

# DATA SHEET

## Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : W22 IEEE 841 NEMA Premium Efficiency Three-Phase      Product code : 11431348

|                     |                  |                             |                           |
|---------------------|------------------|-----------------------------|---------------------------|
| 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> | : 75.6 kg                 |
| Protection degree   | : IP56           | Moment of inertia (J)       | : 0.0268 kgm <sup>2</sup> |
| Design              | : B              |                             |                           |

|                          |                         |                         |                         |                         |                         |                         |                         |
|--------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| Output [HP]              | 10                      | 7.5                     | 7.5                     | 7.5                     | 10                      | 10                      | 10                      |
| Poles                    | 2                       | 2                       | 2                       | 2                       | 2                       | 2                       | 2                       |
| Frequency [Hz]           | 60                      | 50                      | 50                      | 50                      | 50                      | 50                      | 50                      |
| Rated voltage [V]        | 460                     | 380                     | 400                     | 415                     | 380                     | 400                     | 415                     |
| Rated current [A]        | 11.7                    | 10.6                    | 10.4                    | 10.0                    | 14.3                    | 13.7                    | 13.4                    |
| L. R. Amperes [A]        | 84.5                    | 83.8                    | 90.8                    | 91.2                    | 80.1                    | 87.9                    | 92.5                    |
| LRC [A]                  | 7.2x(Code H)            | 7.9x(Code J)            | 8.7x(Code K)            | 9.1x(Code K)            | 5.6x(Code F)            | 6.4x(Code G)            | 6.9x(Code H)            |
| No load current [A]      | 3.60                    | 3.50                    | 3.70                    | 3.90                    | 3.50                    | 3.70                    | 3.90                    |
| Rated speed [RPM]        | 3520                    | 2930                    | 2940                    | 2945                    | 2885                    | 2900                    | 2910                    |
| Slip [%]                 | 2.22                    | 2.33                    | 2.00                    | 1.83                    | 3.83                    | 3.33                    | 3.00                    |
| Rated torque [kgfm]      | 2.06                    | 1.86                    | 1.85                    | 1.85                    | 2.52                    | 2.50                    | 2.49                    |
| Locked rotor torque [%]  | 220                     | 220                     | 240                     | 260                     | 170                     | 190                     | 200                     |
| Breakdown torque [%]     | 290                     | 300                     | 340                     | 360                     | 220                     | 250                     | 270                     |
| Service factor           | 1.25                    | 1.25                    | 1.25                    | 1.25                    | 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        | 32s (cold)<br>18s (hot) | 32s (cold)<br>18s (hot) | 32s (cold)<br>18s (hot) | 32s (cold)<br>18s (hot) | 21s (cold)<br>12s (hot) | 21s (cold)<br>12s (hot) | 21s (cold)<br>12s (hot) |
| Noise level <sup>2</sup> | 68.0 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%                     | 89.5                    | 88.6                    | 88.4                    | 87.7                    | 89.5                    | 89.5                    |
|                          | 75%                     | 90.2                    | 89.6                    | 89.6                    | 89.5                    | 89.5                    | 89.5                    |
|                          | 100%                    | 90.2                    | 89.5                    | 89.5                    | 89.8                    | 88.5                    | 88.5                    |
| Power Factor             | 25%                     |                         |                         |                         |                         |                         |                         |
|                          | 50%                     | 0.79                    | 0.75                    | 0.72                    | 0.70                    | 0.83                    | 0.81                    |
|                          | 75%                     | 0.86                    | 0.85                    | 0.83                    | 0.81                    | 0.89                    | 0.87                    |
|                          | 100%                    | 0.89                    | 0.88                    | 0.85                    | 0.85                    | 0.90                    | 0.88                    |

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

|            |                |      |      |      |      |      |      |      |
|------------|----------------|------|------|------|------|------|------|------|
| Losses (%) | P1 (0,9;1,0)   | 10.5 | 11.4 | 11.4 | 11.0 | 12.6 | 12.6 | 12.6 |
|            | P2 (0,5;1,0)   | 8.5  | 9.2  | 9.2  | 8.9  | 10.1 | 10.1 | 10.1 |
|            | P3 (0,25;1,0)  | 7.4  | 8.0  | 8.0  | 7.8  | 8.9  | 8.9  | 8.9  |
|            | P4 (0,9;0,5)   | 5.1  | 5.6  | 5.6  | 5.4  | 6.2  | 6.2  | 6.2  |
|            | P5 (0,5;0,5)   | 3.2  | 3.4  | 3.4  | 3.3  | 3.8  | 3.8  | 3.8  |
|            | P6 (0,5;0,25)  | 2.0  | 2.2  | 2.2  | 2.1  | 2.4  | 2.4  | 2.4  |
|            | P7 (0,25;0,25) | 1.2  | 1.3  | 1.3  | 1.3  | 1.5  | 1.5  | 1.5  |

|                      |                    |               |         |                  |           |
|----------------------|--------------------|---------------|---------|------------------|-----------|
| Bearing type         | : 6308 C3          | Non drive end | 6207 C3 | Foundation loads |           |
| Sealing              | : Inpro/Seal       | Inpro/Seal    |         | Max. traction    | : 86 kgf  |
| Lubrication interval | : 20000 h          | 20000 h       |         | Max. compression | : 162 kgf |
| Lubricant amount     | : 11 g             | 7 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.

|              |                 |           |               |          |
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## Three Phase Induction Motor - Squirrel Cage



Customer :

Notes

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# LOAD PERFORMANCE CURVE

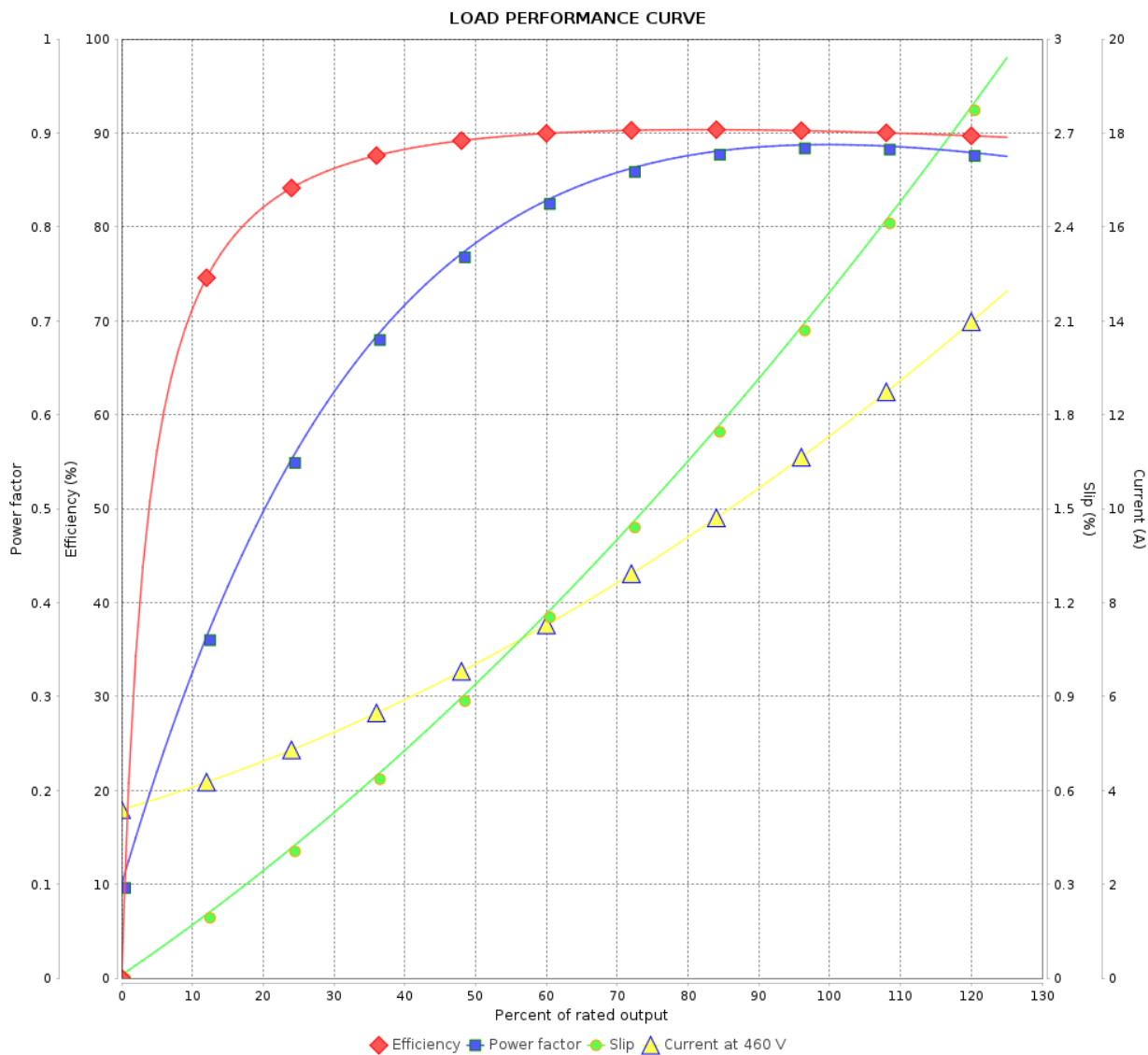
## Three Phase Induction Motor - Squirrel Cage



Customer :

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

Product code : 11431348



Performance : 460 V 60 Hz 2P

Rated current : 11.7 A  
LRC : 7.2  
Rated torque : 2.06 kgfm  
Locked rotor torque : 220 %  
Breakdown torque : 290 %  
Rated speed : 3520 rpm

Moment of inertia (J) : 0.0268 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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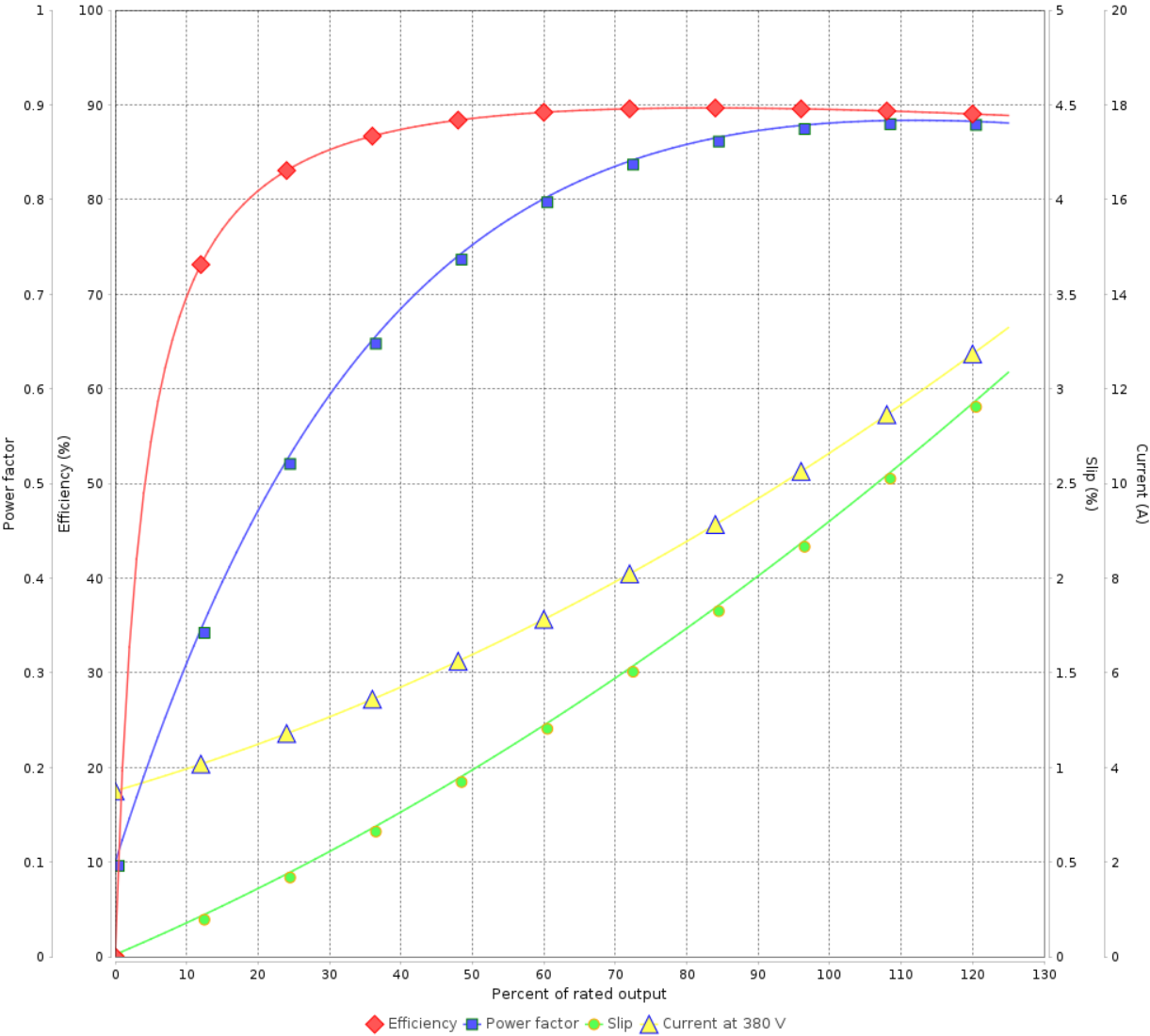
Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : W22 IEEE 841 NEMA Premium Efficiency Three-Phase      Product code : 11431348

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|                                  |             |                       |               |
|----------------------------------|-------------|-----------------------|---------------|
| Performance : 380 V 50 Hz 2P IE3 |             |                       |               |
| Rated current                    | : 10.6 A    | Moment of inertia (J) | : 0.0268 kgm² |
| LRC                              | : 7.9       | Duty cycle            | : Cont.(S1)   |
| Rated torque                     | : 1.86 kgfm | Insulation class      | : F           |
| Locked rotor torque              | : 220 %     | Service factor        | : 1.25        |
| Breakdown torque                 | : 300 %     | Temperature rise      | : 80 K        |
| Rated speed                      | : 2930 rpm  | Design                | : B           |

|              |                 |  |           |               |          |
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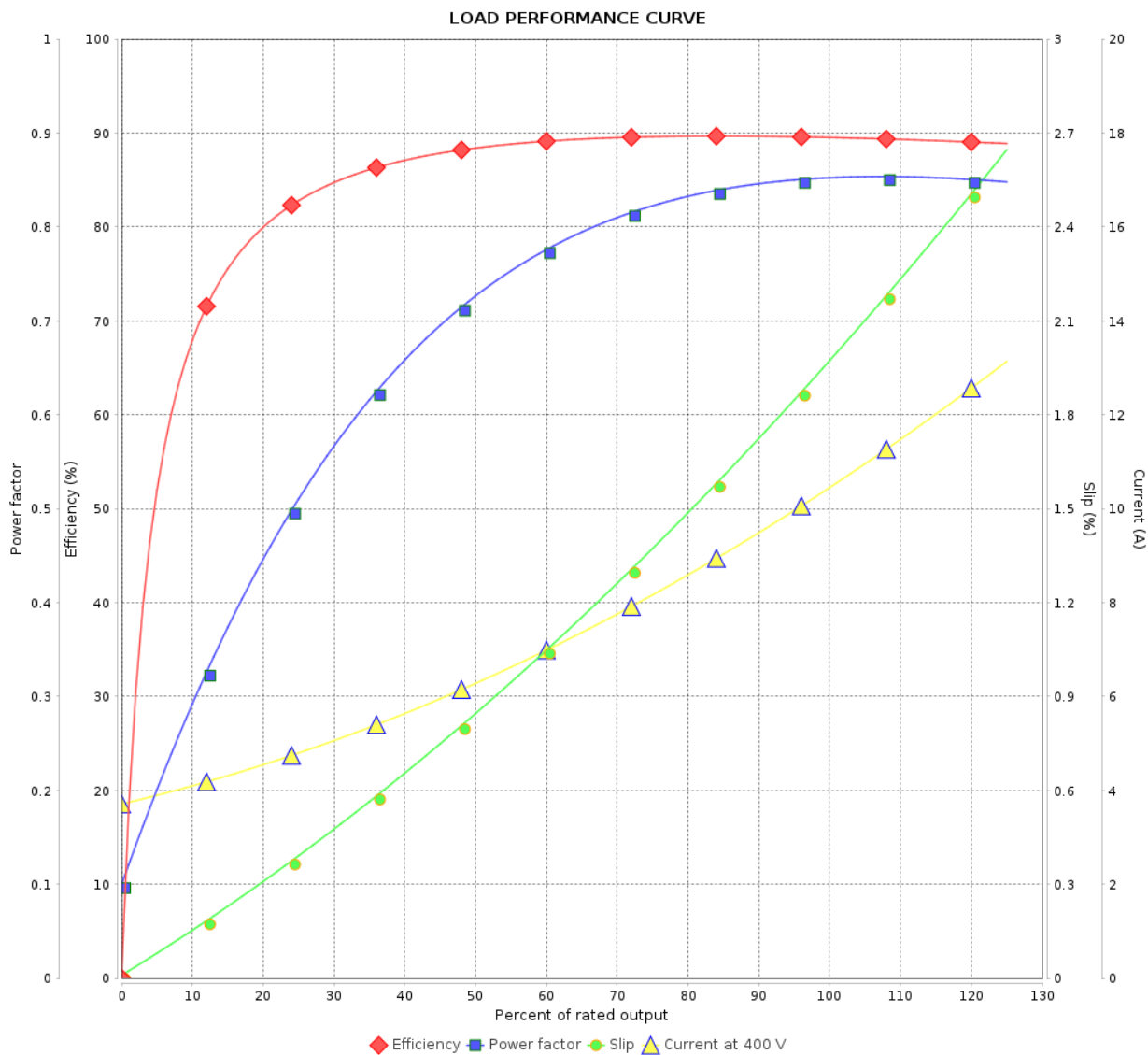
## Three Phase Induction Motor - Squirrel Cage



Customer :

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

Product code : 11431348



Performance : 400 V 50 Hz 2P IE3

Rated current : 10.4 A  
LRC : 8.7  
Rated torque : 1.85 kgfm  
Locked rotor torque : 240 %  
Breakdown torque : 340 %  
Rated speed : 2940 rpm

Moment of inertia (J) : 0.0268 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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# LOAD PERFORMANCE CURVE

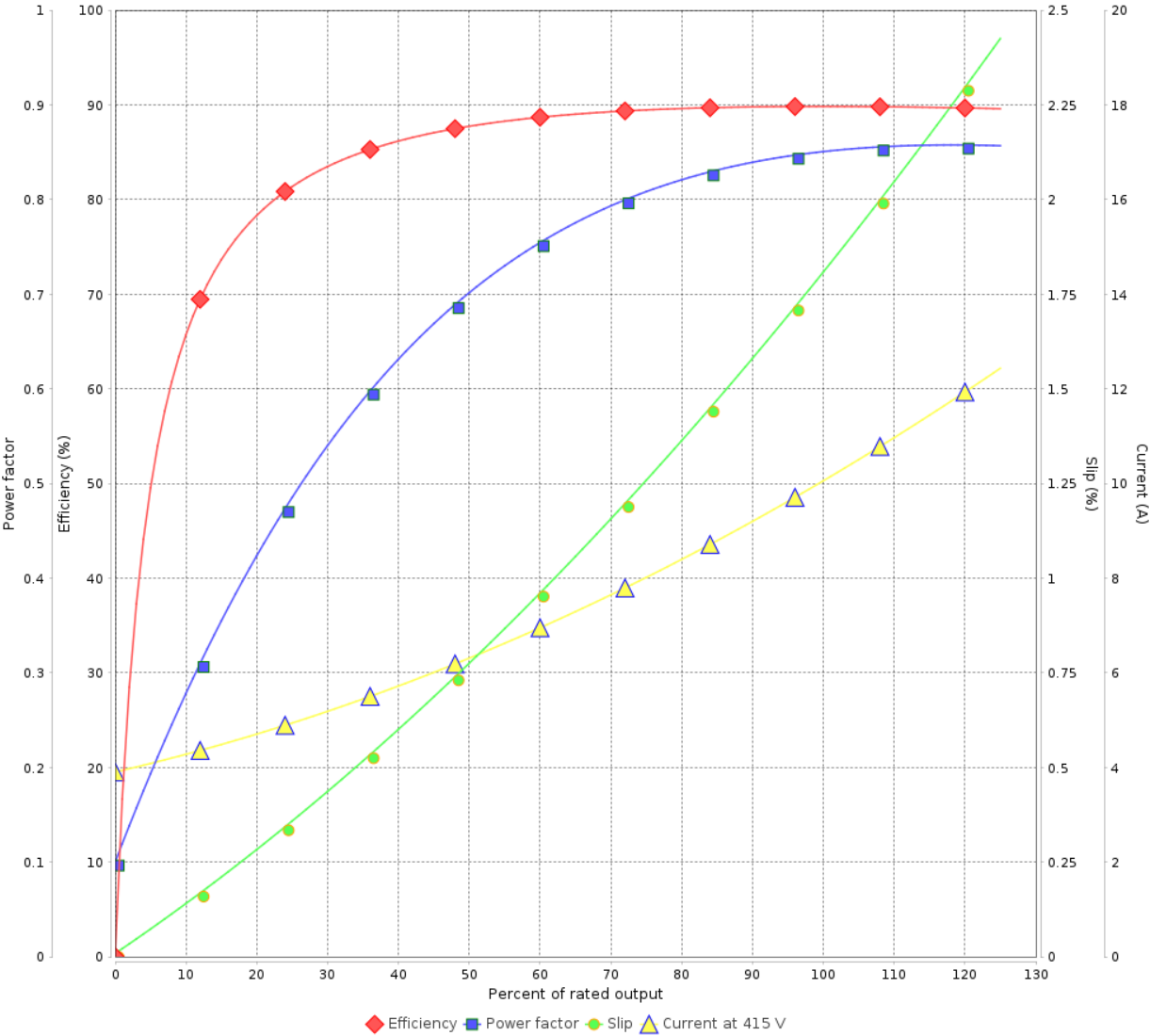
Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : W22 IEEE 841 NEMA Premium Efficiency Three-Phase      Product code : 11431348

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|                                  |             |                       |                           |
|----------------------------------|-------------|-----------------------|---------------------------|
| Performance : 415 V 50 Hz 2P IE3 |             |                       |                           |
| Rated current                    | : 10.0 A    | Moment of inertia (J) | : 0.0268 kgm <sup>2</sup> |
| LRC                              | : 9.1       | Duty cycle            | : Cont.(S1)               |
| Rated torque                     | : 1.85 kgfm | Insulation class      | : F                       |
| Locked rotor torque              | : 260 %     | Service factor        | : 1.25                    |
| Breakdown torque                 | : 360 %     | Temperature rise      | : 80 K                    |
| Rated speed                      | : 2945 rpm  | Design                | : B                       |

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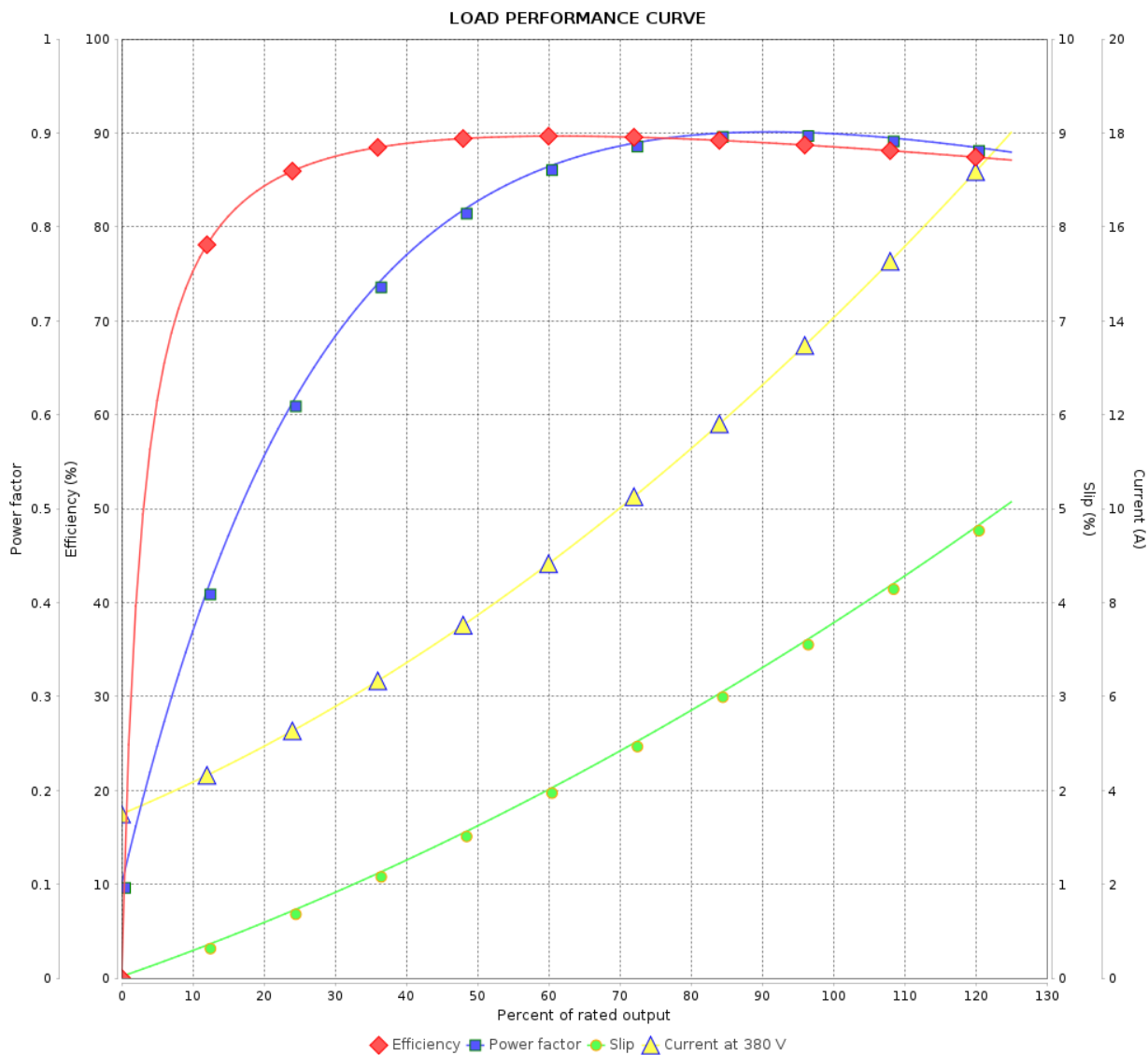
## Three Phase Induction Motor - Squirrel Cage



Customer :

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

Product code : 11431348



Performance : 380 V 50 Hz 2P IE2

Rated current : 14.3 A  
LRC : 5.6  
Rated torque : 2.52 kgfm  
Locked rotor torque : 170 %  
Breakdown torque : 220 %  
Rated speed : 2885 rpm

Moment of inertia (J) : 0.0268 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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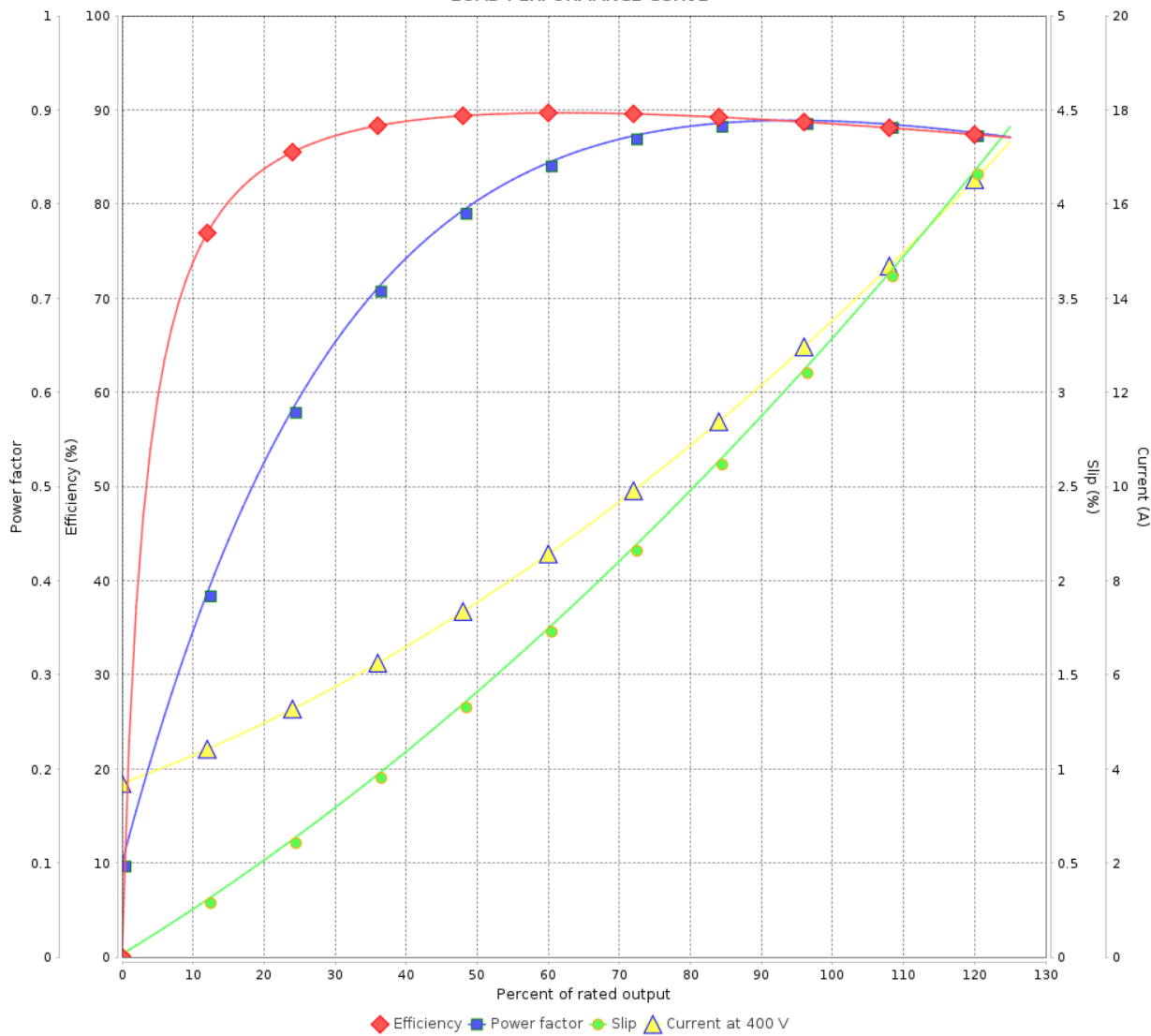
Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : W22 IEEE 841 NEMA Premium Efficiency Three-Phase      Product code : 11431348

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Performance : 400 V 50 Hz 2P IE2

|                     |             |                       |                           |
|---------------------|-------------|-----------------------|---------------------------|
| Rated current       | : 13.7 A    | Moment of inertia (J) | : 0.0268 kgm <sup>2</sup> |
| LRC                 | : 6.4       | Duty cycle            | : Cont.(S1)               |
| Rated torque        | : 2.50 kgfm | Insulation class      | : F                       |
| Locked rotor torque | : 190 %     | Service factor        | : 1.00                    |
| Breakdown torque    | : 250 %     | Temperature rise      | : 105 K                   |
| Rated speed         | : 2900 rpm  | Design                | : B                       |

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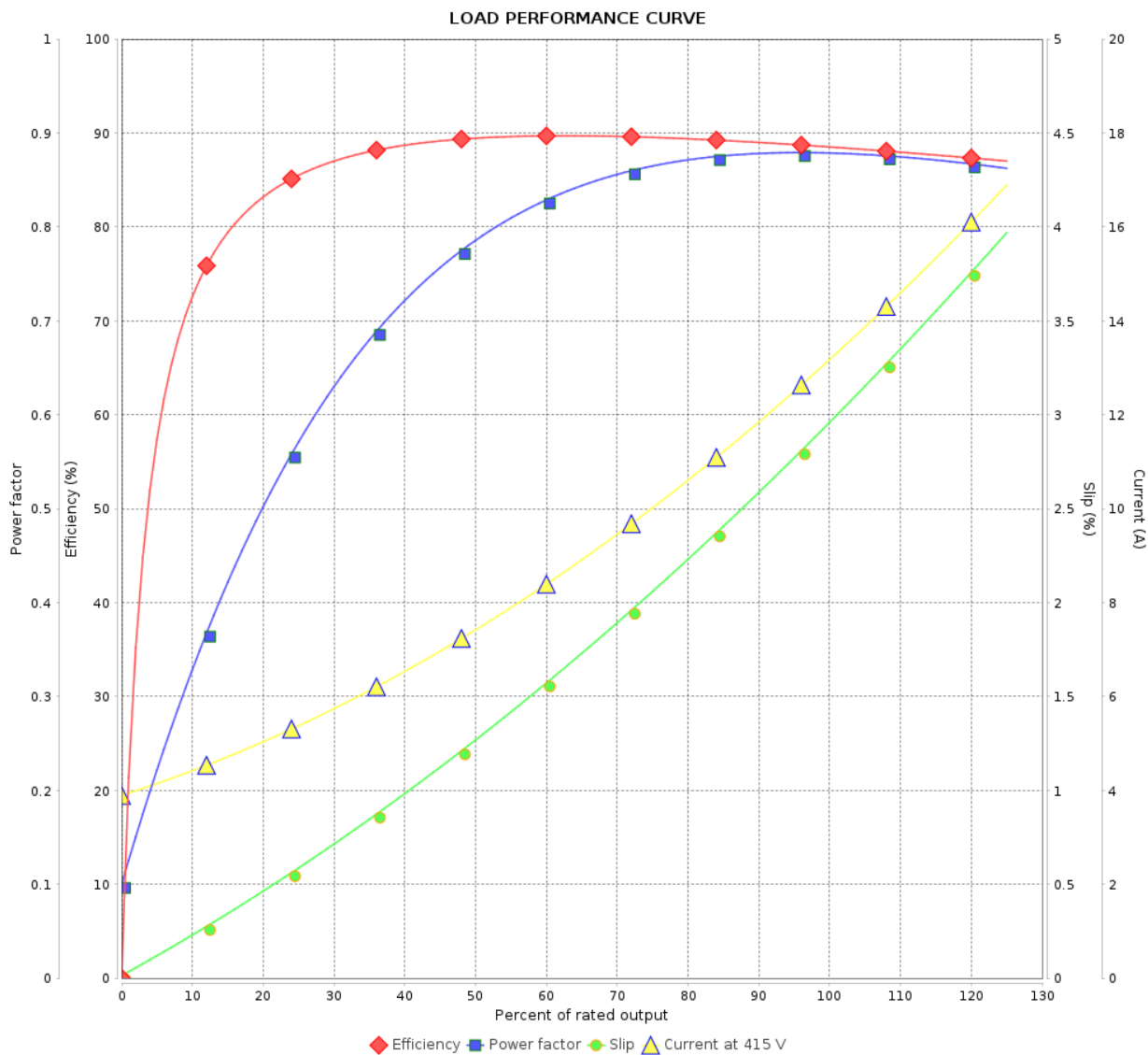
## Three Phase Induction Motor - Squirrel Cage



Customer :

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

Product code : 11431348



Performance : 415 V 50 Hz 2P IE2

Rated current : 13.4 A  
LRC : 6.9  
Rated torque : 2.49 kgfm  
Locked rotor torque : 200 %  
Breakdown torque : 270 %  
Rated speed : 2910 rpm

Moment of inertia (J) : 0.0268 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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