

# DATA SHEET

## Three Phase Induction Motor - Squirrel Cage



Customer		: Astraprom d.o.o.			
Product line		: W22 IE3 Three-Phase		Product code : 12862439	
Frame	: 180M	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>	: 185 kg		
Protection degree	: IP55	Moment of inertia (J)	: 0.0968 kgm <sup>2</sup>		
Design	: N				
Output [kW]	22	22	22	22	22
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]	41.4/23.8	39.8/23.1	39.3	35.6	35.6
L. R. Amperes [A]	344/198	330/192	326	313	313
LRC [A]	8.3	8.3	8.3	8.8	8.8
No load current [A]	14.0/8.06	15.0/8.70	17.0	14.5	14.5
Rated speed [RPM]	2955	2960	2965	3565	3565
Slip [%]					
Rated torque [kgfm]	7.25	7.24	7.23	6.01	6.01
Locked rotor torque [%]	290	320	340	380	380
Breakdown torque [%]	290	320	340	370	370
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					
Noise level <sup>2</sup>	67.0 dB(A)	67.0 dB(A)	67.0 dB(A)	72.0 dB(A)	72.0 dB(A)
Efficiency (%)	25%				
	50%				
	75%				
	100%				
Power Factor	25%				
	50%				
	75%				
	100%				
Losses at normative operating points (speed;torque), in percentage of rated output power					
Losses (%)	P1 (0,9;1,0)	7.6	7.6	7.6	7.9
	P2 (0,5;1,0)	6.3	6.3	6.3	6.6
	P3 (0,25;1,0)	5.7	5.7	5.7	6.0
	P4 (0,9;0,5)	3.7	3.7	3.7	3.9
	P5 (0,5;0,5)	2.4	2.4	2.4	2.5
	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 : 6311 ZZ C3 Non drive end : 6211 ZZ C3	Foundation loads			
Sealing	: Oil Seal Lip Seal	Max. traction : 226 kgf			
Lubrication interval	: - -	Max. compression : 411 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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Notes

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### 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

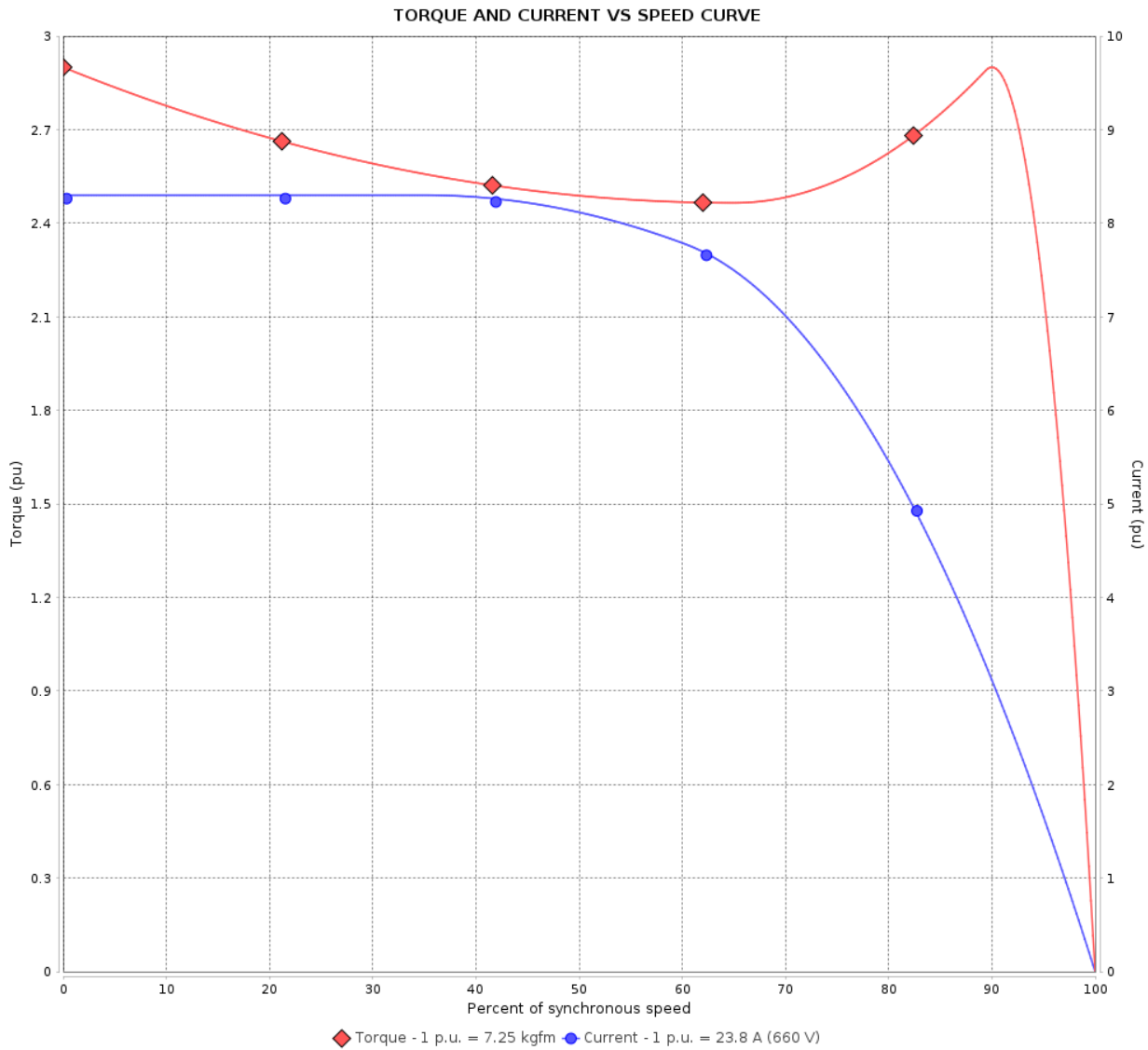
Three Phase Induction Motor - Squirrel Cage



Customer : Astraprom d.o.o.

Product line : W22 IE3 Three-Phase

Product code : 12862439



Performance : 380/660 V 50 Hz 2P

Rated current : 41.4/23.8 A  
 LRC : 8.3  
 Rated torque : 7.25 kgfm  
 Locked rotor torque : 290 %  
 Breakdown torque : 290 %  
 Rated speed : 2955 rpm

Moment of inertia (J) : 0.0968 kgm<sup>2</sup>  
 Duty cycle : S1  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 80 K  
 Design : N

Locked rotor time

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# TORQUE AND CURRENT VS SPEED CURVE

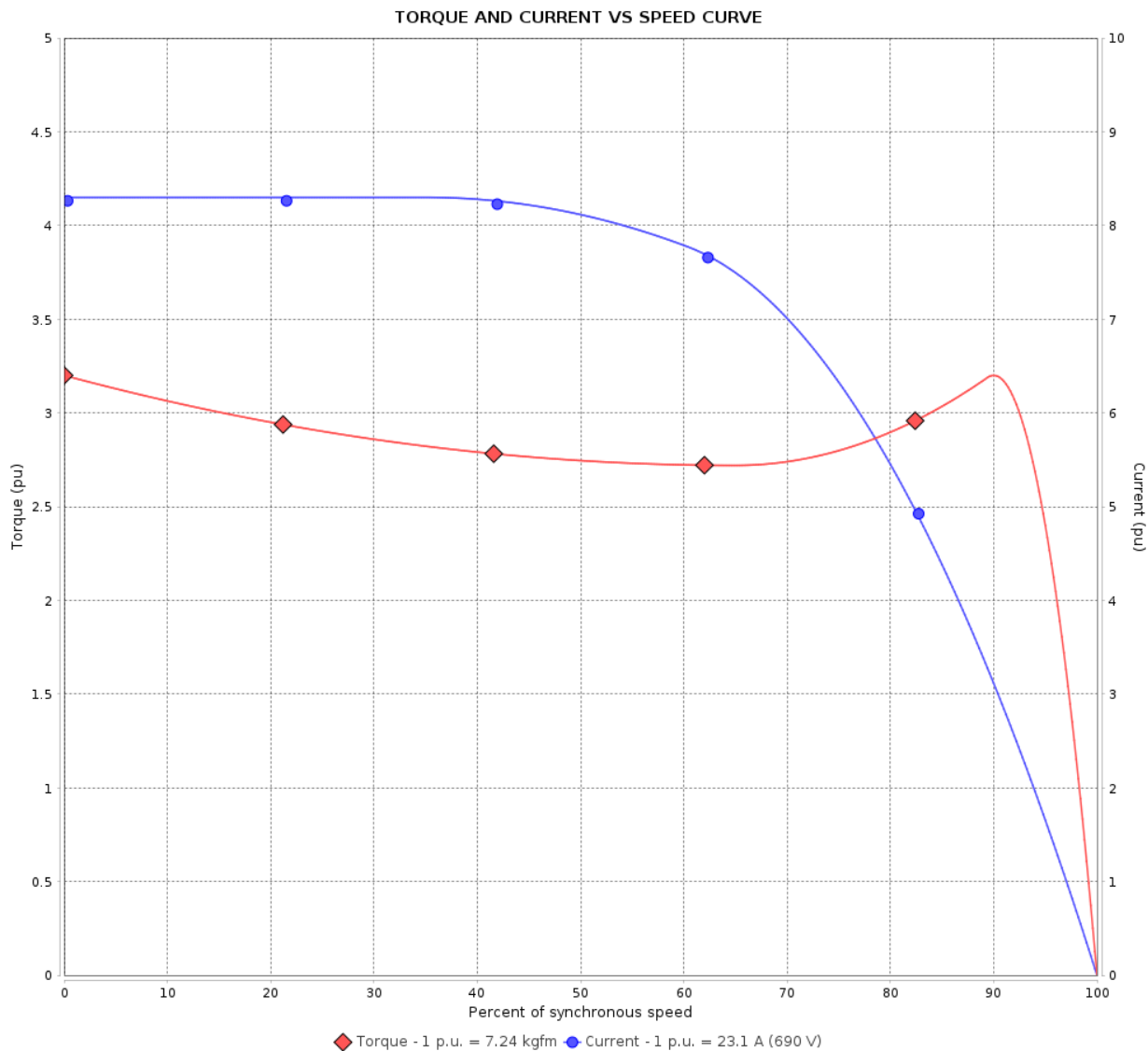


## Three Phase Induction Motor - Squirrel Cage

Customer : Astraprom d.o.o.

Product line : W22 IE3 Three-Phase

Product code : 12862439



Performance : 400/690 V 50 Hz 2P

Rated current : 39.8/23.1 A  
 LRC : 8.3  
 Rated torque : 7.24 kgfm  
 Locked rotor torque : 320 %  
 Breakdown torque : 320 %  
 Rated speed : 2960 rpm

Moment of inertia (J) : 0.0968 kgm<sup>2</sup>  
 Duty cycle : S1  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 80 K  
 Design : N

Locked rotor time

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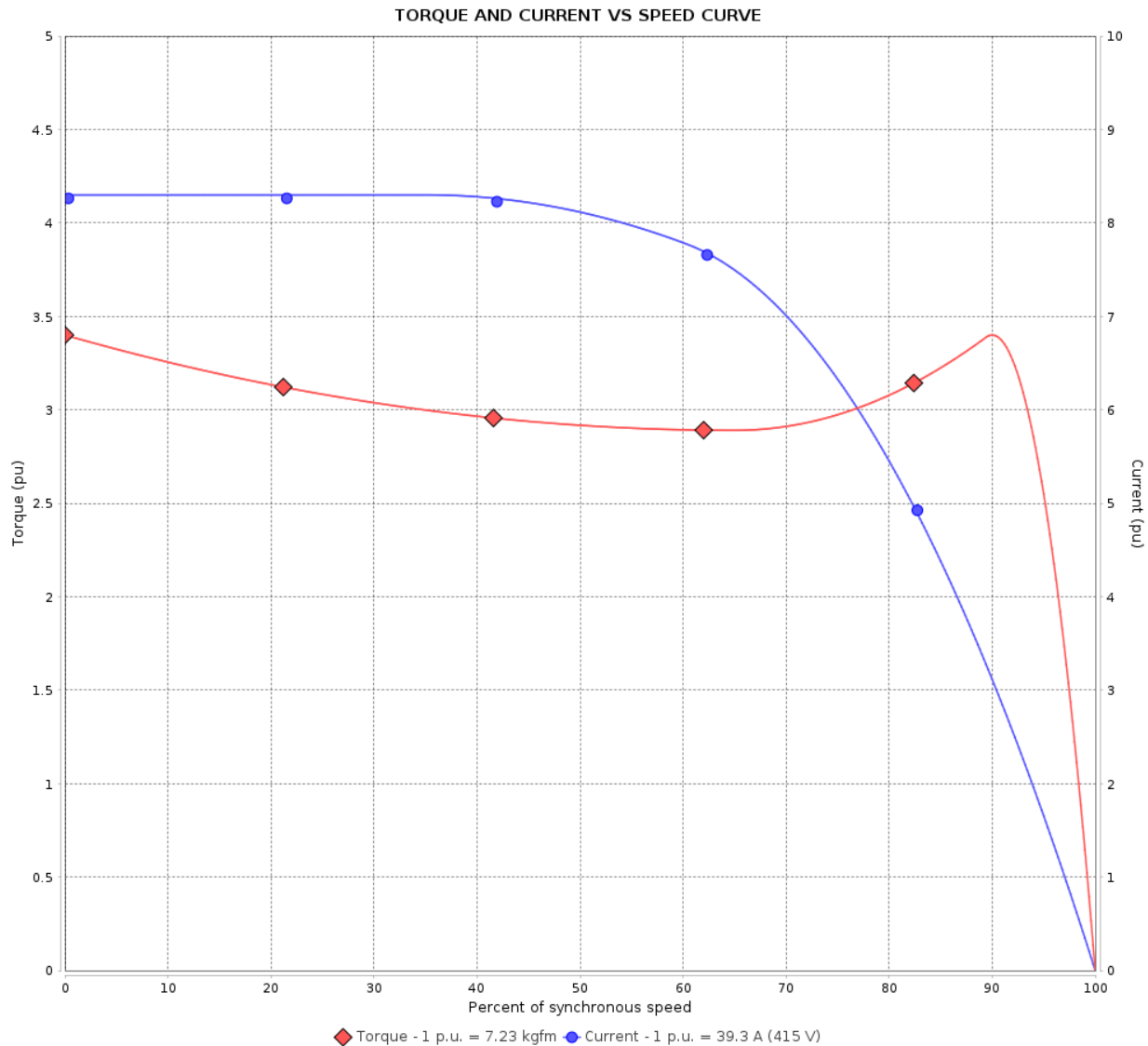
Three Phase Induction Motor - Squirrel Cage



Customer : Astraprom d.o.o.

Product line : W22 IE3 Three-Phase

Product code : 12862439



Performance : 415 V 50 Hz 2P

Rated current	: 39.3 A	Moment of inertia (J)	: 0.0968 kgm <sup>2</sup>
LRC	: 8.3	Duty cycle	: S1
Rated torque	: 7.23 kgfm	Insulation class	: F
Locked rotor torque	: 340 %	Service factor	: 1.00
Breakdown torque	: 340 %	Temperature rise	: 80 K
Rated speed	: 2965 rpm	Design	: N

Locked rotor time

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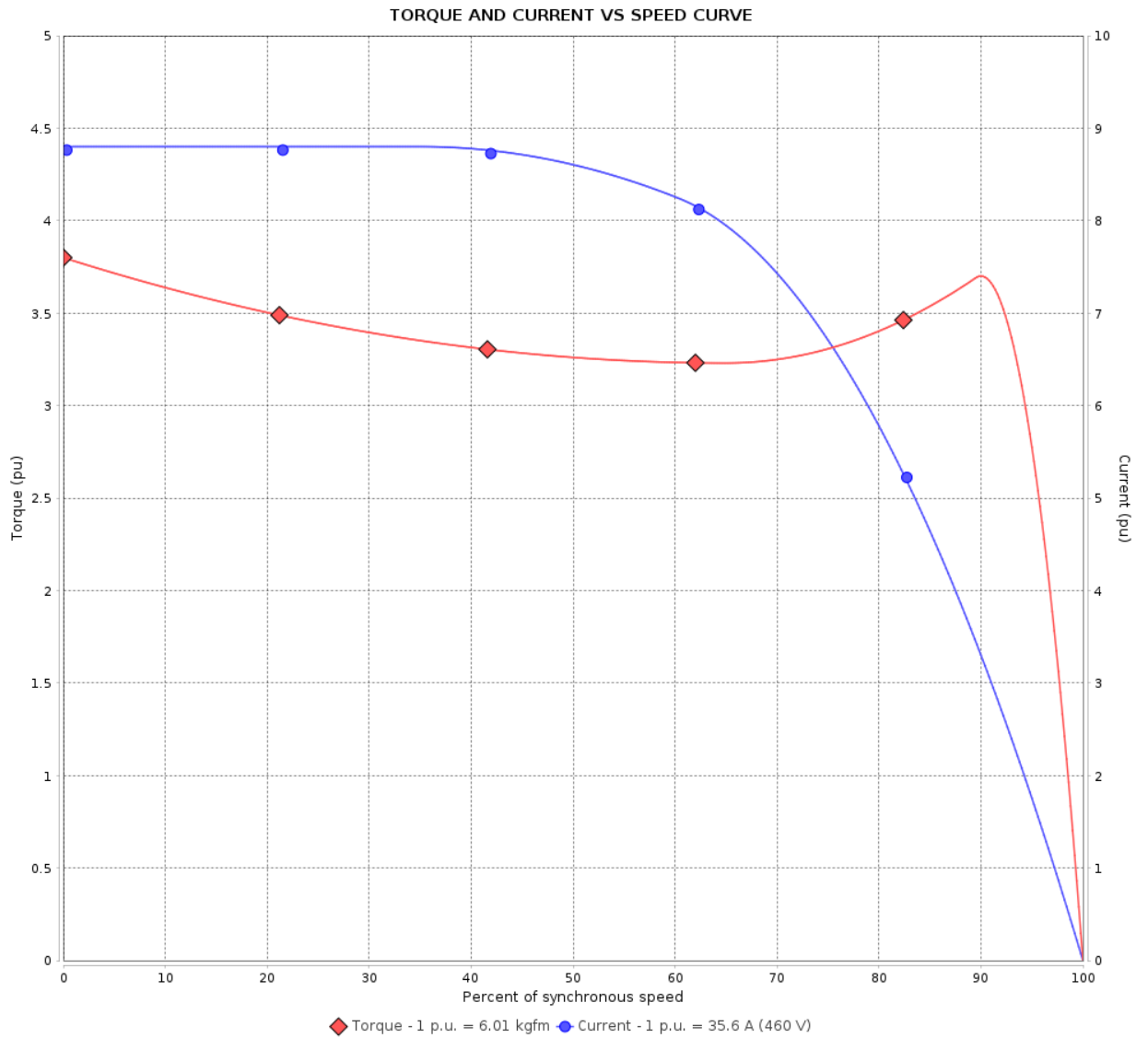
## Three Phase Induction Motor - Squirrel Cage

Customer : Astraprom d.o.o.

Product line : W22 IE3 Three-Phase

Product code :

12862439



Performance : 460 V 60 Hz 2P

Rated current	: 35.6 A	Moment of inertia (J)	: 0.0968 kgm <sup>2</sup>
LRC	: 8.8	Duty cycle	: S1
Rated torque	: 6.01 kgfm	Insulation class	: F
Locked rotor torque	: 380 %	Service factor	: 1.00
Breakdown torque	: 370 %	Temperature rise	: 80 K
Rated speed	: 3565 rpm	Design	: N

Locked rotor time

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# LOAD PERFORMANCE CURVE

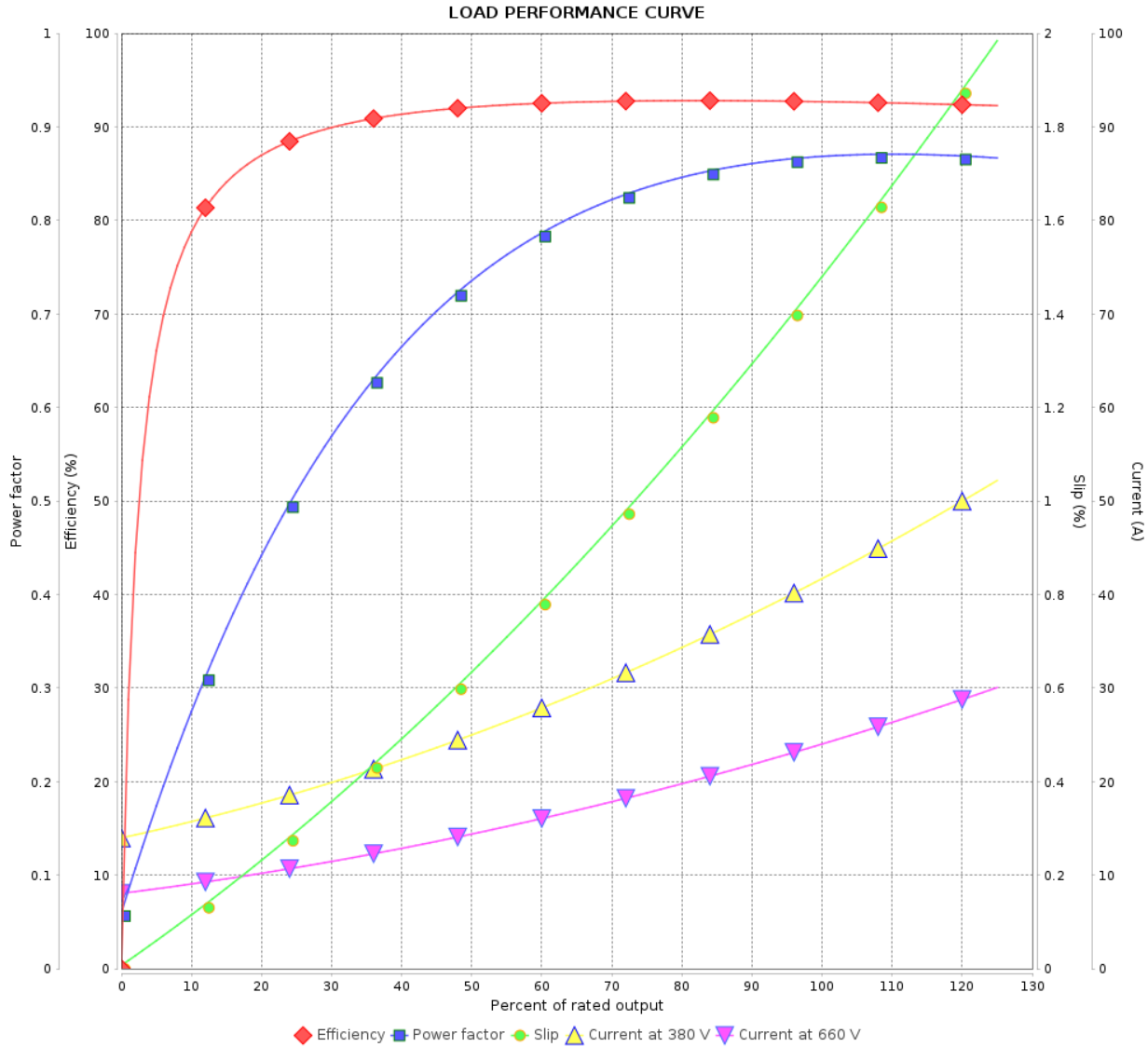
Three Phase Induction Motor - Squirrel Cage



Customer : Astraprom d.o.o.

Product line : W22 IE3 Three-Phase

Product code : 12862439



Performance : 380/660 V 50 Hz 2P

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 LRC : 8.3  
 Rated torque : 7.25 kgfm  
 Locked rotor torque : 290 %  
 Breakdown torque : 290 %  
 Rated speed : 2955 rpm

Moment of inertia (J) : 0.0968 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

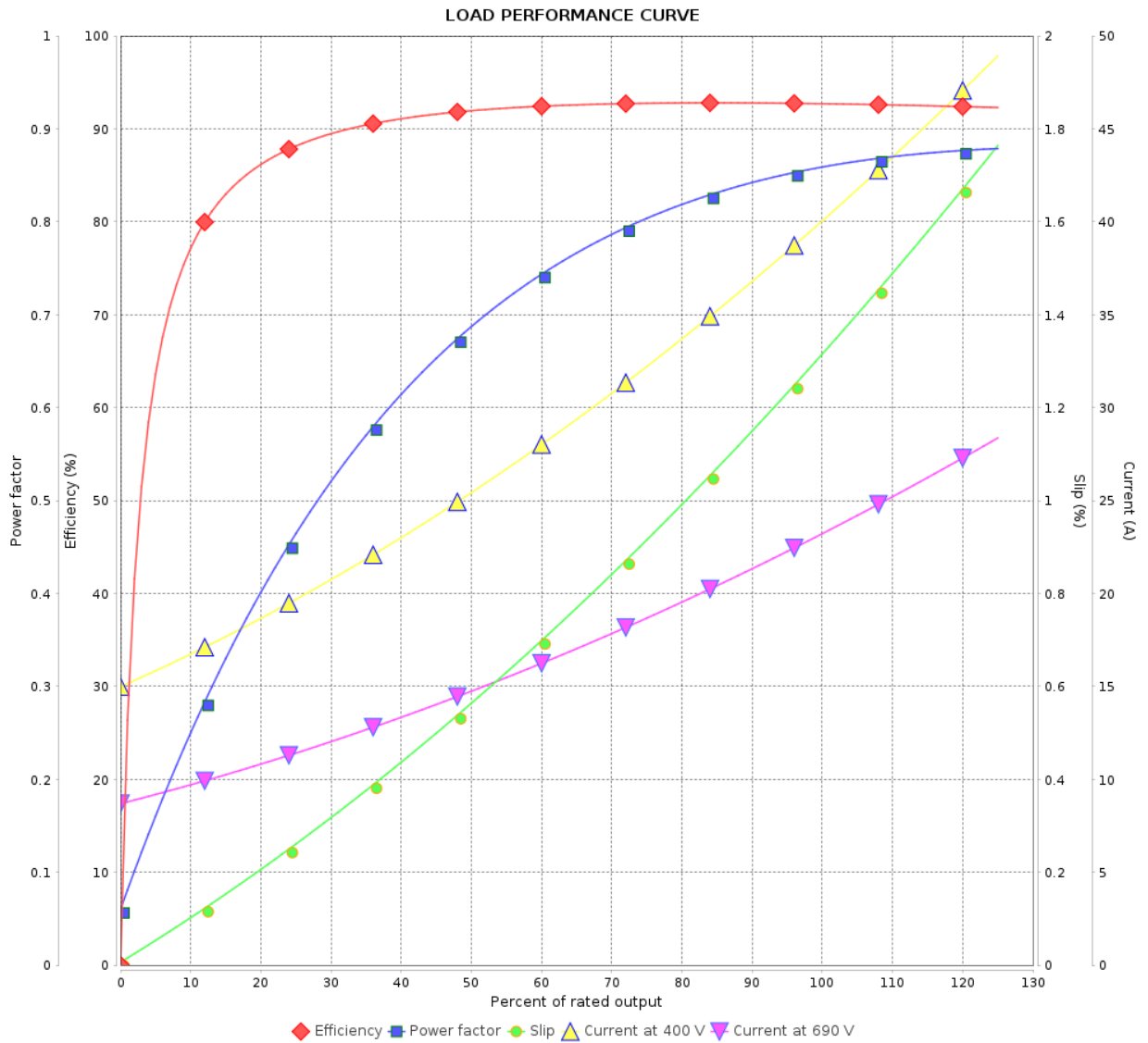


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Product code :

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Performance : 400/690 V 50 Hz 2P

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 Duty cycle : S1  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 80 K  
 Design : N

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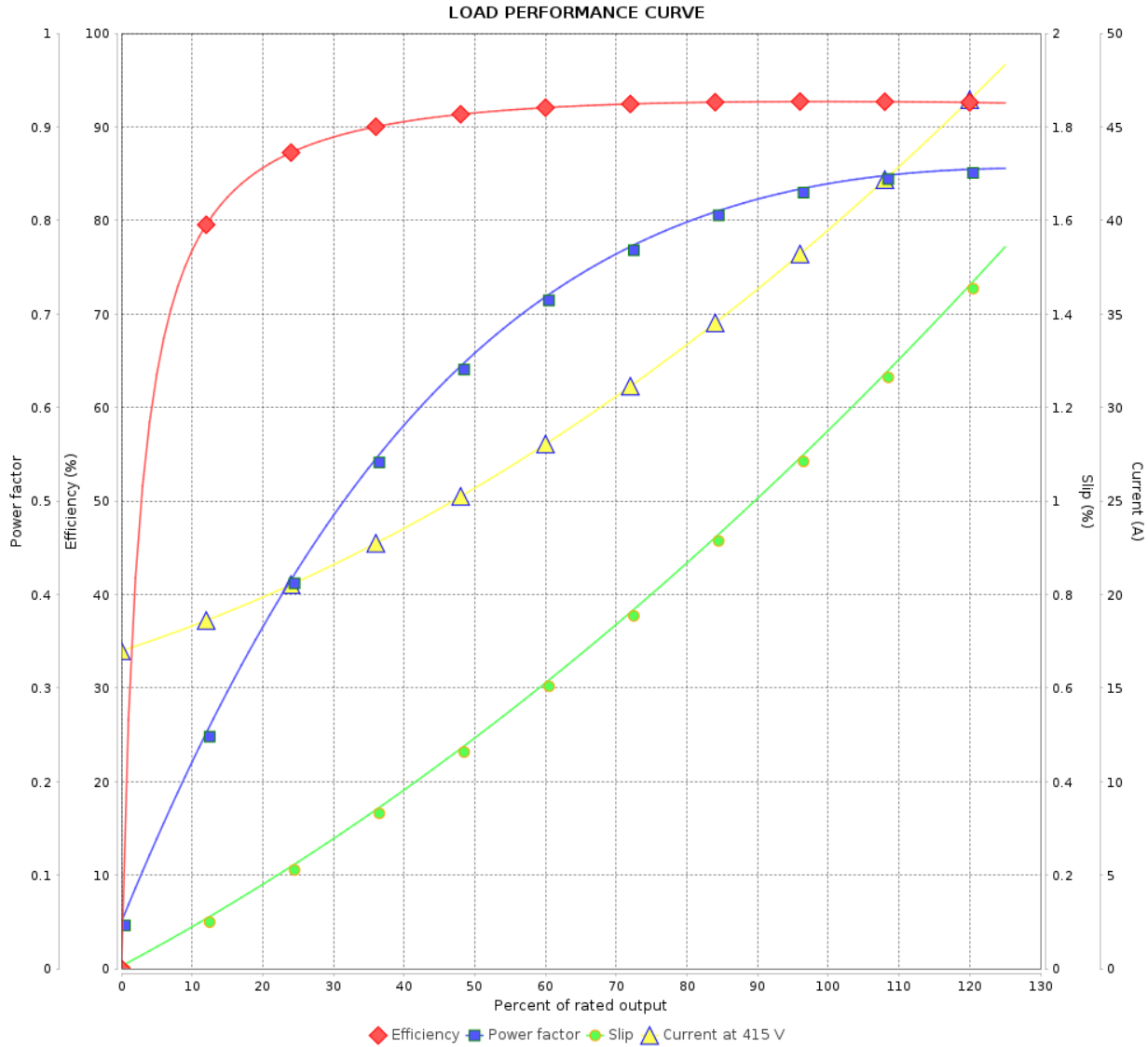
Three Phase Induction Motor - Squirrel Cage



Customer : Astraprom d.o.o.

Product line : W22 IE3 Three-Phase

Product code : 12862439



Performance : 415 V 50 Hz 2P

Rated current	: 39.3 A	Moment of inertia (J)	: 0.0968 kgm <sup>2</sup>
LRC	: 8.3	Duty cycle	: S1
Rated torque	: 7.23 kgfm	Insulation class	: F
Locked rotor torque	: 340 %	Service factor	: 1.00
Breakdown torque	: 340 %	Temperature rise	: 80 K
Rated speed	: 2965 rpm	Design	: N

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# LOAD PERFORMANCE CURVE

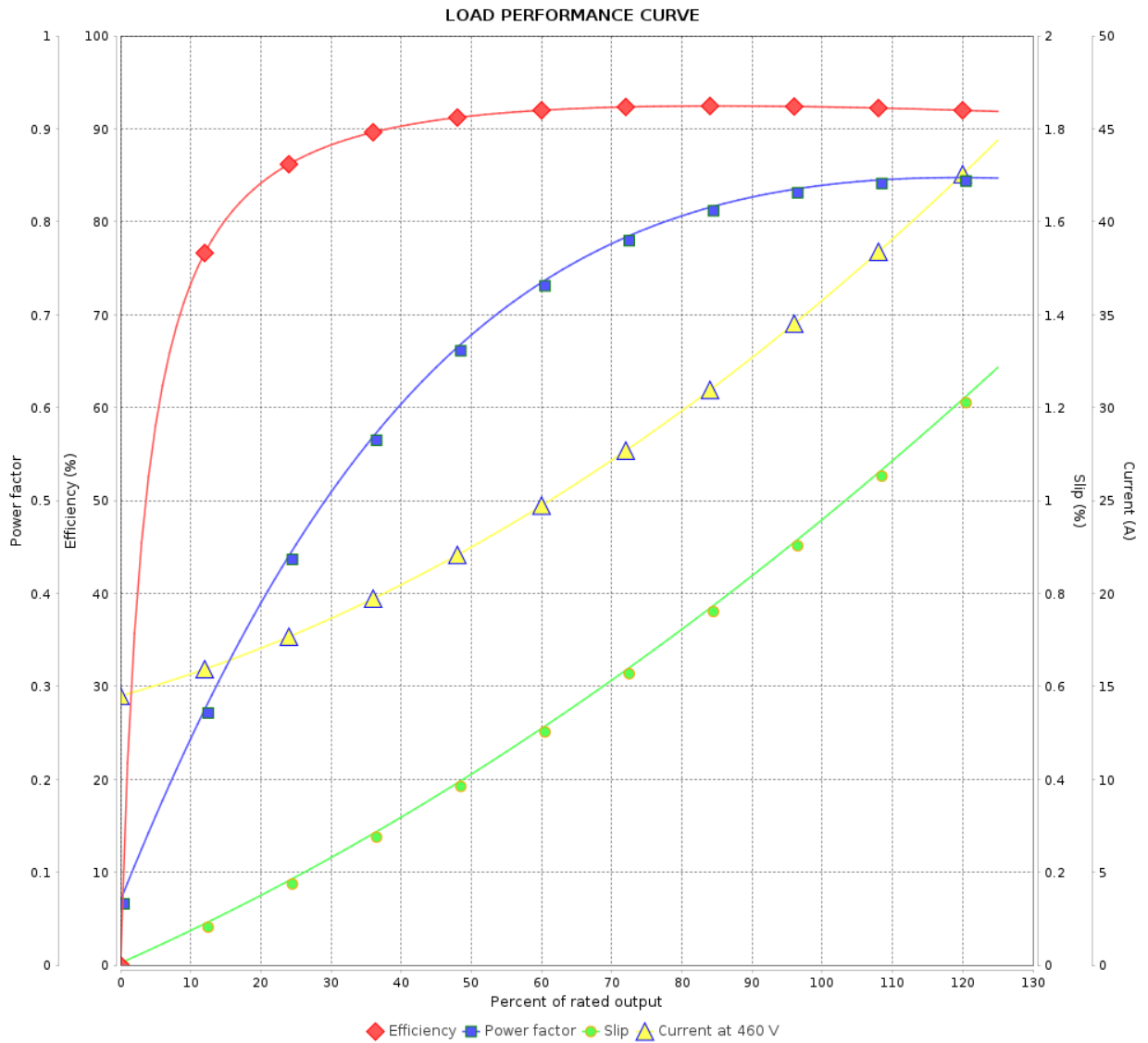
## Three Phase Induction Motor - Squirrel Cage



Customer : Astraprom d.o.o.

Product line : W22 IE3 Three-Phase

Product code : 12862439



Performance : 460 V 60 Hz 2P

Rated current : 35.6 A  
 LRC : 8.8  
 Rated torque : 6.01 kgfm  
 Locked rotor torque : 380 %  
 Breakdown torque : 370 %  
 Rated speed : 3565 rpm

Moment of inertia (J) : 0.0968 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

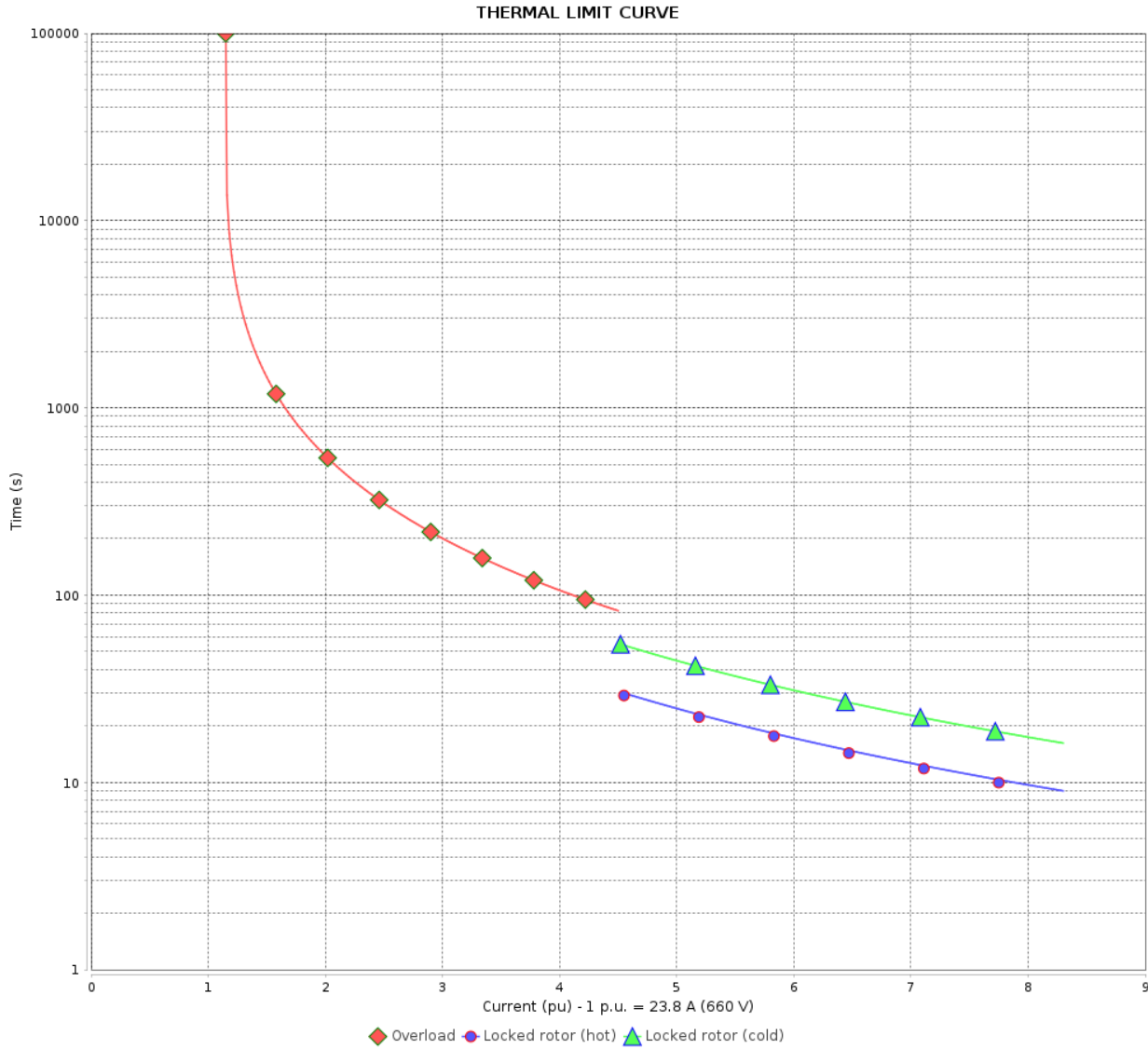
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 Rated speed : 2955 rpm

Moment of inertia (J) : 0.0968 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

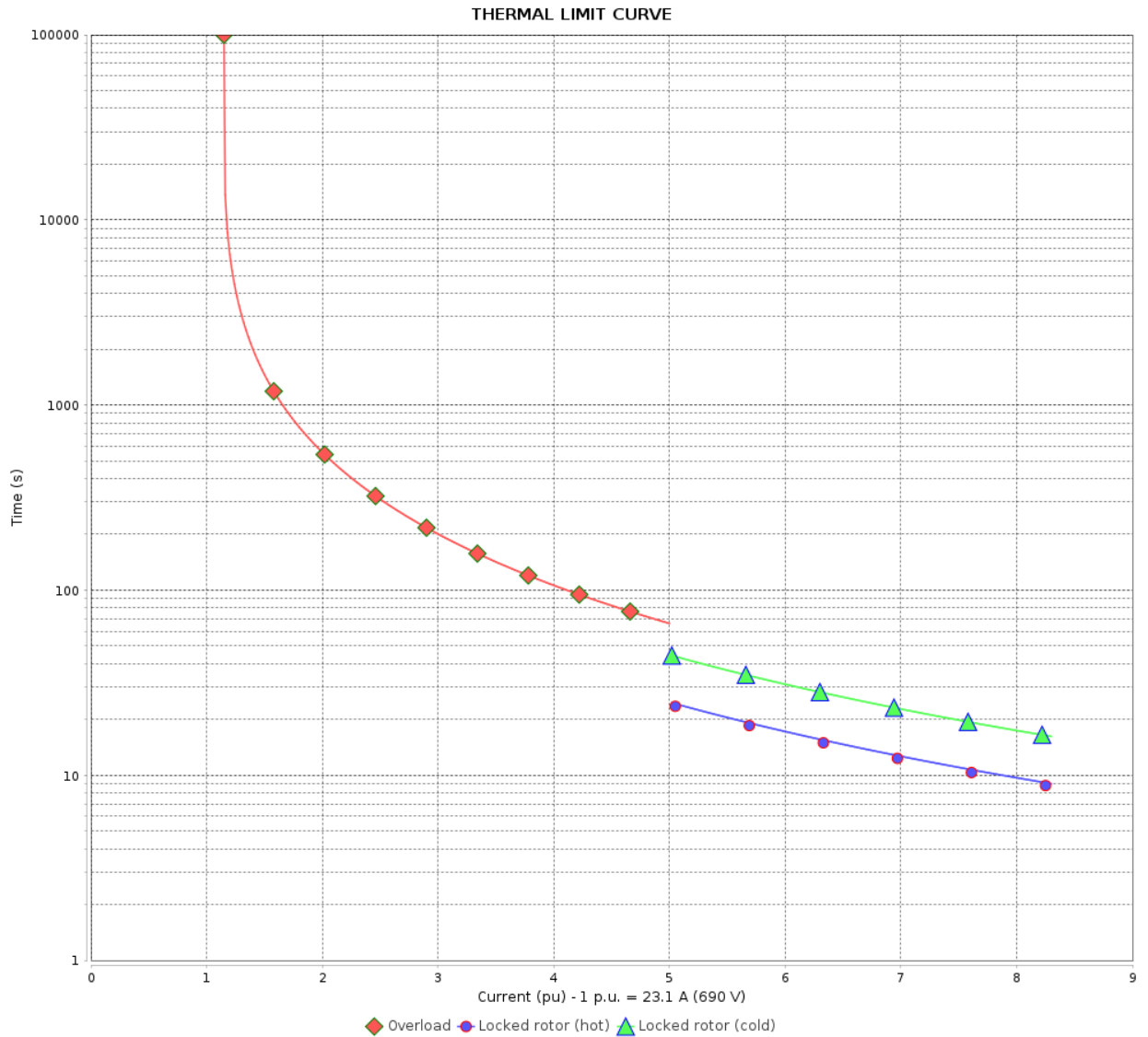
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 Duty cycle : S1  
 Insulation class : F  
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 Temperature rise : 80 K  
 Design : N

Heating constant

Cooling constant

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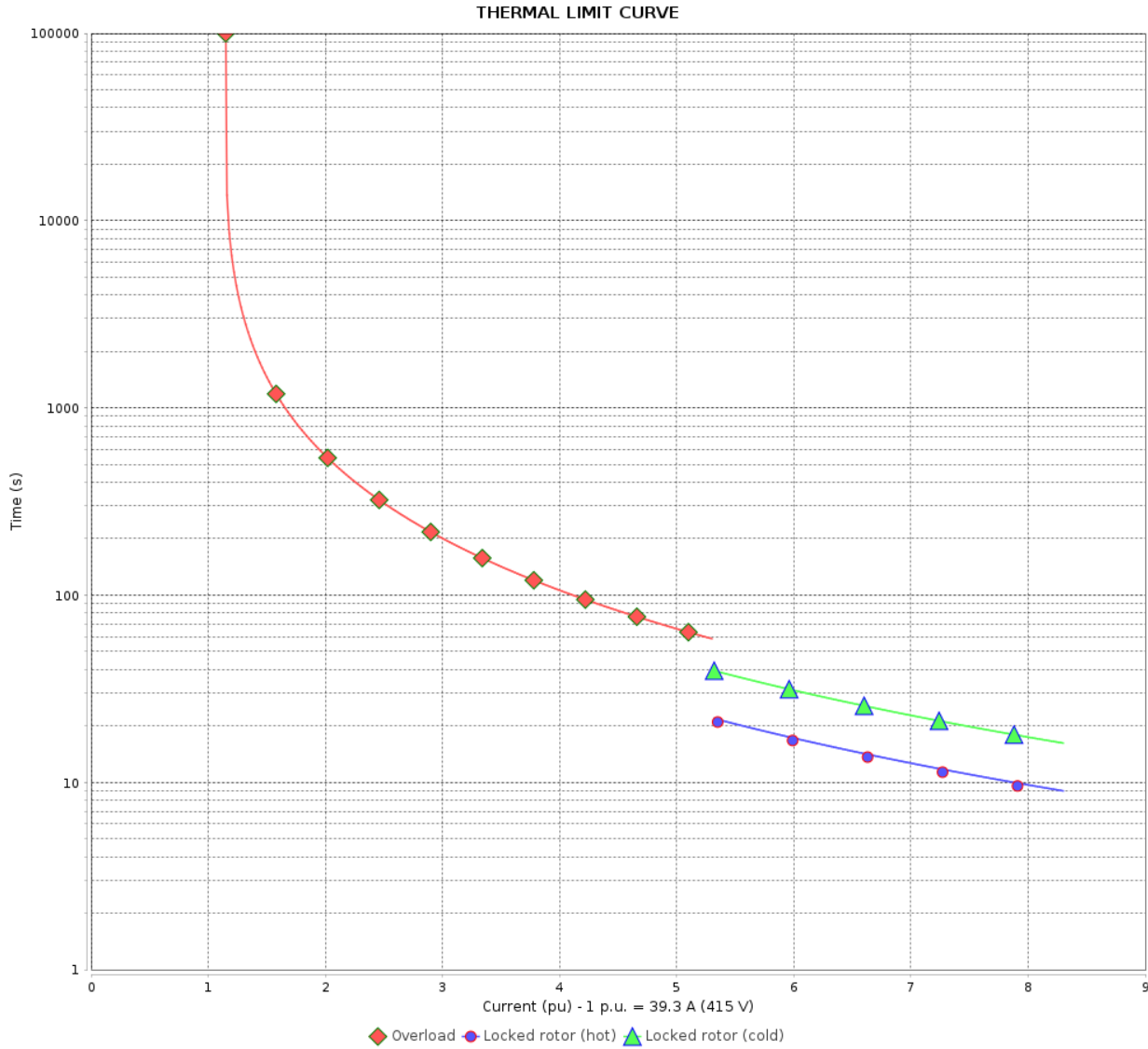
Three Phase Induction Motor - Squirrel Cage



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Product line : W22 IE3 Three-Phase

Product code : 12862439



Performance : 415 V 50 Hz 2P

Rated current	: 39.3 A	Moment of inertia (J)	: 0.0968 kgm <sup>2</sup>
LRC	: 8.3	Duty cycle	: S1
Rated torque	: 7.23 kgfm	Insulation class	: F
Locked rotor torque	: 340 %	Service factor	: 1.00
Breakdown torque	: 340 %	Temperature rise	: 80 K
Rated speed	: 2965 rpm	Design	: N

Heating constant

Cooling constant

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# THERMAL LIMIT CURVE

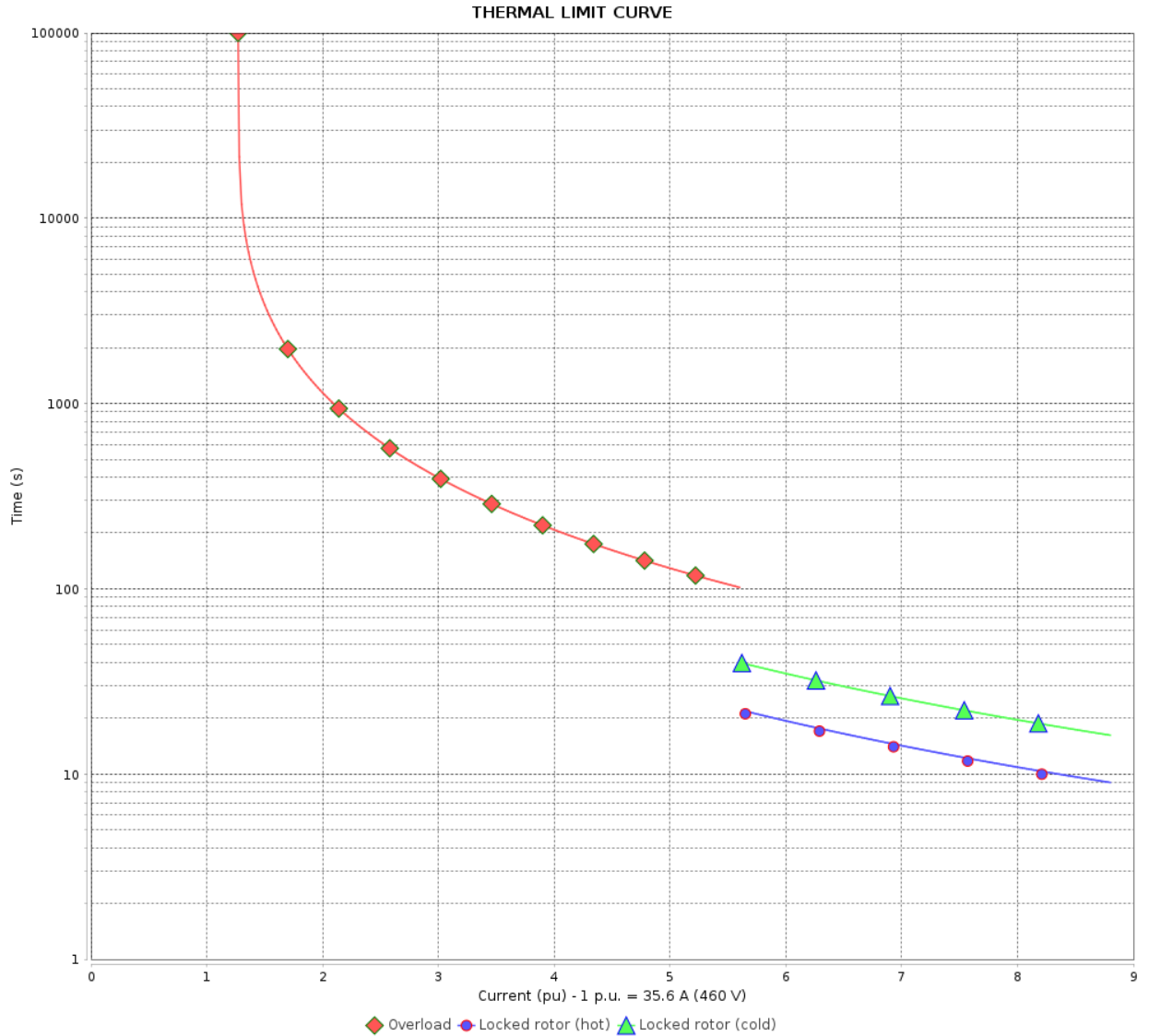
## Three Phase Induction Motor - Squirrel Cage



Customer : Astraprom d.o.o.

Product line : W22 IE3 Three-Phase

Product code : 12862439



Performance : 460 V 60 Hz 2P

Rated current : 35.6 A  
 LRC : 8.8  
 Rated torque : 6.01 kgfm  
 Locked rotor torque : 380 %  
 Breakdown torque : 370 %  
 Rated speed : 3565 rpm

Moment of inertia (J) : 0.0968 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

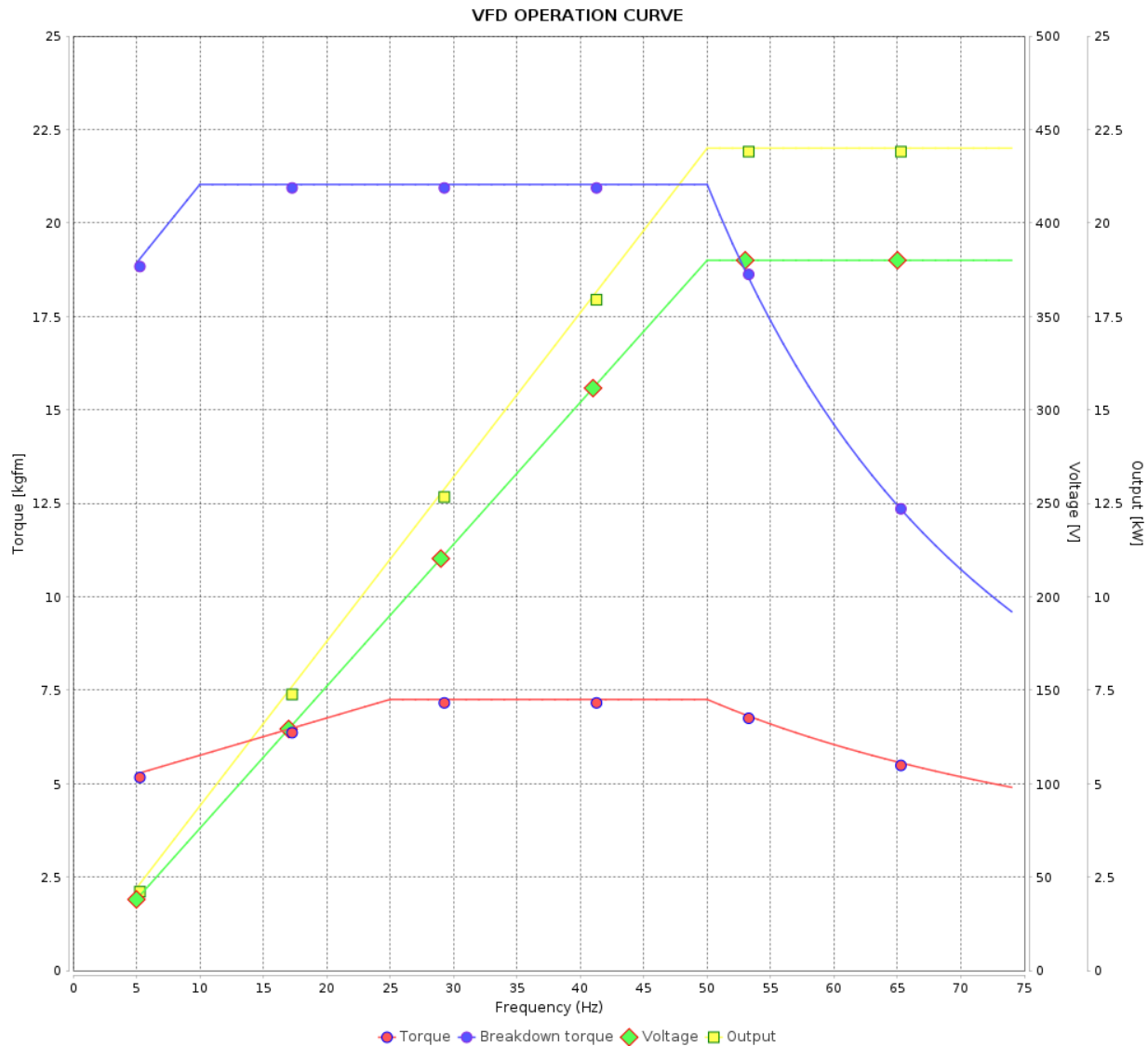
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 Insulation class : F  
 Service factor : 1.00  
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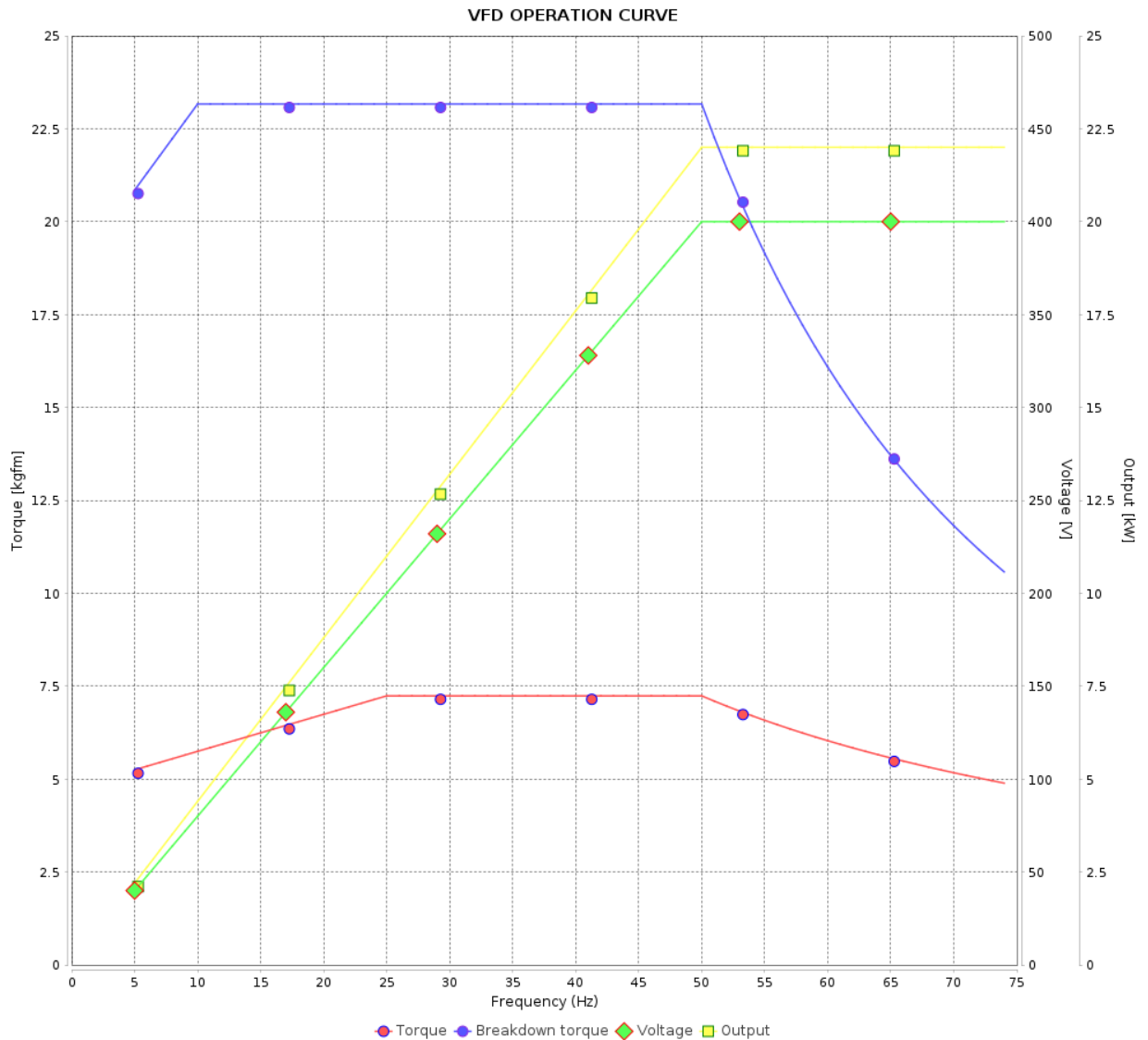
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Product code : 12862439



Performance : 400/690 V 50 Hz 2P

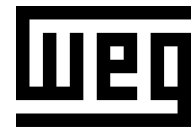
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 Duty cycle : S1  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 80 K  
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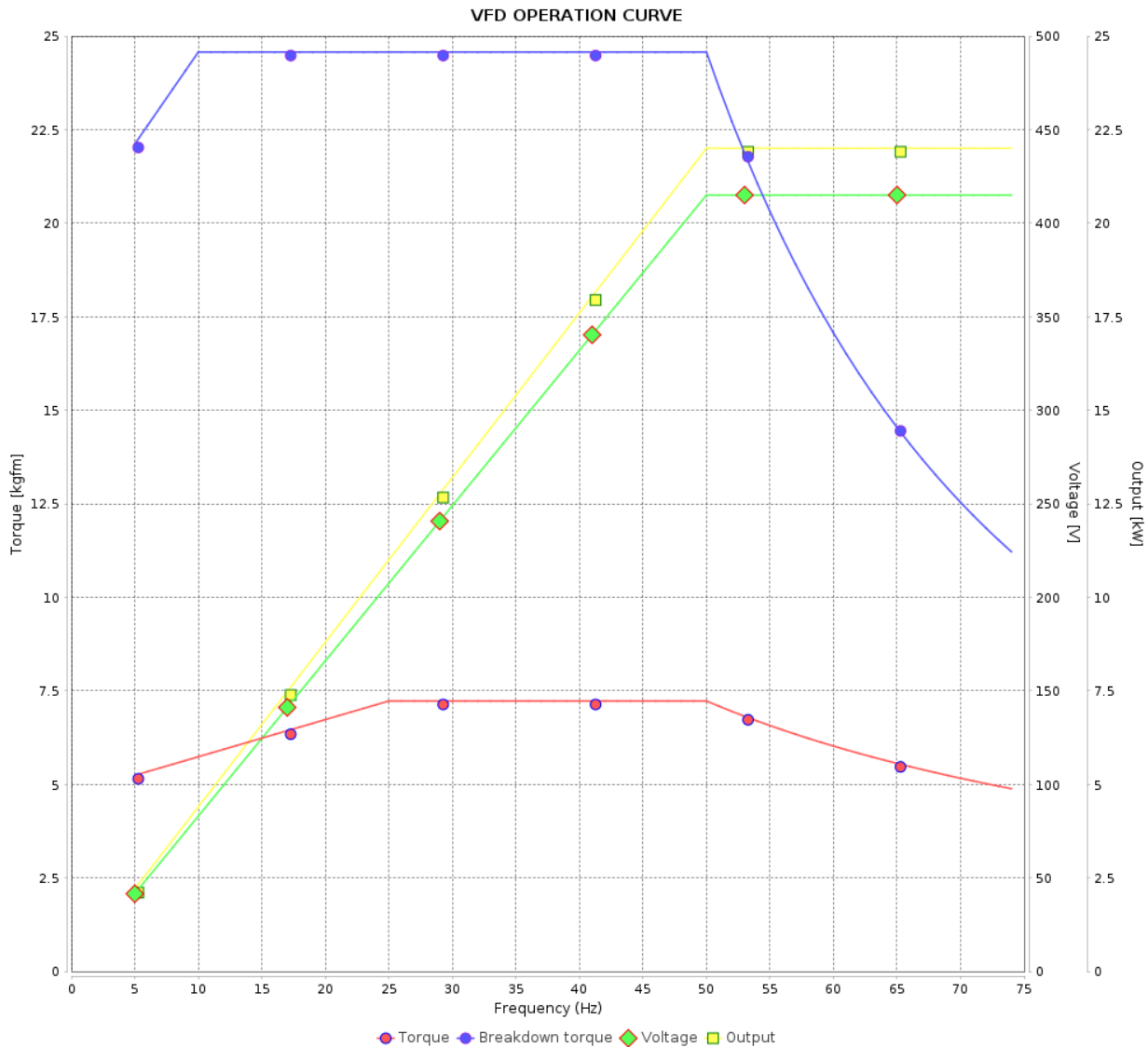
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Performance : 415 V 50 Hz 2P

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LRC	: 8.3	Duty cycle	: S1
Rated torque	: 7.23 kgfm	Insulation class	: F
Locked rotor torque	: 340 %	Service factor	: 1.00
Breakdown torque	: 340 %	Temperature rise	: 80 K
Rated speed	: 2965 rpm	Design	: N

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# VFD OPERATION CURVE

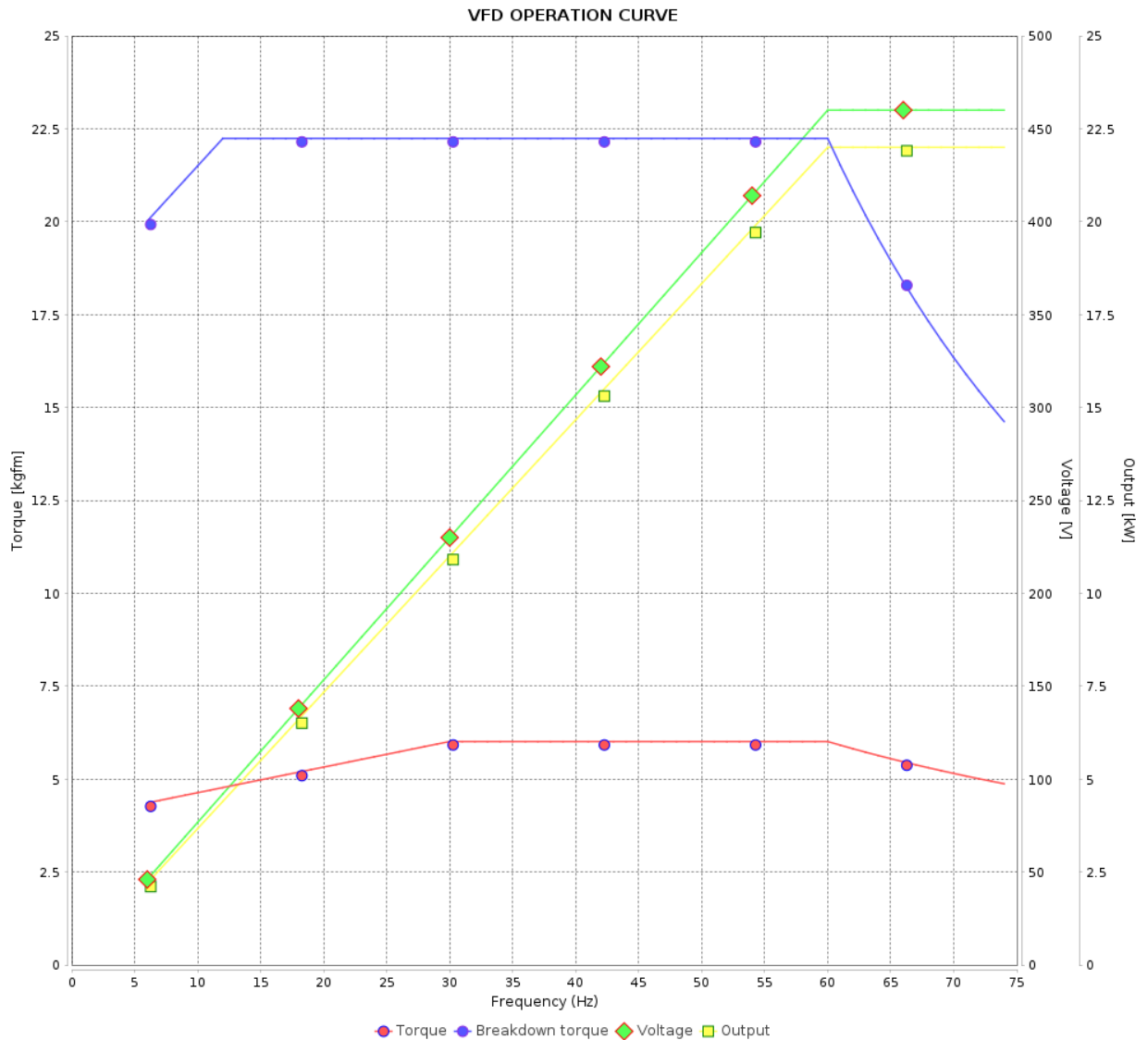
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Performance : 460 V 60 Hz 2P

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 Locked rotor torque : 380 %  
 Breakdown torque : 370 %  
 Rated speed : 3565 rpm

Moment of inertia (J) : 0.0968 kgm<sup>2</sup>  
 Duty cycle : S1  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 80 K  
 Design : N

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