

# DATA SHEET

## Three Phase Induction Motor - Squirrel Cage



Customer		: Astraprom d.o.o.			
Product line		: IE3 Three-Phase		Product code : 12862397	
Frame	: 200L	Cooling method	: IC411 - TEFC		
Insulation class	: F	Mounting	: B3T		
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>	: 262 kg		
Protection degree	: IP55	Moment of inertia (J)	: 0.2368 kgm <sup>2</sup>		
Design	: N				
Output [kW]	37	37	37	37	37
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]	69.8/40.2	67.9/39.4	67.0	60.2	60.2
L. R. Amperes [A]	530/305	523/303	543	500	500
LRC [A]	7.6	7.7	8.1	8.3	8.3
No load current [A]	24.0/13.8	27.0/15.7	29.5	26.0	26.0
Rated speed [RPM]	2965	2970	2970	3575	3575
Slip [%]	1.17	1.00	1.00	0.69	0.69
Rated torque [kgfm]	12.2	12.1	12.1	10.1	10.1
Locked rotor torque [%]	300	330	360	380	380
Breakdown torque [%]	300	330	360	380	380
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	19s (cold) 11s (hot)	18s (cold) 10s (hot)	16s (cold) 9s (hot)	23s (cold) 13s (hot)	23s (cold) 13s (hot)
Noise level <sup>2</sup>	72.0 dB(A)	72.0 dB(A)	72.0 dB(A)	76.0 dB(A)	76.0 dB(A)
Efficiency (%)	25%				
	50%	93.0	92.6	92.0	91.5
	75%	93.6	93.4	93.2	93.0
	100%	93.7	93.7	93.7	93.0
Power Factor	25%				
	50%	0.74	0.69	0.63	0.68
	75%	0.83	0.79	0.76	0.78
	100%	0.86	0.84	0.82	0.83
Losses at normative operating points (speed;torque), in percentage of rated output power					
Losses (%)	P1 (0,9;1,0)	6.4	6.4	6.4	7.1
	P2 (0,5;1,0)	5.1	5.1	5.1	5.7
	P3 (0,25;1,0)	4.8	4.8	4.8	5.4
	P4 (0,9;0,5)	3.4	3.4	3.4	3.8
	P5 (0,5;0,5)	2.1	2.1	2.1	2.4
	P6 (0,5;0,25)	1.5	1.5	1.5	1.6
	P7 (0,25;0,25)	1.0	1.0	1.0	1.1
Bearing type	: Drive end 6312 ZZ C3 Non drive end 6212 ZZ C3	Foundation loads			
Sealing	: V'Ring V'Ring	Max. traction : 350 kgf			
Lubrication interval	: - -	Max. compression : 612 kgf			
Lubricant amount	: - -				
Lubricant type	: Mobil Polyrex EM				
This revision replaces and cancel the previous one, which must be eliminated.		These are average values based on tests with sinusoidal power supply, subject to the tolerances stipulated in IEC 60034-1.			
(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.					
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Customer : Astraprom d.o.o.

Notes

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## 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

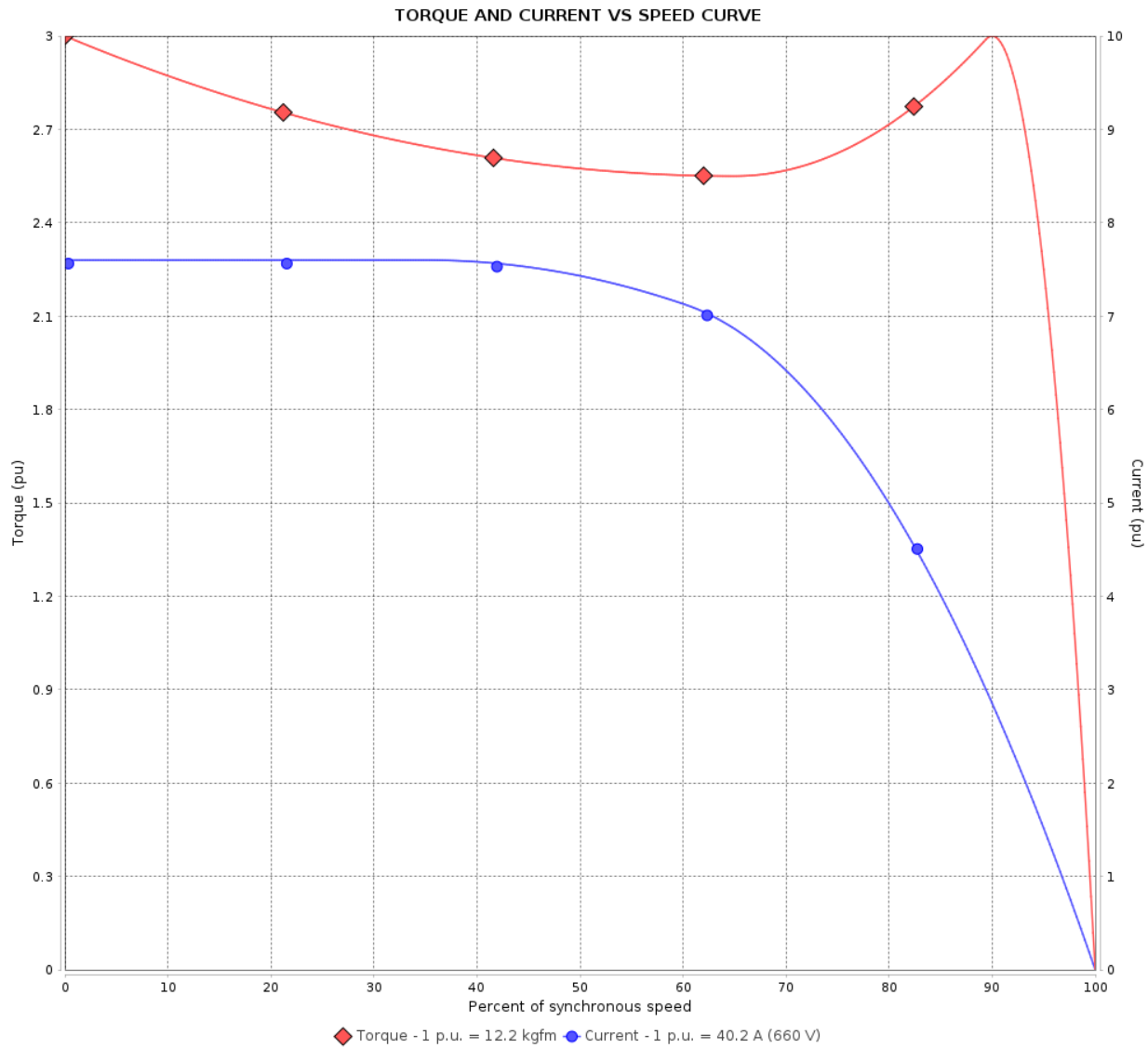
Three Phase Induction Motor - Squirrel Cage



Customer : Astraprom d.o.o.

Product line : IE3 Three-Phase

Product code : 12862397



Performance : 380/660 V 50 Hz 2P

Rated current	: 69.8/40.2 A	Moment of inertia (J)	: 0.2368 kgm <sup>2</sup>
LRC	: 7.6	Duty cycle	: S1
Rated torque	: 12.2 kgfm	Insulation class	: F
Locked rotor torque	: 300 %	Service factor	: 1.00
Breakdown torque	: 300 %	Temperature rise	: 80 K
Rated speed	: 2965 rpm	Design	: N

Locked rotor time : 19s (cold) 11s (hot)

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# TORQUE AND CURRENT VS SPEED CURVE

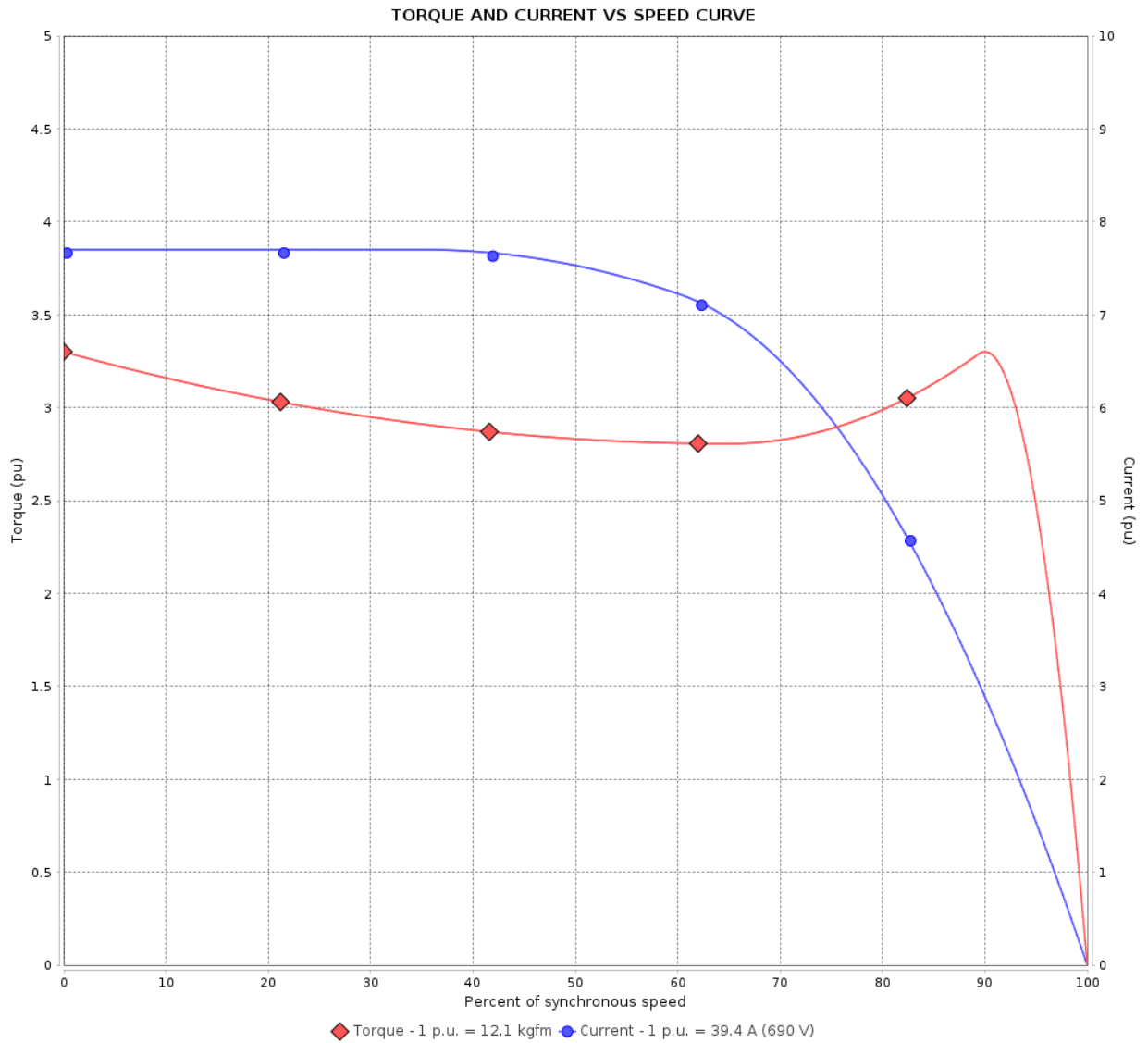
Three Phase Induction Motor - Squirrel Cage



Customer : Astraprom d.o.o.

Product line : IE3 Three-Phase

Product code : 12862397



Performance : 400/690 V 50 Hz 2P

Rated current	: 67.9/39.4 A	Moment of inertia (J)	: 0.2368 kgm <sup>2</sup>
LRC	: 7.7	Duty cycle	: S1
Rated torque	: 12.1 kgfm	Insulation class	: F
Locked rotor torque	: 330 %	Service factor	: 1.00
Breakdown torque	: 330 %	Temperature rise	: 80 K
Rated speed	: 2970 rpm	Design	: N

Locked rotor time : 18s (cold) 10s (hot)

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# TORQUE AND CURRENT VS SPEED CURVE

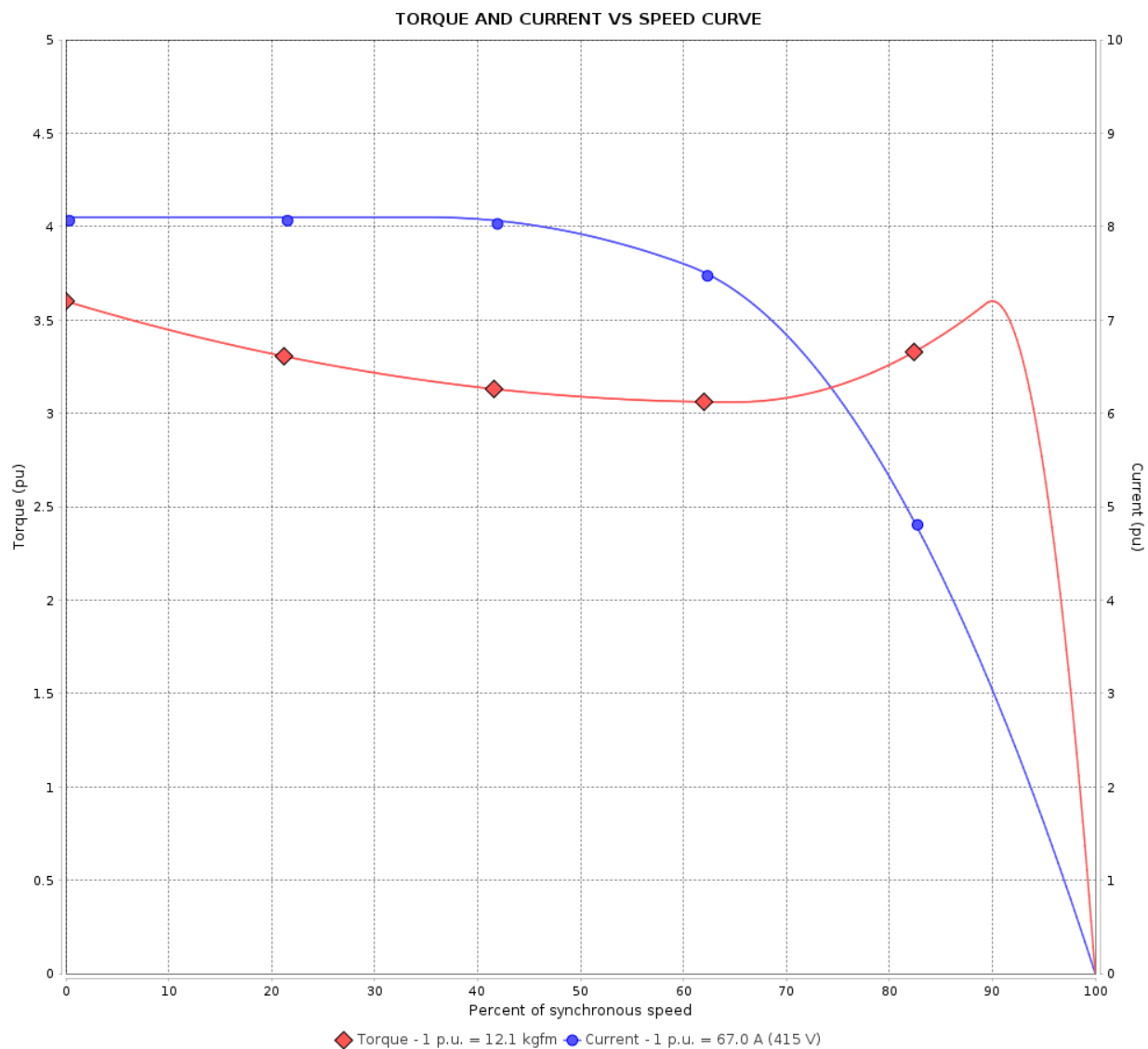
Three Phase Induction Motor - Squirrel Cage



Customer : Astraprom d.o.o.

Product line : IE3 Three-Phase

Product code : 12862397



Performance : 415 V 50 Hz 2P

Rated current	: 67.0 A	Moment of inertia (J)	: 0.2368 kgm <sup>2</sup>
LRC	: 8.1	Duty cycle	: S1
Rated torque	: 12.1 kgfm	Insulation class	: F
Locked rotor torque	: 360 %	Service factor	: 1.00
Breakdown torque	: 360 %	Temperature rise	: 80 K
Rated speed	: 2970 rpm	Design	: N

Locked rotor time : 16s (cold) 9s (hot)

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# TORQUE AND CURRENT VS SPEED CURVE

Three Phase Induction Motor - Squirrel Cage

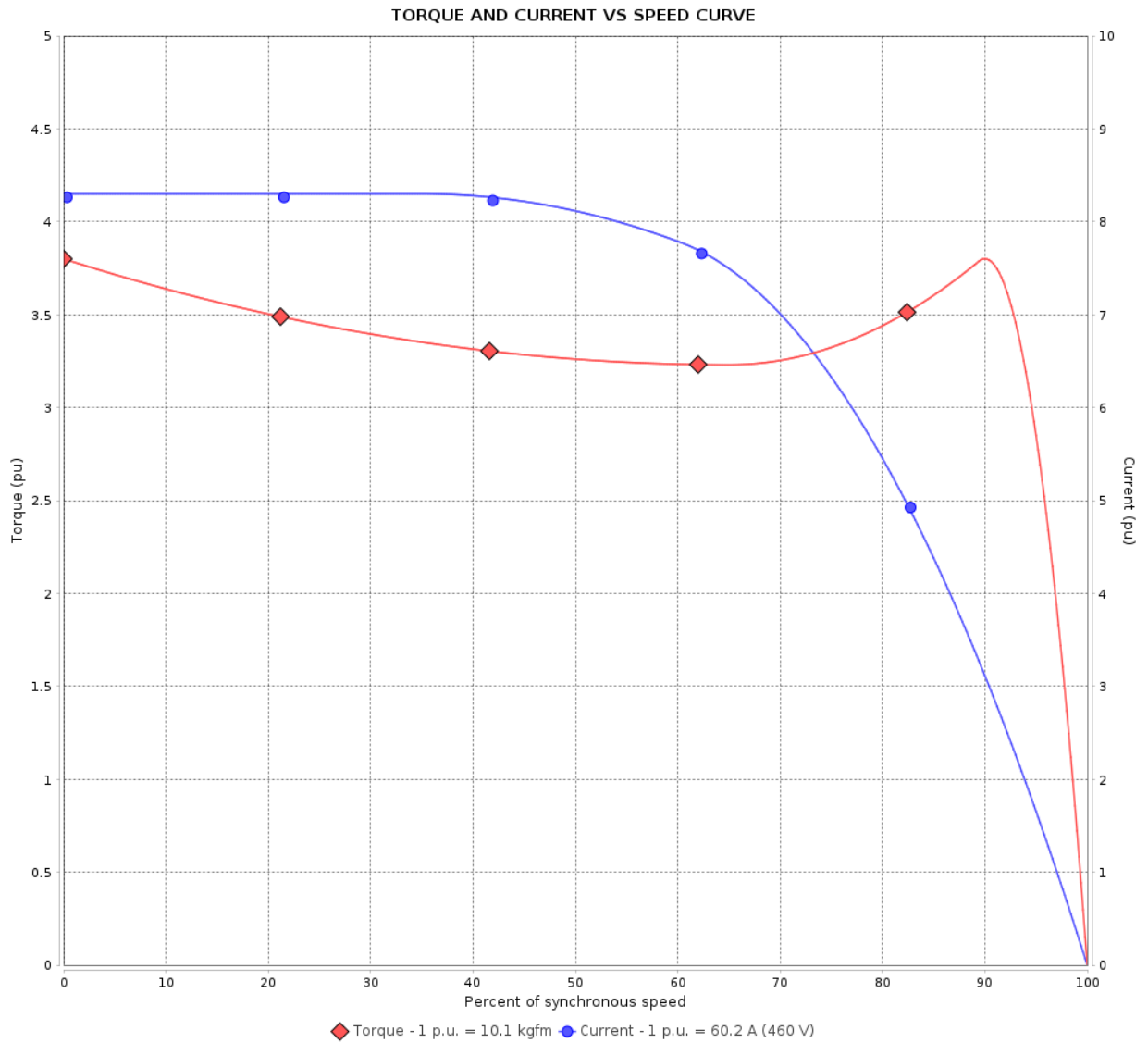


Customer : Astraprom d.o.o.

Product line : IE3 Three-Phase

Product code :

12862397



Performance : 460 V 60 Hz 2P

Rated current	: 60.2 A	Moment of inertia (J)	: 0.2368 kgm <sup>2</sup>
LRC	: 8.3	Duty cycle	: S1
Rated torque	: 10.1 kgfm	Insulation class	: F
Locked rotor torque	: 380 %	Service factor	: 1.00
Breakdown torque	: 380 %	Temperature rise	: 80 K
Rated speed	: 3575 rpm	Design	: N

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

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# LOAD PERFORMANCE CURVE

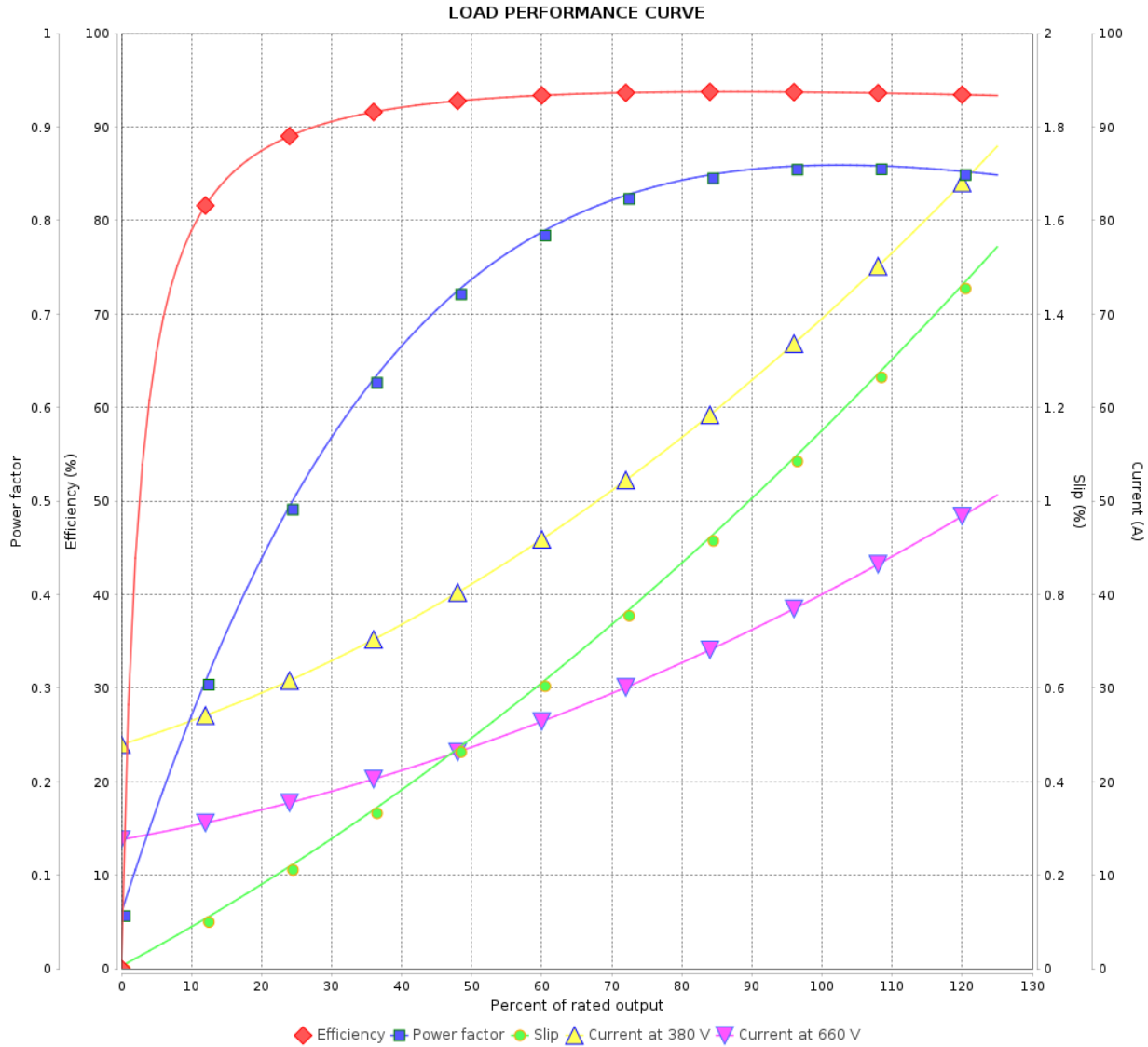
Three Phase Induction Motor - Squirrel Cage



Customer : Astraprom d.o.o.

Product line : IE3 Three-Phase

Product code : 12862397



Performance : 380/660 V 50 Hz 2P

Rated current : 69.8/40.2 A  
 LRC : 7.6  
 Rated torque : 12.2 kgfm  
 Locked rotor torque : 300 %  
 Breakdown torque : 300 %  
 Rated speed : 2965 rpm

Moment of inertia (J) : 0.2368 kgm<sup>2</sup>  
 Duty cycle : S1  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 80 K  
 Design : N

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# LOAD PERFORMANCE CURVE

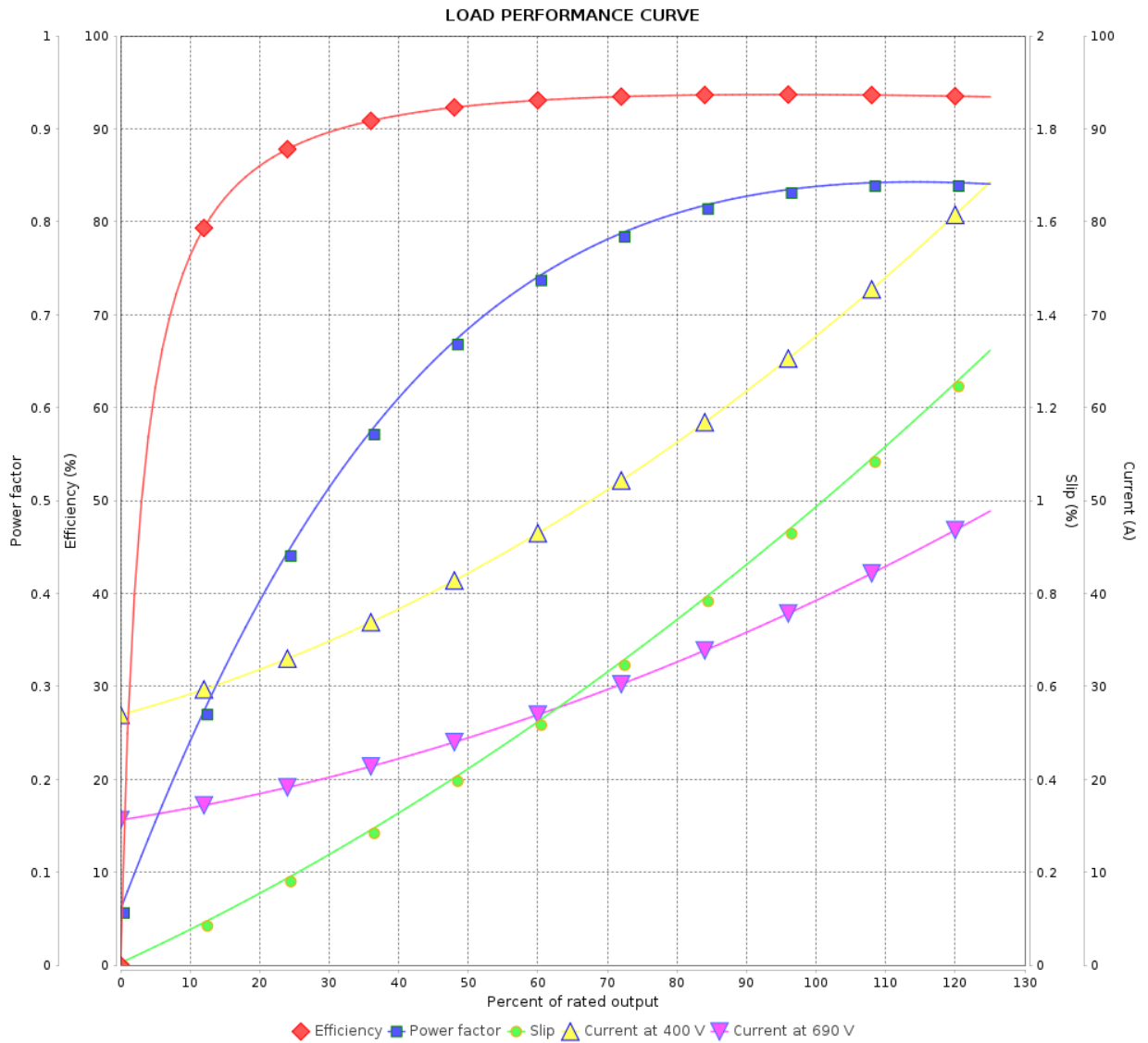
## Three Phase Induction Motor - Squirrel Cage



Customer : Astraprom d.o.o.

Product line : IE3 Three-Phase

Product code : 12862397



Performance : 400/690 V 50 Hz 2P

Rated current : 67.9/39.4 A  
 LRC : 7.7  
 Rated torque : 12.1 kgfm  
 Locked rotor torque : 330 %  
 Breakdown torque : 330 %  
 Rated speed : 2970 rpm

Moment of inertia (J) : 0.2368 kgm<sup>2</sup>  
 Duty cycle : S1  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 80 K  
 Design : N

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# LOAD PERFORMANCE CURVE

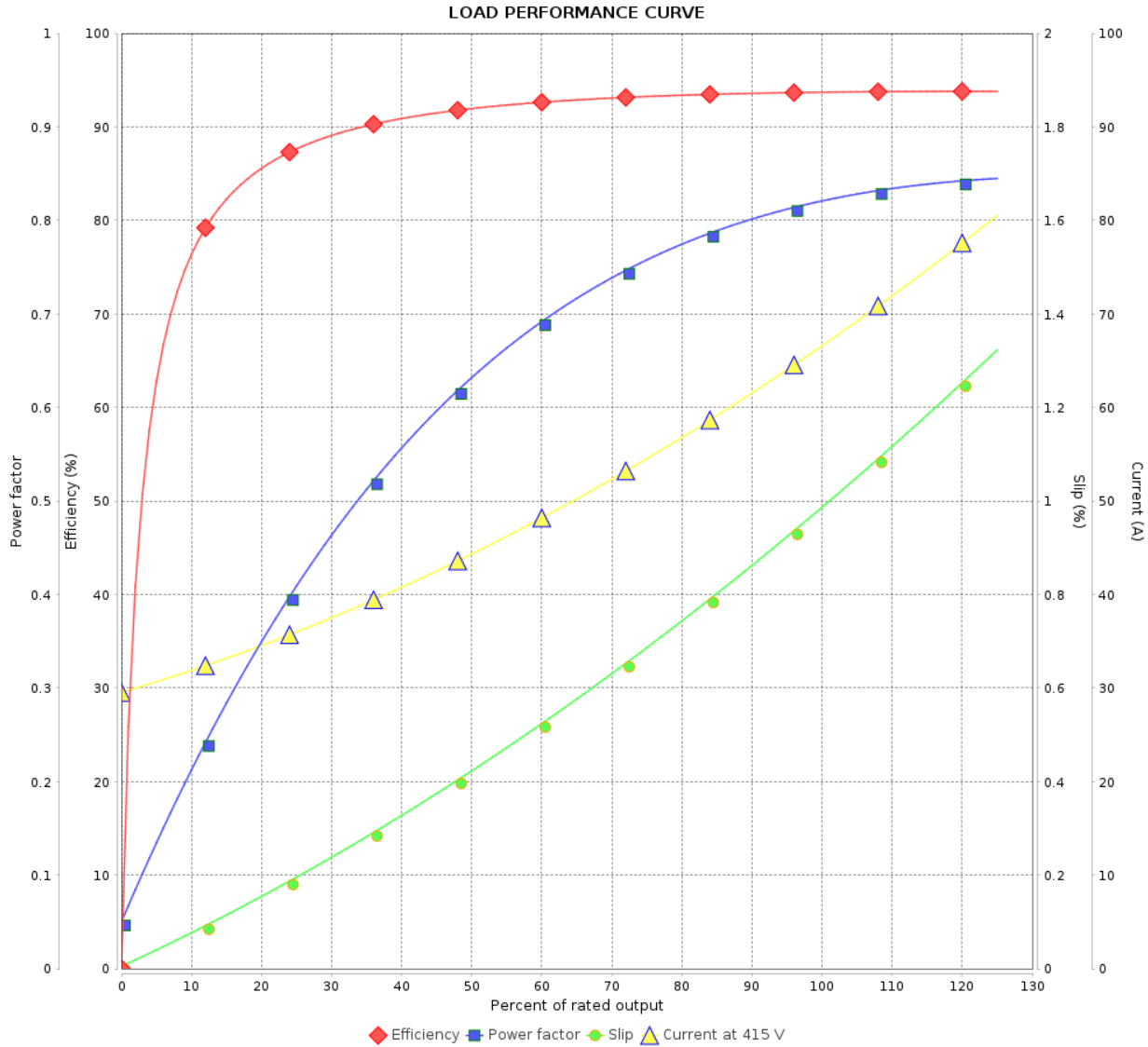
Three Phase Induction Motor - Squirrel Cage



Customer : Astraprom d.o.o.

Product line : IE3 Three-Phase

Product code : 12862397



Performance : 415 V 50 Hz 2P

Rated current : 67.0 A  
 LRC : 8.1  
 Rated torque : 12.1 kgfm  
 Locked rotor torque : 360 %  
 Breakdown torque : 360 %  
 Rated speed : 2970 rpm

Moment of inertia (J) : 0.2368 kgm<sup>2</sup>  
 Duty cycle : S1  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 80 K  
 Design : N

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# LOAD PERFORMANCE CURVE

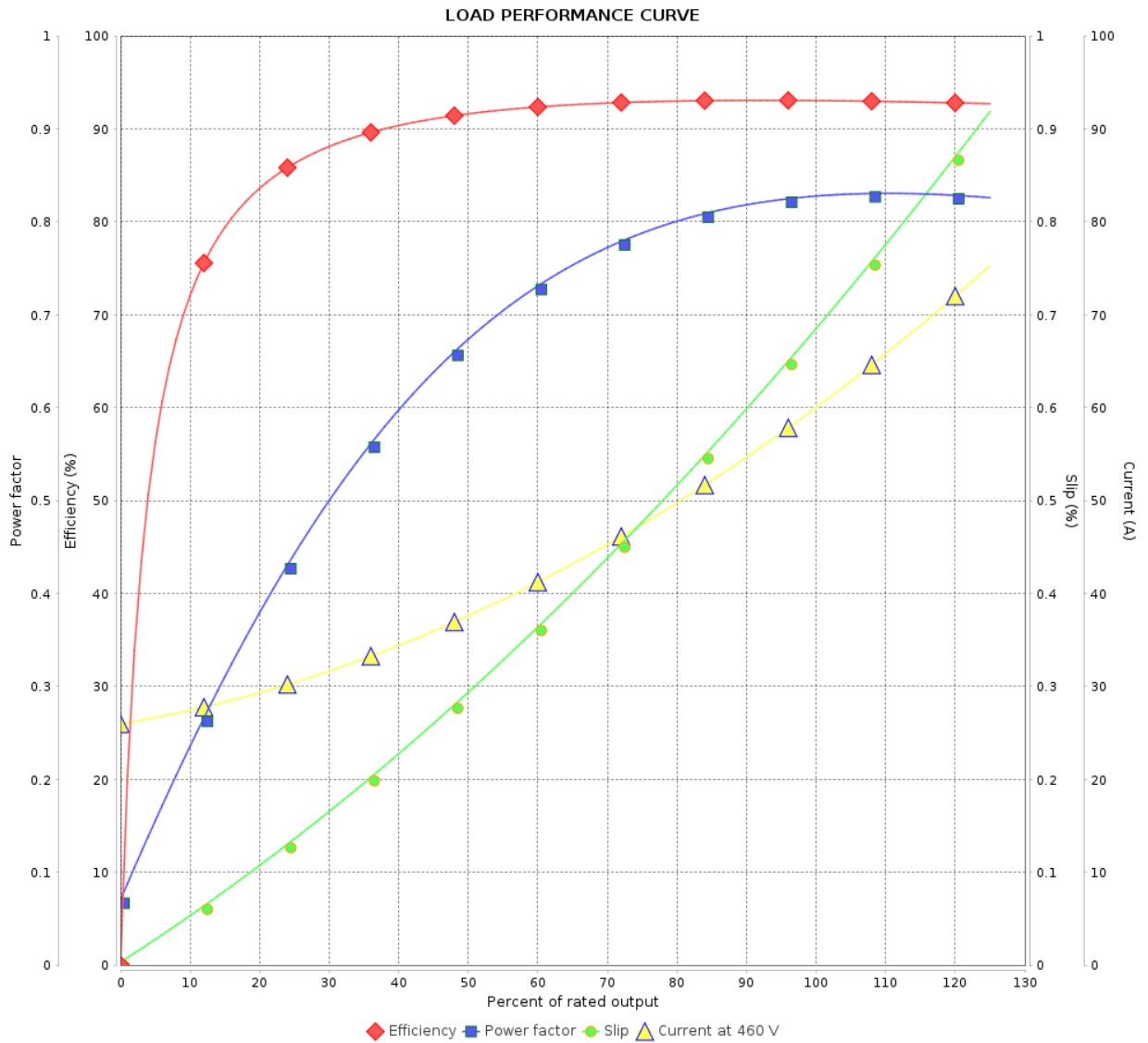
## Three Phase Induction Motor - Squirrel Cage



Customer : Astraprom d.o.o.

Product line : IE3 Three-Phase

Product code : 12862397



Performance : 460 V 60 Hz 2P

Rated current : 60.2 A  
 LRC : 8.3  
 Rated torque : 10.1 kgfm  
 Locked rotor torque : 380 %  
 Breakdown torque : 380 %  
 Rated speed : 3575 rpm

Moment of inertia (J) : 0.2368 kgm<sup>2</sup>  
 Duty cycle : S1  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 80 K  
 Design : N

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# THERMAL LIMIT CURVE

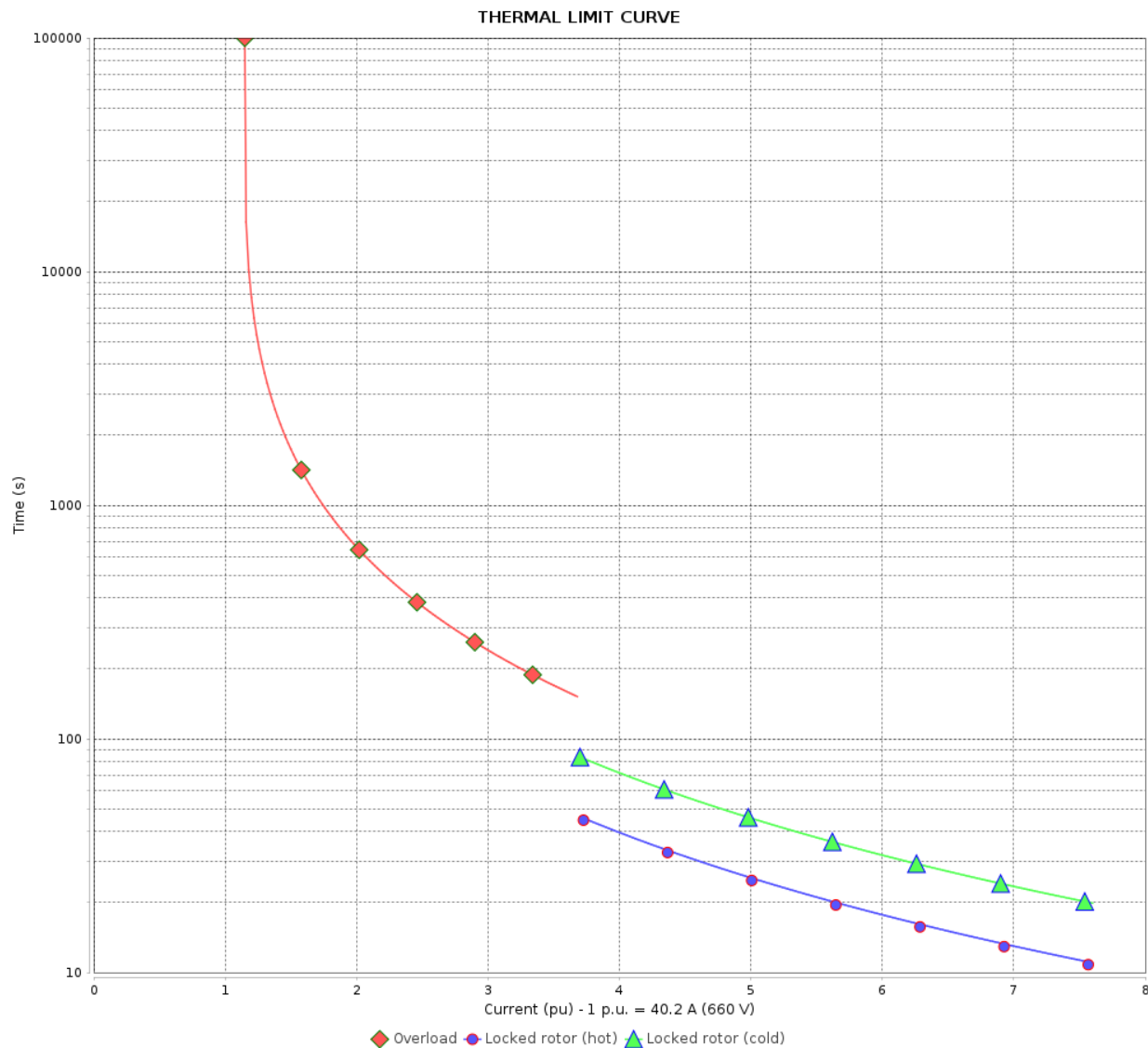
## Three Phase Induction Motor - Squirrel Cage



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Product code : 12862397



Performance : 380/660 V 50 Hz 2P

Rated current : 69.8/40.2 A  
 LRC : 7.6  
 Rated torque : 12.2 kgfm  
 Locked rotor torque : 300 %  
 Breakdown torque : 300 %  
 Rated speed : 2965 rpm

Moment of inertia (J) : 0.2368 kgm<sup>2</sup>  
 Duty cycle : S1  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 80 K  
 Design : N

Heating constant  
 Cooling constant

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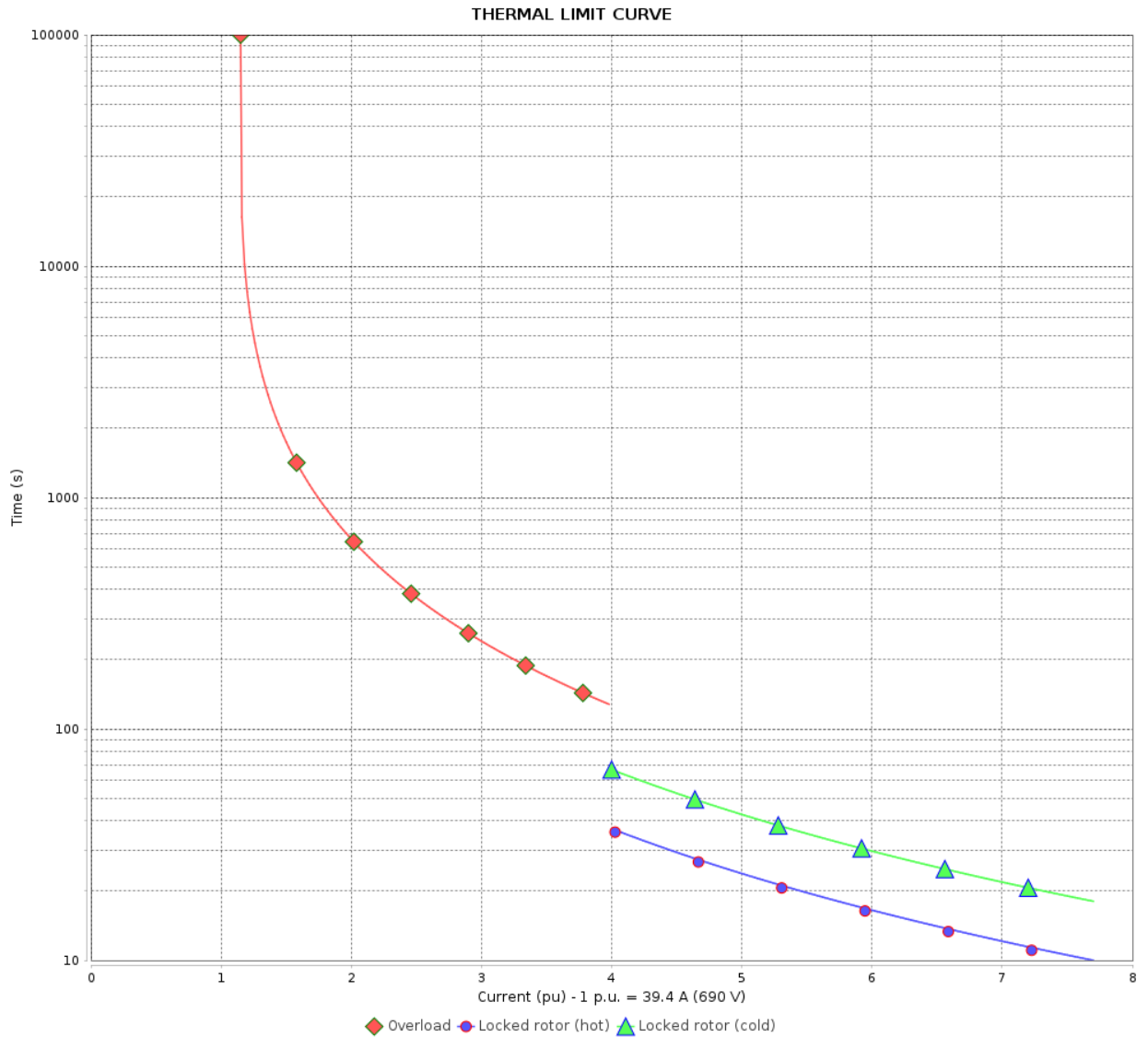
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Performance : 400/690 V 50 Hz 2P

Rated current : 67.9/39.4 A  
 LRC : 7.7  
 Rated torque : 12.1 kgfm  
 Locked rotor torque : 330 %  
 Breakdown torque : 330 %  
 Rated speed : 2970 rpm

Moment of inertia (J) : 0.2368 kgm<sup>2</sup>  
 Duty cycle : S1  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 80 K  
 Design : N

Heating constant  
 Cooling constant

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# THERMAL LIMIT CURVE

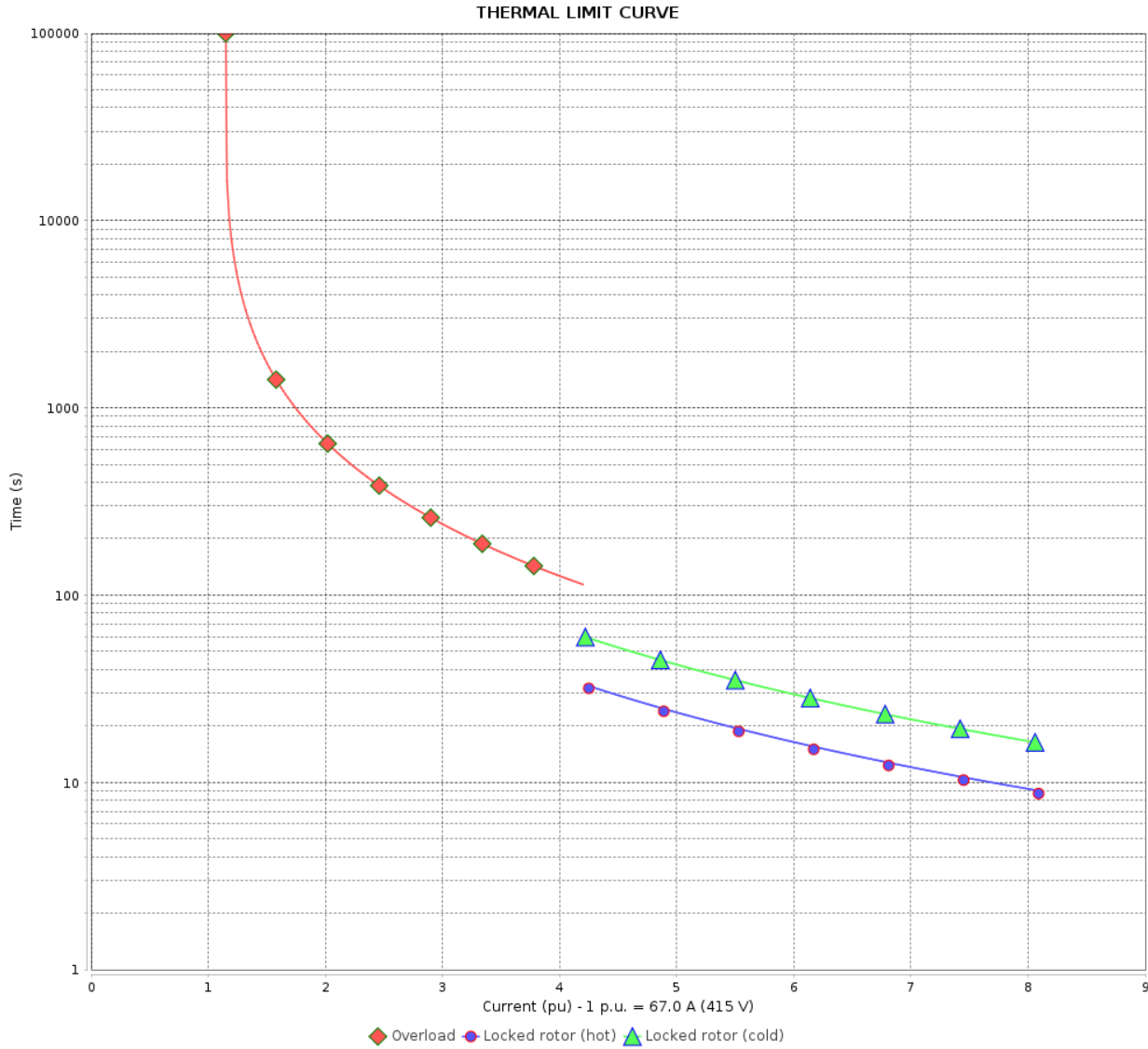
Three Phase Induction Motor - Squirrel Cage



Customer : Astraprom d.o.o.

Product line : IE3 Three-Phase

Product code : 12862397



Performance : 415 V 50 Hz 2P

Rated current	: 67.0 A	Moment of inertia (J)	: 0.2368 kgm <sup>2</sup>
LRC	: 8.1	Duty cycle	: S1
Rated torque	: 12.1 kgfm	Insulation class	: F
Locked rotor torque	: 360 %	Service factor	: 1.00
Breakdown torque	: 360 %	Temperature rise	: 80 K
Rated speed	: 2970 rpm	Design	: N

Heating constant

Cooling constant

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# THERMAL LIMIT CURVE

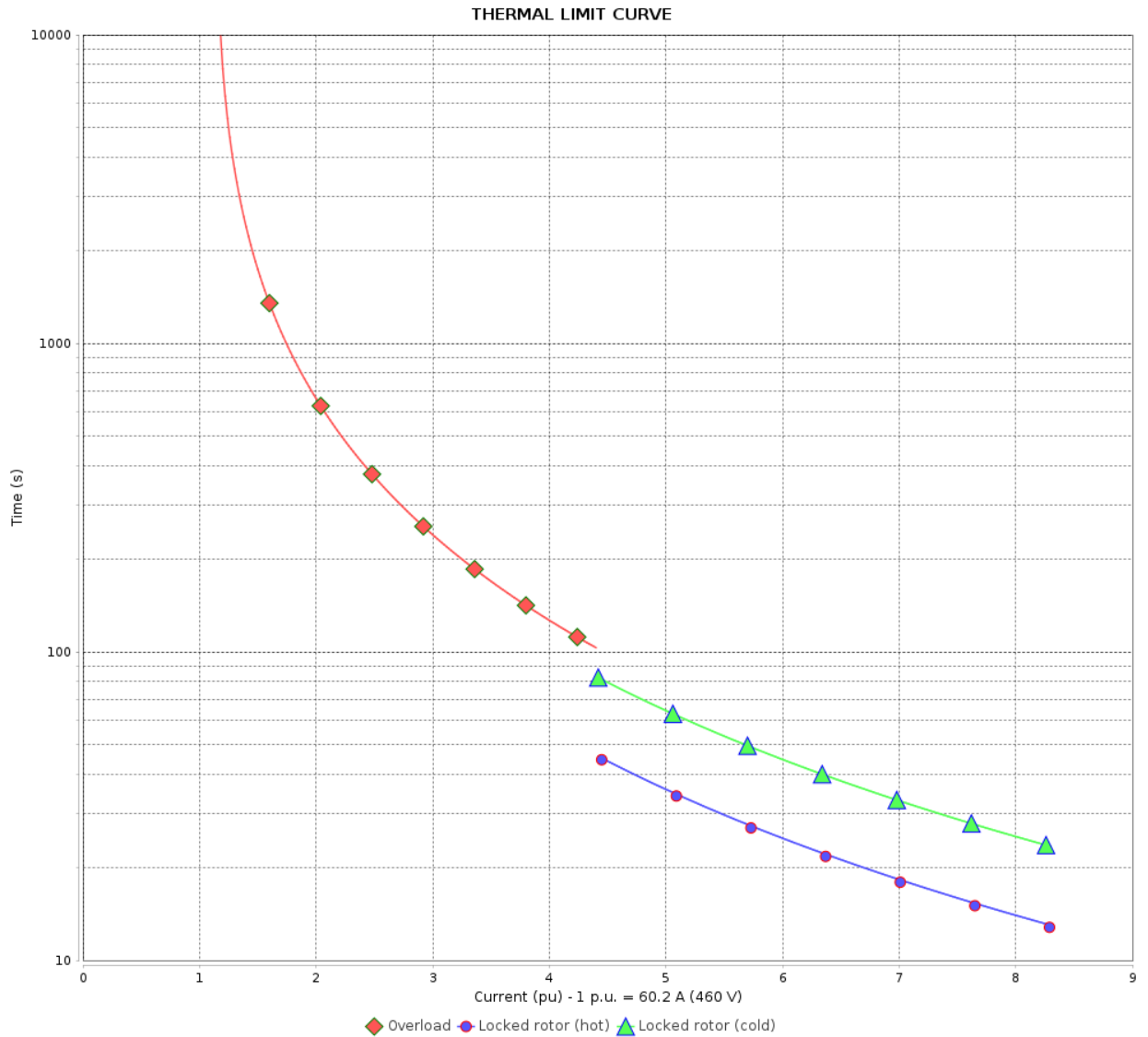
## Three Phase Induction Motor - Squirrel Cage



Customer : Astraprom d.o.o.

Product line : IE3 Three-Phase

Product code : 12862397



Performance : 460 V 60 Hz 2P

Rated current : 60.2 A  
 LRC : 8.3  
 Rated torque : 10.1 kgfm  
 Locked rotor torque : 380 %  
 Breakdown torque : 380 %  
 Rated speed : 3575 rpm

Moment of inertia (J) : 0.2368 kgm<sup>2</sup>  
 Duty cycle : S1  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 80 K  
 Design : N

Heating constant

Cooling constant

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# VFD OPERATION CURVE

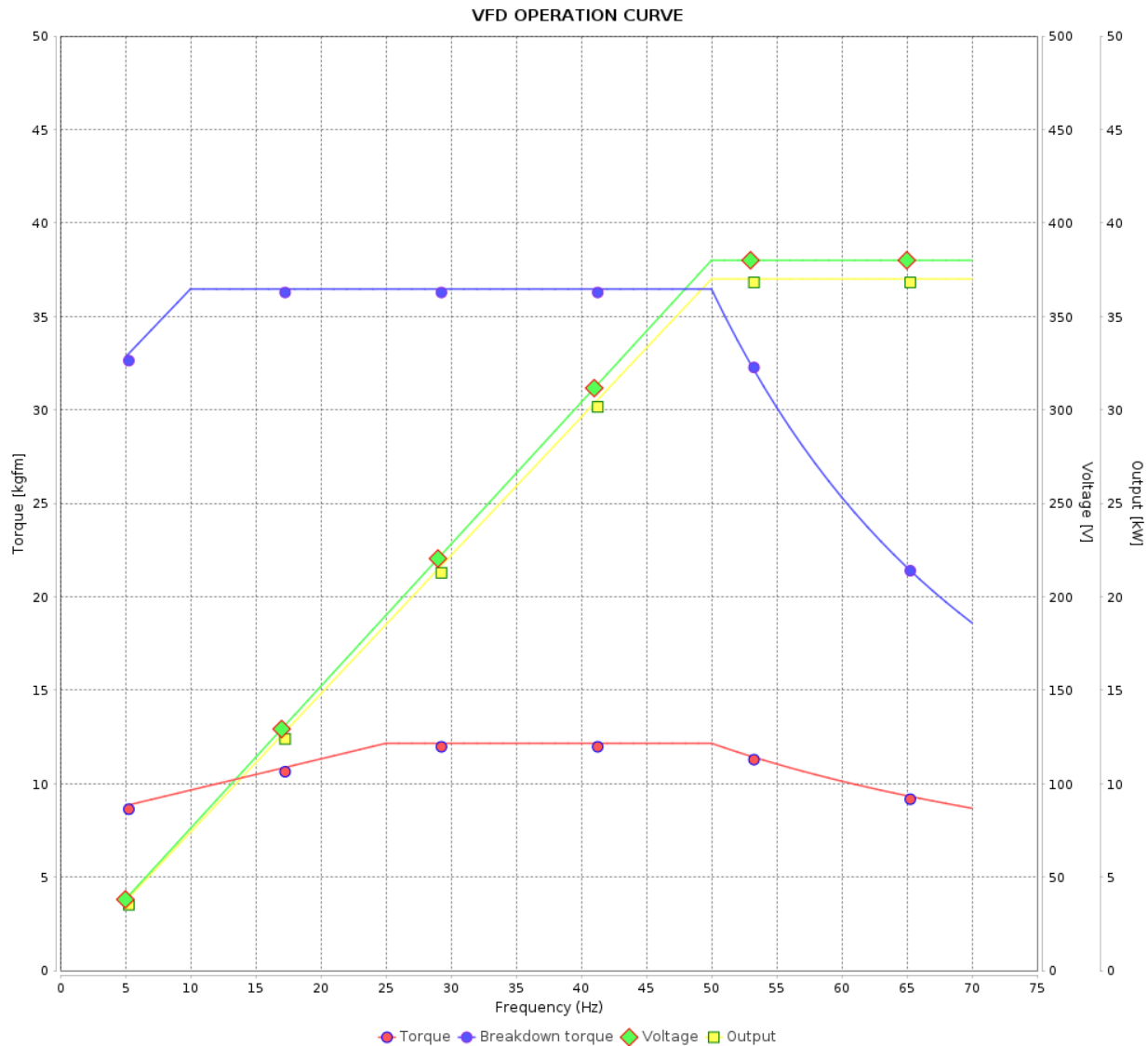
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Performance : 380/660 V 50 Hz 2P

Rated current : 69.8/40.2 A  
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 Rated torque : 12.2 kgfm  
 Locked rotor torque : 300 %  
 Breakdown torque : 300 %  
 Rated speed : 2965 rpm

Moment of inertia (J) : 0.2368 kgm<sup>2</sup>  
 Duty cycle : S1  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 80 K  
 Design : N

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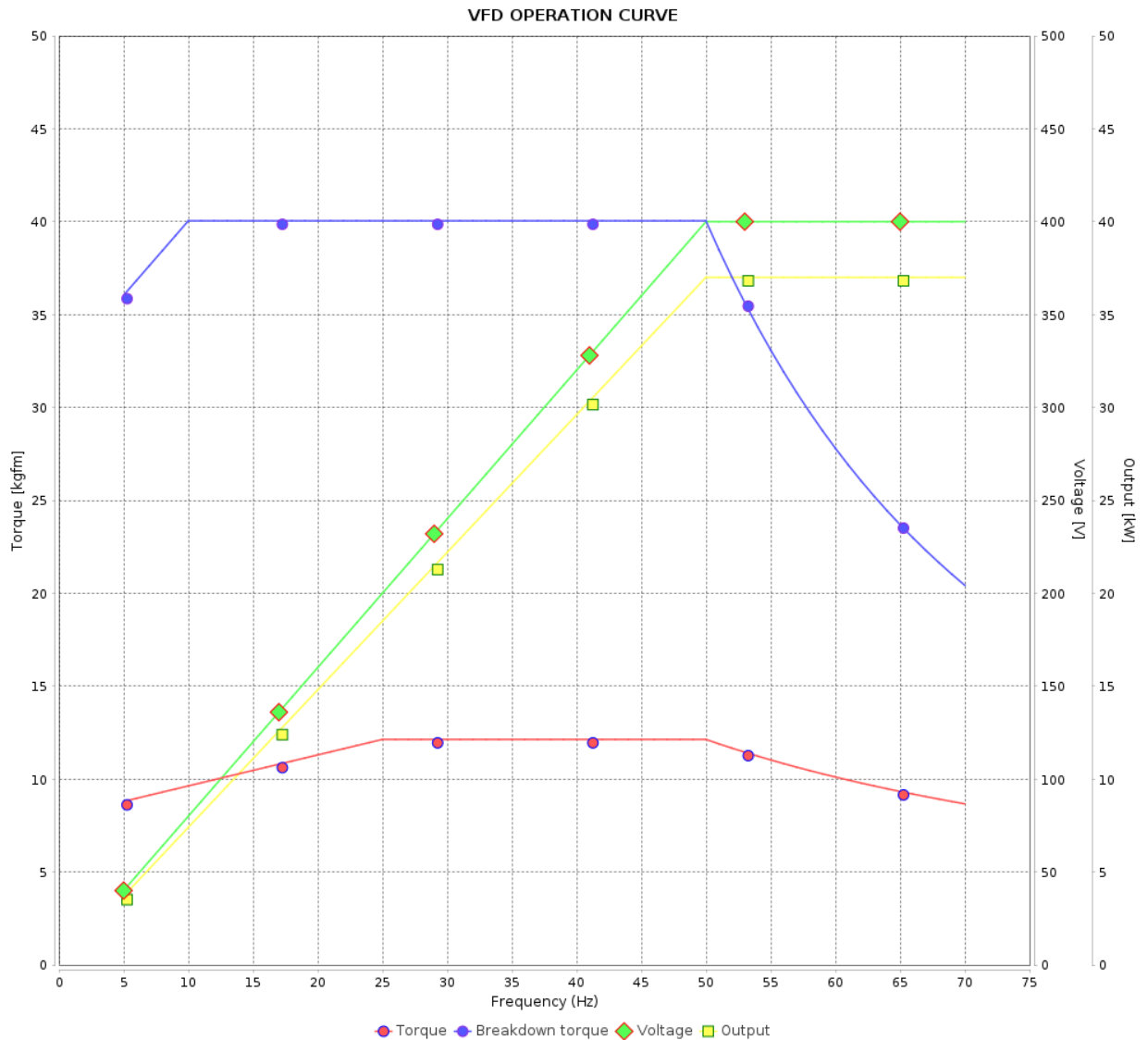
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 Rated speed : 2970 rpm

Moment of inertia (J) : 0.2368 kgm<sup>2</sup>  
 Duty cycle : S1  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 80 K  
 Design : N

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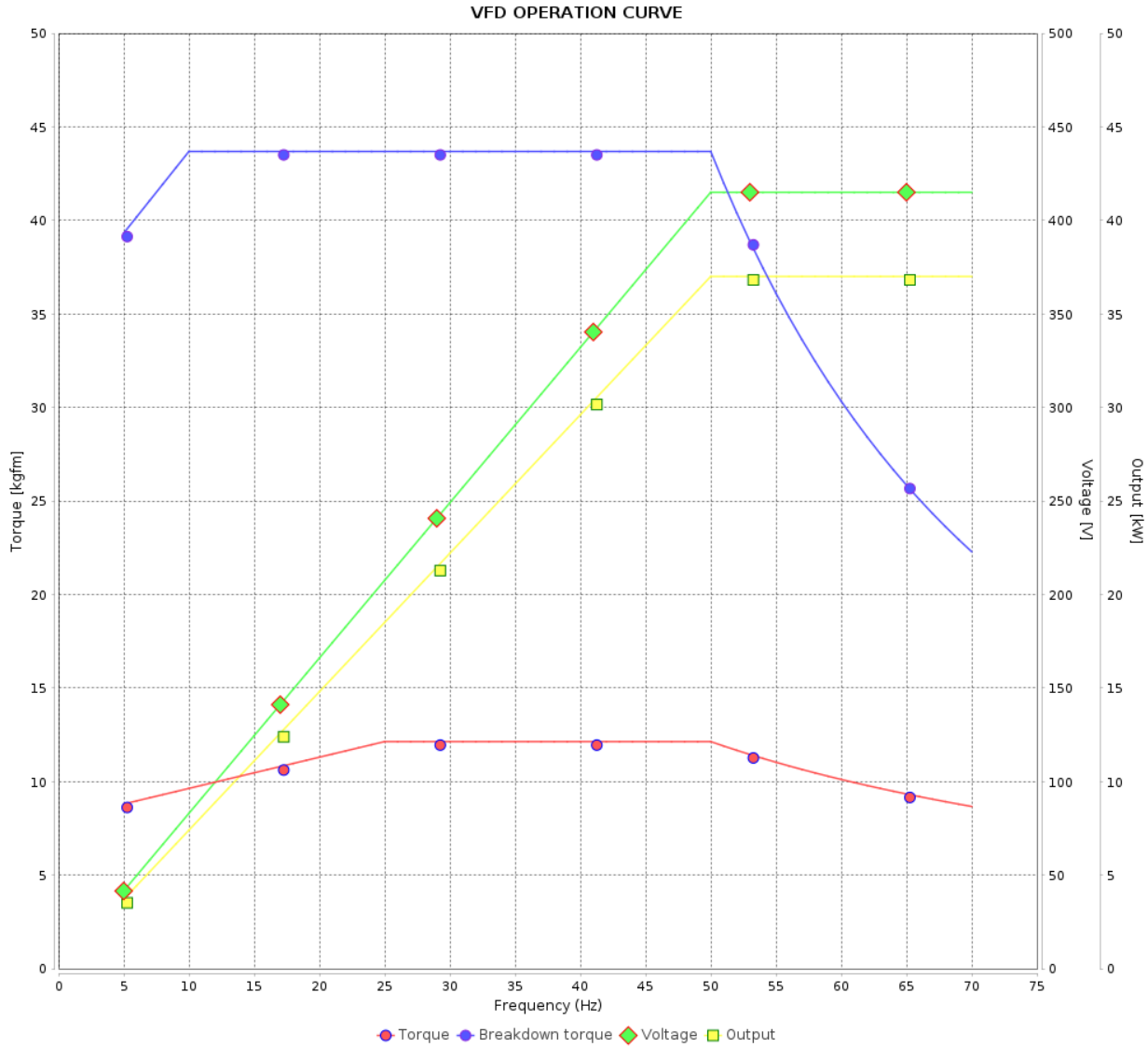
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Customer : Astraprom d.o.o.

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Performance : 415 V 50 Hz 2P

Rated current	: 67.0 A	Moment of inertia (J)	: 0.2368 kgm <sup>2</sup>
LRC	: 8.1	Duty cycle	: S1
Rated torque	: 12.1 kgfm	Insulation class	: F
Locked rotor torque	: 360 %	Service factor	: 1.00
Breakdown torque	: 360 %	Temperature rise	: 80 K
Rated speed	: 2970 rpm	Design	: N

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# VFD OPERATION CURVE

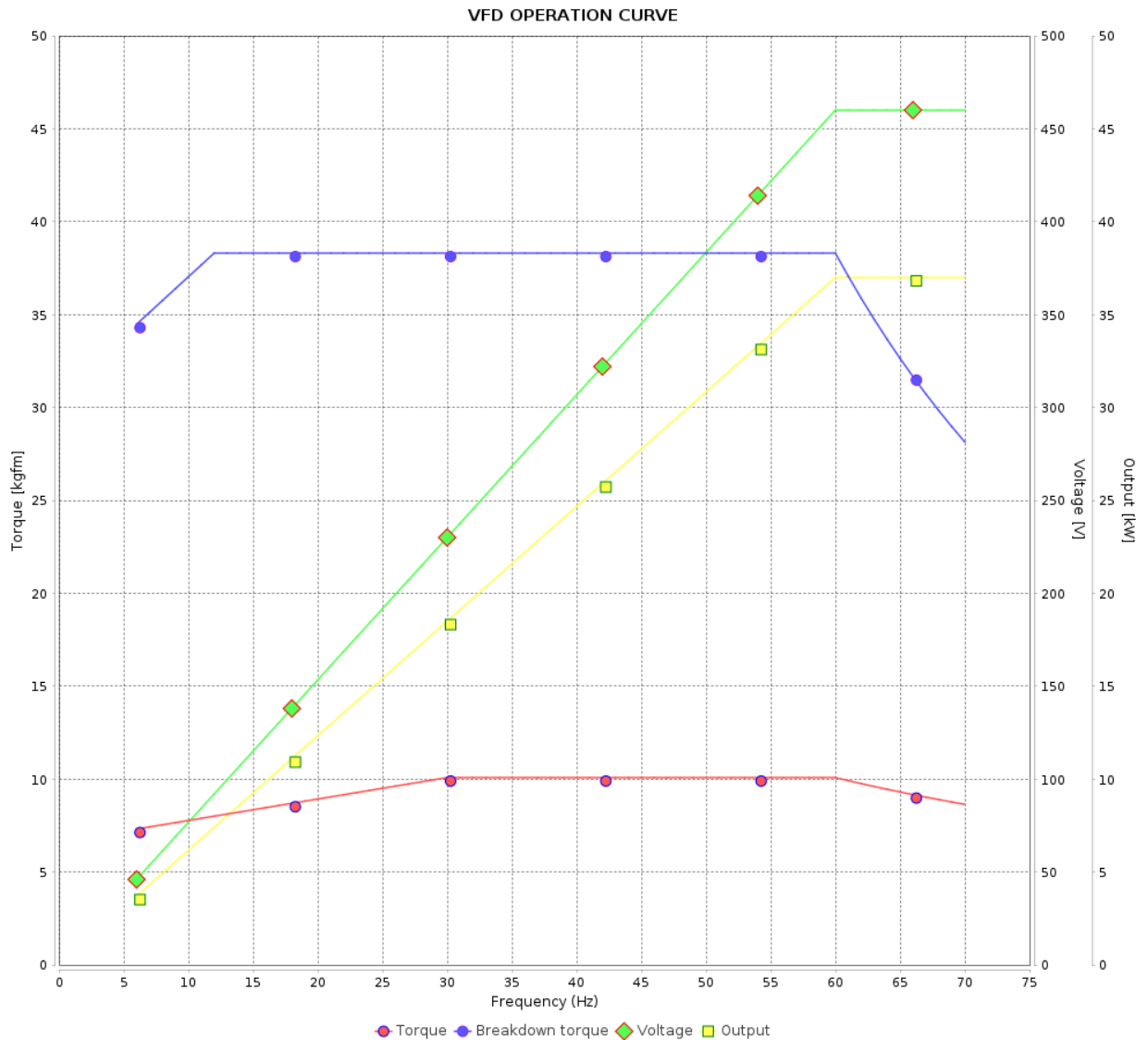
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Customer : Astraprom d.o.o.

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Moment of inertia (J) : 0.2368 kgm<sup>2</sup>  
 Duty cycle : S1  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 80 K  
 Design : N

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