

# DATA SHEET

## Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : W22 IEEE 841 NEMA Premium Efficiency Three-Phase Product code : 11943059

|                     |                  |                             |                           |
|---------------------|------------------|-----------------------------|---------------------------|
| Frame               | : 324TC          | 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> | : 262 kg                  |
| Protection degree   | : IP55           | Moment of inertia (J)       | : 0.3861 kgm <sup>2</sup> |
| Design              | : B              |                             |                           |

|                          |                         |                         |                         |                         |                         |                         |                         |
|--------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| Output [HP]              | 40                      | 30                      | 30                      | 30                      | 40                      | 40                      | 40                      |
| 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]        | 47.1                    | 42.8                    | 41.6                    | 41.1                    | 57.4                    | 54.1                    | 52.8                    |
| L. R. Amperes [A]        | 287                     | 291                     | 308                     | 316                     | 287                     | 303                     | 317                     |
| LRC [A]                  | 6.1x(Code G)            | 6.8x(Code H)            | 7.4x(Code J)            | 7.7x(Code J)            | 5.0x(Code E)            | 5.6x(Code F)            | 6.0x(Code G)            |
| No load current [A]      | 17.0                    | 16.8                    | 17.3                    | 18.6                    | 16.8                    | 17.3                    | 18.6                    |
| Rated speed [RPM]        | 1775                    | 1477                    | 1480                    | 1481                    | 1460                    | 1465                    | 1470                    |
| Slip [%]                 | 1.39                    | 1.53                    | 1.33                    | 1.27                    | 2.67                    | 2.33                    | 2.00                    |
| Rated torque [kgfm]      | 16.4                    | 14.7                    | 14.7                    | 14.7                    | 19.9                    | 19.8                    | 19.7                    |
| Locked rotor torque [%]  | 229                     | 240                     | 270                     | 280                     | 170                     | 190                     | 210                     |
| Breakdown torque [%]     | 240                     | 250                     | 290                     | 310                     | 180                     | 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        | 36s (cold)<br>20s (hot) | 25s (cold)<br>14s (hot) | 27s (cold)<br>15s (hot) | 27s (cold)<br>15s (hot) | 25s (cold)<br>14s (hot) | 27s (cold)<br>15s (hot) | 27s (cold)<br>15s (hot) |
| Noise level <sup>2</sup> | 66.0 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%                     | 93.6                    | 92.9                    | 92.4                    | 91.7                    | 93.6                    | 93.0                    |
|                          | 75%                     | 94.1                    | 93.1                    | 93.0                    | 92.6                    | 93.0                    | 93.0                    |
|                          | 100%                    | 94.1                    | 93.0                    | 93.2                    | 93.1                    | 92.4                    | 93.0                    |
| Power Factor             | 25%                     |                         |                         |                         |                         |                         |                         |
|                          | 50%                     | 0.72                    | 0.68                    | 0.64                    | 0.62                    | 0.78                    | 0.72                    |
|                          | 75%                     | 0.80                    | 0.78                    | 0.75                    | 0.73                    | 0.84                    | 0.80                    |
|                          | 100%                    | 0.85                    | 0.84                    | 0.82                    | 0.80                    | 0.86                    | 0.85                    |

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

|            |                |     |     |     |     |     |     |
|------------|----------------|-----|-----|-----|-----|-----|-----|
| Losses (%) | P1 (0,9;1,0)   | 6.1 | 6.1 | 6.1 | 6.1 | 6.1 | 6.1 |
|            | P2 (0,5;1,0)   | 5.1 | 5.1 | 5.1 | 5.1 | 5.1 | 5.1 |
|            | P3 (0,25;1,0)  | 4.9 | 4.9 | 4.9 | 4.9 | 4.9 | 4.9 |
|            | P4 (0,9;0,5)   | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 |
|            | P5 (0,5;0,5)   | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 |
|            | 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 |

|                      |                    |               |           |                  |           |
|----------------------|--------------------|---------------|-----------|------------------|-----------|
| Bearing type         | : 6312 C3          | Non drive end | 6212 C3   | Foundation loads |           |
| Sealing              | : Taconite         |               | Taconite  | Max. traction    | : 441 kgf |
|                      | : Labyrinth        |               | Labyrinth | Max. compression | : 702 kgf |
| Lubrication interval | : 20000 h          |               | 20000 h   |                  |           |
| Lubricant amount     | : 21 g             |               | 13 g      |                  |           |
| Lubricant type       | : Mobil Polyrex EM |               |           |                  |           |

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# DATA SHEET

## Three Phase Induction Motor - Squirrel Cage



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

Notes

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

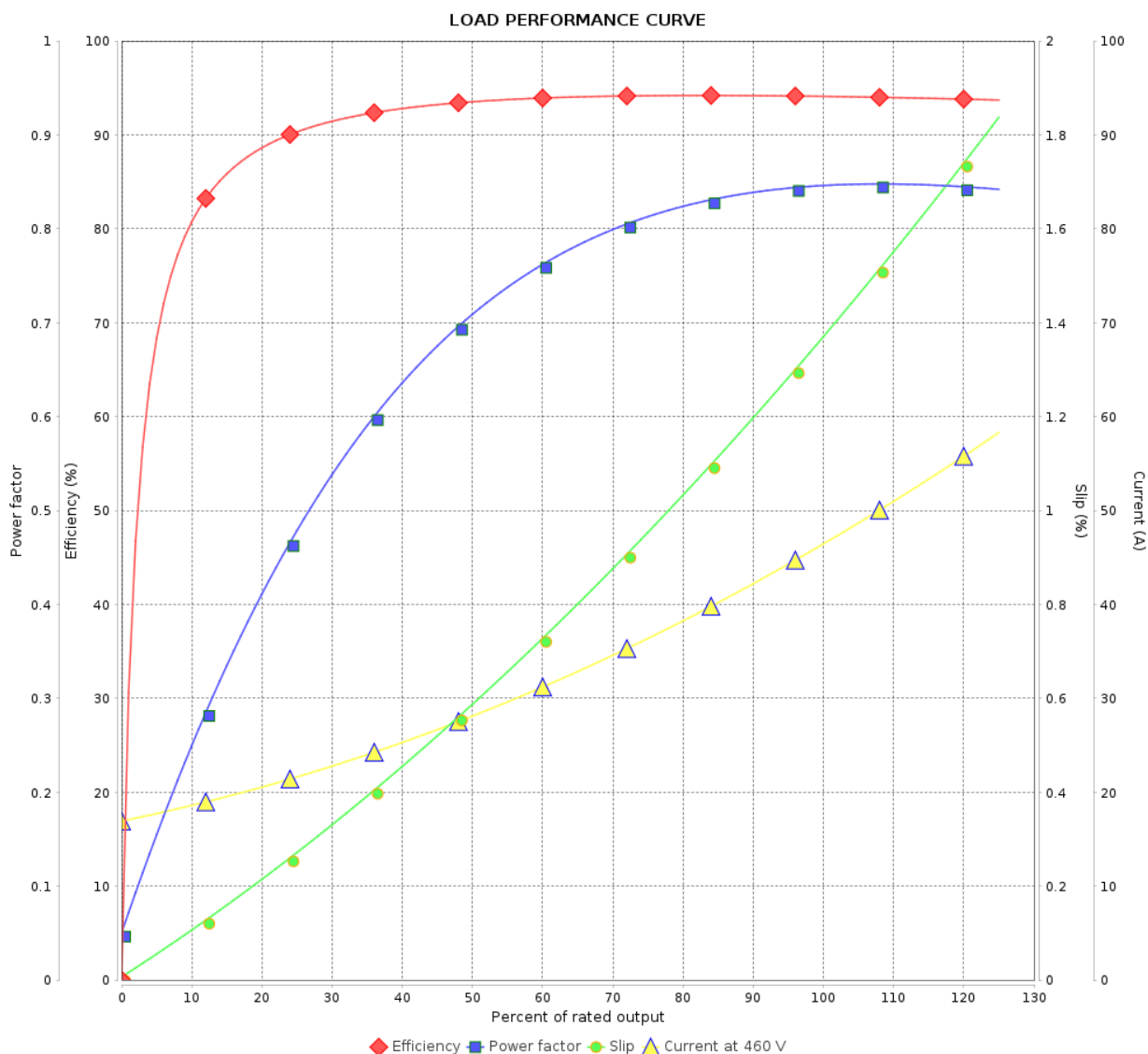
## Three Phase Induction Motor - Squirrel Cage



Customer :

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

Product code : 11943059



Performance : 460 V 60 Hz 4P

Rated current : 47.1 A  
LRC : 6.1  
Rated torque : 16.4 kgfm  
Locked rotor torque : 229 %  
Breakdown torque : 240 %  
Rated speed : 1775 rpm

Moment of inertia (J) : 0.3861 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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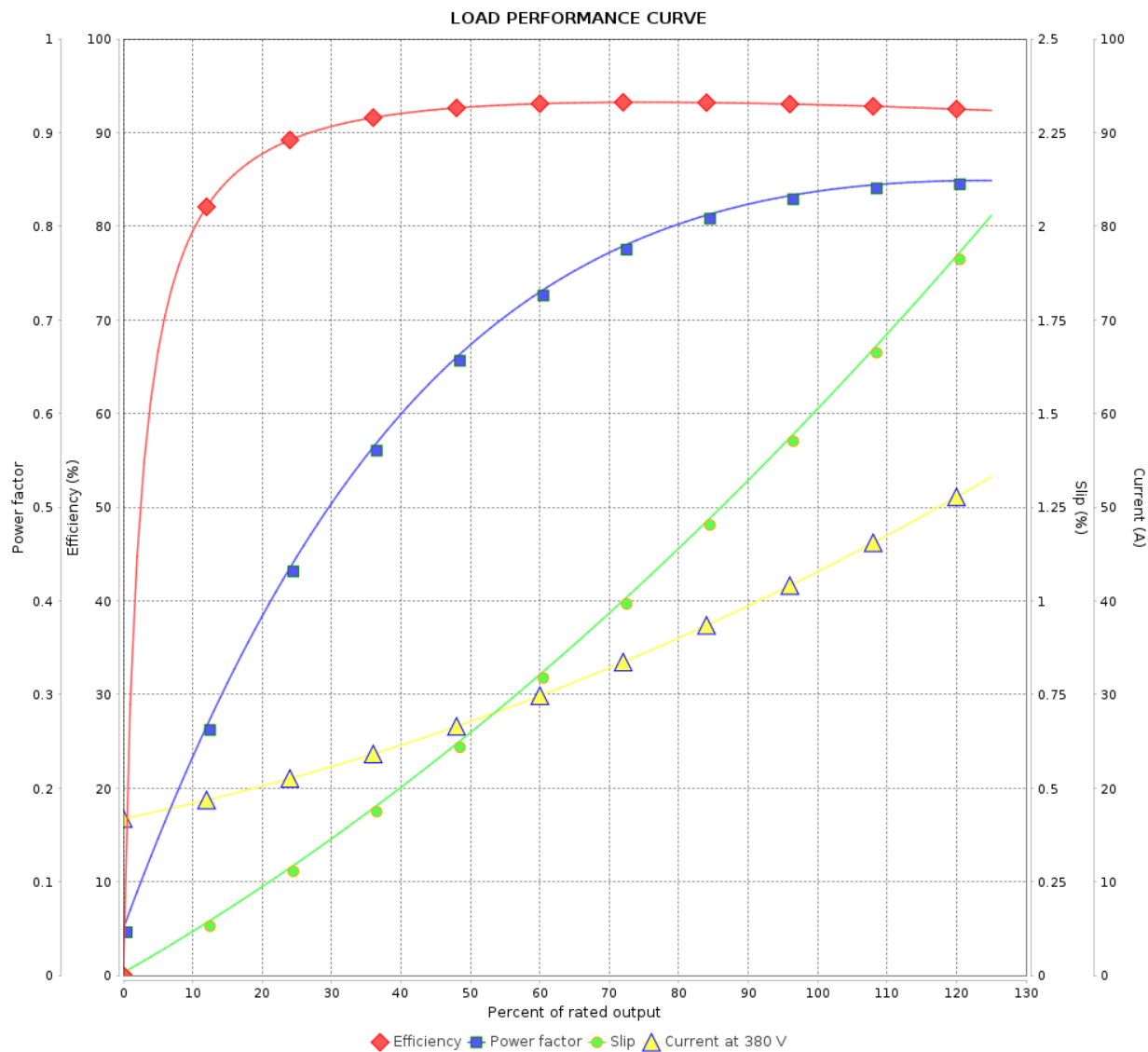
## Three Phase Induction Motor - Squirrel Cage



Customer :

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

Product code : 11943059



Performance : 380 V 50 Hz 4P IE3

Rated current : 42.8 A  
LRC : 6.8  
Rated torque : 14.7 kgfm  
Locked rotor torque : 240 %  
Breakdown torque : 250 %  
Rated speed : 1477 rpm

Moment of inertia (J) : 0.3861 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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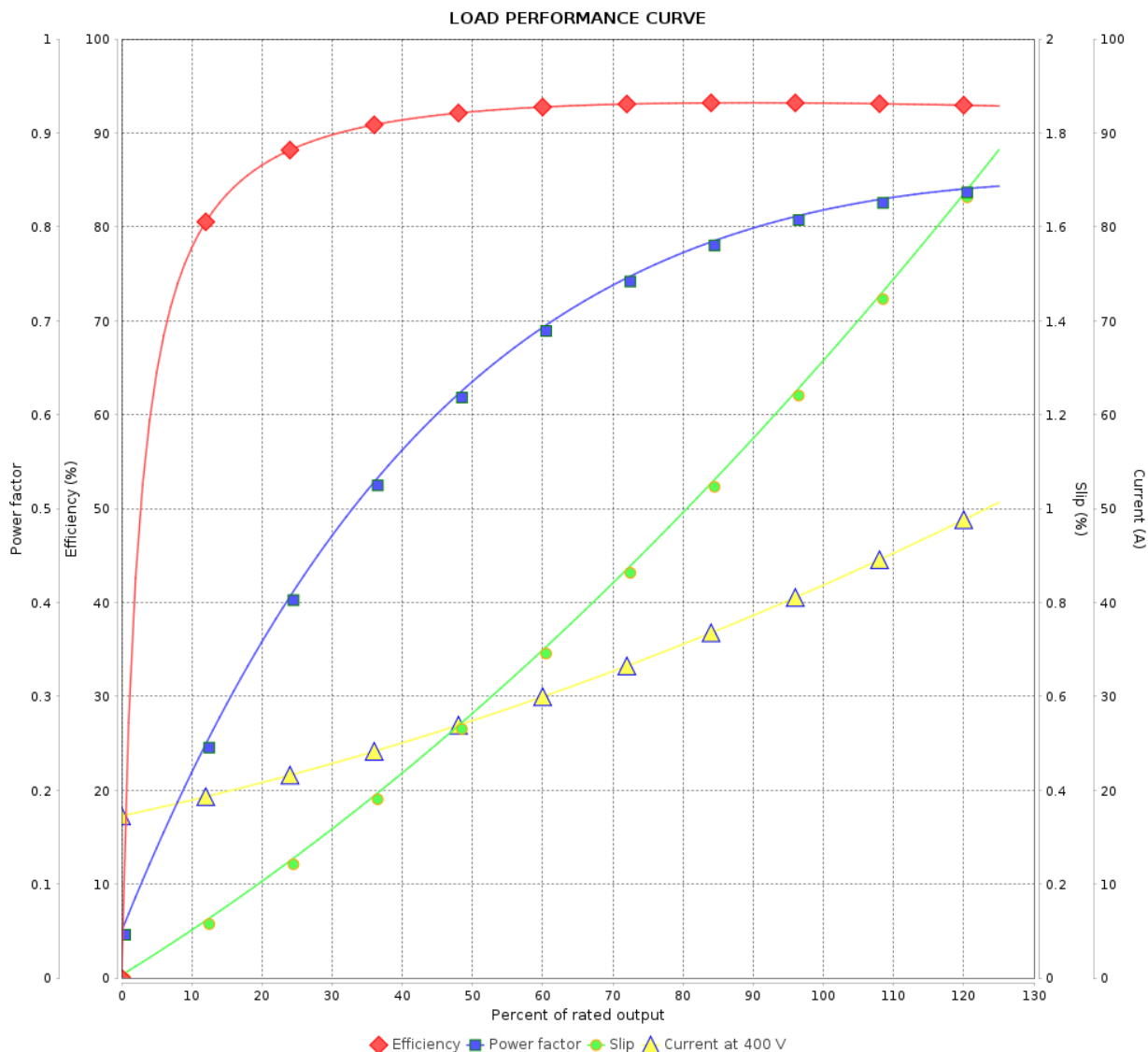
## Three Phase Induction Motor - Squirrel Cage



Customer :

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

Product code : 11943059



Performance : 400 V 50 Hz 4P IE3

Rated current : 41.6 A  
LRC : 7.4  
Rated torque : 14.7 kgfm  
Locked rotor torque : 270 %  
Breakdown torque : 290 %  
Rated speed : 1480 rpm

Moment of inertia (J) : 0.3861 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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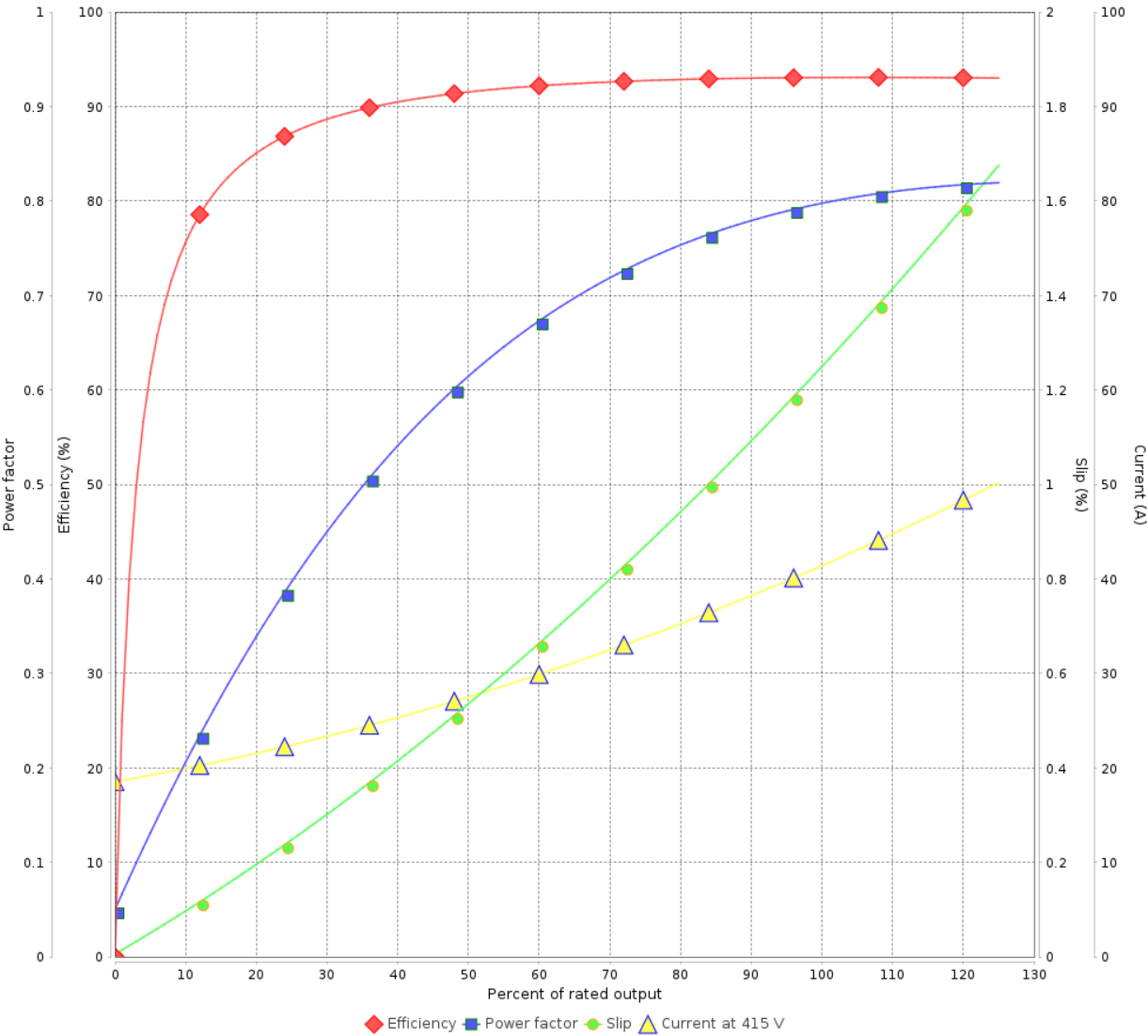
Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : W22 IEEE 841 NEMA Premium Efficiency Three-Phase      Product code : 11943059

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|                                  |             |                       |                           |
|----------------------------------|-------------|-----------------------|---------------------------|
| Performance : 415 V 50 Hz 4P IE3 |             |                       |                           |
| Rated current                    | : 41.1 A    | Moment of inertia (J) | : 0.3861 kgm <sup>2</sup> |
| LRC                              | : 7.7       | Duty cycle            | : Cont.(S1)               |
| Rated torque                     | : 14.7 kgfm | Insulation class      | : F                       |
| Locked rotor torque              | : 280 %     | Service factor        | : 1.00                    |
| Breakdown torque                 | : 310 %     | Temperature rise      | : 80 K                    |
| Rated speed                      | : 1481 rpm  | Design                | : B                       |

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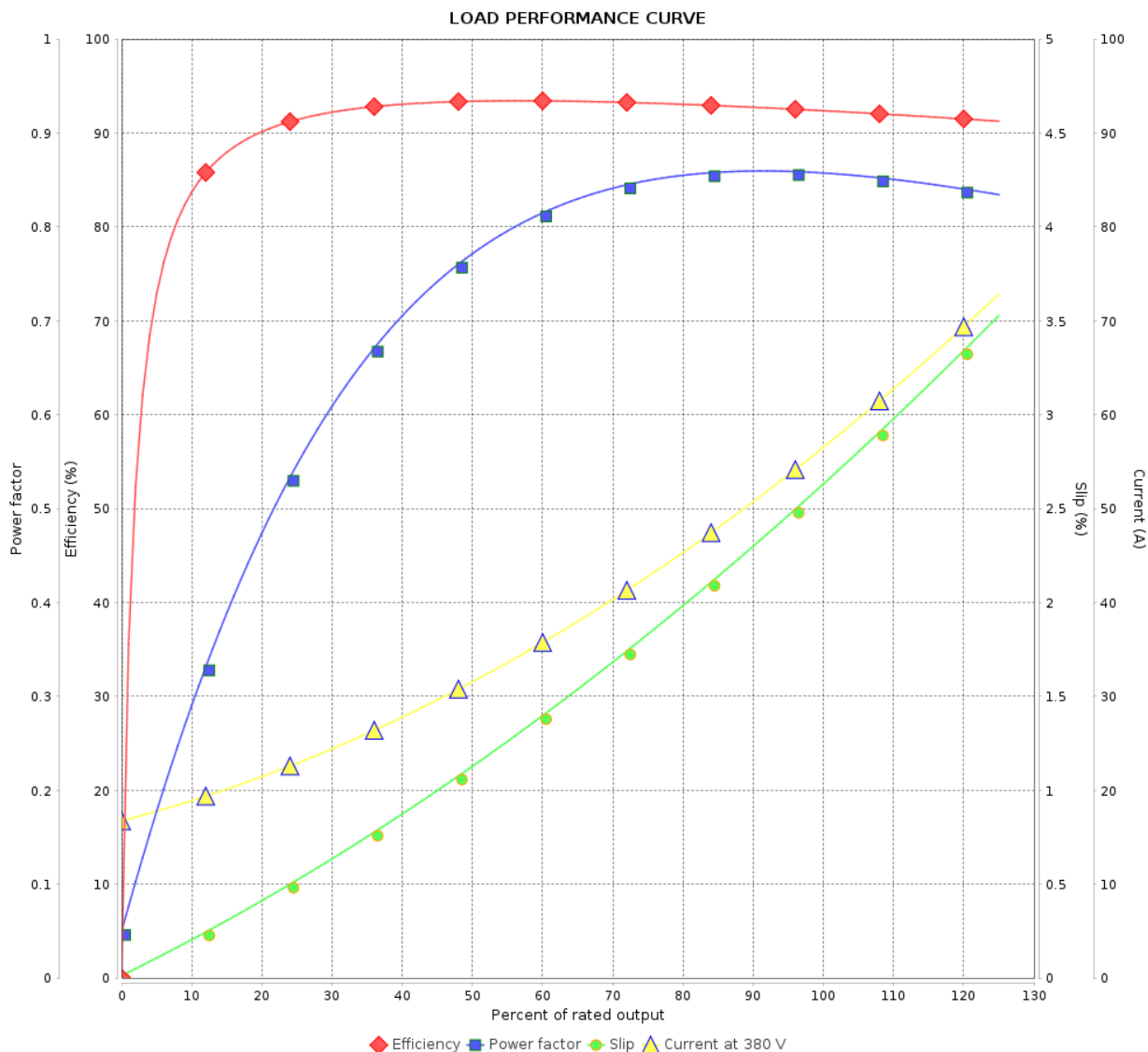
## Three Phase Induction Motor - Squirrel Cage



Customer :

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

Product code : 11943059



Performance : 380 V 50 Hz 4P IE2

Rated current : 57.4 A  
LRC : 5.0  
Rated torque : 19.9 kgfm  
Locked rotor torque : 170 %  
Breakdown torque : 180 %  
Rated speed : 1460 rpm

Moment of inertia (J) : 0.3861 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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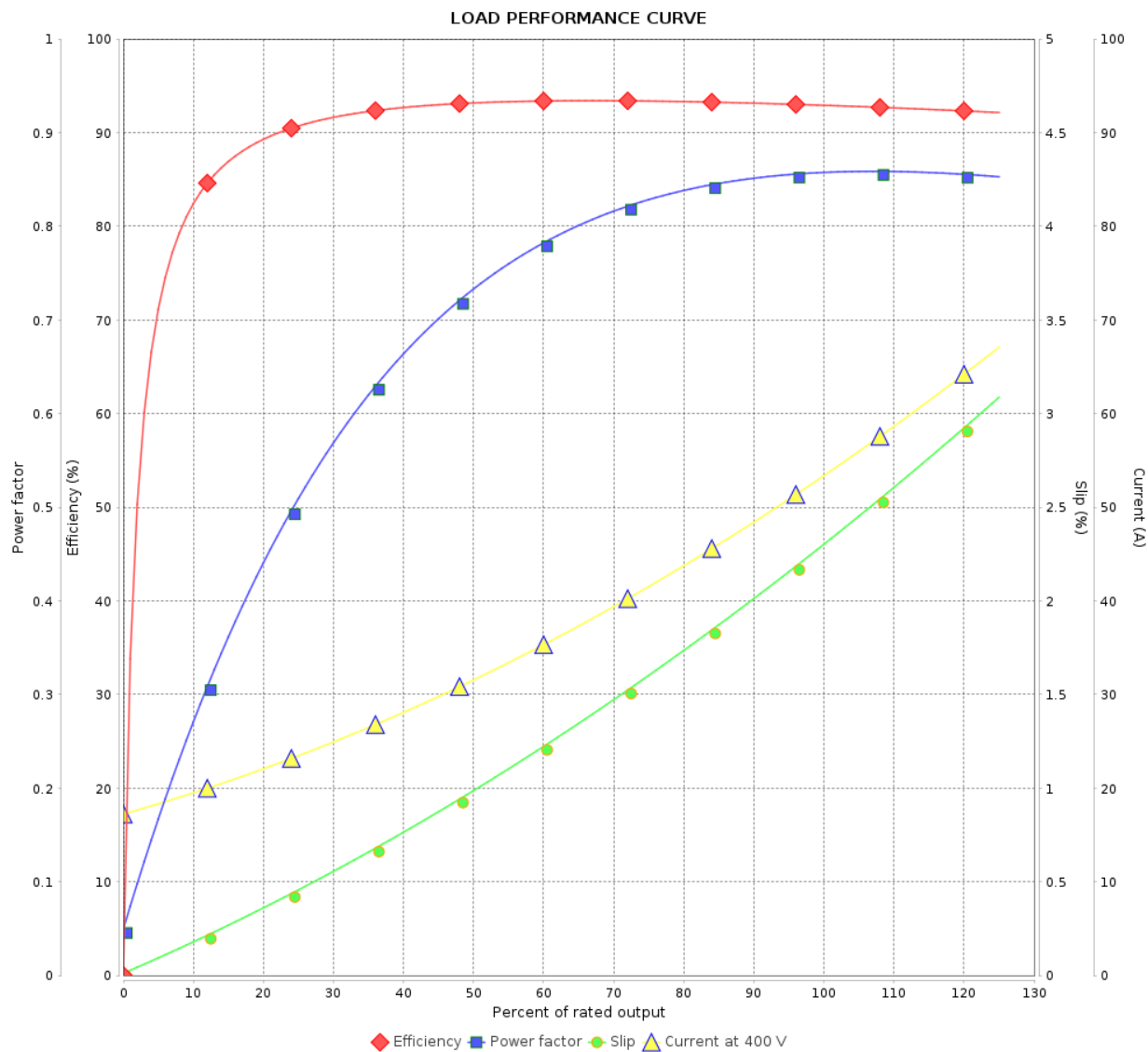
## Three Phase Induction Motor - Squirrel Cage



Customer :

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

Product code : 11943059



Performance : 400 V 50 Hz 4P IE2

Rated current : 54.1 A  
LRC : 5.6  
Rated torque : 19.8 kgfm  
Locked rotor torque : 190 %  
Breakdown torque : 210 %  
Rated speed : 1465 rpm

Moment of inertia (J) : 0.3861 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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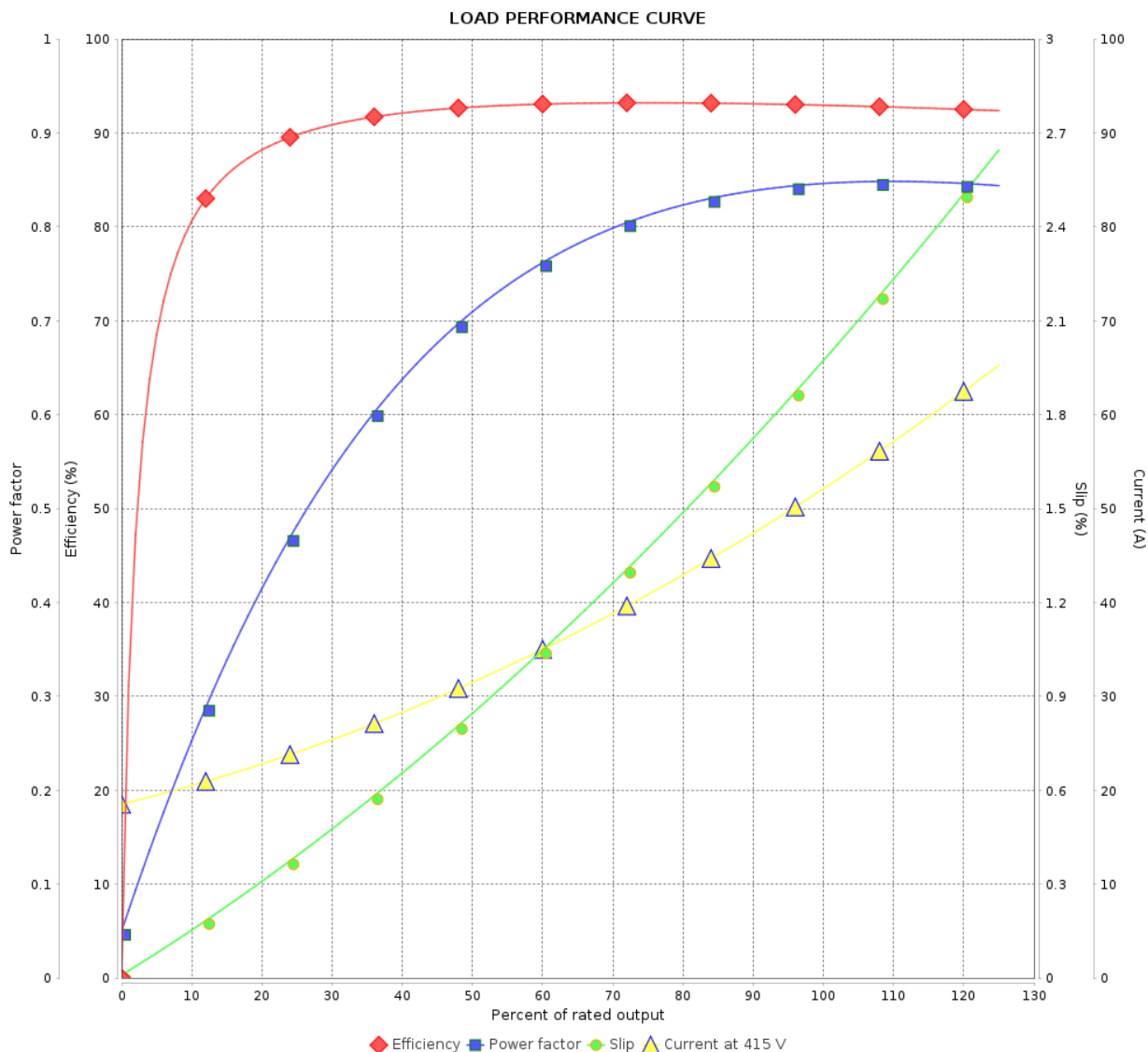
## Three Phase Induction Motor - Squirrel Cage



Customer :

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

Product code : 11943059



Performance : 415 V 50 Hz 4P IE2

Rated current : 52.8 A  
LRC : 6.0  
Rated torque : 19.7 kgfm  
Locked rotor torque : 210 %  
Breakdown torque : 229 %  
Rated speed : 1470 rpm

Moment of inertia (J) : 0.3861 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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