

DATA SHEET

Three Phase Induction Motor - Squirrel Cage



| | | | | | |
|--|----------------------|-----------------------------|--|-------------------------|----------------------|
| Customer | | : Astraprom d.o.o. | | | |
| Product line | | : IE3 Three-Phase | | Product code : 12862442 | |
| Frame | : 225S/M | Cooling method | : IC411 - TEFC | | |
| Insulation class | : F | Mounting | : B5T | | |
| Duty cycle | : S1 | Rotation ¹ | : Both (CW and CCW) | | |
| Ambient temperature | : -20°C to +40°C | Starting method | : Direct On Line | | |
| Altitude | : 1000 m.a.s.l. | Approx. weight ³ | : 374 kg | | |
| Protection degree | : IP55 | Moment of inertia (J) | : 0.2861 kgm ² | | |
| Design | : N | | | | |
| Output [kW] | 45 | 45 | 45 | 45 | 45 |
| Poles | 2 | 2 | 2 | 2 | 2 |
| Frequency [Hz] | 50 | 50 | 50 | 50 | 60 |
| Rated voltage [V] | 380/660 | 400/690 | 415 | 460 | 460 |
| Rated current [A] | 84.6/48.7 | 83.3/48.3 | 83.3 | 73.6 | 73.6 |
| L. R. Amperes [A] | 651/375 | 691/401 | 741 | 670 | 670 |
| LRC [A] | 7.7 | 8.3 | 8.9 | 9.1 | 9.1 |
| No load current [A] | 33.0/19.0 | 38.0/22.0 | 42.0 | 34.0 | 34.0 |
| Rated speed [RPM] | 2965 | 2970 | 2970 | 3575 | 3575 |
| Slip [%] | 1.17 | 1.00 | 1.00 | 0.69 | 0.69 |
| Rated torque [kgfm] | 14.8 | 14.8 | 14.7 | 12.3 | 12.3 |
| Locked rotor torque [%] | 260 | 290 | 320 | 320 | 320 |
| Breakdown torque [%] | 320 | 380 | 409 | 430 | 430 |
| Service factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Temperature rise | 80 K | 80 K | 80 K | 80 K | 80 K |
| Locked rotor time | 23s (cold) 13s (hot) | 23s (cold) 13s (hot) | 21s (cold) 12s (hot) | 23s (cold) 13s (hot) | 23s (cold) 13s (hot) |
| Noise level ² | 74.0 dB(A) | 74.0 dB(A) | 74.0 dB(A) | 79.0 dB(A) | 79.0 dB(A) |
| Efficiency (%) | 25% | 0.000 | 0.000 | 0.000 | |
| | 50% | 93.0 | 92.0 | 92.0 | 91.5 |
| | 75% | 93.8 | 93.0 | 93.0 | 93.6 |
| | 100% | 94.0 | 94.0 | 94.0 | 93.6 |
| Power Factor | 25% | 0.00 | 0.00 | 0.00 | |
| | 50% | 0.71 | 0.65 | 0.60 | 0.66 |
| | 75% | 0.81 | 0.78 | 0.74 | 0.77 |
| | 100% | 0.86 | 0.83 | 0.80 | 0.82 |
| Losses at normative operating points (speed;torque), in percentage of rated output power | | | | | |
| Losses (%) | P1 (0,9;1,0) | 6.0 | 6.0 | 6.0 | 6.4 |
| | P2 (0,5;1,0) | 4.6 | 4.6 | 4.6 | 4.9 |
| | P3 (0,25;1,0) | 4.2 | 4.2 | 4.2 | 4.5 |
| | P4 (0,9;0,5) | 3.4 | 3.4 | 3.4 | 3.6 |
| | P5 (0,5;0,5) | 2.0 | 2.0 | 2.0 | 2.1 |
| | P6 (0,5;0,25) | 1.4 | 1.4 | 1.4 | 1.5 |
| | P7 (0,25;0,25) | 0.9 | 0.9 | 0.9 | 0.9 |
| Bearing type | : Drive end 6314 C3 | Non drive end 6314 C3 | Foundation loads | | |
| Sealing | : Oil Seal | Oil Seal | Max. traction | : 405 kgf | |
| Lubrication interval | : 5000 h | 5000 h | Max. compression | : 779 kgf | |
| Lubricant amount | : 27 g | 27 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. (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 IEC 60034-1. | | |
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DATA SHEET

Three Phase Induction Motor - Squirrel Cage



Customer : Astraprom d.o.o.

Notes

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DATA SHEET



Three Phase Induction Motor - Squirrel Cage

Customer : Astraprom d.o.o.

Thermal protection

| ID | Application | Type | Quantity | Sensing Temperature |
|----|-------------|----------------------|-----------|---------------------|
| 1 | Winding | Thermistor - 2 wires | 1 x Phase | 155 °C |

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TORQUE AND CURRENT VS SPEED CURVE

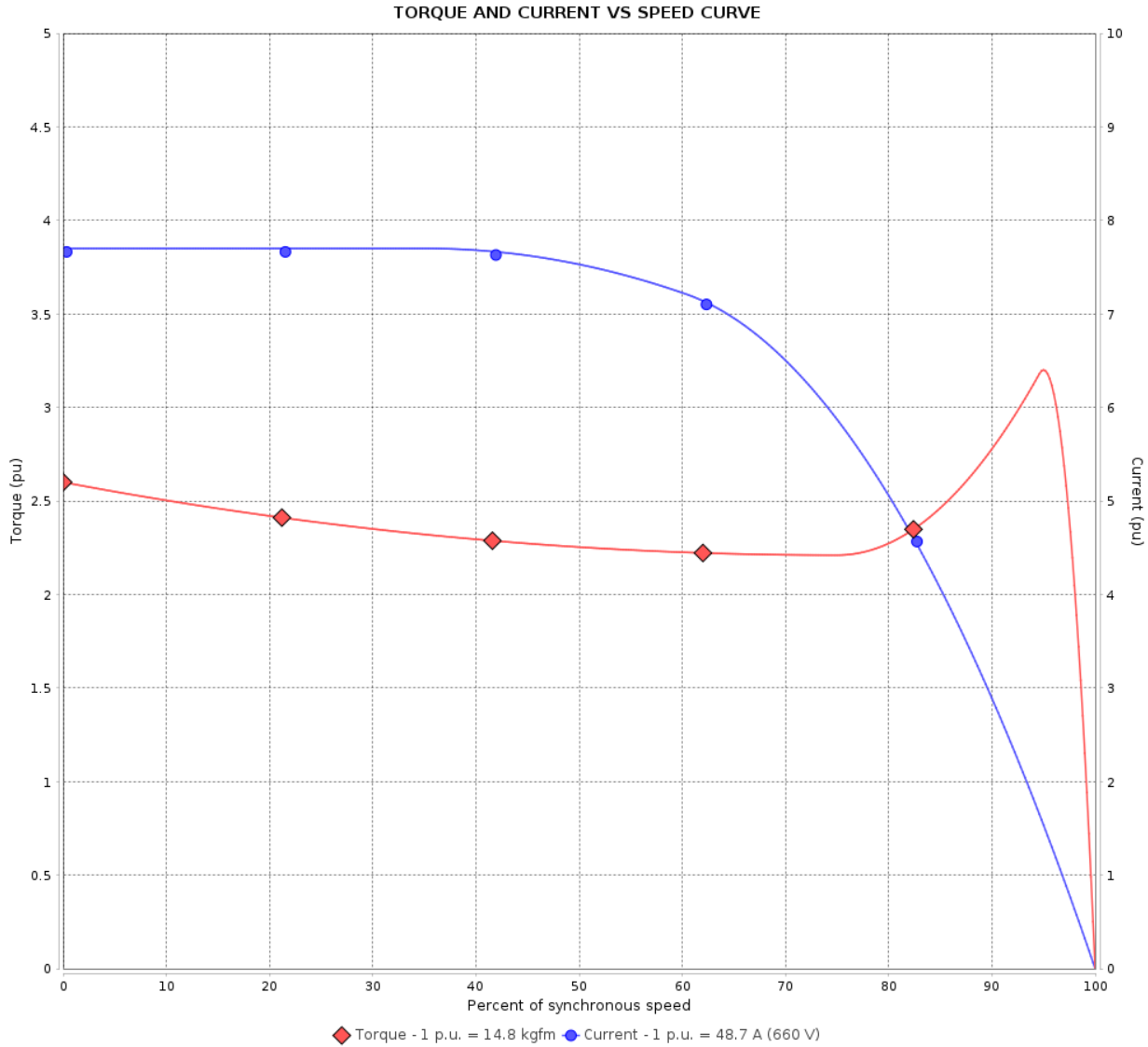
Three Phase Induction Motor - Squirrel Cage



Customer : Astraprom d.o.o.

Product line : IE3 Three-Phase

Product code : 12862442



Performance : 380/660 V 50 Hz 2P

| | | | |
|---------------------|---------------|-----------------------|---------------------------|
| Rated current | : 84.6/48.7 A | Moment of inertia (J) | : 0.2861 kgm ² |
| LRC | : 7.7 | Duty cycle | : S1 |
| Rated torque | : 14.8 kgfm | Insulation class | : F |
| Locked rotor torque | : 260 % | Service factor | : 1.00 |
| Breakdown torque | : 320 % | Temperature rise | : 80 K |
| Rated speed | : 2965 rpm | Design | : N |

Locked rotor time : 23s (cold) 13s (hot)

| Rev. | Changes Summary | Performed | Checked | Date |
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TORQUE AND CURRENT VS SPEED CURVE

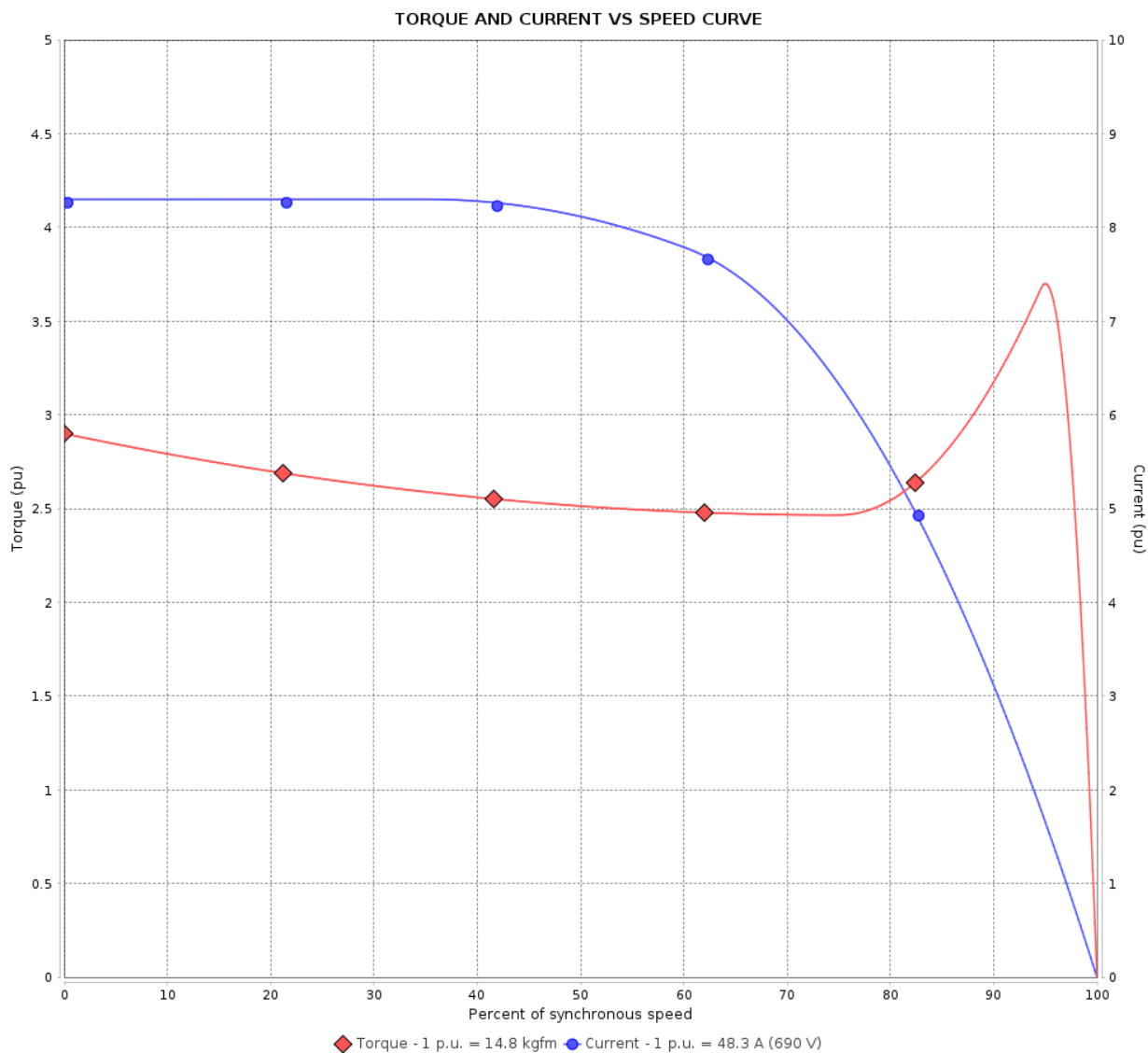


Three Phase Induction Motor - Squirrel Cage

Customer : Astraprom d.o.o.

Product line : IE3 Three-Phase

Product code : 12862442



Performance : 400/690 V 50 Hz 2P

| | | | |
|---------------------|---------------|-----------------------|---------------------------|
| Rated current | : 83.3/48.3 A | Moment of inertia (J) | : 0.2861 kgm ² |
| LRC | : 8.3 | Duty cycle | : S1 |
| Rated torque | : 14.8 kgfm | Insulation class | : F |
| Locked rotor torque | : 290 % | Service factor | : 1.00 |
| Breakdown torque | : 380 % | Temperature rise | : 80 K |
| Rated speed | : 2970 rpm | Design | : N |

Locked rotor time : 23s (cold) 13s (hot)

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TORQUE AND CURRENT VS SPEED CURVE

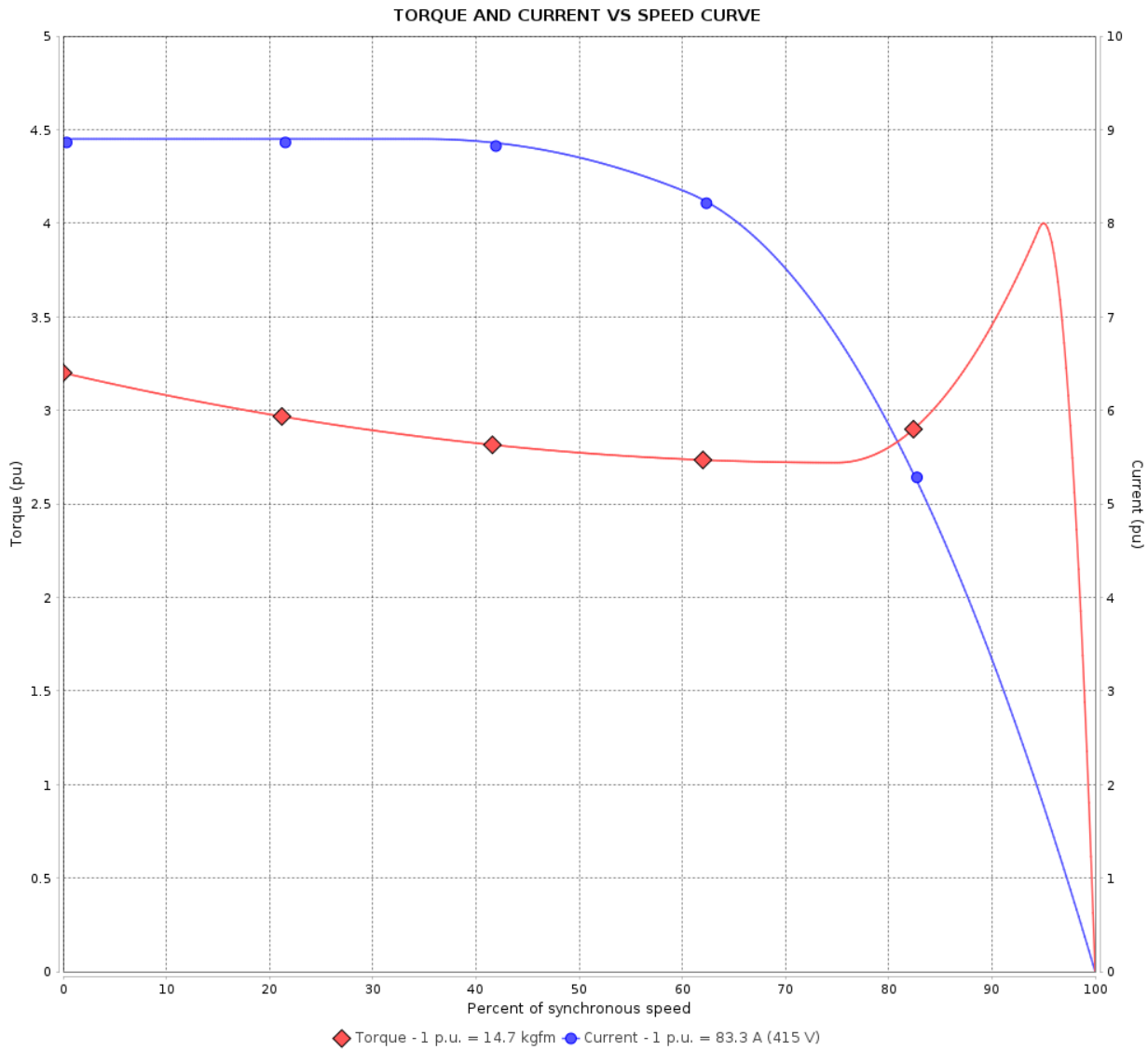
Three Phase Induction Motor - Squirrel Cage



Customer : Astraprom d.o.o.

Product line : IE3 Three-Phase

Product code : 12862442



Performance : 415 V 50 Hz 2P

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|---------------------|-------------|-----------------------|---------------------------|
| Rated current | : 83.3 A | Moment of inertia (J) | : 0.2861 kgm ² |
| LRC | : 8.9 | Duty cycle | : S1 |
| Rated torque | : 14.7 kgfm | Insulation class | : F |
| Locked rotor torque | : 320 % | Service factor | : 1.00 |
| Breakdown torque | : 409 % | Temperature rise | : 80 K |
| Rated speed | : 2970 rpm | Design | : N |

Locked rotor time : 21s (cold) 12s (hot)

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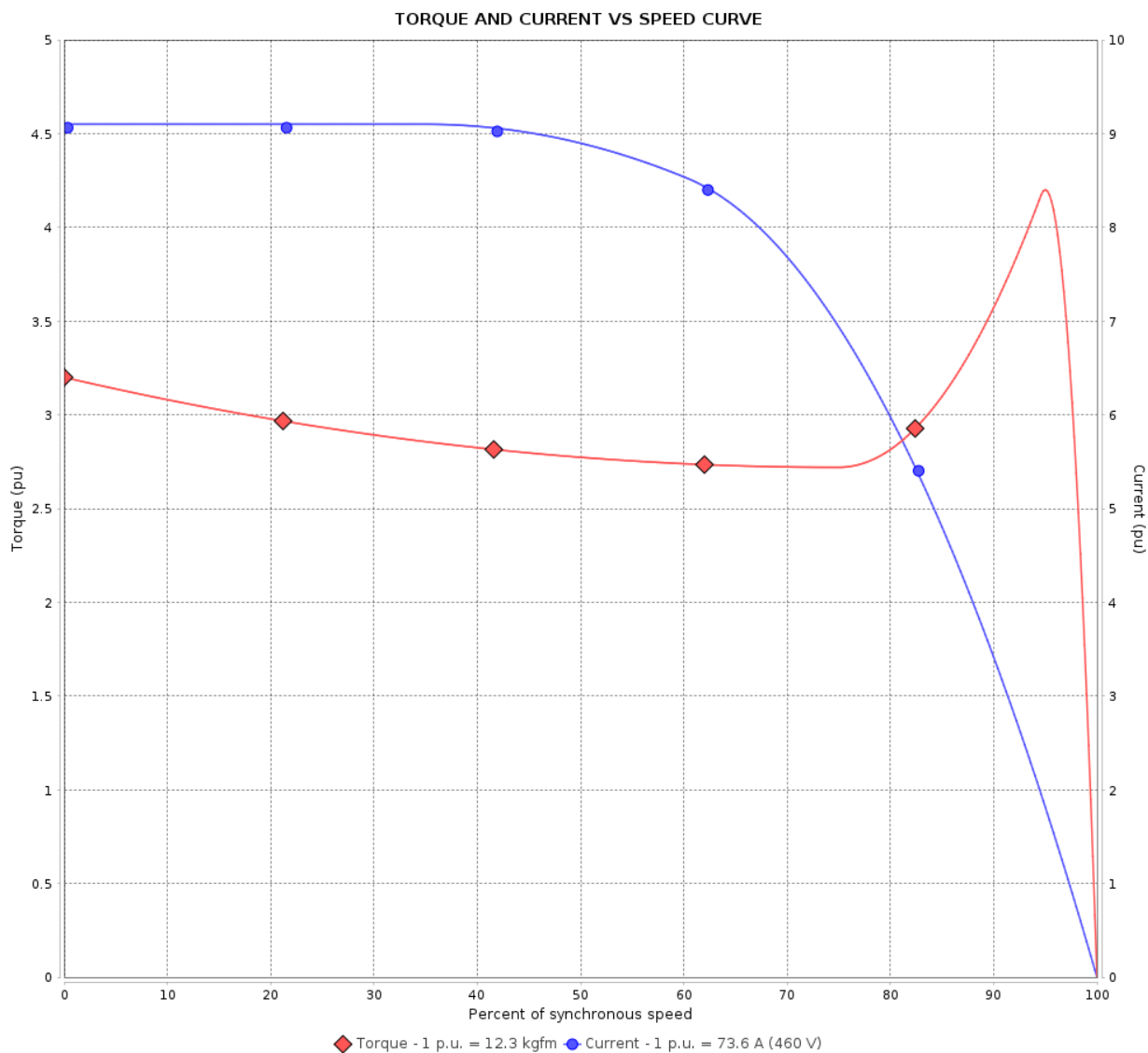


Three Phase Induction Motor - Squirrel Cage

Customer : Astraprom d.o.o.

Product line : IE3 Three-Phase

Product code : 12862442



Performance : 460 V 60 Hz 2P

| | | | |
|---------------------|-------------|-----------------------|---------------------------|
| Rated current | : 73.6 A | Moment of inertia (J) | : 0.2861 kgm ² |
| LRC | : 9.1 | Duty cycle | : S1 |
| Rated torque | : 12.3 kgfm | Insulation class | : F |
| Locked rotor torque | : 320 % | Service factor | : 1.00 |
| Breakdown torque | : 430 % | Temperature rise | : 80 K |
| Rated speed | : 3575 rpm | Design | : N |

Locked rotor time : 23s (cold) 13s (hot)

| Rev. | Changes Summary | Performed | Checked | Date |
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LOAD PERFORMANCE CURVE

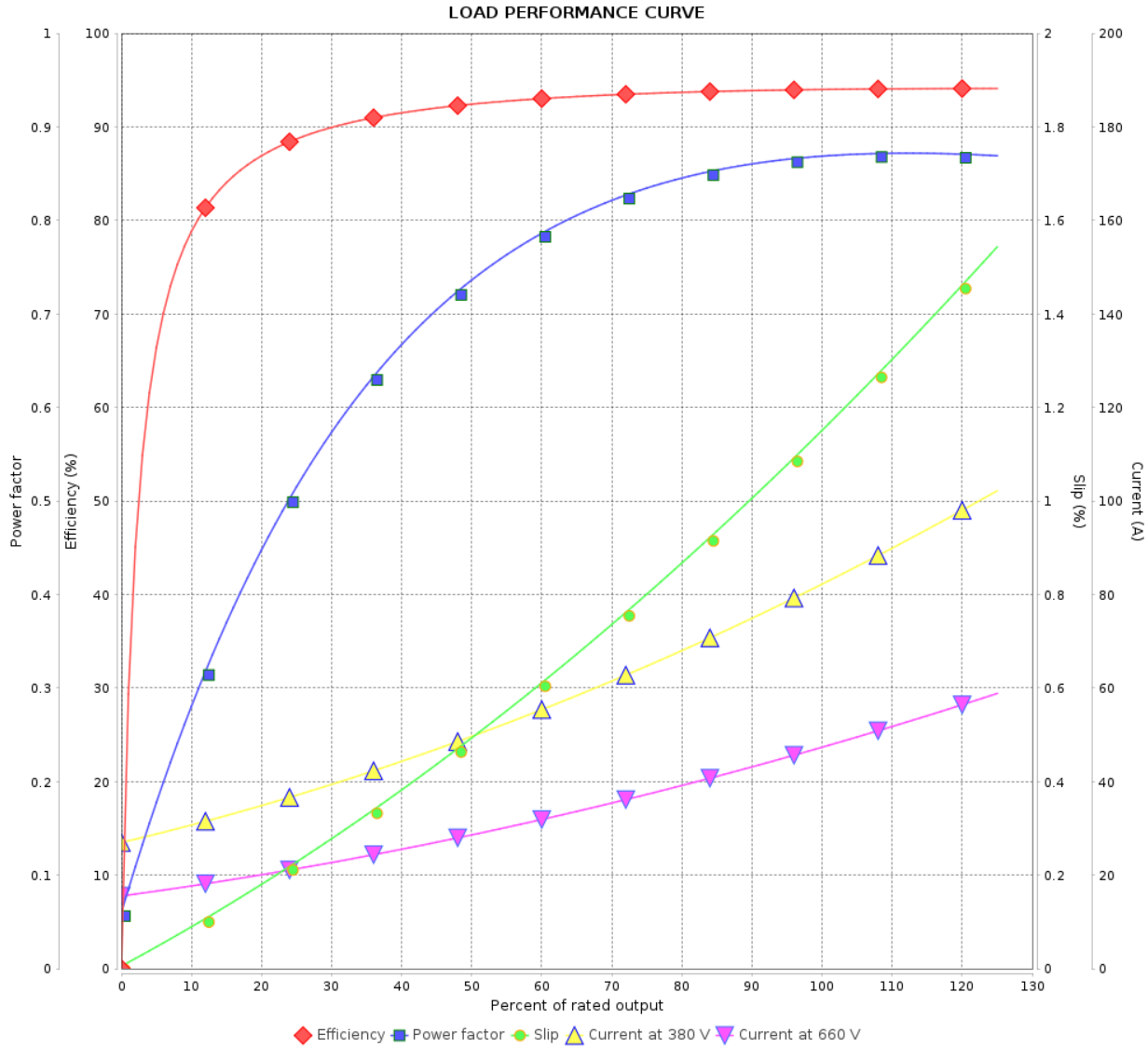
Three Phase Induction Motor - Squirrel Cage



Customer : Astraprom d.o.o.

Product line : IE3 Three-Phase

Product code : 12862442



Performance : 380/660 V 50 Hz 2P

Rated current : 84.6/48.7 A
 LRC : 7.7
 Rated torque : 14.8 kgfm
 Locked rotor torque : 260 %
 Breakdown torque : 320 %
 Rated speed : 2965 rpm

Moment of inertia (J) : 0.2861 kgm²
 Duty cycle : S1
 Insulation class : F
 Service factor : 1.00
 Temperature rise : 80 K
 Design : N

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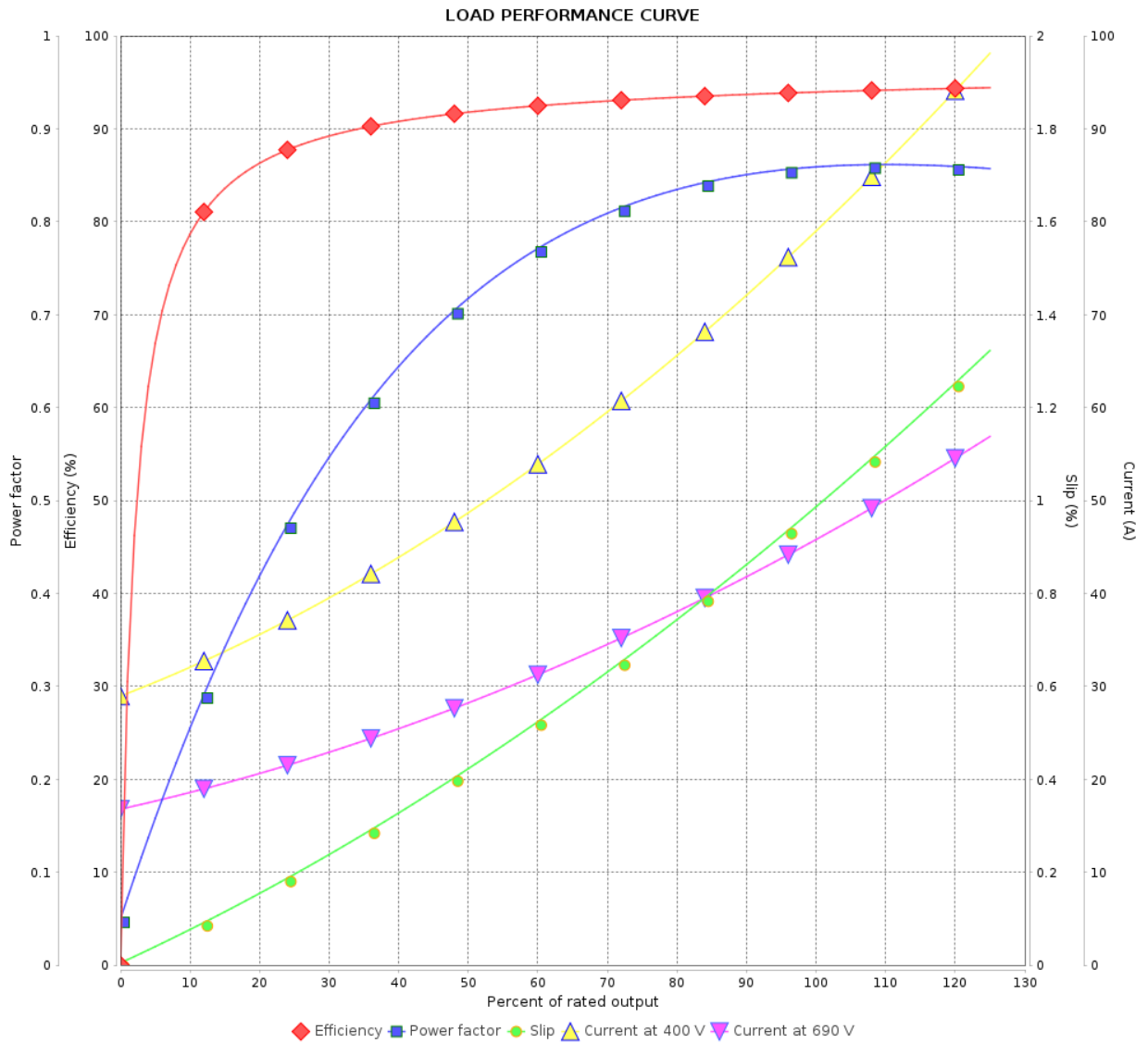
Three Phase Induction Motor - Squirrel Cage



Customer : Astraprom d.o.o.

Product line : IE3 Three-Phase

Product code : 12862442



Performance : 400/690 V 50 Hz 2P

Rated current : 83.3/48.3 A
 LRC : 8.3
 Rated torque : 14.8 kgfm
 Locked rotor torque : 290 %
 Breakdown torque : 380 %
 Rated speed : 2970 rpm

Moment of inertia (J) : 0.2861 kgm²
 Duty cycle : S1
 Insulation class : F
 Service factor : 1.00
 Temperature rise : 80 K
 Design : N

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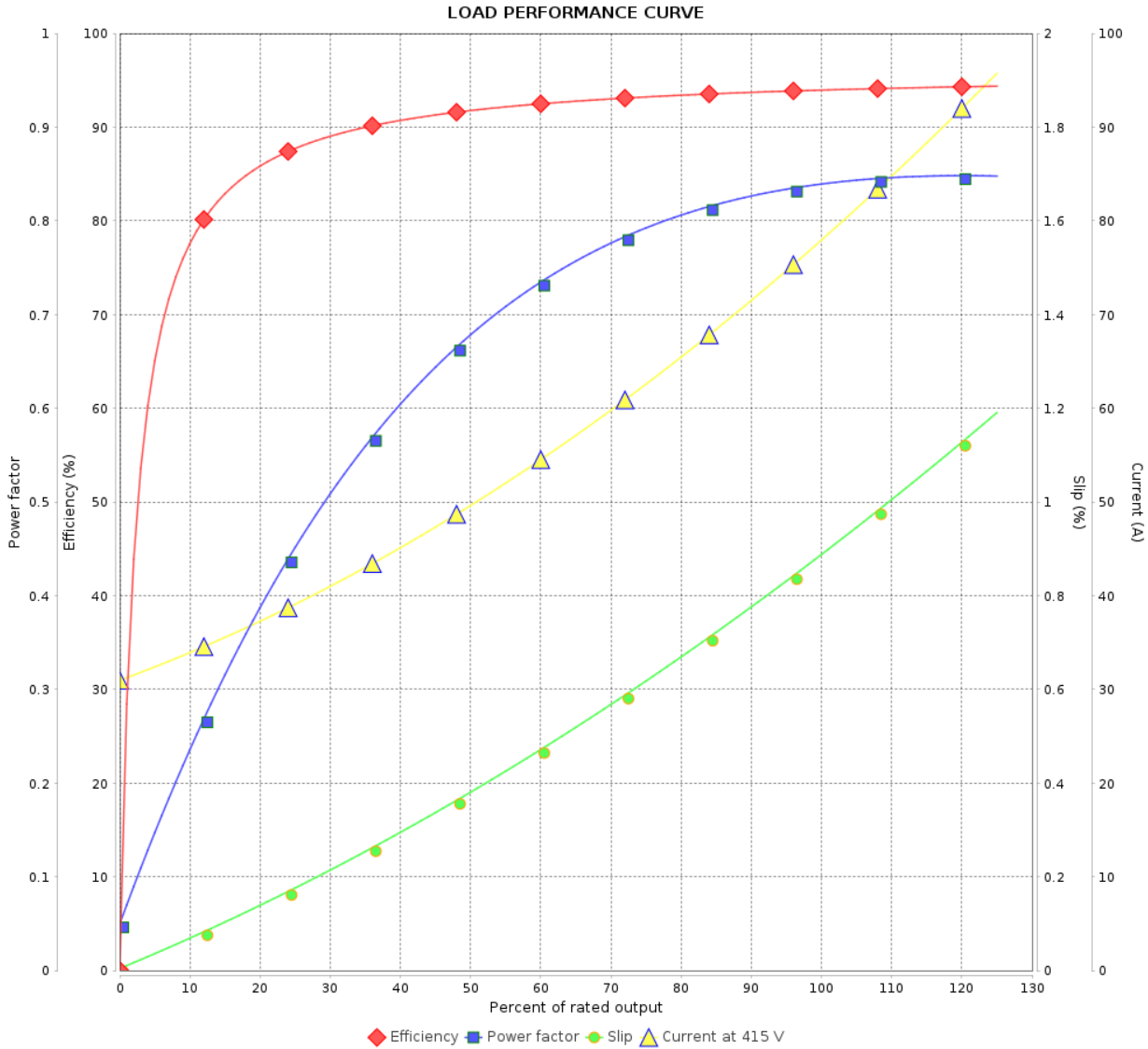
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Customer : Astraprom d.o.o.

Product line : IE3 Three-Phase

Product code : 12862442



Performance : 415 V 50 Hz 2P

| | | | |
|---------------------|-------------|-----------------------|---------------------------|
| Rated current | : 83.3 A | Moment of inertia (J) | : 0.2861 kgm ² |
| LRC | : 8.9 | Duty cycle | : S1 |
| Rated torque | : 14.7 kgfm | Insulation class | : F |
| Locked rotor torque | : 320 % | Service factor | : 1.00 |
| Breakdown torque | : 409 % | Temperature rise | : 80 K |
| Rated speed | : 2970 rpm | Design | : N |

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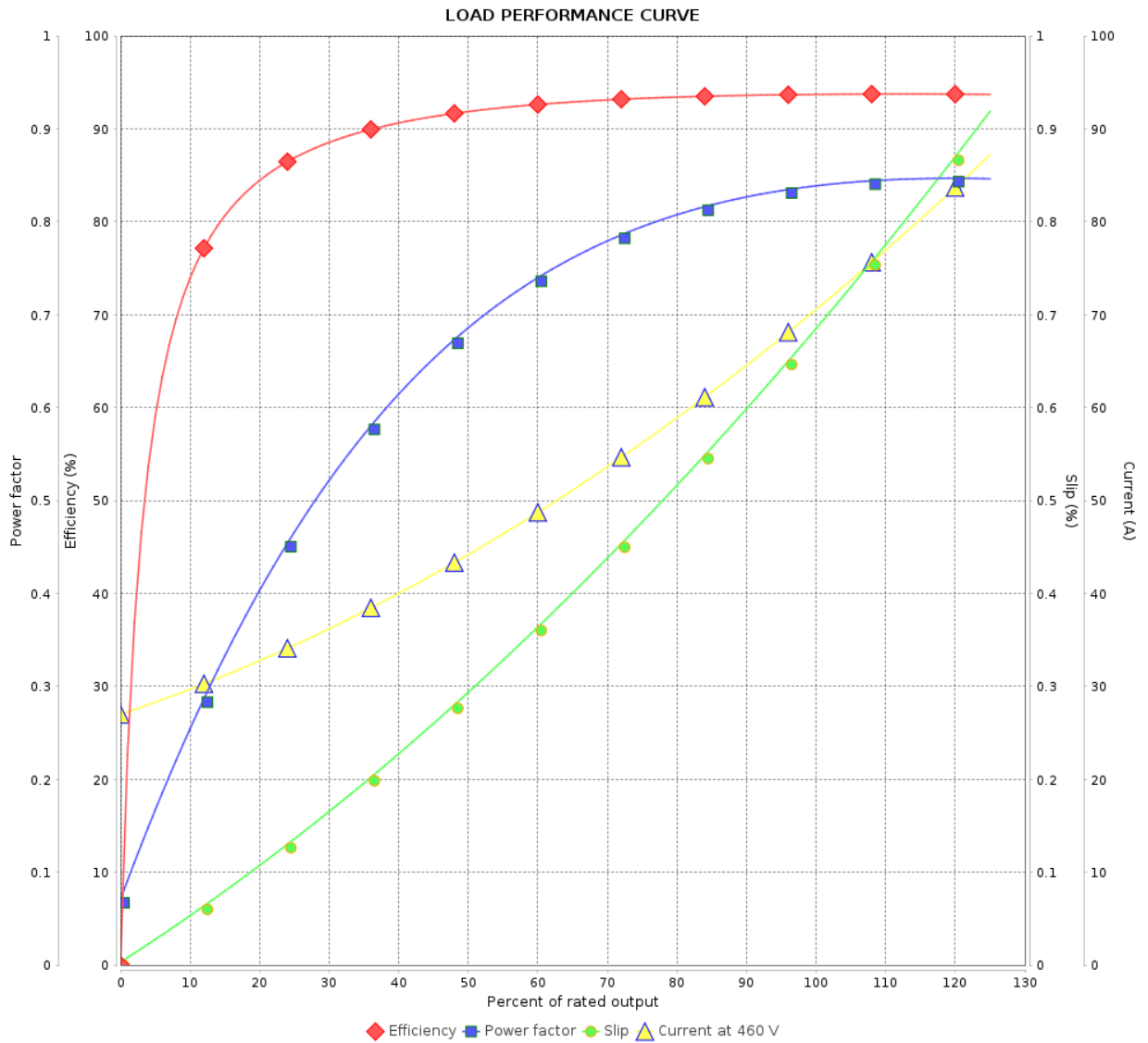
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Customer : Astraprom d.o.o.

Product line : IE3 Three-Phase

Product code : 12862442



Performance : 460 V 60 Hz 2P

Rated current : 73.6 A
 LRC : 9.1
 Rated torque : 12.3 kgfm
 Locked rotor torque : 320 %
 Breakdown torque : 430 %
 Rated speed : 3575 rpm

Moment of inertia (J) : 0.2861 kgm²
 Duty cycle : S1
 Insulation class : F
 Service factor : 1.00
 Temperature rise : 80 K
 Design : N

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THERMAL LIMIT CURVE

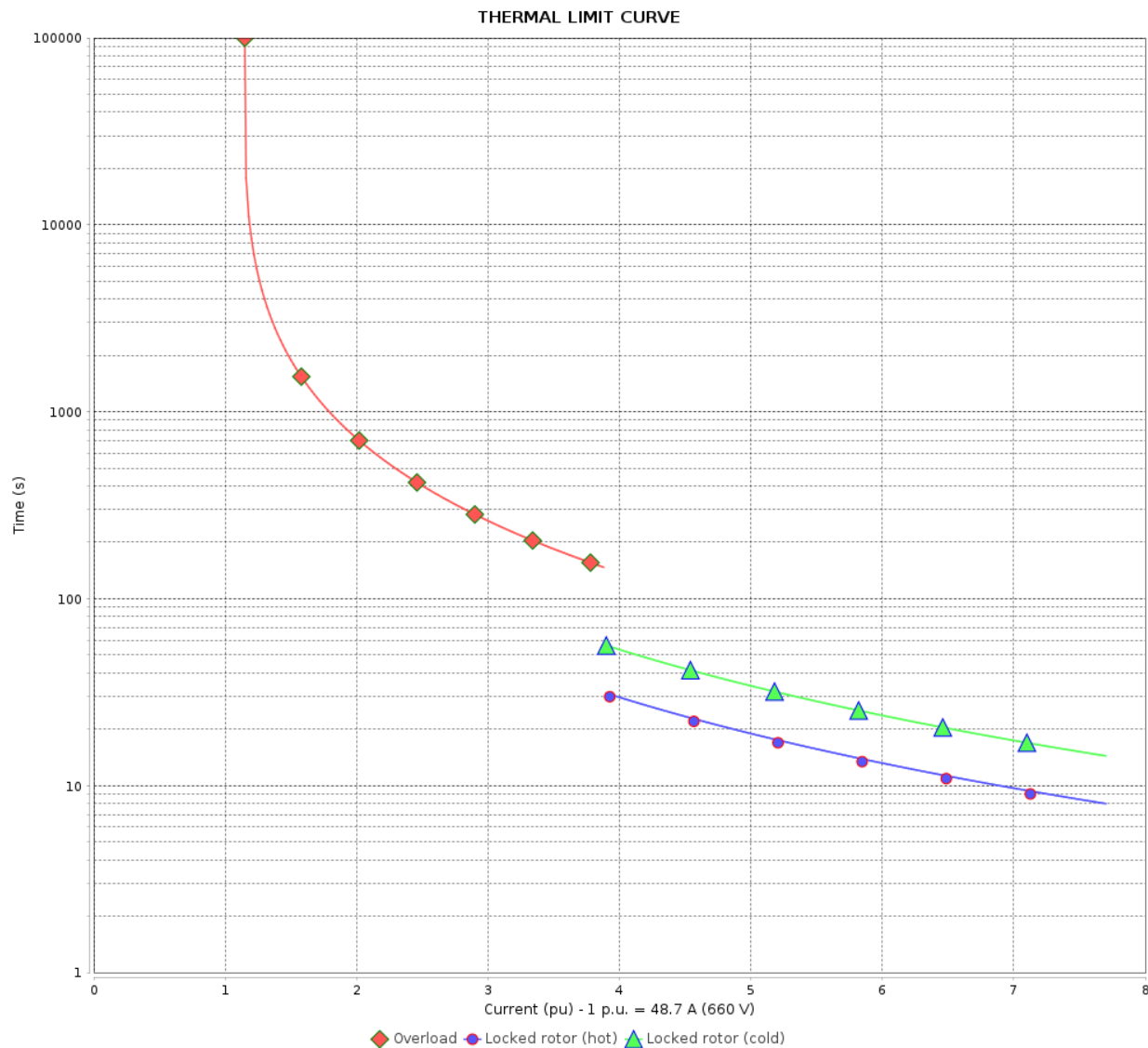
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Product line : IE3 Three-Phase

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Performance : 380/660 V 50 Hz 2P

Rated current : 84.6/48.7 A
 LRC : 7.7
 Rated torque : 14.8 kgfm
 Locked rotor torque : 260 %
 Breakdown torque : 320 %
 Rated speed : 2965 rpm

Moment of inertia (J) : 0.2861 kgm²
 Duty cycle : S1
 Insulation class : F
 Service factor : 1.00
 Temperature rise : 80 K
 Design : N

Heating constant
 Cooling constant

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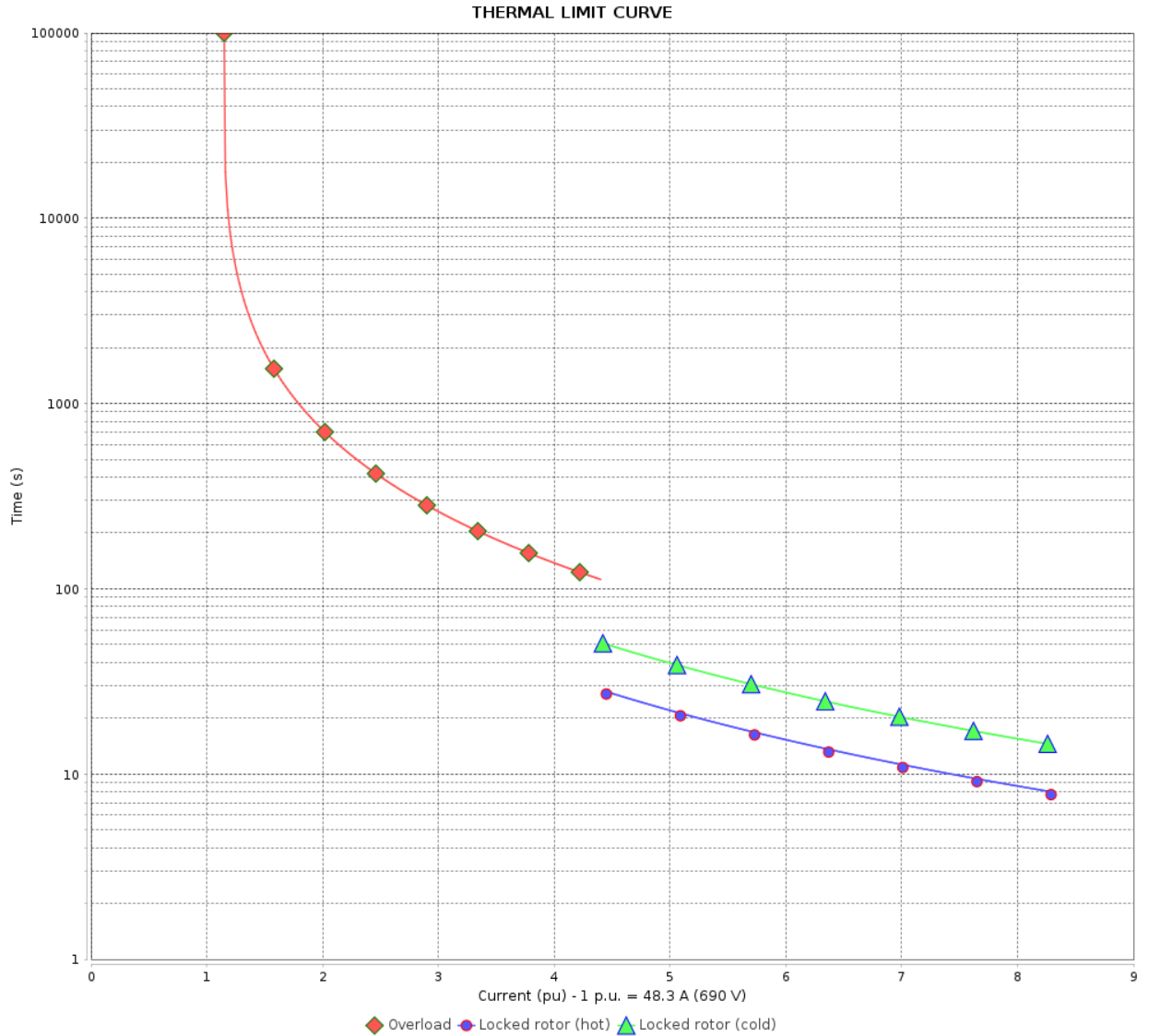
Three Phase Induction Motor - Squirrel Cage



Customer : Astraprom d.o.o.

Product line : IE3 Three-Phase

Product code : 12862442



Performance : 400/690 V 50 Hz 2P

Rated current : 83.3/48.3 A
 LRC : 8.3
 Rated torque : 14.8 kgfm
 Locked rotor torque : 290 %
 Breakdown torque : 380 %
 Rated speed : 2970 rpm

Moment of inertia (J) : 0.2861 kgm²
 Duty cycle : S1
 Insulation class : F
 Service factor : 1.00
 Temperature rise : 80 K
 Design : N

Heating constant

Cooling constant

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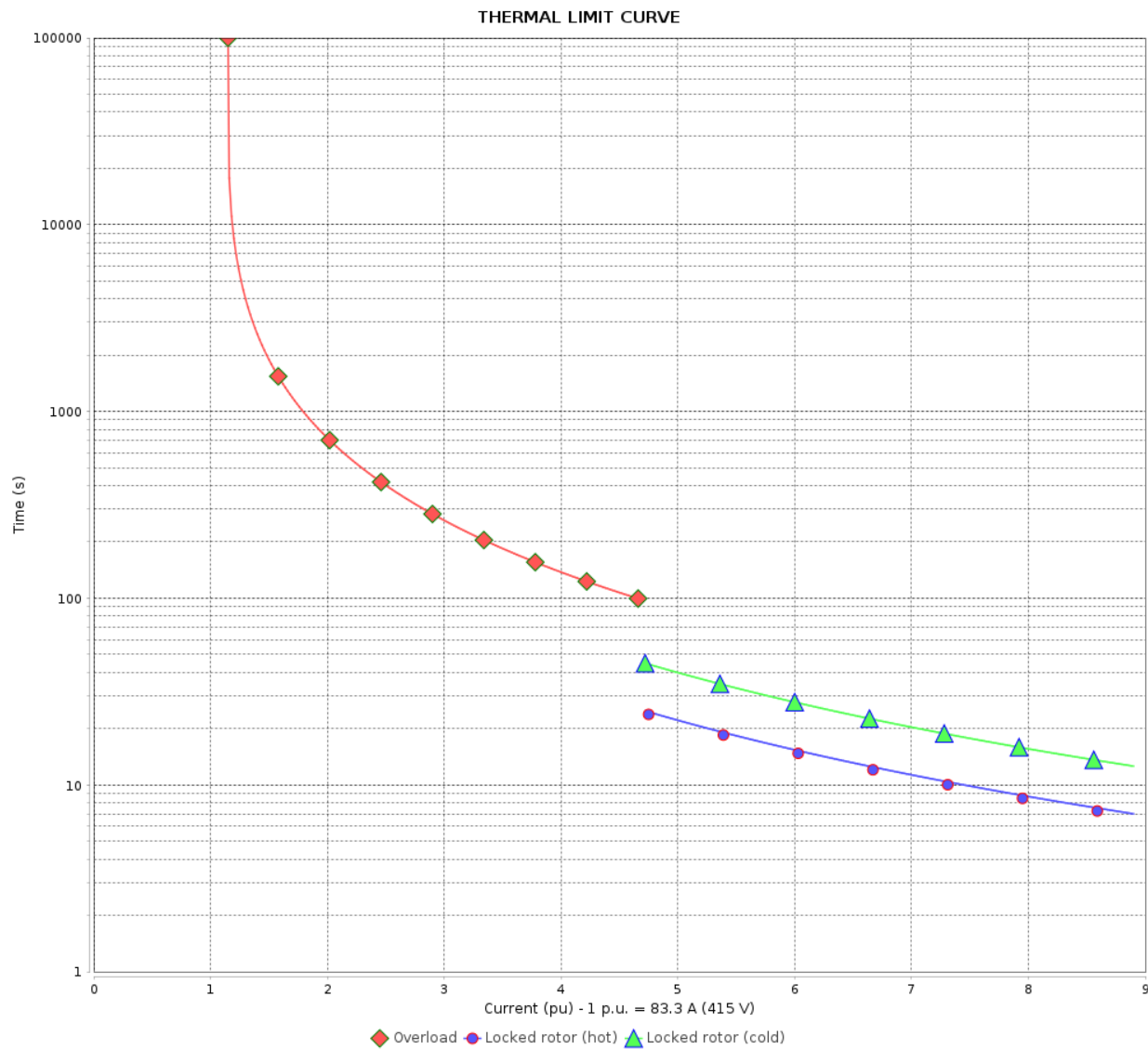
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Performance : 415 V 50 Hz 2P

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|---------------------|-------------|-----------------------|---------------------------|
| Rated current | : 83.3 A | Moment of inertia (J) | : 0.2861 kgm ² |
| LRC | : 8.9 | Duty cycle | : S1 |
| Rated torque | : 14.7 kgfm | Insulation class | : F |
| Locked rotor torque | : 320 % | Service factor | : 1.00 |
| Breakdown torque | : 409 % | Temperature rise | : 80 K |
| Rated speed | : 2970 rpm | Design | : N |

Heating constant

Cooling constant

| Rev. | Changes Summary | Performed | Checked | Date |
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THERMAL LIMIT CURVE

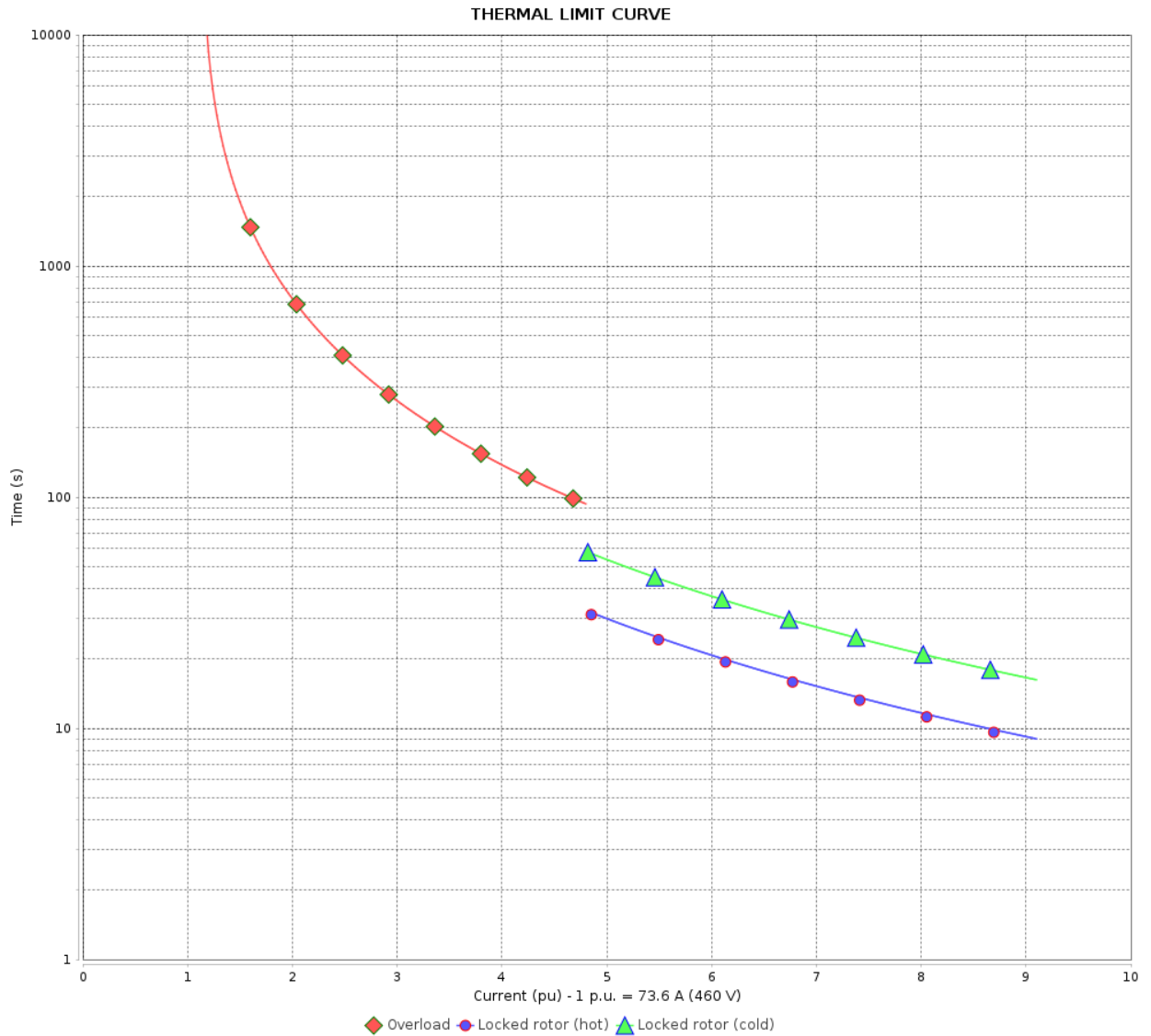
Three Phase Induction Motor - Squirrel Cage



Customer : Astraprom d.o.o.

Product line : IE3 Three-Phase

Product code : 12862442



Performance : 460 V 60 Hz 2P

Rated current : 73.6 A
 LRC : 9.1
 Rated torque : 12.3 kgfm
 Locked rotor torque : 320 %
 Breakdown torque : 430 %
 Rated speed : 3575 rpm

Moment of inertia (J) : 0.2861 kgm²
 Duty cycle : S1
 Insulation class : F
 Service factor : 1.00
 Temperature rise : 80 K
 Design : N

Heating constant
 Cooling constant

| Rev. | Changes Summary | Performed | Checked | Date |
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VFD OPERATION CURVE

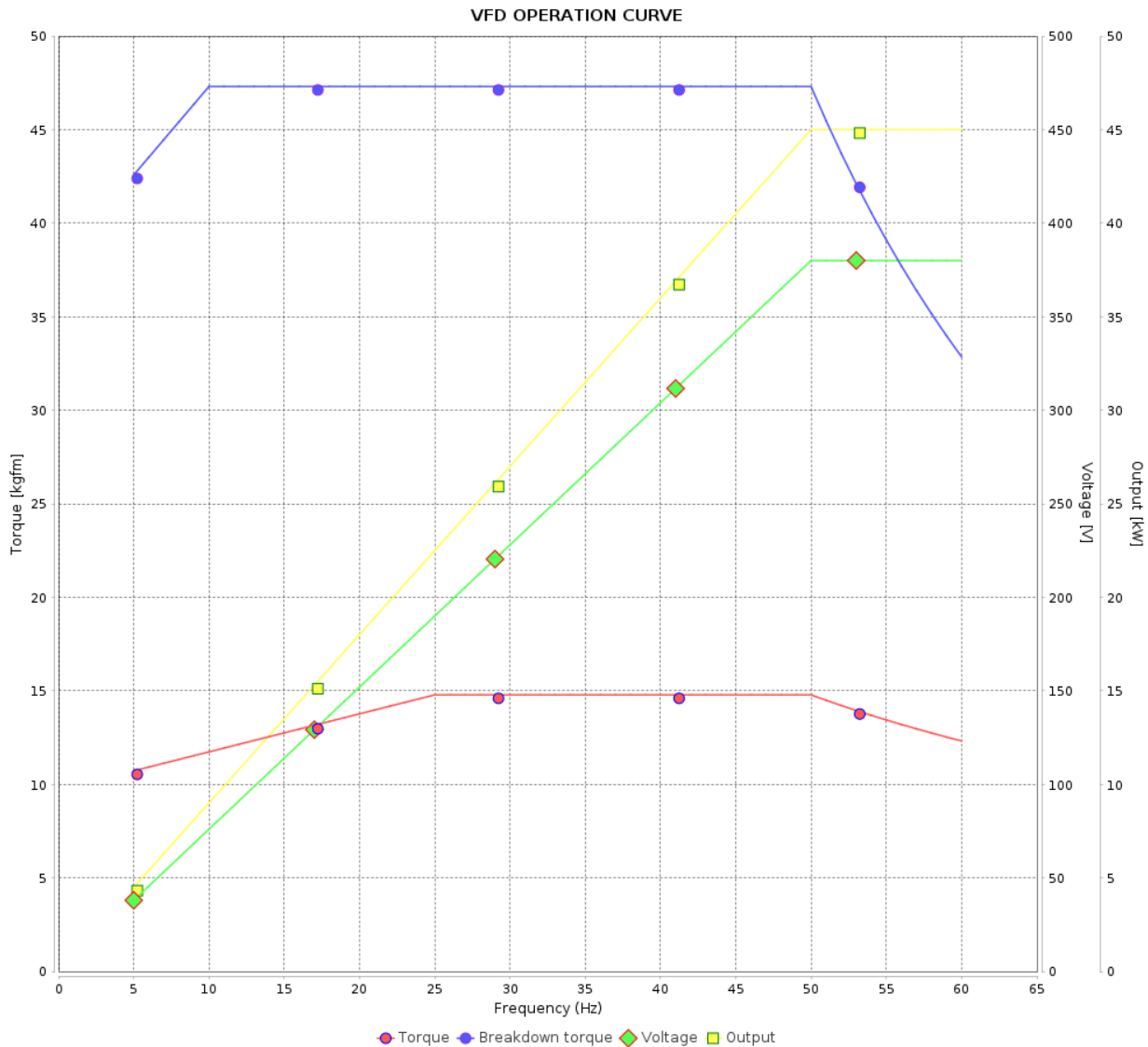
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Performance : 380/660 V 50 Hz 2P

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 Locked rotor torque : 260 %
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VFD OPERATION CURVE

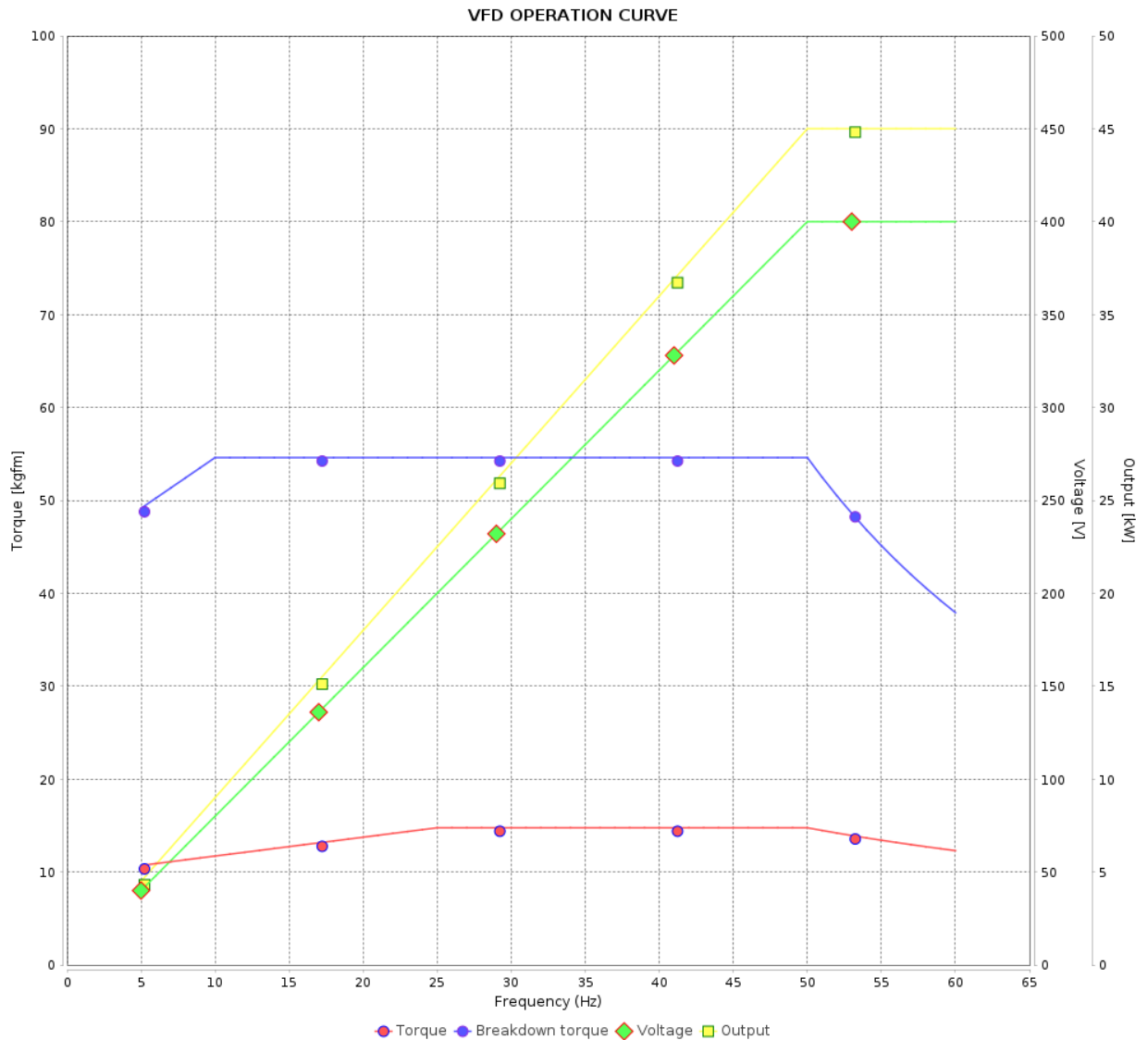
Three Phase Induction Motor - Squirrel Cage



Customer : Astraprom d.o.o.

Product line : IE3 Three-Phase

Product code : 12862442



Performance : 400/690 V 50 Hz 2P

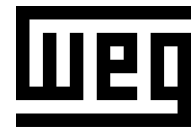
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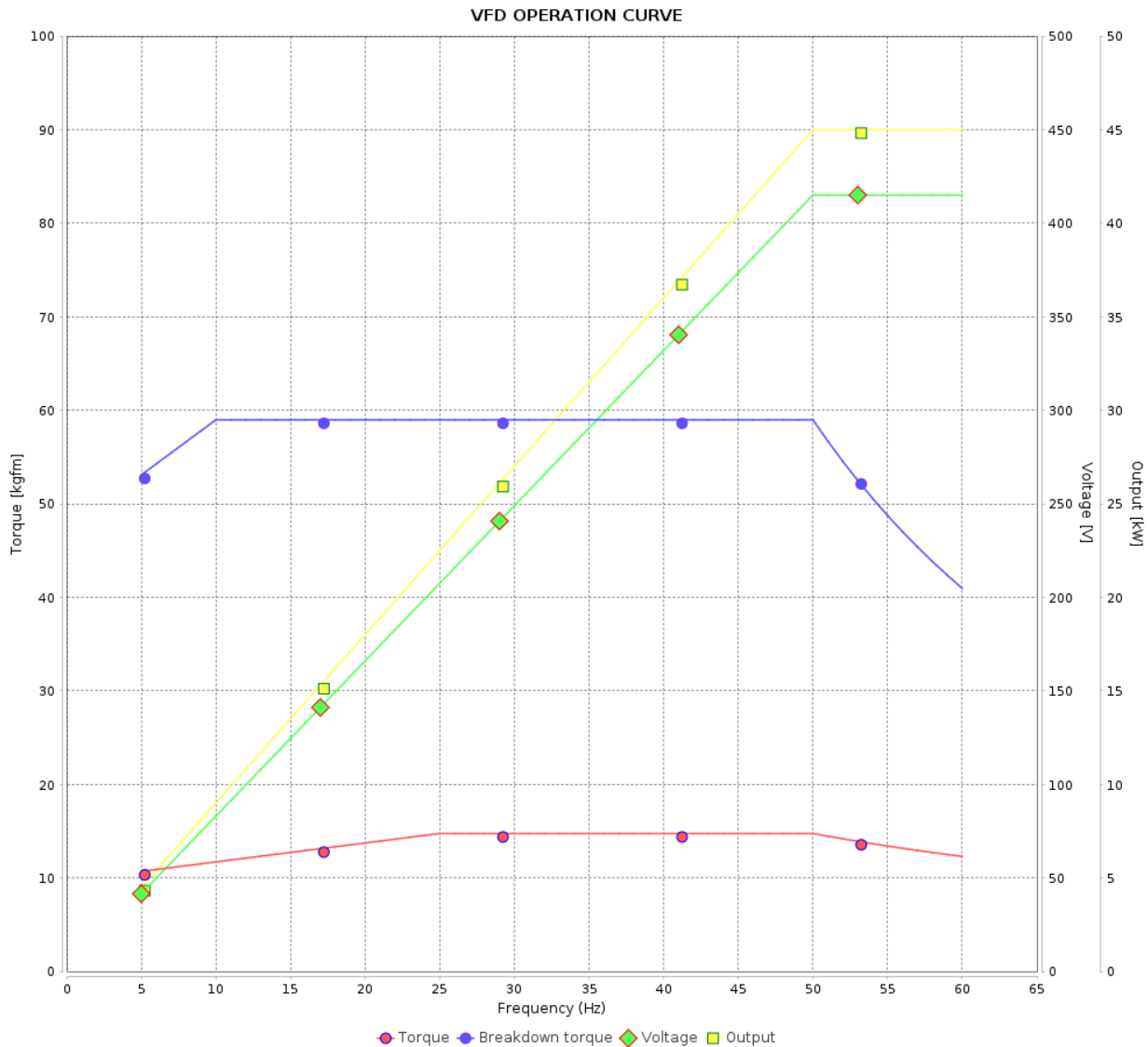
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VFD OPERATION CURVE

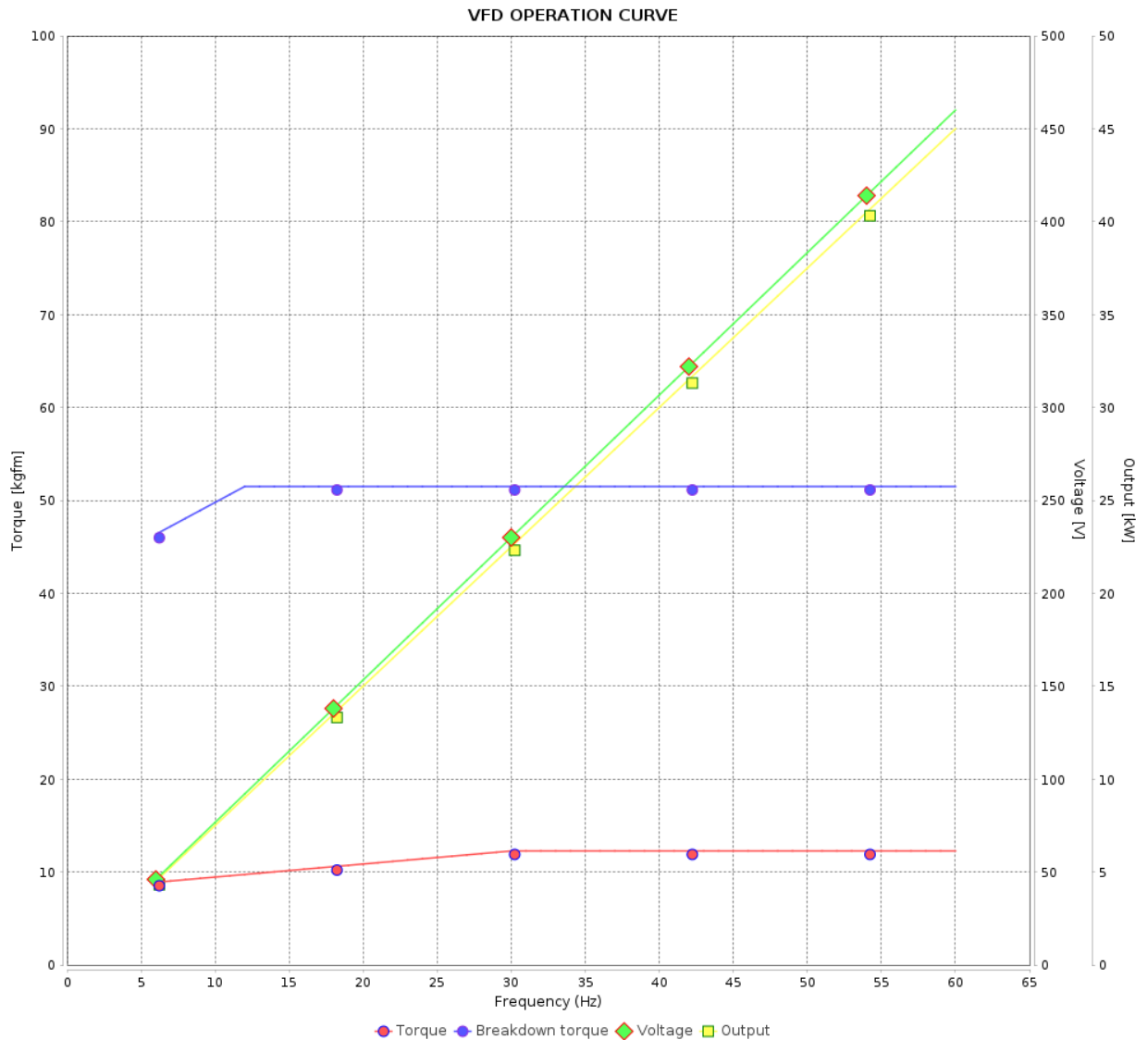
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Performance : 460 V 60 Hz 2P

Rated current : 73.6 A
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 Duty cycle : S1
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