

# DATA SHEET

## Three Phase Induction Motor - Squirrel Cage



|  |                      |                                 |  |                         |                      |
|--|----------------------|---------------------------------|--|-------------------------|----------------------|
| Customer   |                      | : Astraprom d.o.o.              |  |                         |                      |
| Product line   |                      | : Multimounting IE3 Three-Phase |  | Product code : 15448738 |                      |
| Frame  | : S132S              | Cooling method                  | : IC411 - TEFC   |                         |                      |
| Insulation class   | : F                  | Mounting                        | : B5T  |                         |                      |
| Duty cycle   | : 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>     | : 61.9 kg  |                         |                      |
| Protection degree  | : IP55               | Moment of inertia (J)           | : 0.0528 kgm <sup>2</sup>  |                         |                      |
| Design   | : N                  |                                 |  |                         |                      |
| Output [kW]  | 5.5                  | 5.5                             | 5.5  | 5.5                     | 5.5                  |
| Poles  | 4                    | 4                               | 4  | 4                       | 4                    |
| Frequency [Hz]   | 50                   | 50                              | 50   | 50                      | 60                   |
| Rated voltage [V]  | 380/660              | 400/690                         | 415  | 460                     | 460                  |
| Rated current [A]  | 10.6/6.10            | 10.3/5.97                       | 10.2   | 9.07                    | 9.07                 |
| L. R. Amperes [A]  | 90.1/51.9            | 87.6/50.8                       | 86.7   | 80.7                    | 80.7                 |
| LRC [A]  | 8.5                  | 8.5                             | 8.5  | 8.9                     | 8.9                  |
| No load current [A]  | 4.40/2.53            | 4.70/2.72                       | 5.10   | 4.43                    | 4.43                 |
| Rated speed [RPM]  | 1460                 | 1465                            | 1470   | 1765                    | 1765                 |
| Slip [%]   | 2.67                 | 2.33                            | 2.00   | 1.94                    | 1.94                 |
| Rated torque [kgfm]  | 3.67                 | 3.66                            | 3.64   | 3.04                    | 3.04                 |
| Locked rotor torque [%]  | 210                  | 240                             | 260  | 260                     | 260                  |
| Breakdown torque [%]   | 300                  | 340                             | 370  | 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  | 27s (cold) 15s (hot) | 27s (cold) 15s (hot)            | 27s (cold) 15s (hot)   | 32s (cold) 18s (hot)    | 32s (cold) 18s (hot) |
| Noise level <sup>2</sup>   | 56.0 dB(A)           | 56.0 dB(A)                      | 56.0 dB(A)   | 58.0 dB(A)              | 58.0 dB(A)           |
| Efficiency (%)   | 25%                  |                                 |  |                         |                      |
|  | 50%                  | 90.4                            | 90.0   | 89.6                    | 88.5                 |
|  | 75%                  | 90.7                            | 90.7   | 90.7                    | 91.0                 |
|  | 100%                 | 90.3                            | 90.7   | 90.8                    | 91.7                 |
| Power Factor   | 25%                  |                                 |  |                         |                      |
|  | 50%                  | 0.71                            | 0.67   | 0.64                    | 0.65                 |
|  | 75%                  | 0.82                            | 0.79   | 0.76                    | 0.77                 |
|  | 100%                 | 0.87                            | 0.85   | 0.83                    | 0.83                 |
| Losses at normative operating points (speed;torque), in percentage of rated output power   |                      |                                 |  |                         |                      |
| Losses (%)   | P1 (0,9;1,0)         | 10.5                            | 10.0   | 9.9                     | 8.9                  |
|  | P2 (0,5;1,0)         | 9.2                             | 8.8  | 8.7                     | 7.8                  |
|  | P3 (0,25;1,0)        | 8.8                             | 8.4  | 8.3                     | 7.4                  |
|  | P4 (0,9;0,5)         | 4.9                             | 4.7  | 4.7                     | 4.2                  |
|  | P5 (0,5;0,5)         | 3.5                             | 3.4  | 3.3                     | 3.0                  |
|  | P6 (0,5;0,25)        | 2.3                             | 2.2  | 2.2                     | 1.9                  |
|  | P7 (0,25;0,25)       | 1.6                             | 1.6  | 1.6                     | 1.4                  |
| Bearing type   | : Drive end 6308 ZZ  | Non drive end 6207 ZZ           | Foundation loads   |                         |                      |
| Sealing  | : Oil Seal           | Oil Seal                        | Max. traction  | : 210 kgf               |                      |
| Lubrication interval   | : -                  | -                               | Max. compression   | : 272 kgf               |                      |
| Lubricant amount   | : -                  | -                               |  |                         |                      |
| Lubricant type   | : Mobil Polyrex EM   |                                 |  |                         |                      |
| This revision replaces and cancel the previous one, which must be eliminated.<br>(1) Looking the motor from the shaft end.<br>(2) Measured at 1m and with tolerance of +3dB(A).<br>(3) Approximate weight subject to changes after manufacturing process.<br>(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. |                         |                      |
| Rev.   | Changes Summary      |                                 | Performed  | Checked                 | Date                 |
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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

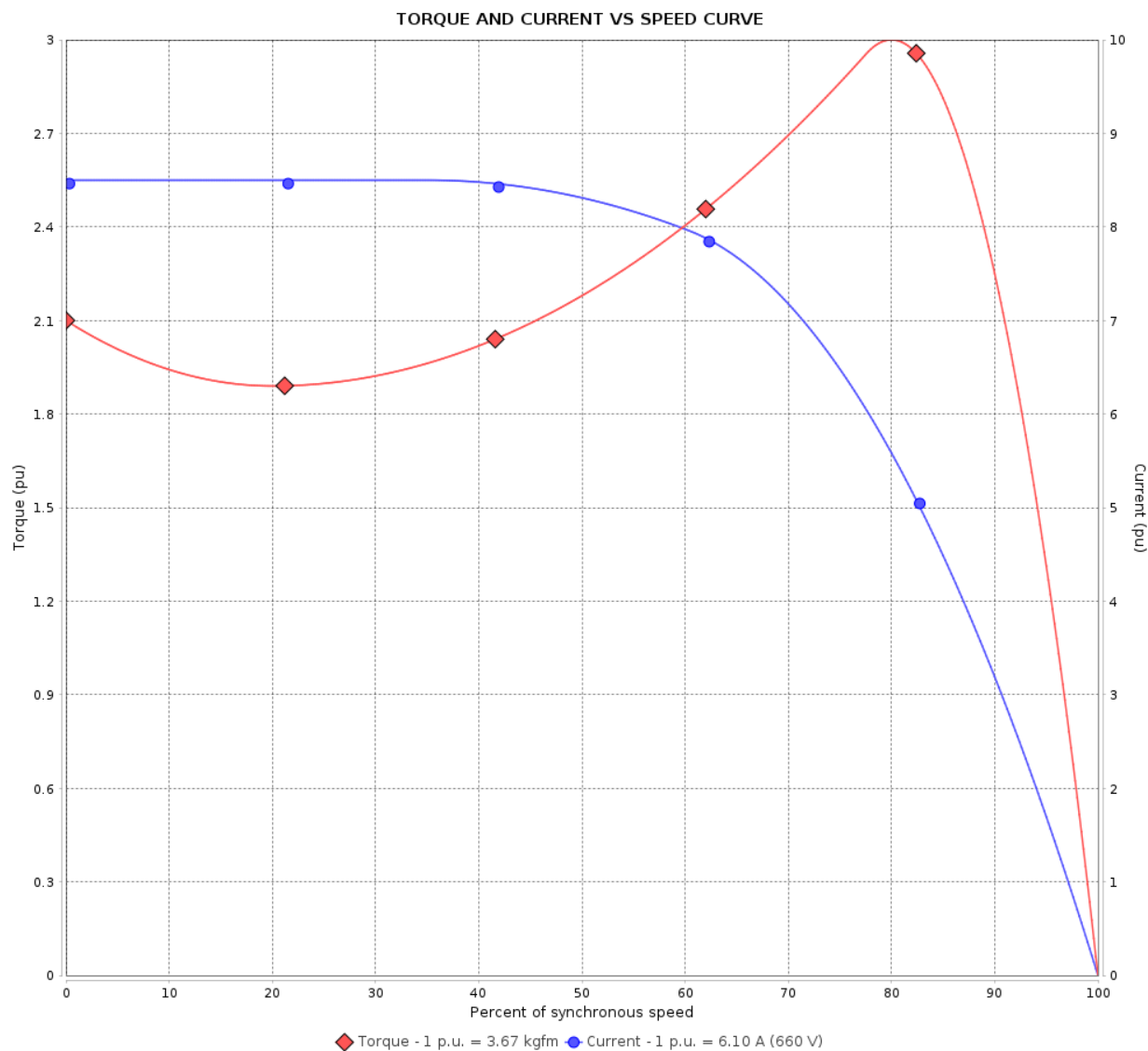
Three Phase Induction Motor - Squirrel Cage



Customer : Astraprom d.o.o.

Product line : Multimounting IE3 Three-Phase

Product code : 15448738



Performance : 380/660 V 50 Hz 4P

|                     |               |                       |                           |
|---------------------|---------------|-----------------------|---------------------------|
| Rated current       | : 10.6/6.10 A | Moment of inertia (J) | : 0.0528 kgm <sup>2</sup> |
| LRC                 | : 8.5         | Duty cycle            | : S1                      |
| Rated torque        | : 3.67 kgfm   | Insulation class      | : F                       |
| Locked rotor torque | : 210 %       | Service factor        | : 1.00                    |
| Breakdown torque    | : 300 %       | Temperature rise      | : 80 K                    |
| Rated speed         | : 1460 rpm    | Design                | : N                       |

Locked rotor time : 27s (cold) 15s (hot)

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



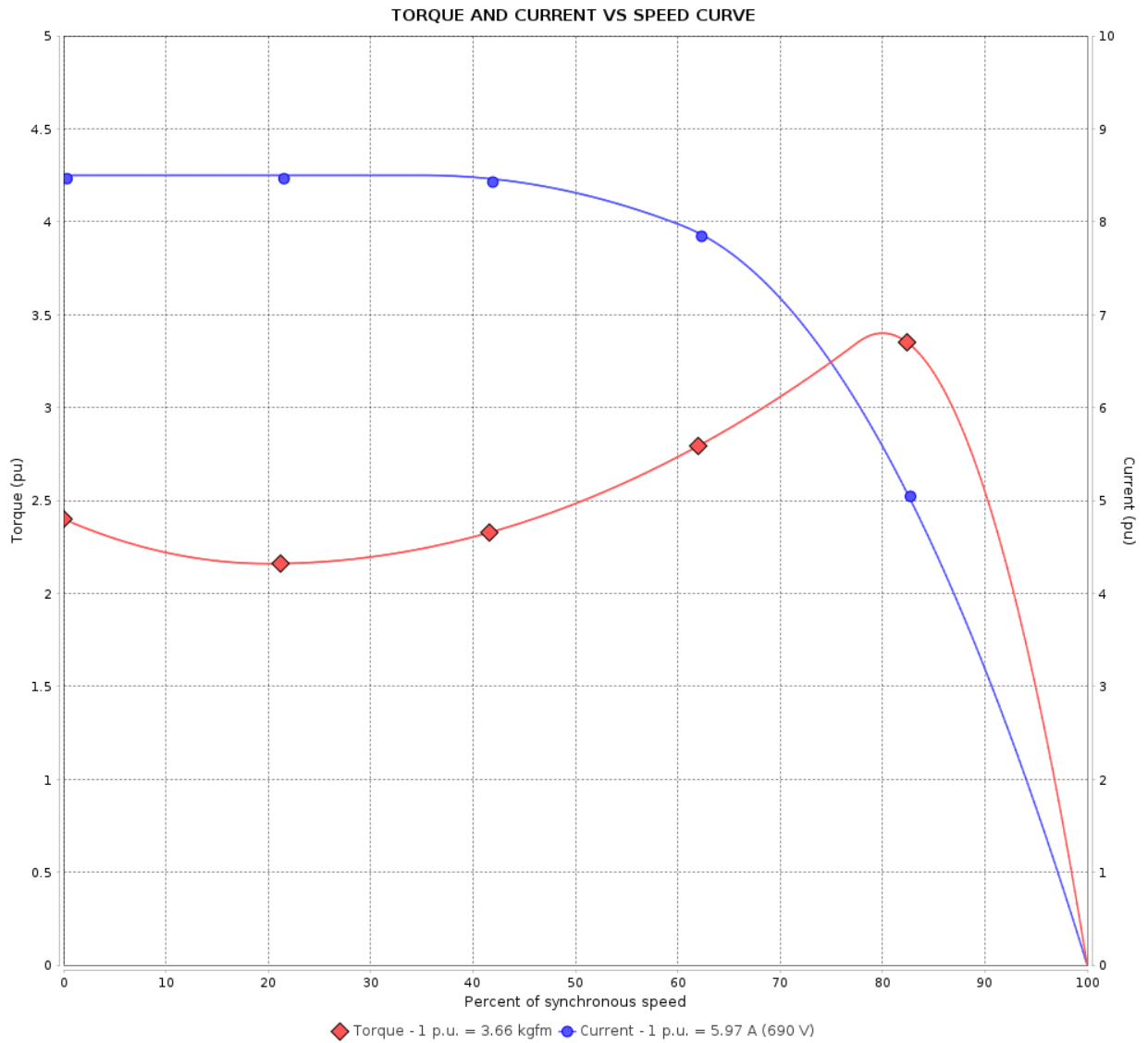
## Three Phase Induction Motor - Squirrel Cage

Customer : Astraprom d.o.o.

Product line : Multimounting IE3 Three-Phase

Product code :

15448738



Performance : 400/690 V 50 Hz 4P

Rated current : 10.3/5.97 A  
 LRC : 8.5  
 Rated torque : 3.66 kgfm  
 Locked rotor torque : 240 %  
 Breakdown torque : 340 %  
 Rated speed : 1465 rpm

Moment of inertia (J) : 0.0528 kgm<sup>2</sup>  
 Duty cycle : S1  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 80 K  
 Design : N

Locked rotor time : 27s (cold) 15s (hot)

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

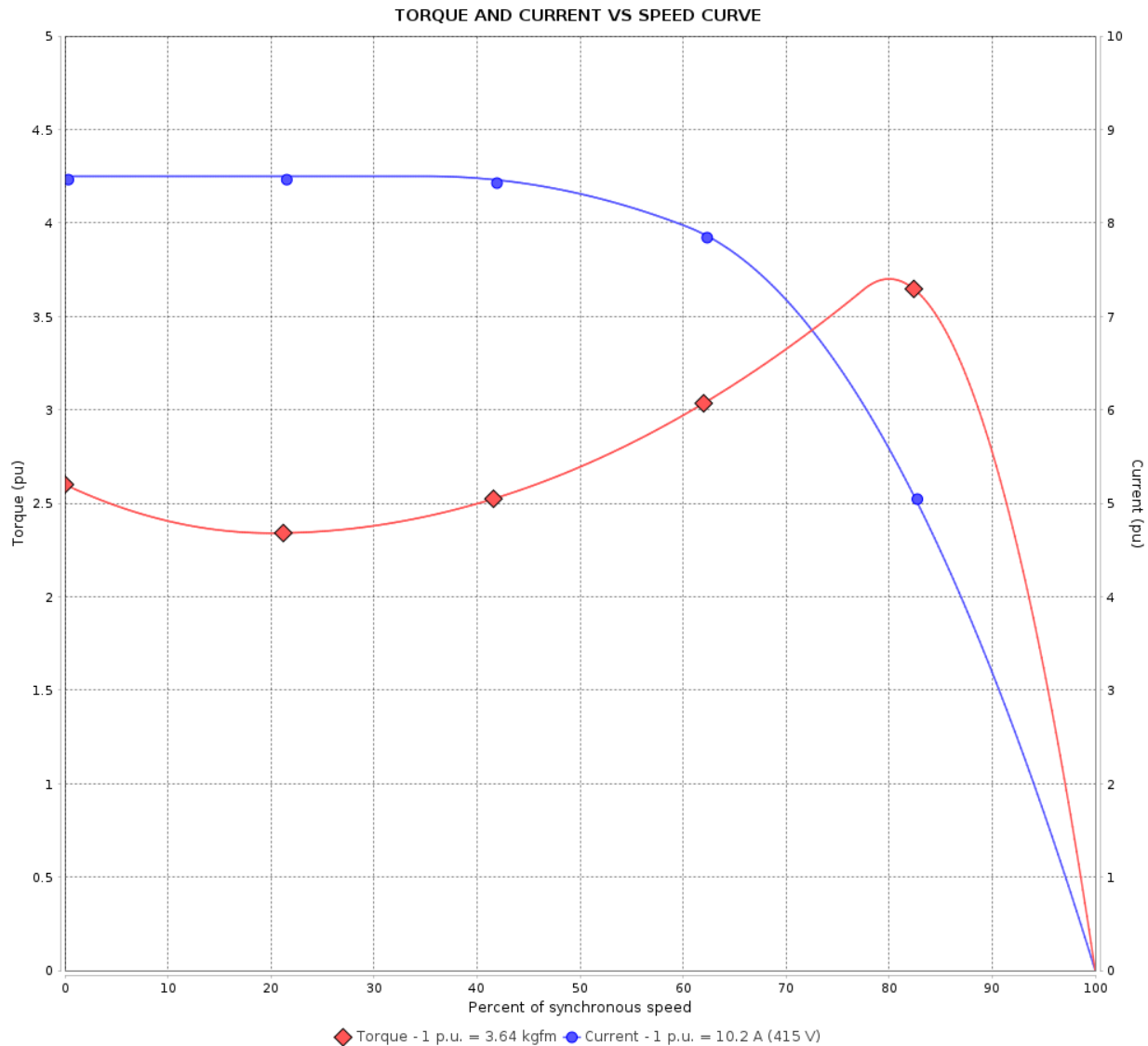
Three Phase Induction Motor - Squirrel Cage



Customer : Astraprom d.o.o.

Product line : Multimounting IE3 Three-Phase

Product code : 15448738



Performance : 415 V 50 Hz 4P

|                     |             |                       |                           |
|---------------------|-------------|-----------------------|---------------------------|
| Rated current       | : 10.2 A    | Moment of inertia (J) | : 0.0528 kgm <sup>2</sup> |
| LRC                 | : 8.5       | Duty cycle            | : S1                      |
| Rated torque        | : 3.64 kgfm | Insulation class      | : F                       |
| Locked rotor torque | : 260 %     | Service factor        | : 1.00                    |
| Breakdown torque    | : 370 %     | Temperature rise      | : 80 K                    |
| Rated speed         | : 1470 rpm  | Design                | : N                       |

Locked rotor time : 27s (cold) 15s (hot)

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

Three Phase Induction Motor - Squirrel Cage

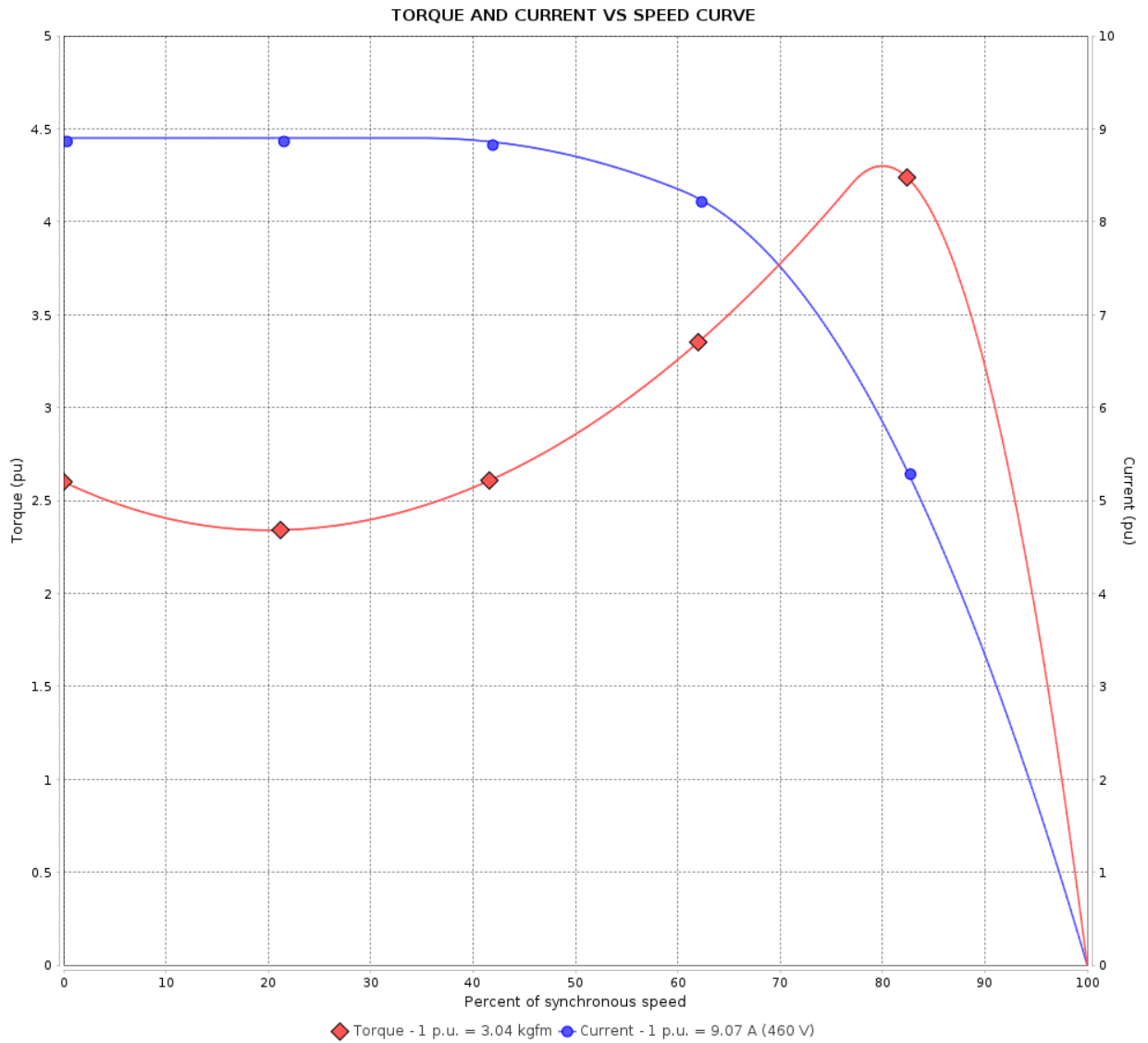


Customer : Astraprom d.o.o.

Product line : Multimounting IE3 Three-Phase

Product code :

15448738



Performance : 460 V 60 Hz 4P

|                     |             |                       |                           |
|---------------------|-------------|-----------------------|---------------------------|
| Rated current       | : 9.07 A    | Moment of inertia (J) | : 0.0528 kgm <sup>2</sup> |
| LRC                 | : 8.9       | Duty cycle            | : S1                      |
| Rated torque        | : 3.04 kgfm | Insulation class      | : F                       |
| Locked rotor torque | : 260 %     | Service factor        | : 1.00                    |
| Breakdown torque    | : 430 %     | Temperature rise      | : 80 K                    |
| Rated speed         | : 1765 rpm  | Design                | : N                       |

Locked rotor time : 32s (cold) 18s (hot)

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

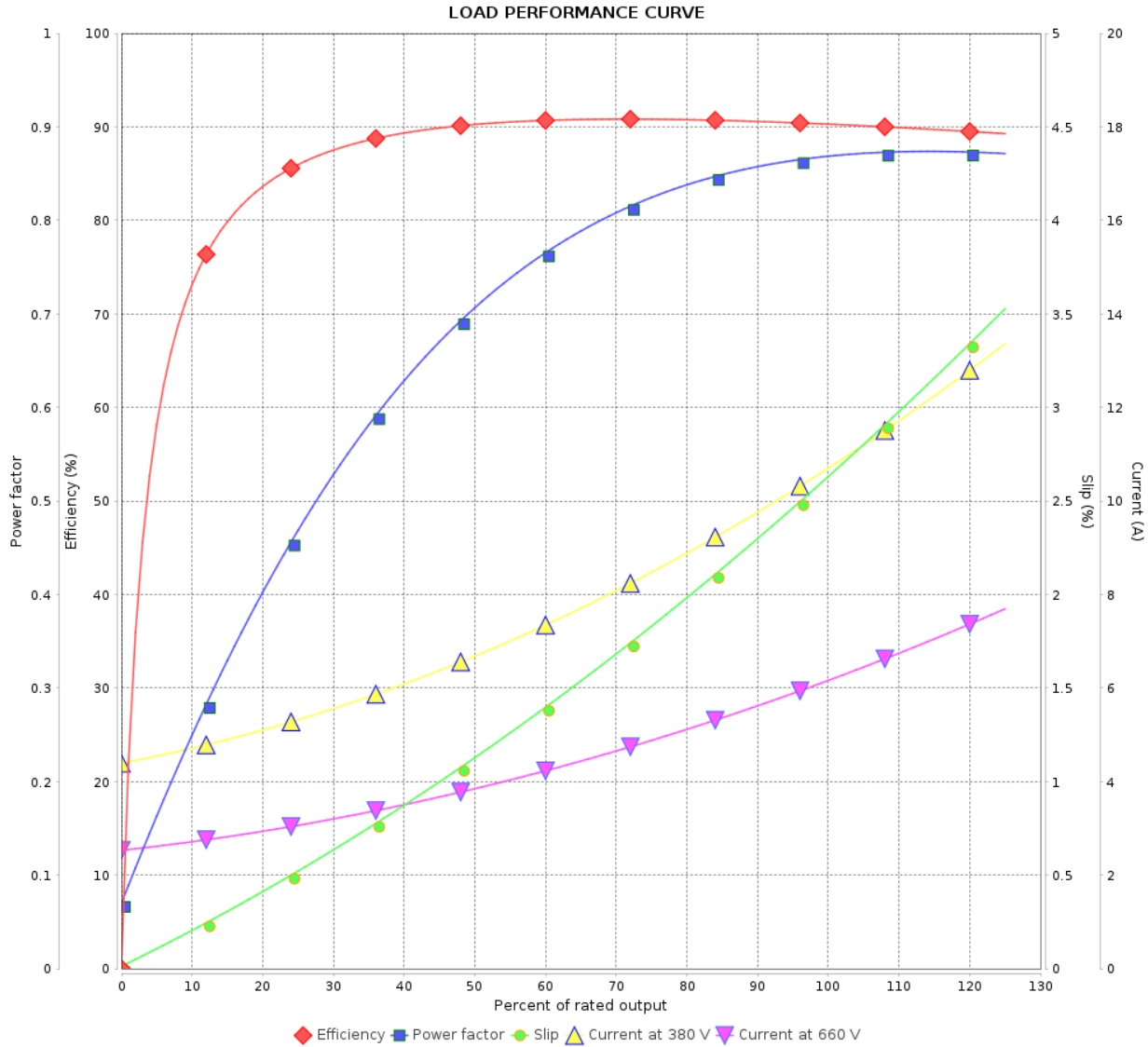
Three Phase Induction Motor - Squirrel Cage



Customer : Astraprom d.o.o.

Product line : Multimounting IE3 Three-Phase

Product code : 15448738



Performance : 380/660 V 50 Hz 4P

Rated current : 10.6/6.10 A  
 LRC : 8.5  
 Rated torque : 3.67 kgfm  
 Locked rotor torque : 210 %  
 Breakdown torque : 300 %  
 Rated speed : 1460 rpm

Moment of inertia (J) : 0.0528 kgm<sup>2</sup>  
 Duty cycle : S1  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 80 K  
 Design : N

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

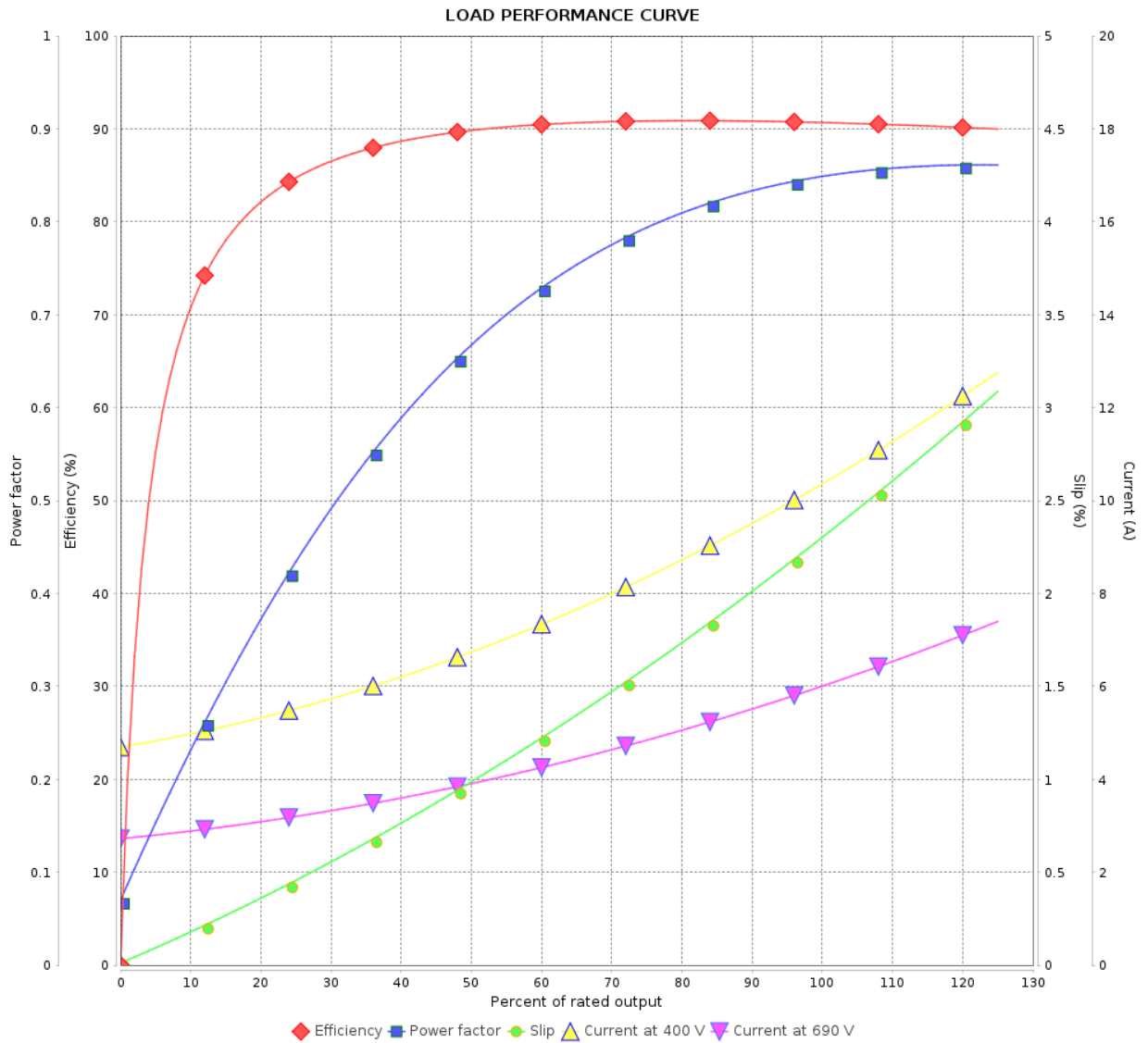
## Three Phase Induction Motor - Squirrel Cage



Customer : Astraprom d.o.o.

Product line : Multimounting IE3 Three-Phase

Product code : 15448738



Performance : 400/690 V 50 Hz 4P

Rated current : 10.3/5.97 A  
 LRC : 8.5  
 Rated torque : 3.66 kgfm  
 Locked rotor torque : 240 %  
 Breakdown torque : 340 %  
 Rated speed : 1465 rpm

Moment of inertia (J) : 0.0528 kgm<sup>2</sup>  
 Duty cycle : S1  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 80 K  
 Design : N

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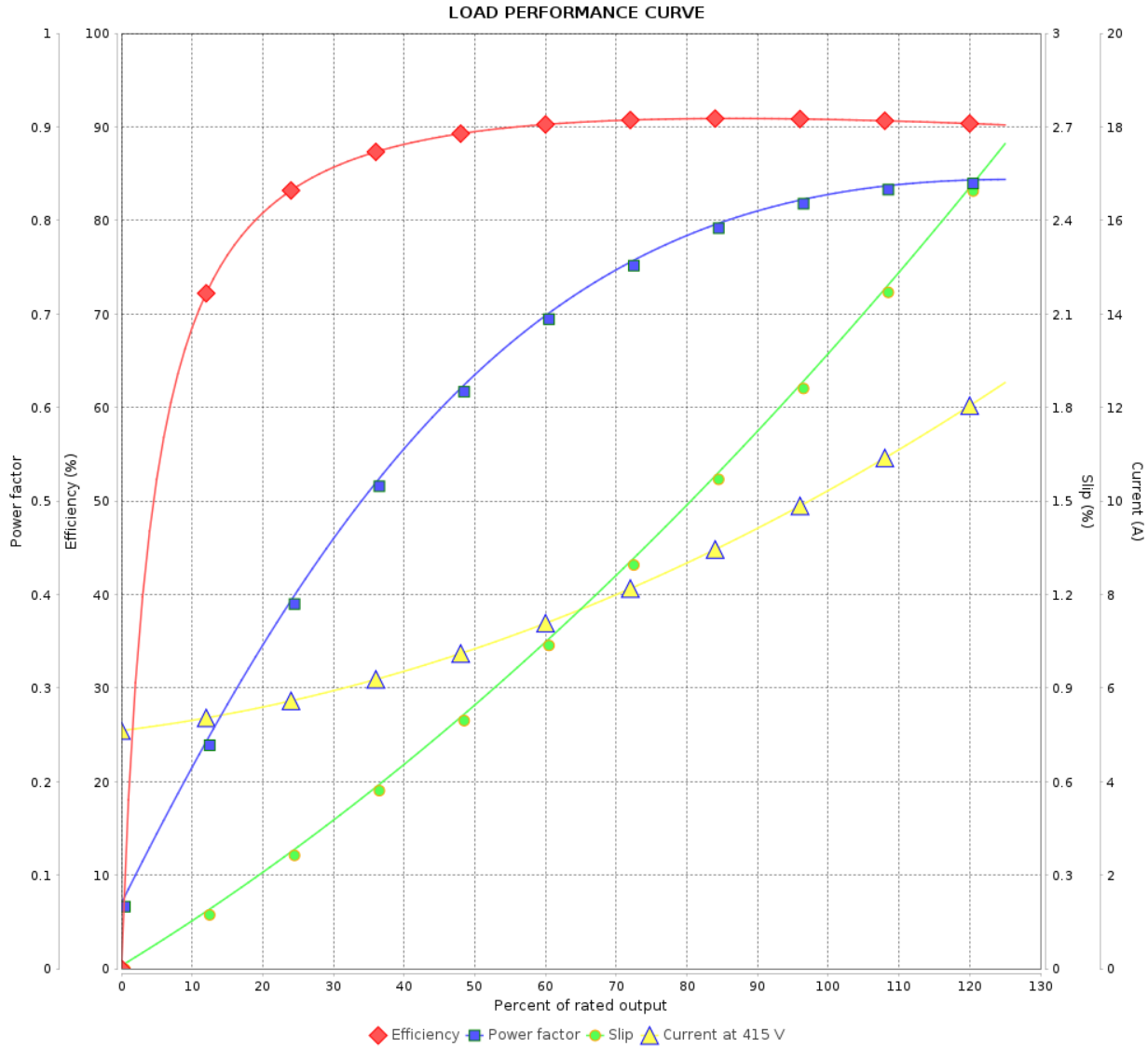
Three Phase Induction Motor - Squirrel Cage



Customer : Astraprom d.o.o.

Product line : Multimounting IE3 Three-Phase

Product code : 15448738



Performance : 415 V 50 Hz 4P

|                     |             |                       |                           |
|---------------------|-------------|-----------------------|---------------------------|
| Rated current       | : 10.2 A    | Moment of inertia (J) | : 0.0528 kgm <sup>2</sup> |
| LRC                 | : 8.5       | Duty cycle            | : S1                      |
| Rated torque        | : 3.64 kgfm | Insulation class      | : F                       |
| Locked rotor torque | : 260 %     | Service factor        | : 1.00                    |
| Breakdown torque    | : 370 %     | Temperature rise      | : 80 K                    |
| Rated speed         | : 1470 rpm  | Design                | : N                       |

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

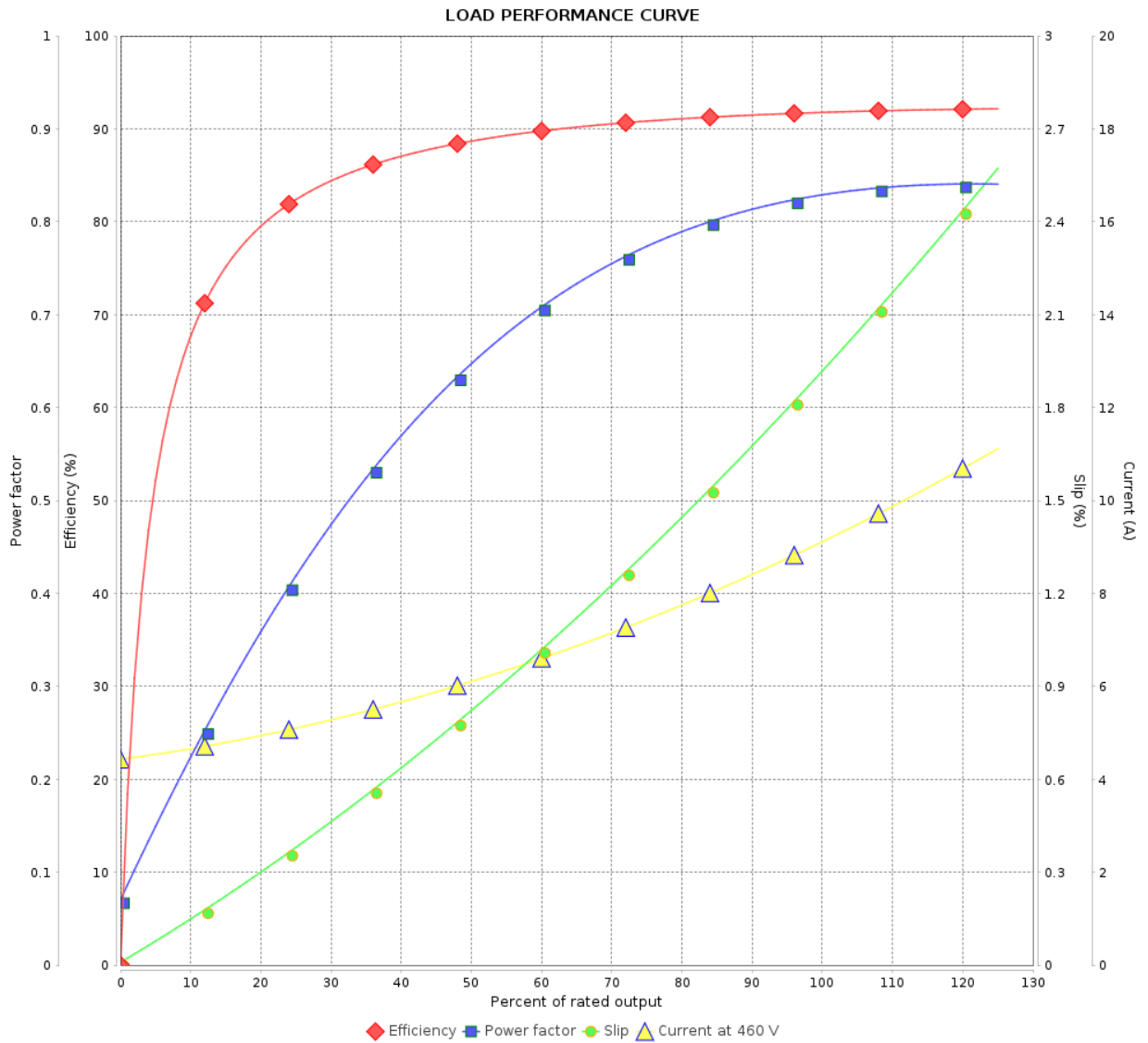
## Three Phase Induction Motor - Squirrel Cage



Customer : Astraprom d.o.o.

Product line : Multimounting IE3 Three-Phase

Product code : 15448738



Performance : 460 V 60 Hz 4P

Rated current : 9.07 A  
 LRC : 8.9  
 Rated torque : 3.04 kgfm  
 Locked rotor torque : 260 %  
 Breakdown torque : 430 %  
 Rated speed : 1765 rpm

Moment of inertia (J) : 0.0528 kgm<sup>2</sup>  
 Duty cycle : S1  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 80 K  
 Design : N

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

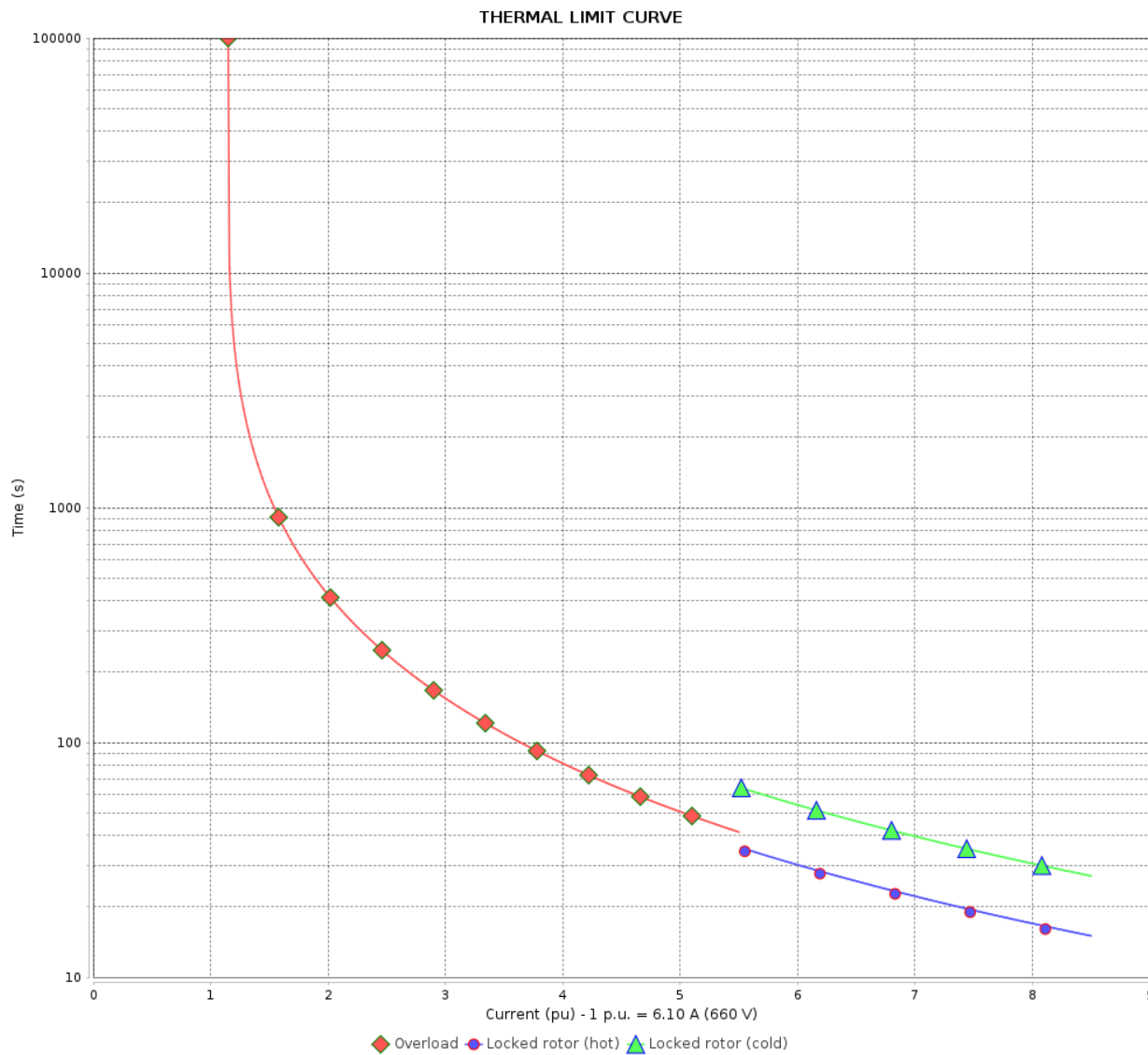
Three Phase Induction Motor - Squirrel Cage



Customer : Astraprom d.o.o.

Product line : Multimounting IE3 Three-Phase

Product code : 15448738



Performance : 380/660 V 50 Hz 4P

Rated current : 10.6/6.10 A  
 LRC : 8.5  
 Rated torque : 3.67 kgfm  
 Locked rotor torque : 210 %  
 Breakdown torque : 300 %  
 Rated speed : 1460 rpm

Moment of inertia (J) : 0.0528 kgm<sup>2</sup>  
 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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# THERMAL LIMIT CURVE

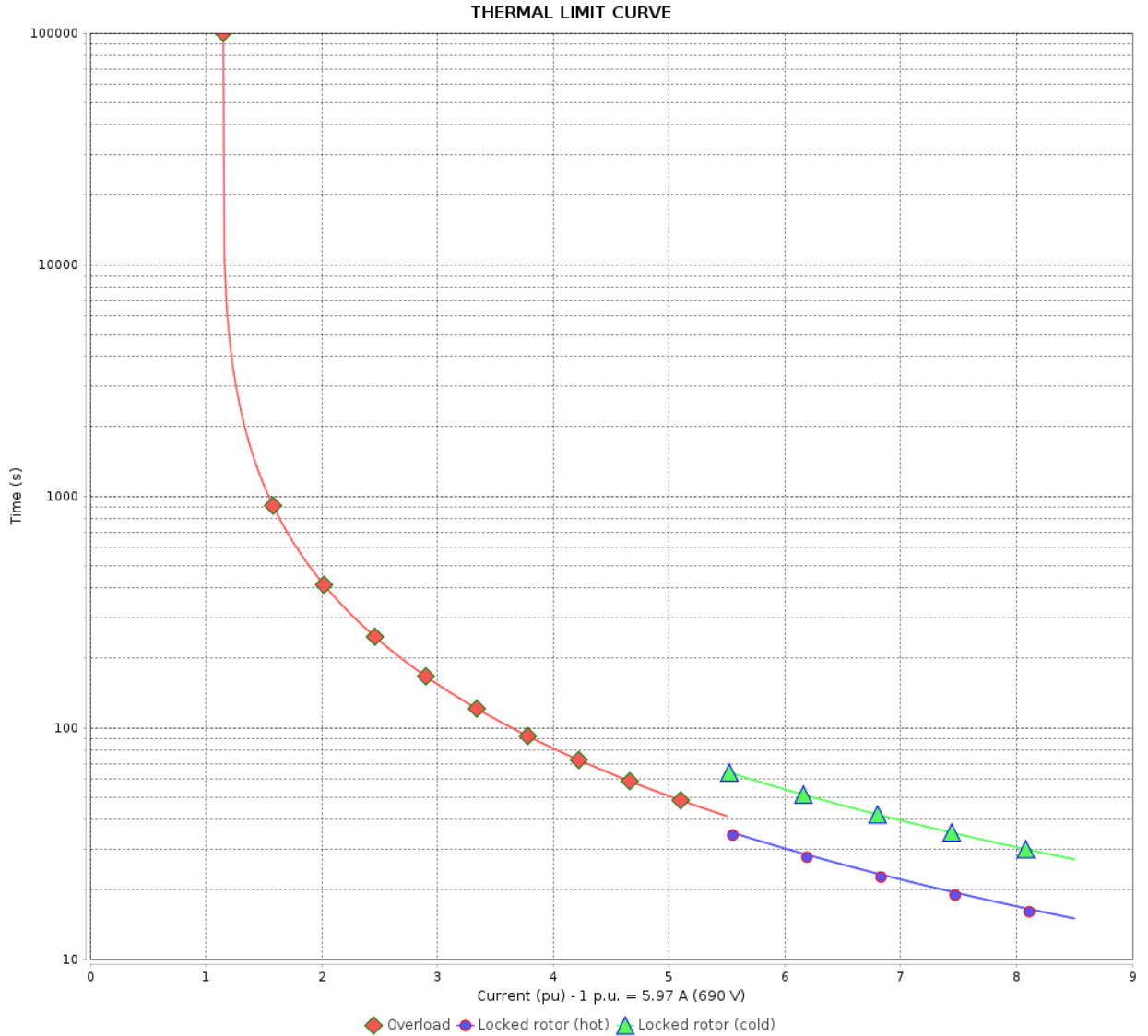
## Three Phase Induction Motor - Squirrel Cage



Customer : Astraprom d.o.o.

Product line : Multimounting IE3 Three-Phase

Product code : 15448738



Performance : 400/690 V 50 Hz 4P

Rated current : 10.3/5.97 A  
 LRC : 8.5  
 Rated torque : 3.66 kgfm  
 Locked rotor torque : 240 %  
 Breakdown torque : 340 %  
 Rated speed : 1465 rpm

Moment of inertia (J) : 0.0528 kgm<sup>2</sup>  
 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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# THERMAL LIMIT CURVE

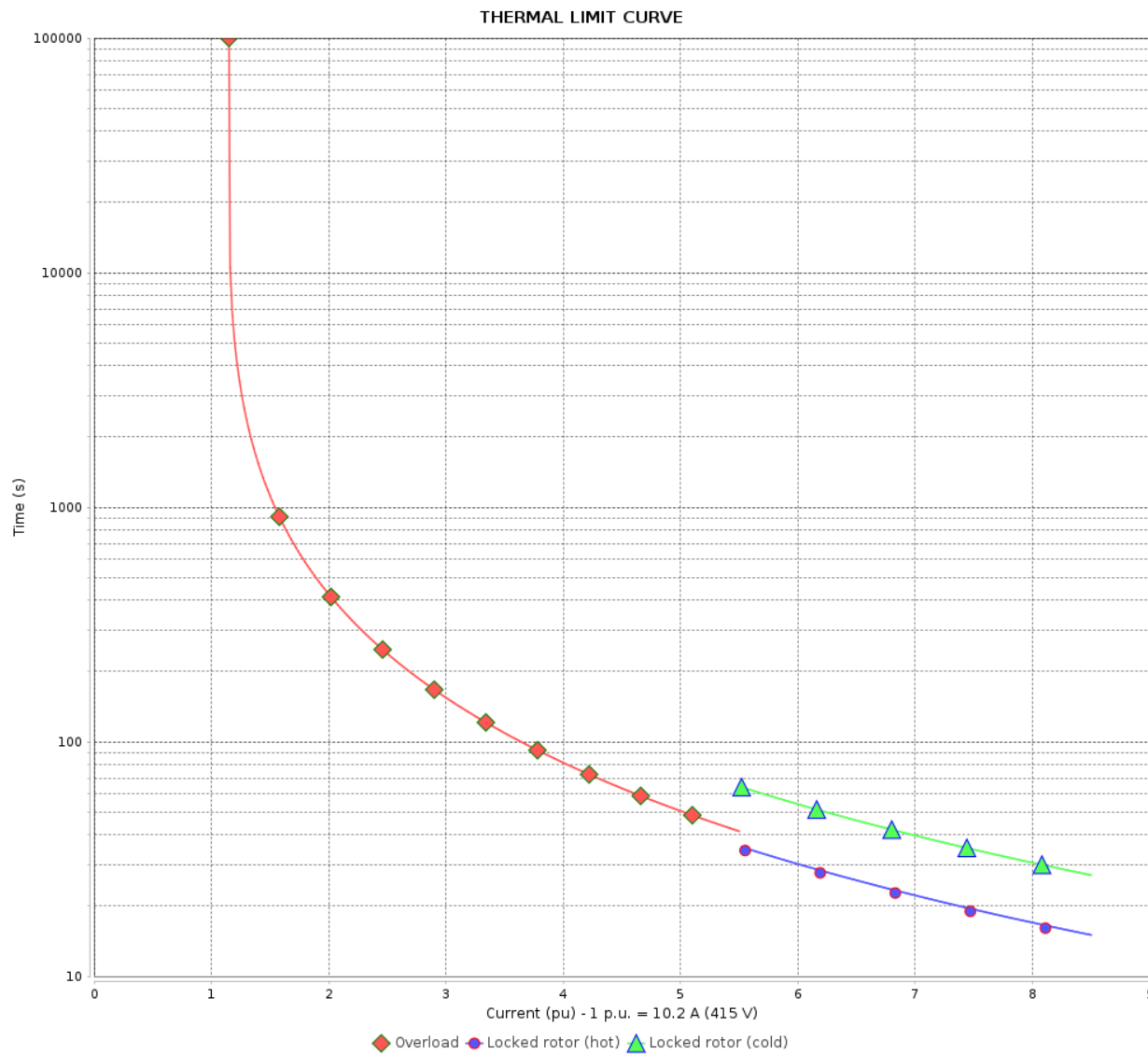
Three Phase Induction Motor - Squirrel Cage



Customer : Astraprom d.o.o.

Product line : Multimounting IE3 Three-Phase

Product code : 15448738



Performance : 415 V 50 Hz 4P

|                     |             |                       |                           |
|---------------------|-------------|-----------------------|---------------------------|
| Rated current       | : 10.2 A    | Moment of inertia (J) | : 0.0528 kgm <sup>2</sup> |
| LRC                 | : 8.5       | Duty cycle            | : S1                      |
| Rated torque        | : 3.64 kgfm | Insulation class      | : F                       |
| Locked rotor torque | : 260 %     | Service factor        | : 1.00                    |
| Breakdown torque    | : 370 %     | Temperature rise      | : 80 K                    |
| Rated speed         | : 1470 rpm  | Design                | : N                       |

Heating constant

Cooling constant

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

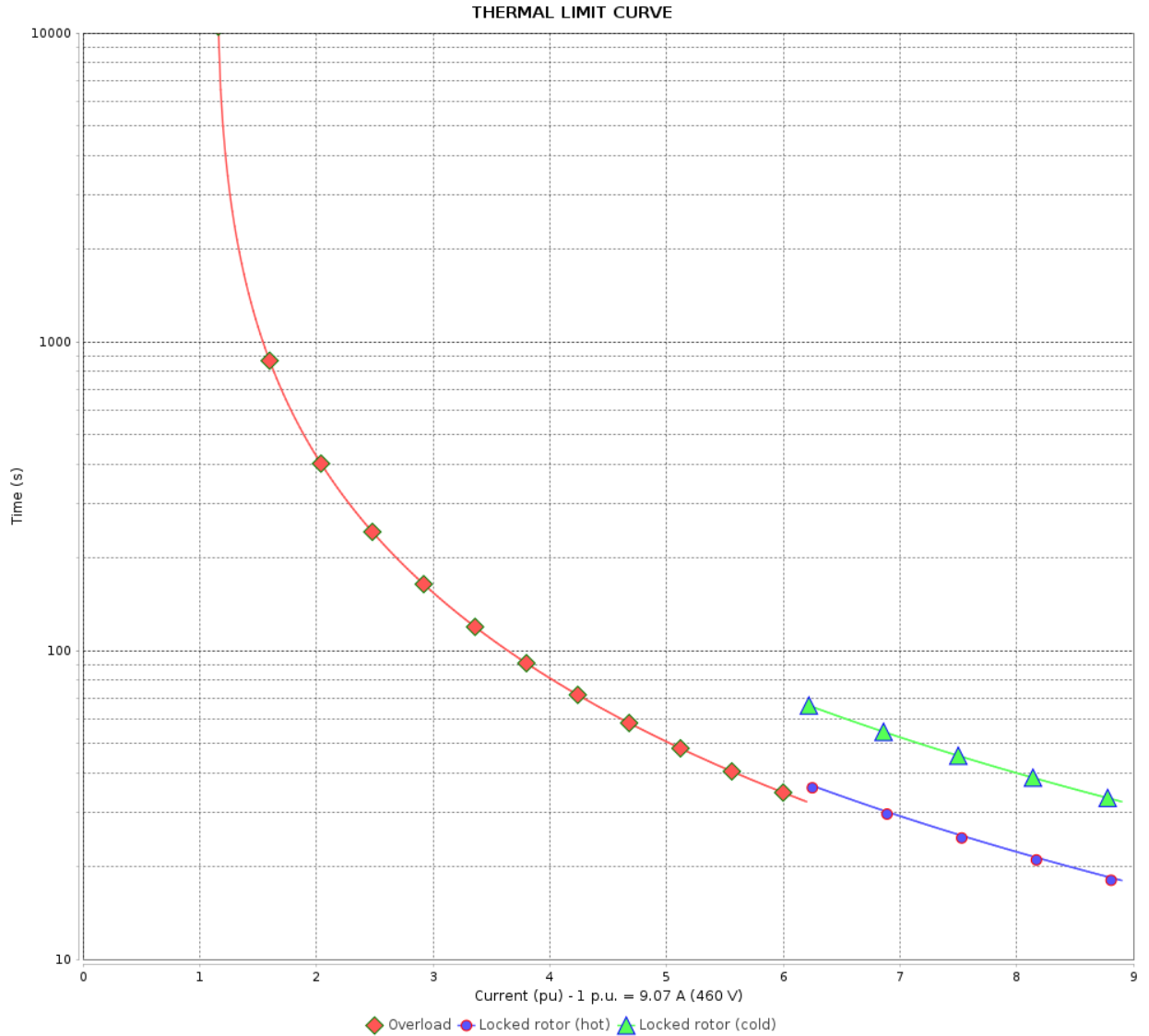
## Three Phase Induction Motor - Squirrel Cage



Customer : Astraprom d.o.o.

Product line : Multimounting IE3 Three-Phase

Product code : 15448738



Performance : 460 V 60 Hz 4P

|                     |             |                       |                           |
|---------------------|-------------|-----------------------|---------------------------|
| Rated current       | : 9.07 A    | Moment of inertia (J) | : 0.0528 kgm <sup>2</sup> |
| LRC                 | : 8.9       | Duty cycle            | : S1                      |
| Rated torque        | : 3.04 kgfm | Insulation class      | : F                       |
| Locked rotor torque | : 260 %     | Service factor        | : 1.00                    |
| Breakdown torque    | : 430 %     | Temperature rise      | : 80 K                    |
| Rated speed         | : 1765 rpm  | Design                | : N                       |

Heating constant

Cooling constant

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

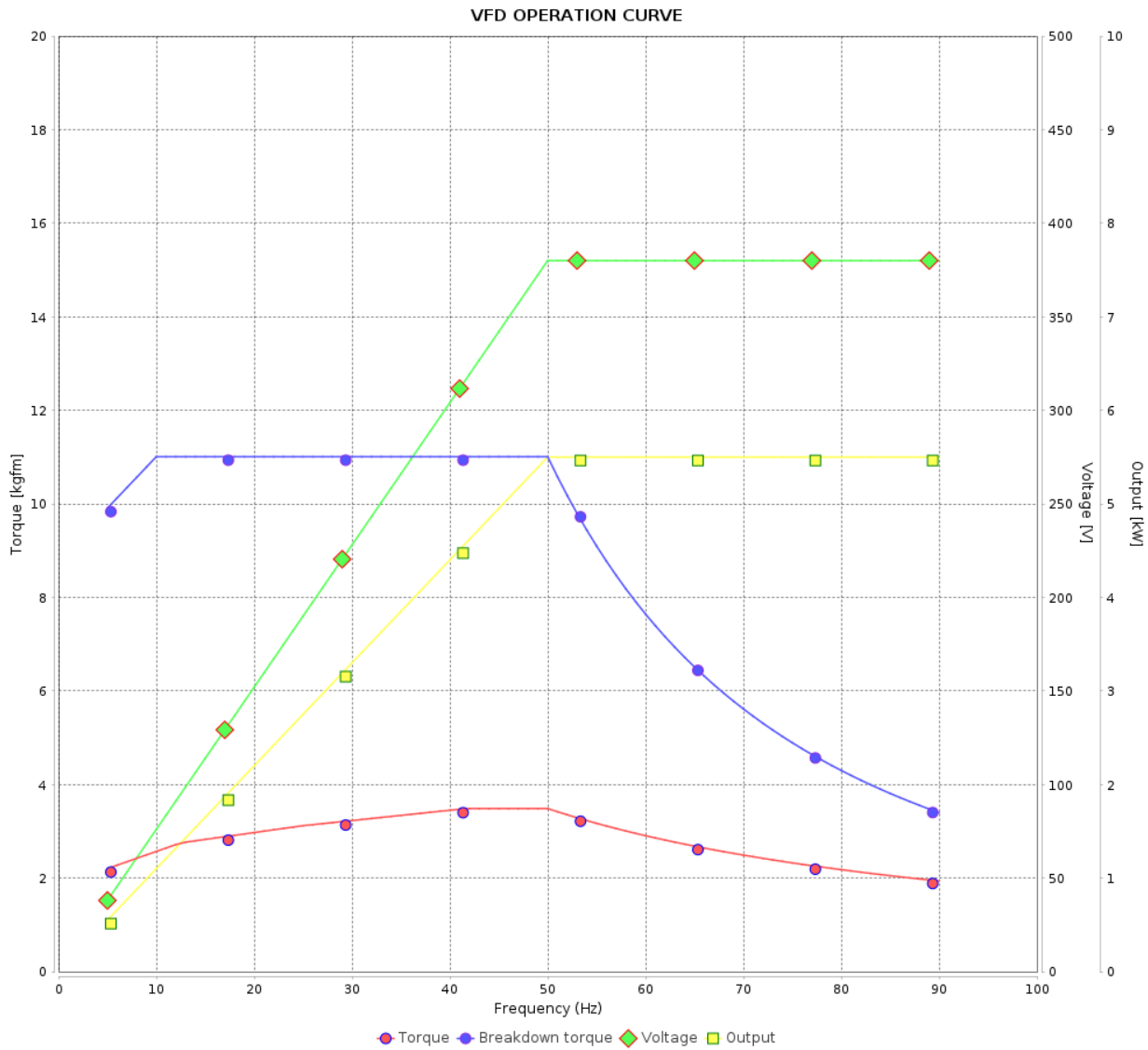
Three Phase Induction Motor - Squirrel Cage



Customer : Astraprom d.o.o.

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Product code : 15448738



Performance : 380/660 V 50 Hz 4P

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 LRC : 8.5  
 Rated torque : 3.67 kgfm  
 Locked rotor torque : 210 %  
 Breakdown torque : 300 %  
 Rated speed : 1460 rpm

Moment of inertia (J) : 0.0528 kgm<sup>2</sup>  
 Duty cycle : S1  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 80 K  
 Design : N

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

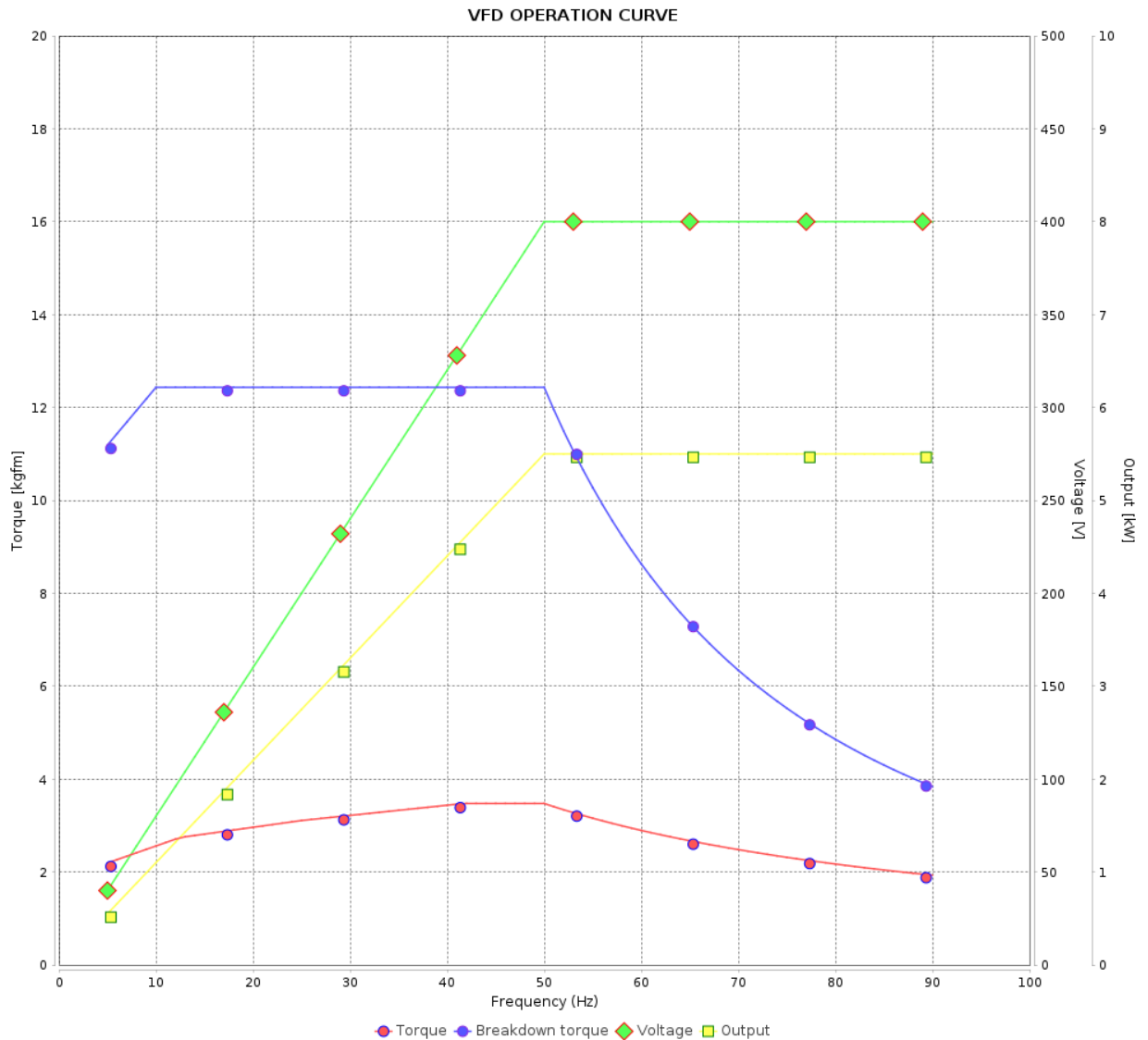
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 Duty cycle : S1  
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 Temperature rise : 80 K  
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| Rev.         | Changes Summary | Performed | Checked | Date     |
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# VFD OPERATION CURVE

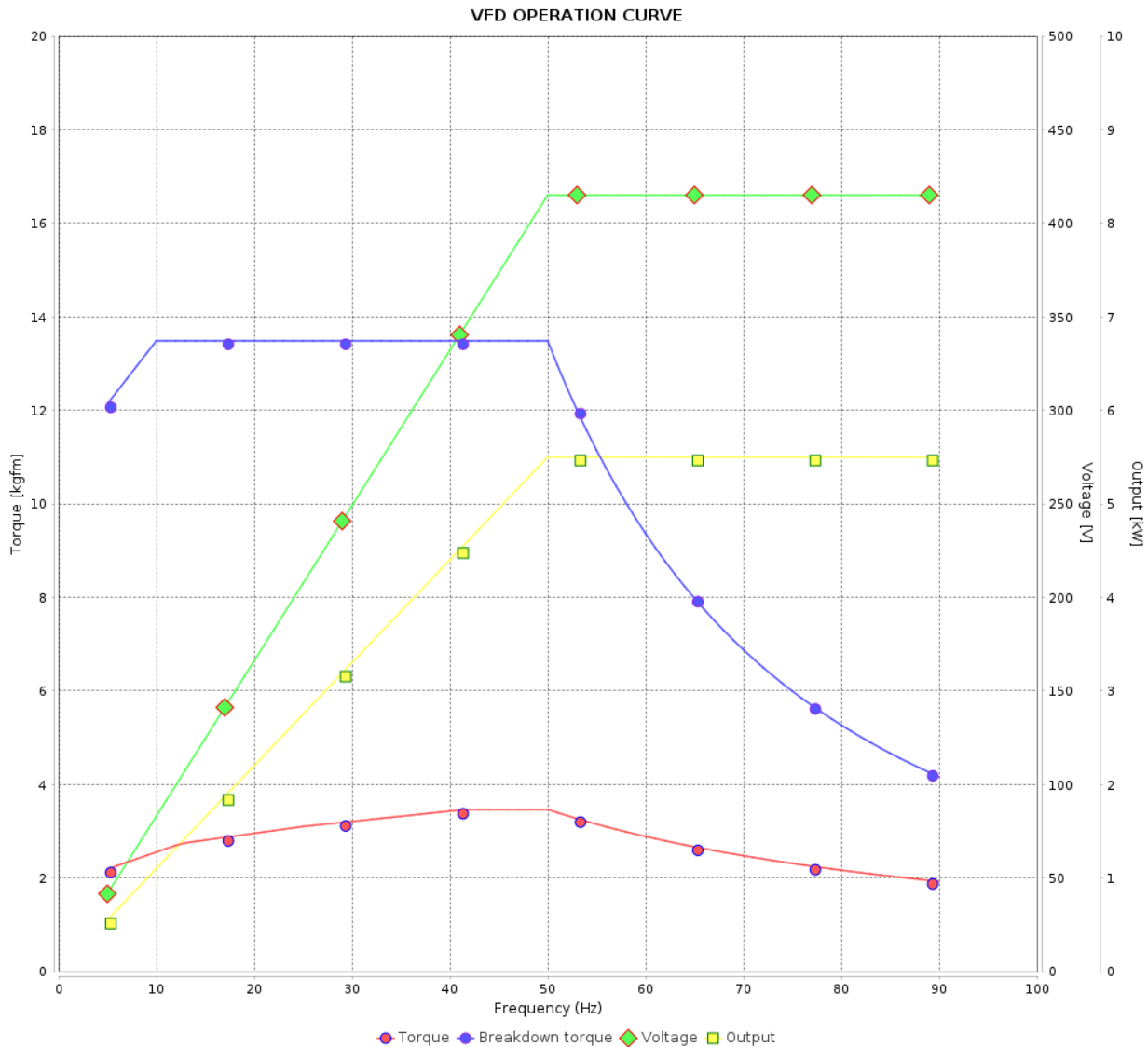
Three Phase Induction Motor - Squirrel Cage



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Product line : Multimounting IE3 Three-Phase

Product code : 15448738



Performance : 415 V 50 Hz 4P

|                     |             |                       |                           |
|---------------------|-------------|-----------------------|---------------------------|
| Rated current       | : 10.2 A    | Moment of inertia (J) | : 0.0528 kgm <sup>2</sup> |
| LRC                 | : 8.5       | Duty cycle            | : S1                      |
| Rated torque        | : 3.64 kgfm | Insulation class      | : F                       |
| Locked rotor torque | : 260 %     | Service factor        | : 1.00                    |
| Breakdown torque    | : 370 %     | Temperature rise      | : 80 K                    |
| Rated speed         | : 1470 rpm  | Design                | : N                       |

| Rev.         | Changes Summary | Performed | Checked | Date     |
|--------------|-----------------|-----------|---------|----------|
|              |                 |           |         |          |
| Performed by |                 | Page      |         | Revision |
| Checked by   |                 | 18 / 19   |         |          |
| Date         | 31/05/2023      |           |         |          |

# VFD OPERATION CURVE

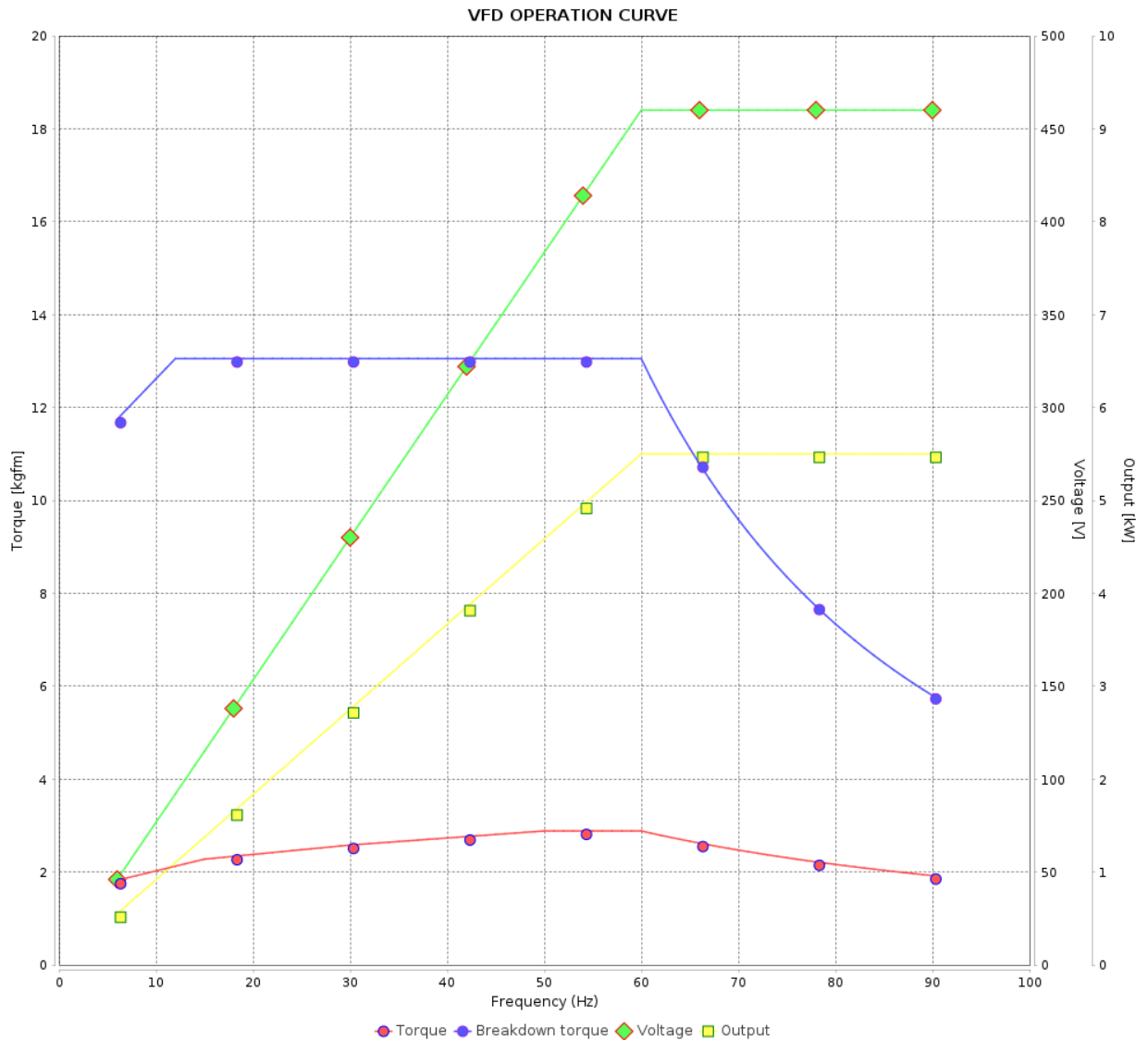
## Three Phase Induction Motor - Squirrel Cage



Customer : Astraprom d.o.o.

Product line : Multimounting IE3 Three-Phase

Product code : 15448738



Performance : 460 V 60 Hz 4P

Rated current : 9.07 A  
 LRC : 8.9  
 Rated torque : 3.04 kgfm  
 Locked rotor torque : 260 %  
 Breakdown torque : 430 %  
 Rated speed : 1765 rpm

Moment of inertia (J) : 0.0528 kgm<sup>2</sup>  
 Duty cycle : S1  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 80 K  
 Design : N

| Rev.         | Changes Summary | Performed  | Checked | Date     |
|--------------|-----------------|------------|---------|----------|
|              |                 |            |         |          |
| Performed by |                 | Page       |         | Revision |
| Checked by   |                 | 19 / 19    |         |          |
| Date         |                 | 31/05/2023 |         |          |