 kgfm | Insulation class      | : F                       |
| Locked rotor torque | : 490 %      | Service factor        | : 1.00                    |
| Breakdown torque    | : 509 %      | Temperature rise      | : 80 K                    |
| Rated speed         | : 2910 rpm   | Design                | : B                       |

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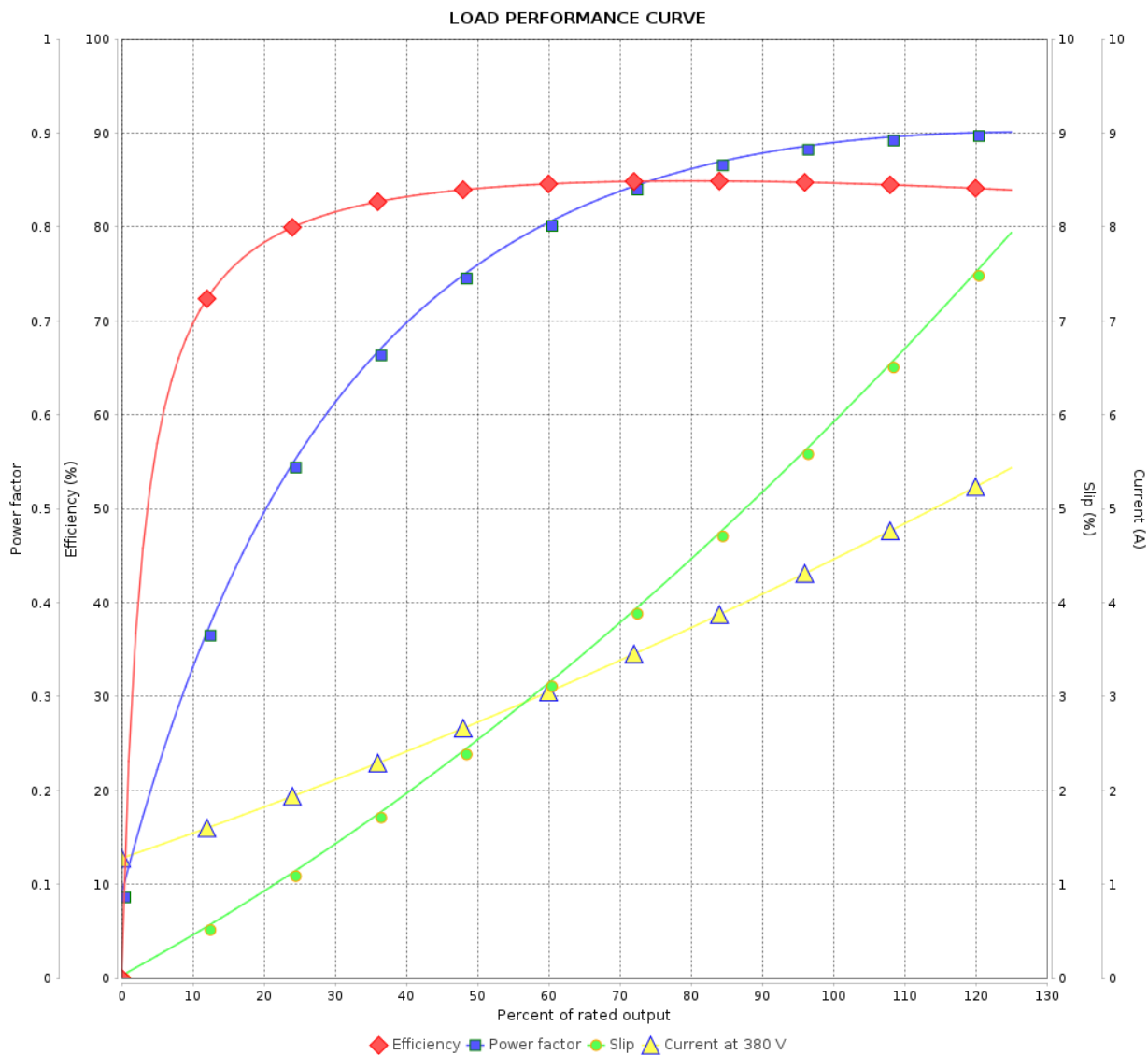
## Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : W22 NEMA Premium Efficiency  
Three-Phase

Product code : 11783909



Performance : 380 V 50 Hz 2P IE2

Rated current : 4.44 A  
LRC : 6.1  
Rated torque : 0.772 kgfm  
Locked rotor torque : 260 %  
Breakdown torque : 260 %  
Rated speed : 2820 rpm

Moment of inertia (J) : 0.0026 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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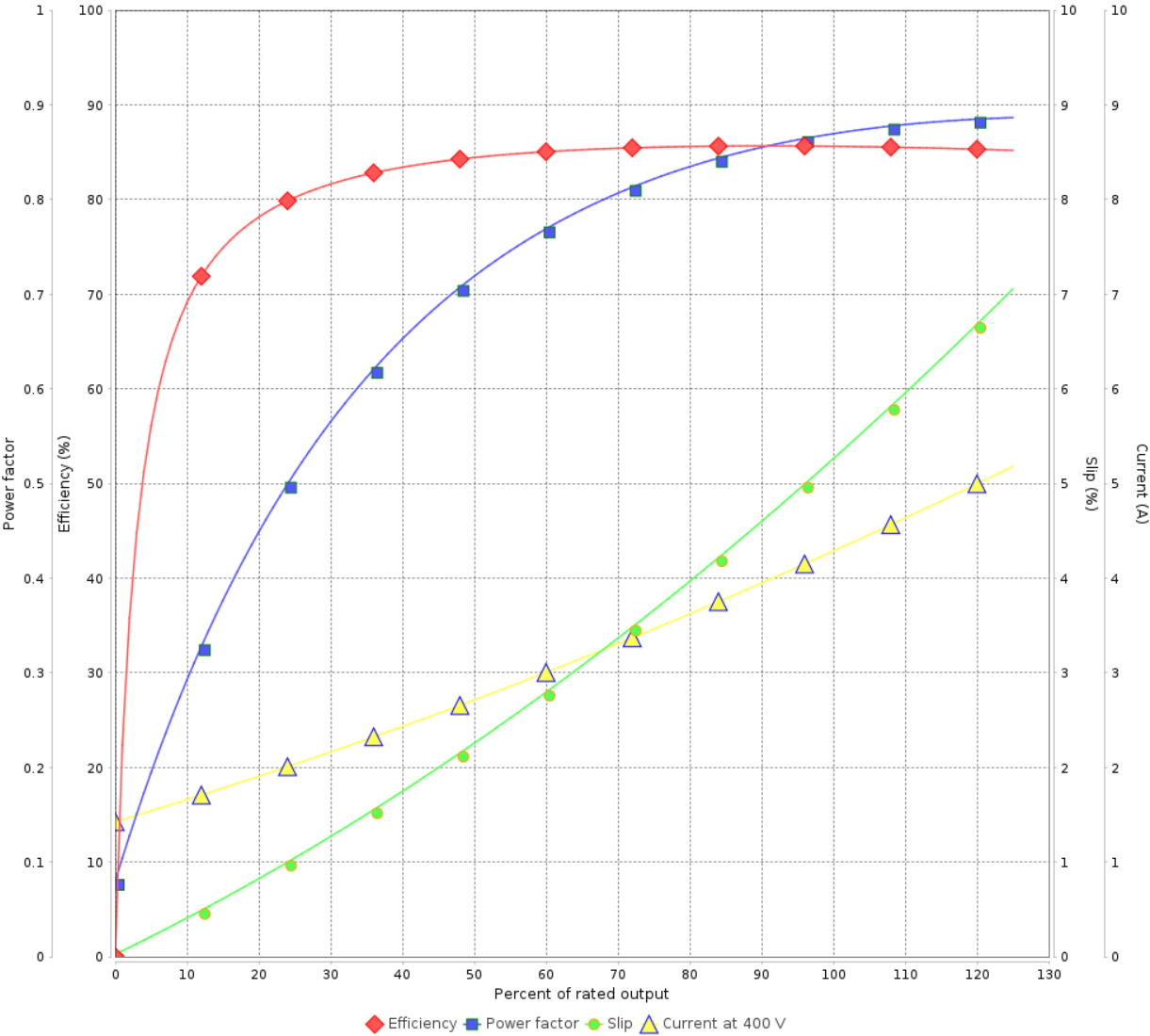
Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : W22 NEMA Premium Efficiency Three-Phase      Product code : 11783909

LOAD PERFORMANCE CURVE



|                                  |              |                       |               |
|----------------------------------|--------------|-----------------------|---------------|
| Performance : 400 V 50 Hz 2P IE2 |              |                       |               |
| Rated current                    | : 4.26 A     | Moment of inertia (J) | : 0.0026 kgm² |
| LRC                              | : 6.7        | Duty cycle            | : Cont.(S1)   |
| Rated torque                     | : 0.767 kgfm | Insulation class      | : F           |
| Locked rotor torque              | : 300 %      | Service factor        | : 1.00        |
| Breakdown torque                 | : 300 %      | Temperature rise      | : 80 K        |
| Rated speed                      | : 2840 rpm   | Design                | : B           |

|              |                 |  |           |               |          |
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# LOAD PERFORMANCE CURVE

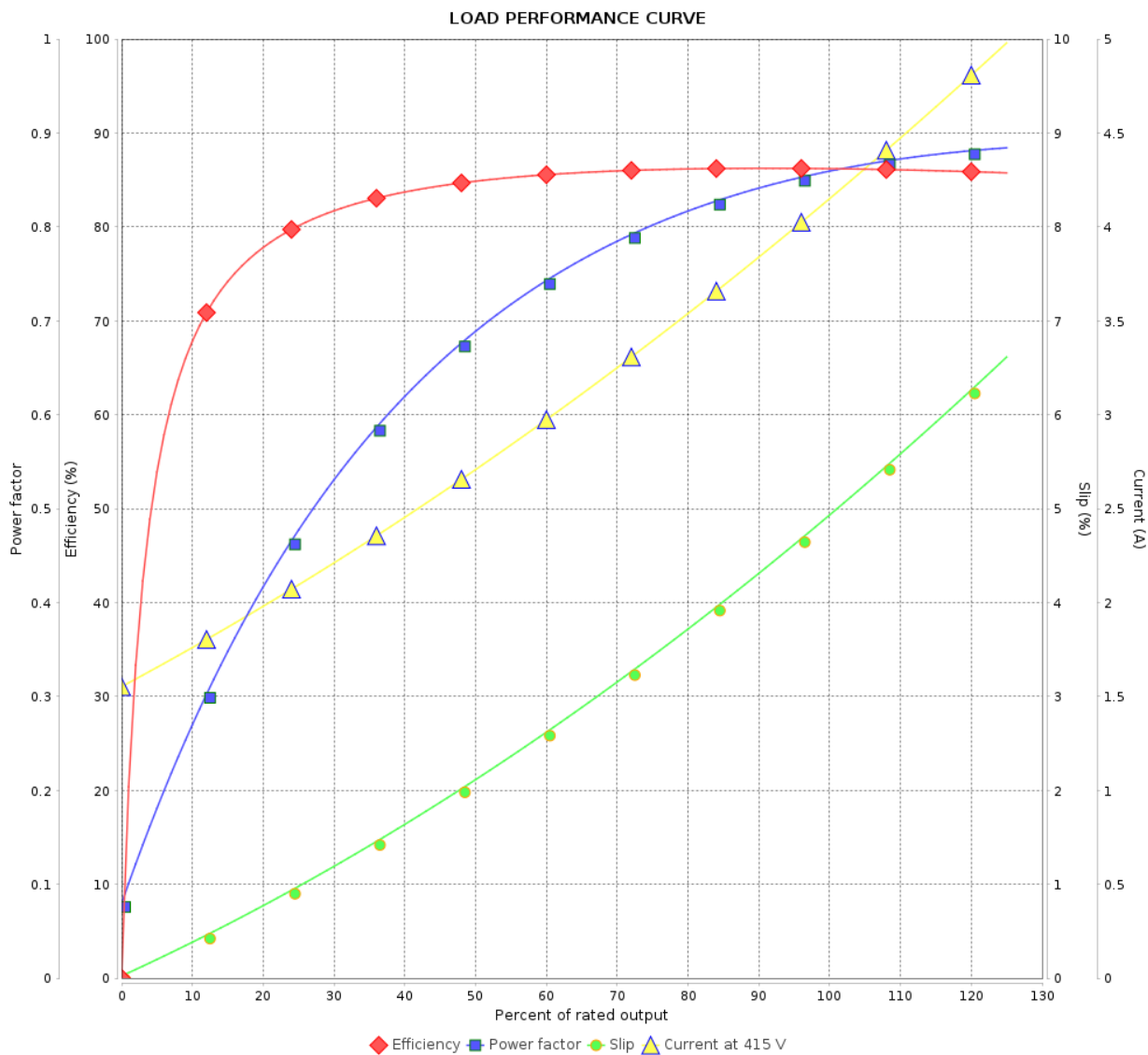
## Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : W22 NEMA Premium Efficiency  
Three-Phase

Product code : 11783909



Performance : 415 V 50 Hz 2P IE3

Rated current : 4.13 A  
LRC : 7.1  
Rated torque : 0.764 kgfm  
Locked rotor torque : 320 %  
Breakdown torque : 330 %  
Rated speed : 2850 rpm

Moment of inertia (J) : 0.0026 kgm<sup>2</sup>  
Duty cycle : Cont.(S1)  
Insulation class : F  
Service factor : 1.00  
Temperature rise : 80 K  
Design : B

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