

# DATA SHEET

## Three Phase Induction Motor - Squirrel Cage



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

Product line : W22 Close Coupled Pump JM  
NEMA Premium Efficiency Three-Phase  
Product code : 12082015

|                                      |   |
|--------------------------------------|---|
| Frame : 213/5JM                      | 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>2</sup> : 82.7 kg           |
| Protection degree : IP55             | 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]        | 230/460                 | 380                     | 400                     | 415                     | 380                     | 400                     | 415                     |
| Rated current [A]        | 25.3/12.7               | 11.5                    | 11.4                    | 11.3                    | 15.2                    | 14.4                    | 14.1                    |
| L. R. Amperes [A]        | 162/81.1                | 86.2                    | 91.5                    | 96.1                    | 90.9                    | 93.6                    | 98.8                    |
| LRC [A]                  | 6.4x(Code H)            | 7.5x(Code J)            | 8.0x(Code K)            | 8.5x(Code L)            | 6.0x(Code G)            | 6.5x(Code H)            | 7.0x(Code H)            |
| No load current [A]      | 11.3/5.65               | 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                    | 3.70                    | 3.69                    | 3.69                    | 5.01                    | 4.99                    | 4.95                    |
| 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%                     | 0.65                    | 0.61                    | 0.57                    | 0.53                    | 0.72                    | 0.68                    |
|                          | 75%                     | 0.76                    | 0.74                    | 0.70                    | 0.67                    | 0.81                    | 0.79                    |
|                          | 100%                    | 0.81                    | 0.81                    | 0.77                    | 0.75                    | 0.85                    | 0.84                    |

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

|            |                |     |      |      |      |      |      |      |
|------------|----------------|-----|------|------|------|------|------|------|
| Losses (%) | P1 (0,9;1,0)   | 8.8 | 11.0 | 10.7 | 10.4 | 12.6 | 11.4 | 10.6 |
|            | P2 (0,5;1,0)   | 7.3 | 9.2  | 8.9  | 8.7  | 10.5 | 9.5  | 8.8  |
|            | P3 (0,25;1,0)  | 7.0 | 8.8  | 8.5  | 8.3  | 10.1 | 9.1  | 8.4  |
|            | P4 (0,9;0,5)   | 4.6 | 5.8  | 5.6  | 5.5  | 6.6  | 6.0  | 5.6  |
|            | P5 (0,5;0,5)   | 3.2 | 4.0  | 3.9  | 3.8  | 4.6  | 4.1  | 3.8  |
|            | P6 (0,5;0,25)  | 2.3 | 2.8  | 2.7  | 2.7  | 3.2  | 2.9  | 2.7  |
|            | P7 (0,25;0,25) | 1.6 | 2.0  | 1.9  | 1.9  | 2.2  | 2.0  | 1.9  |

|                      |                       |                       |                            |
|----------------------|-----------------------|-----------------------|----------------------------|
| Bearing type         | : Drive end 6309 Z C3 | Non drive end 6207 ZZ | Foundation loads           |
| Sealing              | : V'Ring              | V'Ring                | Max. traction : 207 kgf    |
| Lubrication interval | : 20000 h             | 40000 h               | Max. compression : 289 kgf |
| Lubricant amount     | : 13 g                | 0 g                   |                            |
| Lubricant type       | : Mobil Polyrex EM    |                       |                            |

|              |                 |           |         |          |
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# DATA SHEET

## Three Phase Induction Motor - Squirrel Cage



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

Notes  
USABLE @208V 27.4A SF 1.15 SFA 31.5A

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.

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# LOAD PERFORMANCE CURVE

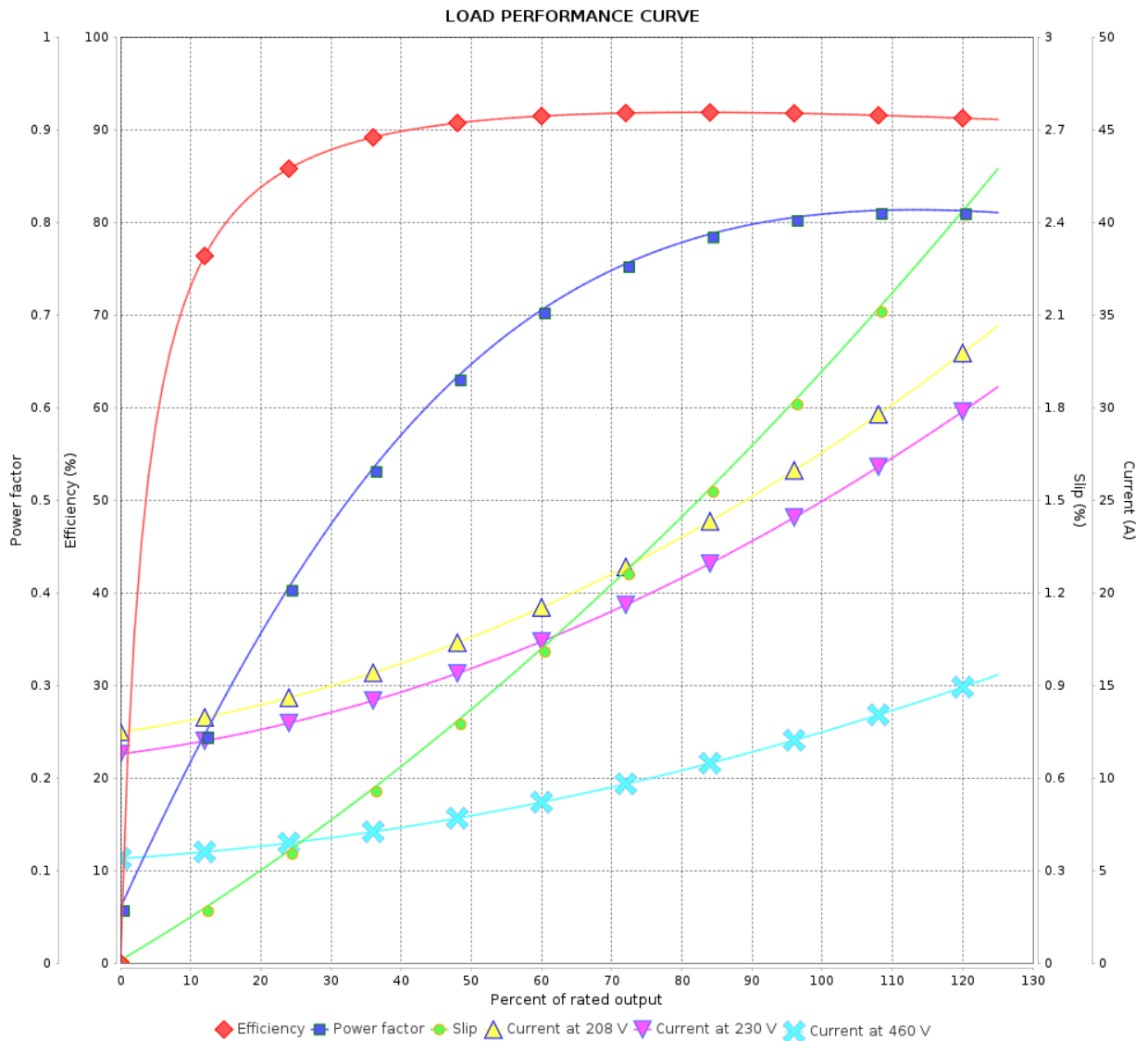
## Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : W22 Close Coupled Pump JM  
NEMA Premium Efficiency Three-Phase

Product code : 12082015



Performance : 230/460 V 60 Hz 4P

Rated current : 25.3/12.7 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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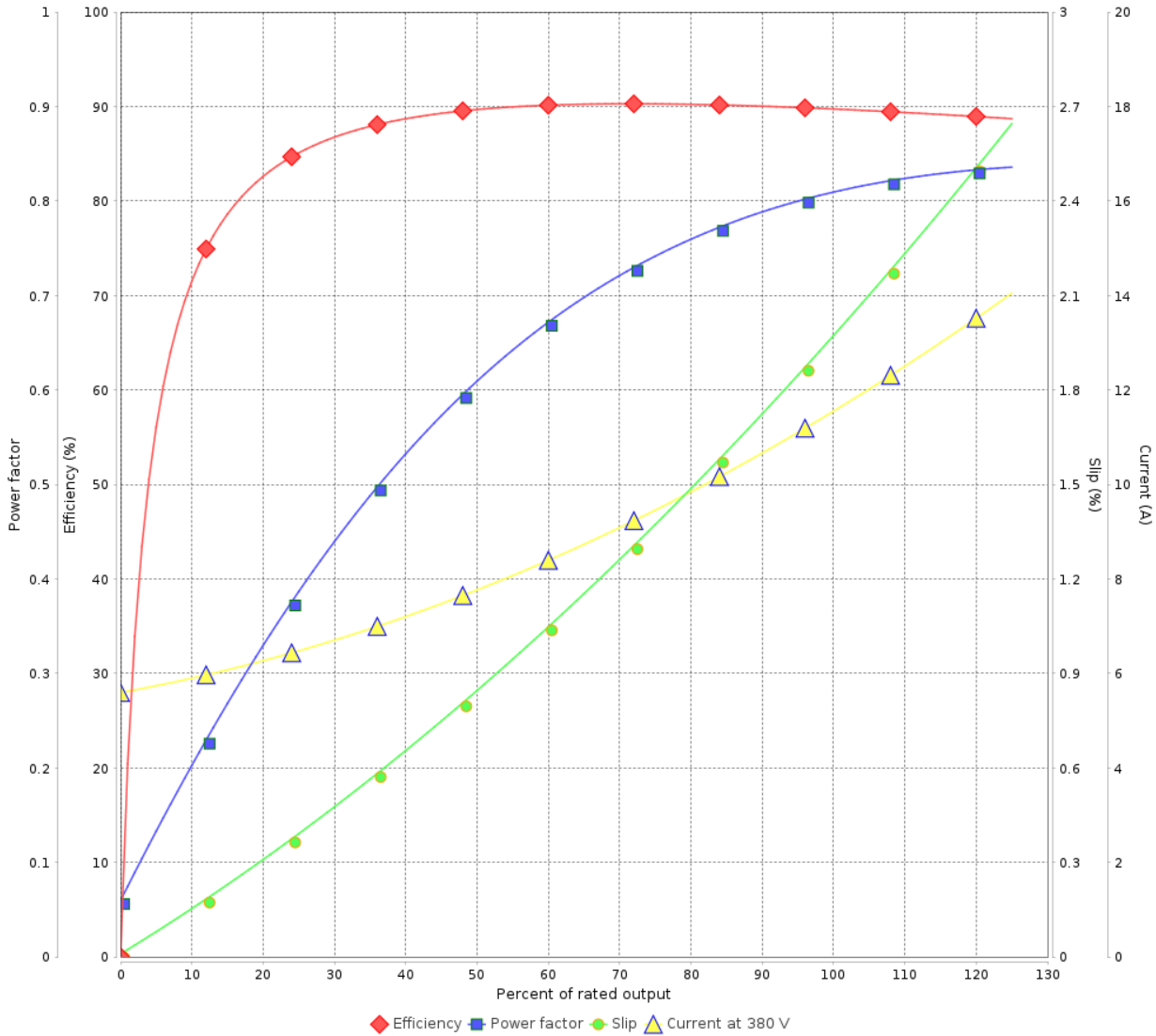
Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : W22 Close Coupled Pump JM  
 NEMA Premium Efficiency Three-Phase  
 Product code : 12082015

LOAD PERFORMANCE CURVE



Performance : 380 V 50 Hz 4P IE3

|                     |             |                       |                           |
|---------------------|-------------|-----------------------|---------------------------|
| Rated current       | : 11.5 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 | : 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

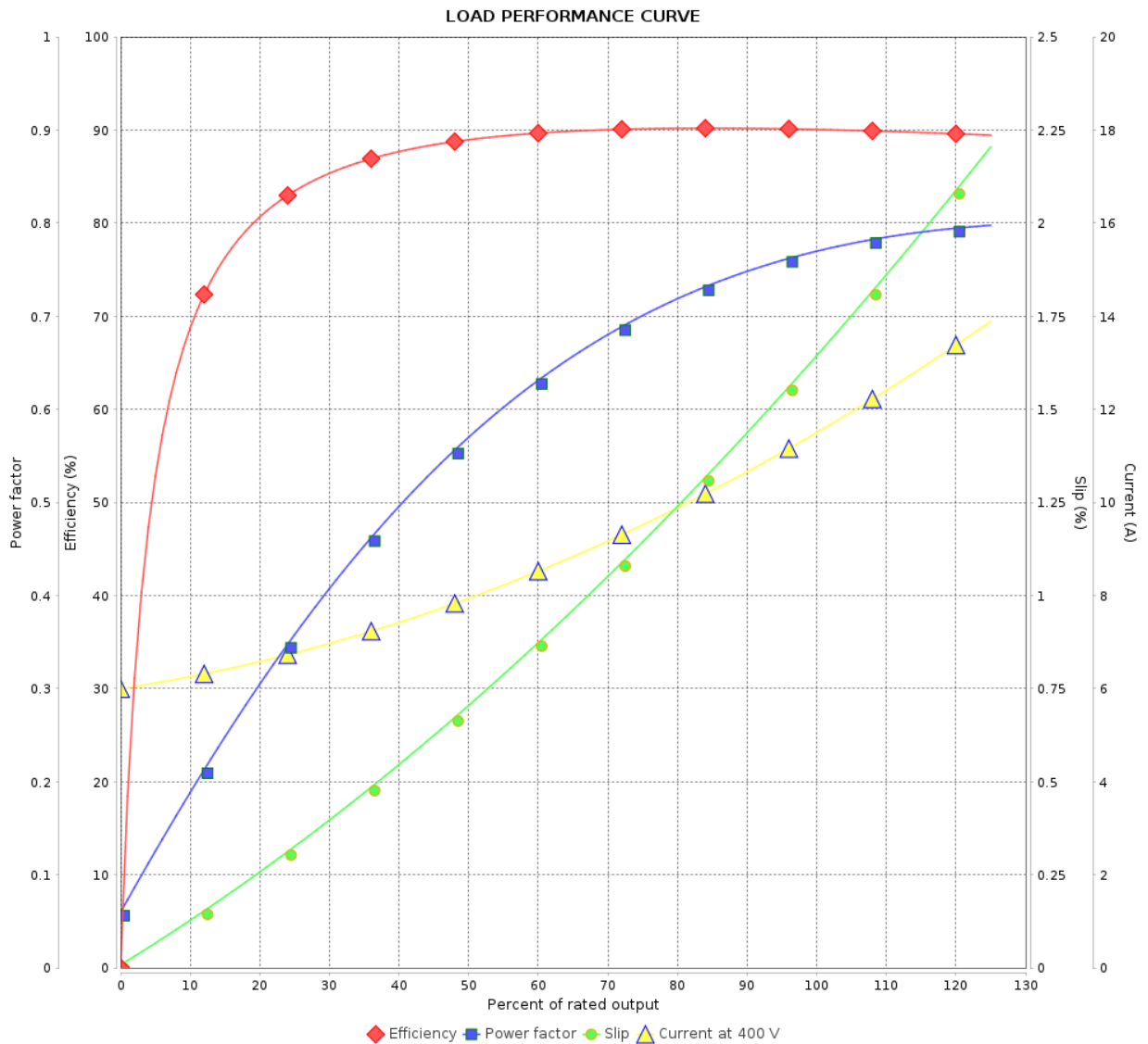
## Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : W22 Close Coupled Pump JM  
NEMA Premium Efficiency Three-Phase

Product code : 12082015



Performance : 400 V 50 Hz 4P IE3

Rated current : 11.4 A  
LRC : 8.0  
Rated torque : 3.69 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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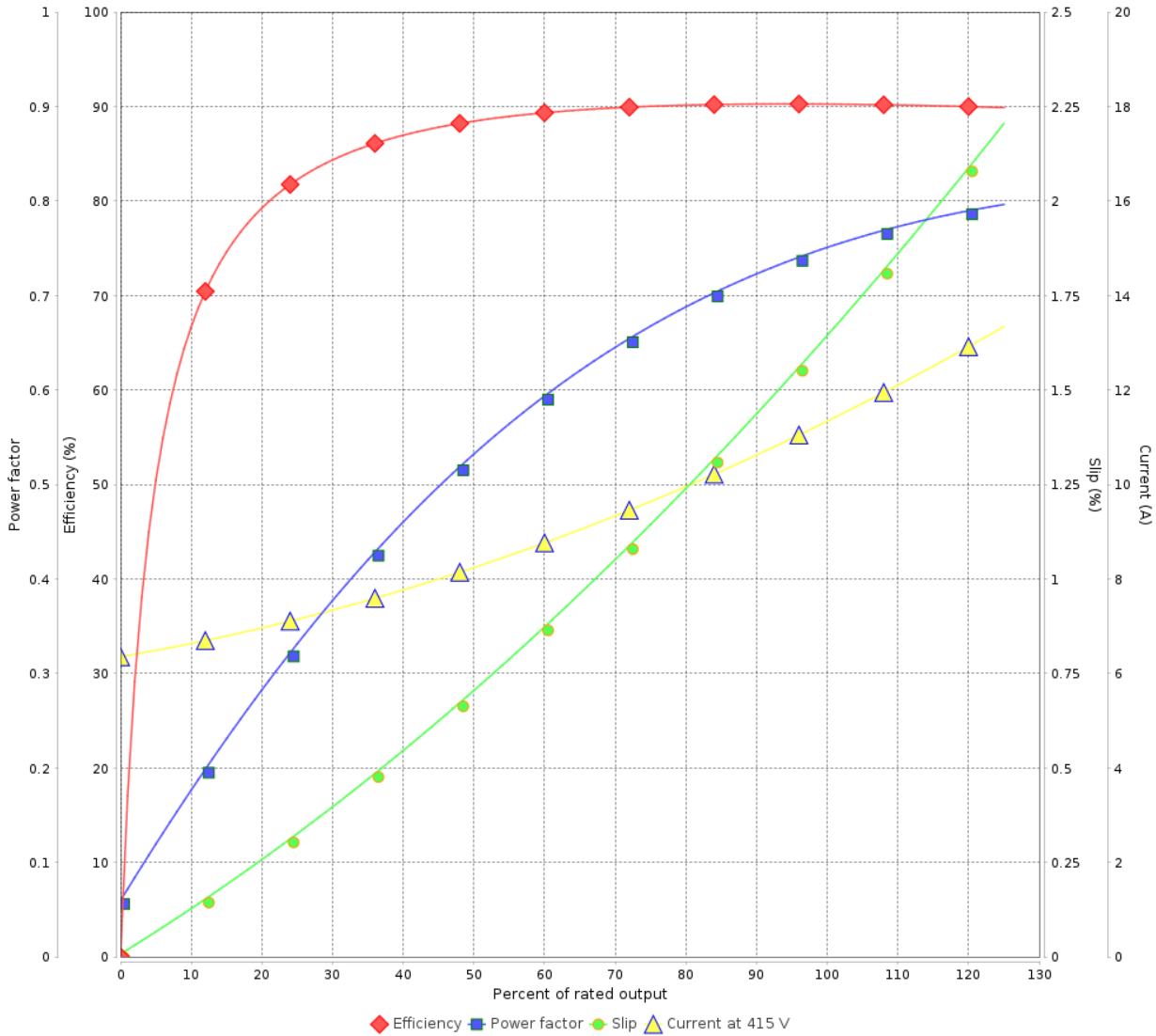
Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : W22 Close Coupled Pump JM  
 NEMA Premium Efficiency Three-Phase  
 Product code : 12082015

LOAD PERFORMANCE CURVE



Performance : 415 V 50 Hz 4P IE3

|                     |             |                       |                           |
|---------------------|-------------|-----------------------|---------------------------|
| Rated current       | : 11.3 A    | Moment of inertia (J) | : 0.0636 kgm <sup>2</sup> |
| LRC                 | : 8.5       | Duty cycle            | : Cont.(S1)               |
| Rated torque        | : 3.69 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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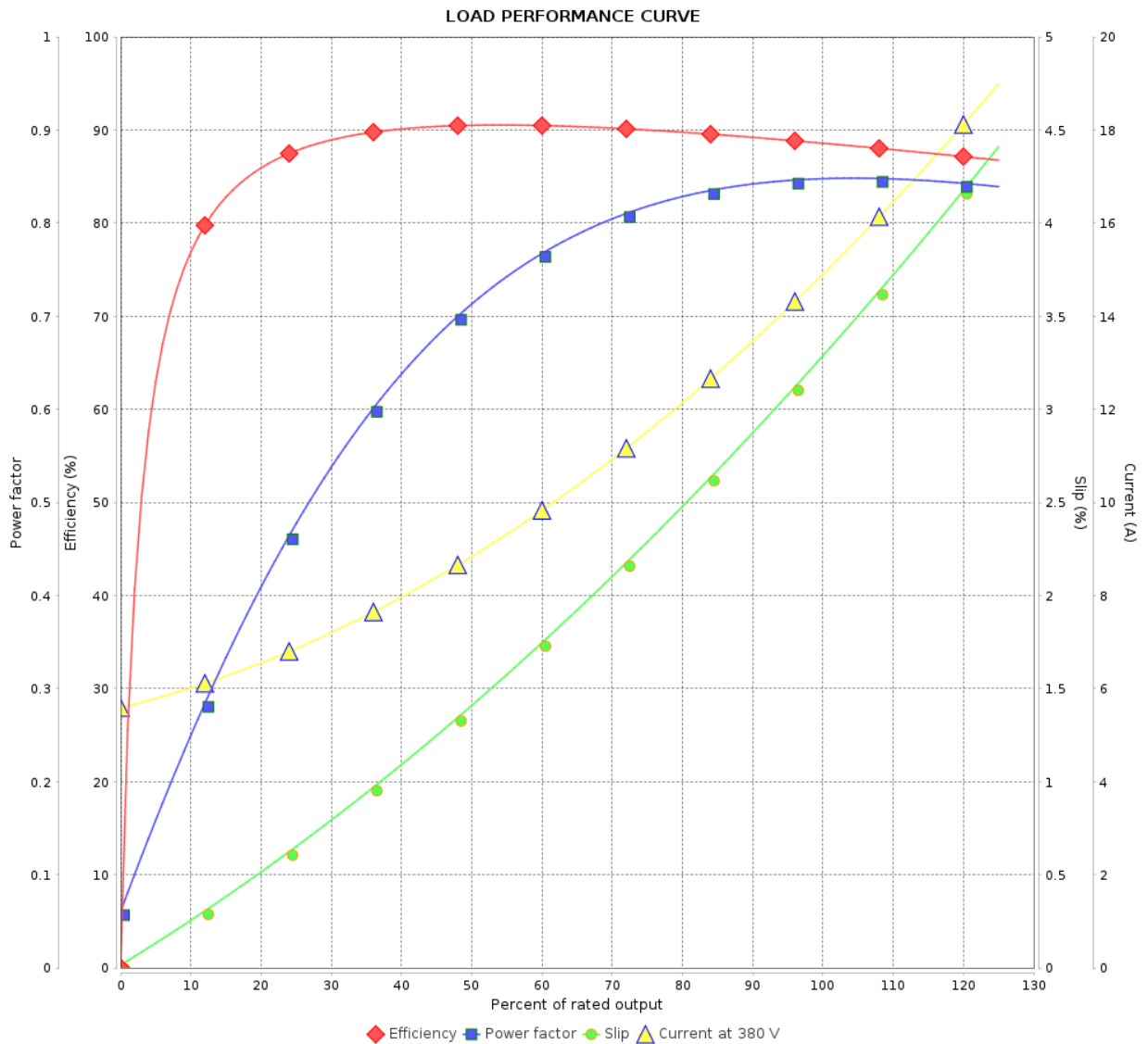
Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : W22 Close Coupled Pump JM  
NEMA Premium Efficiency Three-Phase

Product code : 12082015



Performance : 380 V 50 Hz 4P IE1

Rated current : 15.2 A  
LRC : 6.0  
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

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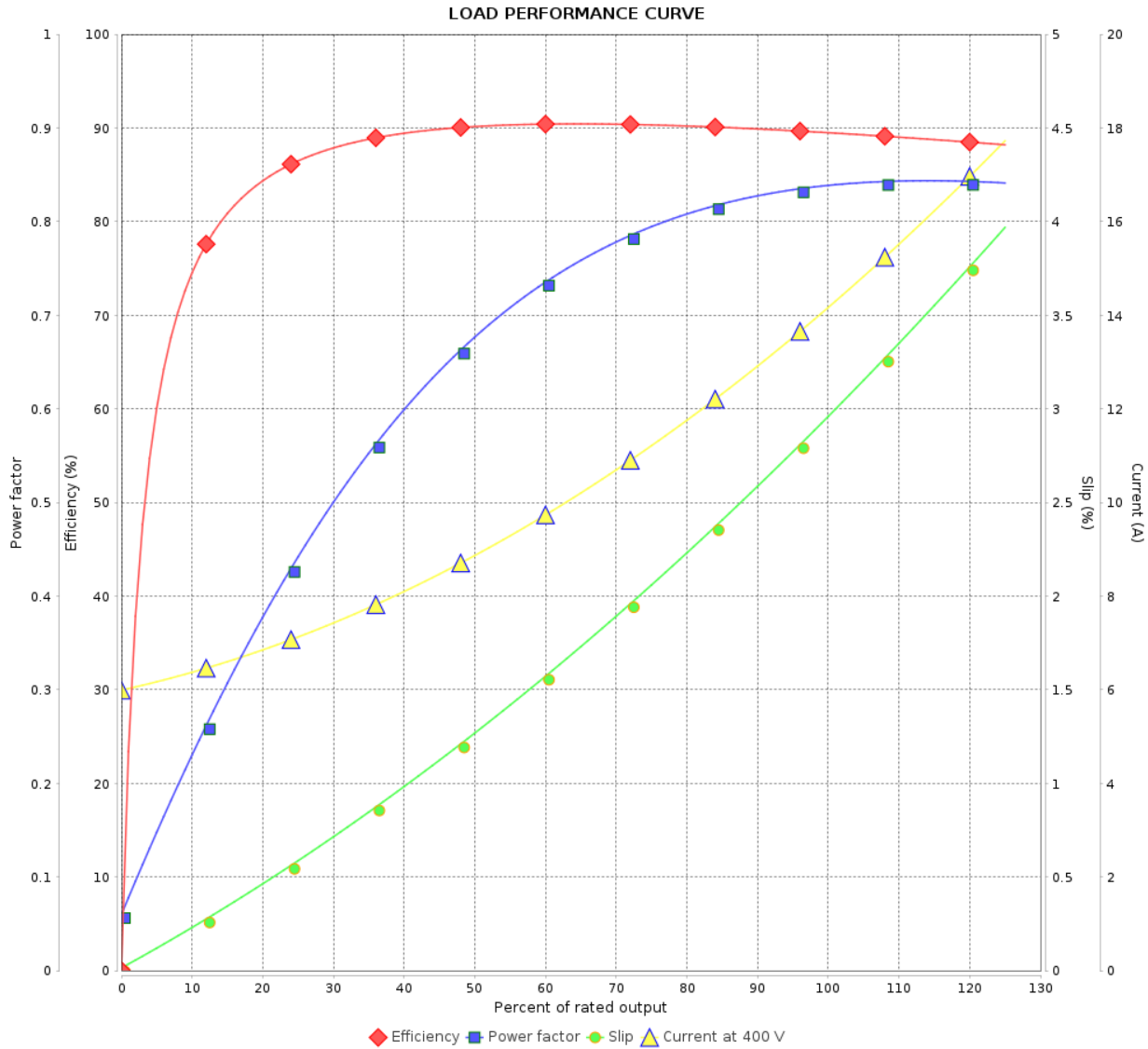
# LOAD PERFORMANCE CURVE

Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : W22 Close Coupled Pump JM  
 NEMA Premium Efficiency Three-Phase  
 Product code : 12082015



Performance : 400 V 50 Hz 4P IE2

|                     |             |                       |                           |
|---------------------|-------------|-----------------------|---------------------------|
| Rated current       | : 14.4 A    | Moment of inertia (J) | : 0.0636 kgm <sup>2</sup> |
| LRC                 | : 6.5       | 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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# LOAD PERFORMANCE CURVE

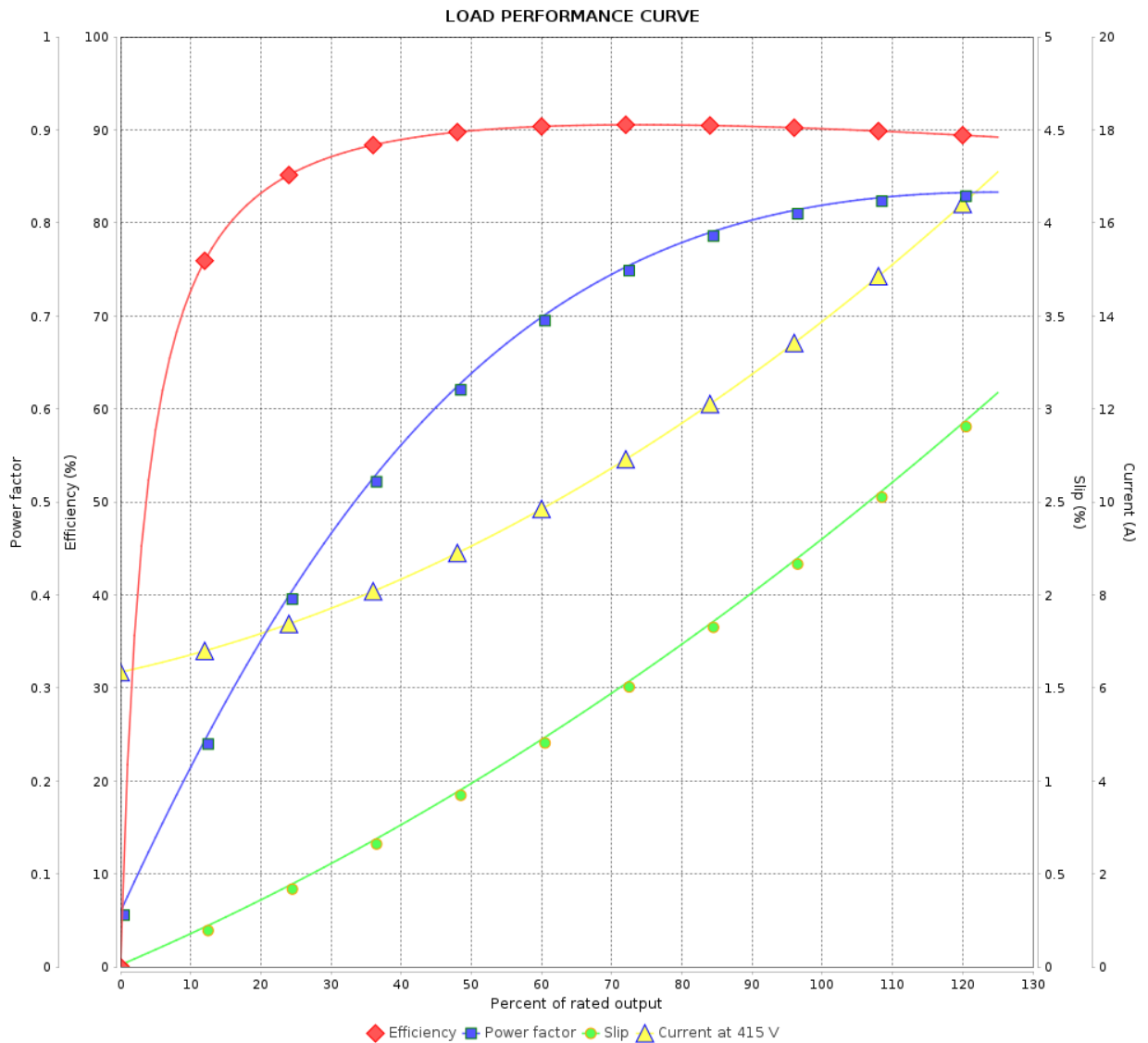
## Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : W22 Close Coupled Pump JM  
NEMA Premium Efficiency Three-Phase

Product code : 12082015



Performance : 415 V 50 Hz 4P IE2

Rated current : 14.1 A  
LRC : 7.0  
Rated torque : 4.95 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

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