

# DATA SHEET

## Three Phase Induction Motor - Squirrel Cage



Customer		: Astraprom d.o.o.			
Product line		: W22		Product code : 12868146	
Frame	: 90S	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>3</sup>	: 20.4 kg		
Protection degree	: IP55	Moment of inertia (J)	: 0.0055 kgm <sup>2</sup>		
Design	: N				
Output [kW]	1.1	1.1	1.1	1.1	1.1
Poles	4	4	4	4	4
Frequency [Hz]	50	50	50	50	60
Rated voltage [V]	220/380	230/400	240/415	460	
Rated current [A]	4.18/2.42	4.16/2.39	4.08/2.36	2.07	
L. R. Amperes [A]	26.3/15.2	27.4/15.8	29.0/16.8	16.4	
LRC [A]	6.3	6.6	7.1	7.9	
No load current [A]	2.07/1.20	2.43/1.40	2.59/1.50	1.30	
Rated speed [RPM]	1435	1445	1450	1755	
Slip [%]	4.33	3.67	3.33	2.50	
Rated torque [kgfm]	0.747	0.741	0.739	0.610	
Locked rotor torque [%]	210	229	250	270	
Breakdown torque [%]	240	270	300	340	
Service factor	1.00	1.00	1.00	1.00	
Temperature rise	80 K	80 K	80 K	80 K	
Locked rotor time	30s (cold) 17s (hot)	28s (cold) 16s (hot)	27s (cold) 15s (hot)	28s (cold) 16s (hot)	
Noise level <sup>2</sup>	49.0 dB(A)	49.0 dB(A)	49.0 dB(A)	51.0 dB(A)	
Efficiency (%)	25%				
	50%	84.0	83.0	82.0	80.0
	75%	84.1	84.1	84.1	84.0
	100%	84.1	84.1	84.1	86.5
Power Factor	25%				
	50%	0.64	0.59	0.55	0.57
	75%	0.76	0.72	0.69	0.70
	100%	0.82	0.79	0.77	0.77
Losses at normative operating points (speed;torque), in percentage of rated output power					
Losses (%)	P1 (0,9;1,0)	19.1	19.1	19.1	15.8
	P2 (0,5;1,0)	18.5	18.5	18.5	15.2
	P3 (0,25;1,0)	17.1	17.1	17.1	14.1
	P4 (0,9;0,5)	8.8	8.8	8.8	7.3
	P5 (0,5;0,5)	6.9	6.9	6.9	5.7
	P6 (0,5;0,25)	4.7	4.7	4.7	3.9
	P7 (0,25;0,25)	3.7	3.7	3.7	3.0
Bearing type	: Drive end 6205 ZZ	Non drive end 6204 ZZ	Foundation loads		
Sealing	: Oil Seal	Lip Seal	Max. traction	: 49 kgf	
Lubrication interval	: -	-	Max. compression	: 69 kgf	
Lubricant amount	: -	-			
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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Customer : Astraprom d.o.o.

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## Three Phase Induction Motor - Squirrel Cage

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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

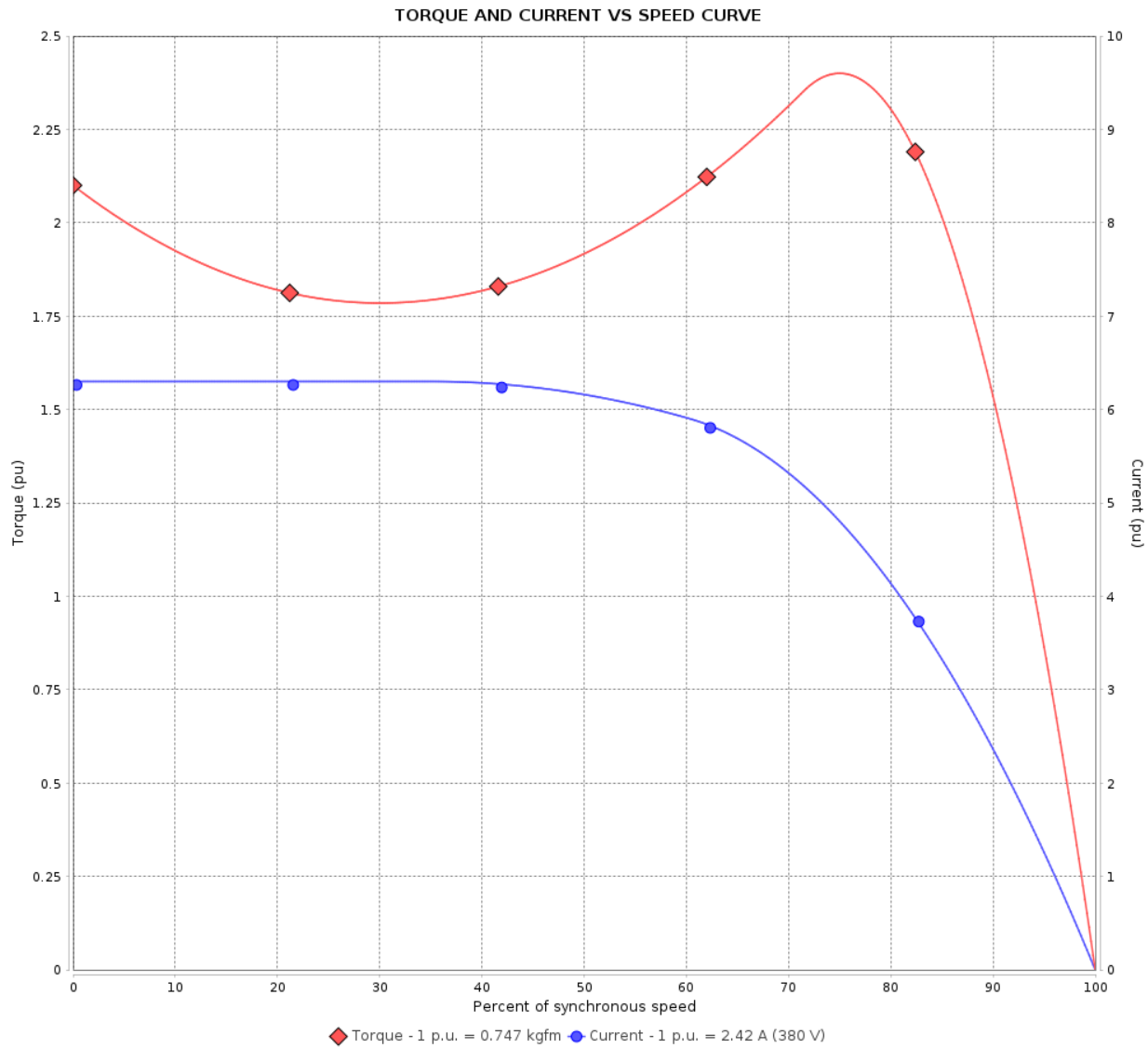
Three Phase Induction Motor - Squirrel Cage



Customer : Astraprom d.o.o.

Product line : W22

Product code : 12868146



Performance : 220/380 V 50 Hz 4P

Rated current	: 4.18/2.42 A	Moment of inertia (J)	: 0.0055 kgm <sup>2</sup>
LRC	: 6.3	Duty cycle	: S1
Rated torque	: 0.747 kgfm	Insulation class	: F
Locked rotor torque	: 210 %	Service factor	: 1.00
Breakdown torque	: 240 %	Temperature rise	: 80 K
Rated speed	: 1435 rpm	Design	: N

Locked rotor time : 30s (cold) 17s (hot)

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# TORQUE AND CURRENT VS SPEED CURVE

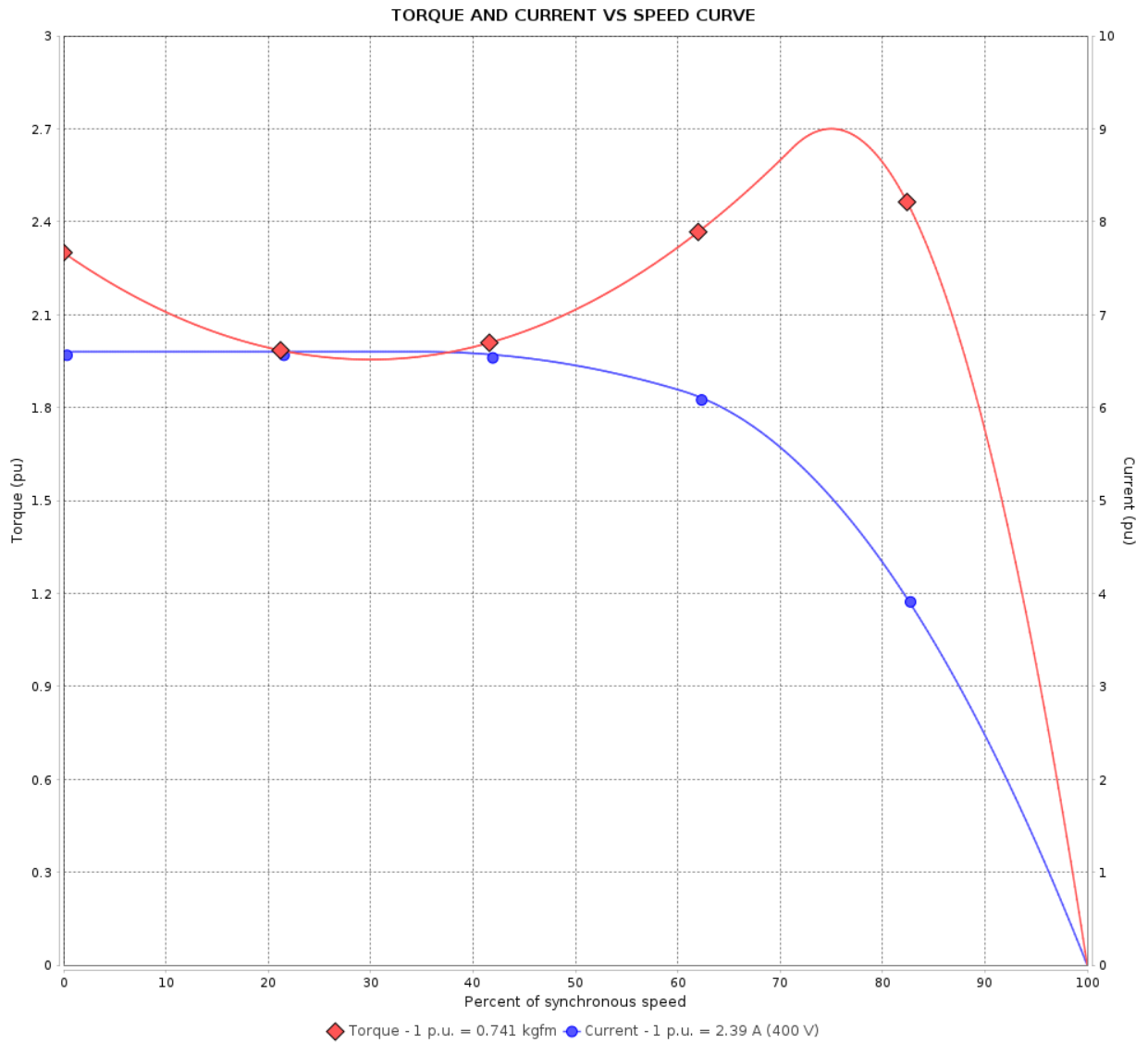


## Three Phase Induction Motor - Squirrel Cage

Customer : Astraprom d.o.o.

Product line : W22

Product code : 12868146



Performance : 230/400 V 50 Hz 4P

Rated current	: 4.16/2.39 A	Moment of inertia (J)	: 0.0055 kgm <sup>2</sup>
LRC	: 6.6	Duty cycle	: S1
Rated torque	: 0.741 kgfm	Insulation class	: F
Locked rotor torque	: 229 %	Service factor	: 1.00
Breakdown torque	: 270 %	Temperature rise	: 80 K
Rated speed	: 1445 rpm	Design	: N

Locked rotor time : 28s (cold) 16s (hot)

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# TORQUE AND CURRENT VS SPEED CURVE

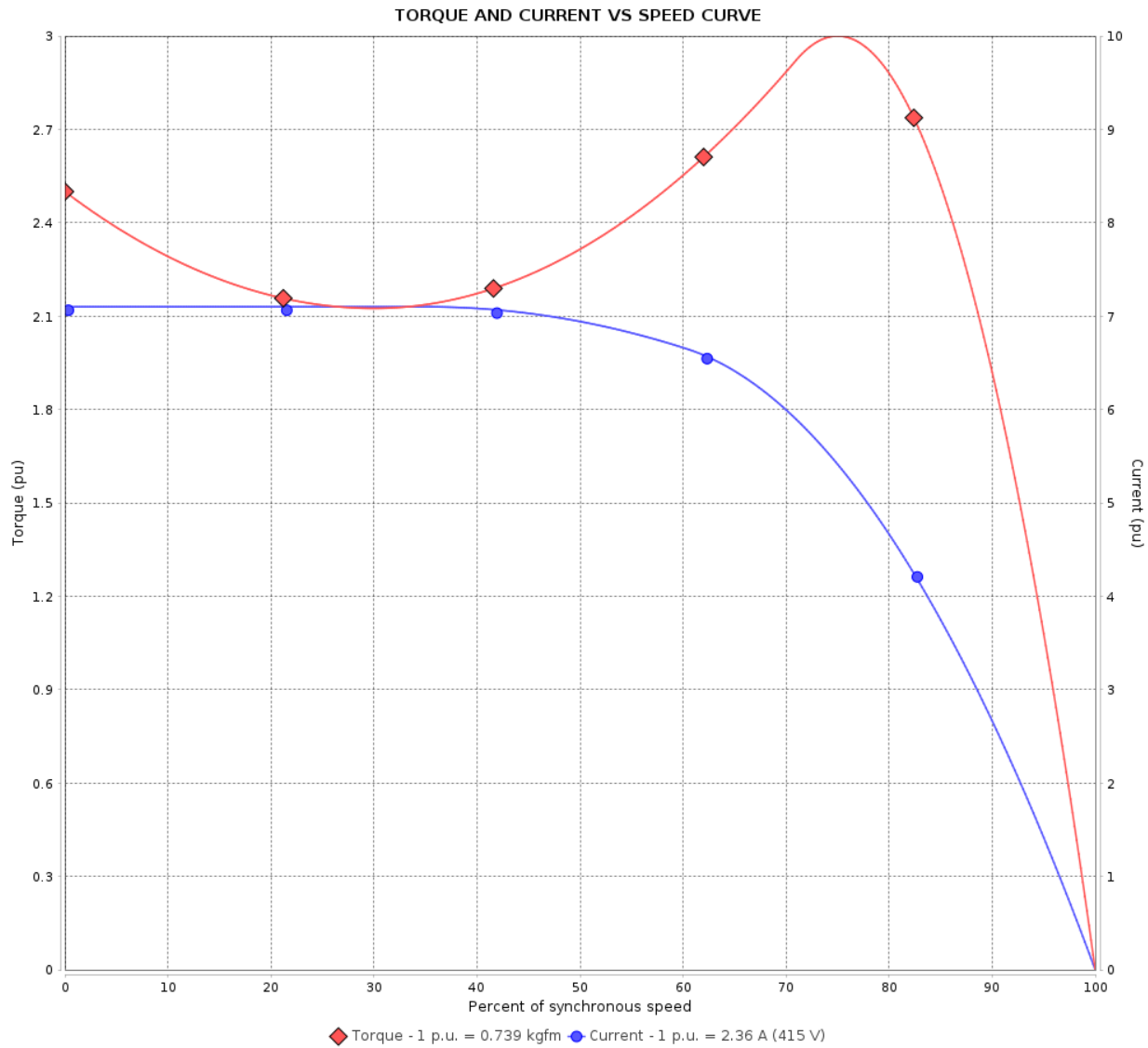
Three Phase Induction Motor - Squirrel Cage



Customer : Astraprom d.o.o.

Product line : W22

Product code : 12868146



Performance : 240/415 V 50 Hz 4P

Rated current	: 4.08/2.36 A	Moment of inertia (J)	: 0.0055 kgm <sup>2</sup>
LRC	: 7.1	Duty cycle	: S1
Rated torque	: 0.739 kgfm	Insulation class	: F
Locked rotor torque	: 250 %	Service factor	: 1.00
Breakdown torque	: 300 %	Temperature rise	: 80 K
Rated speed	: 1450 rpm	Design	: N

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

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# TORQUE AND CURRENT VS SPEED CURVE

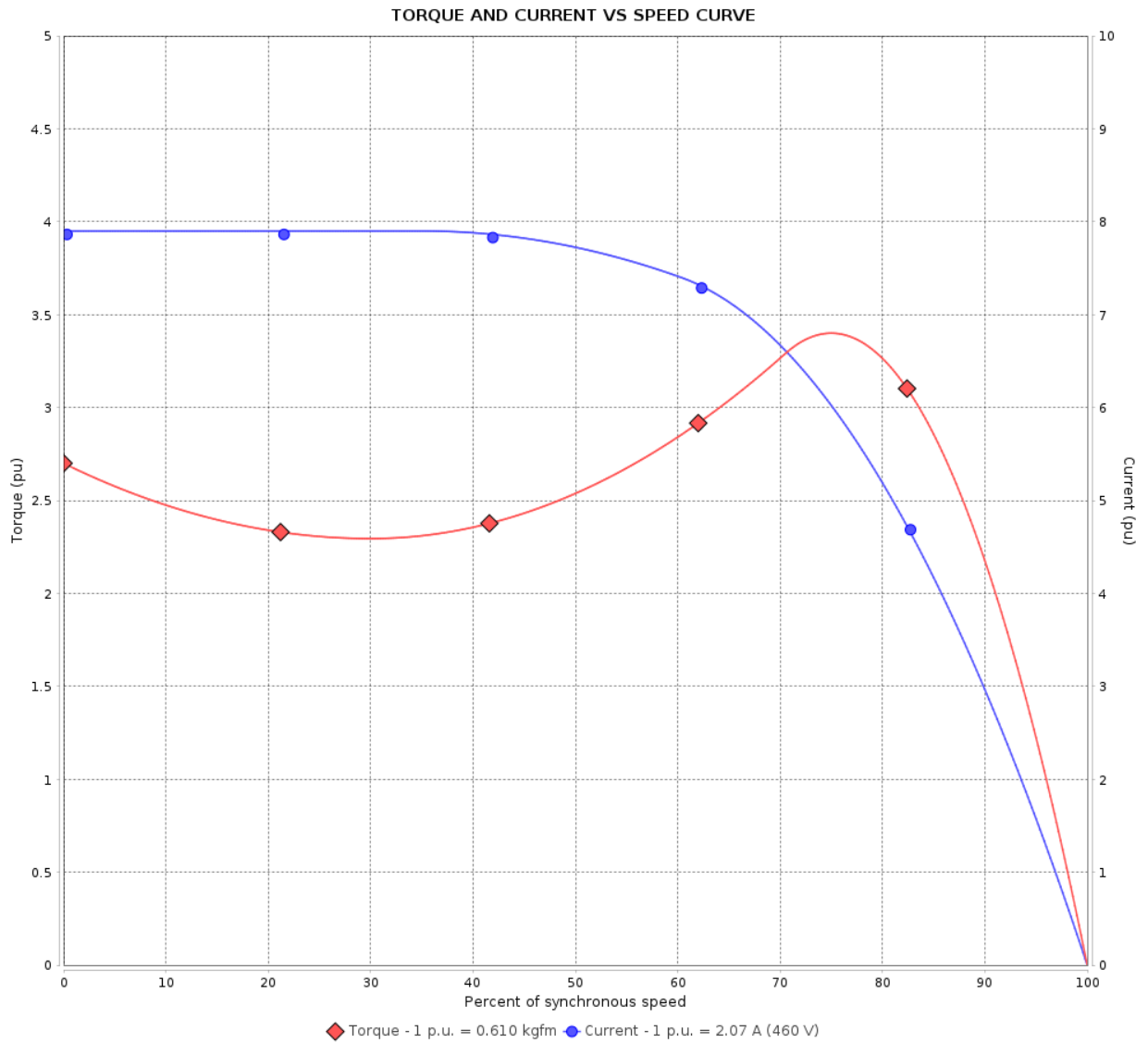
Three Phase Induction Motor - Squirrel Cage



Customer : Astraprom d.o.o.

Product line : W22

Product code : 12868146



Performance : 460 V 60 Hz 4P

Rated current	: 2.07 A	Moment of inertia (J)	: 0.0055 kgm <sup>2</sup>
LRC	: 7.9	Duty cycle	: S1
Rated torque	: 0.610 kgfm	Insulation class	: F
Locked rotor torque	: 270 %	Service factor	: 1.00
Breakdown torque	: 340 %	Temperature rise	: 80 K
Rated speed	: 1755 rpm	Design	: N

Locked rotor time : 28s (cold) 16s (hot)

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# LOAD PERFORMANCE CURVE

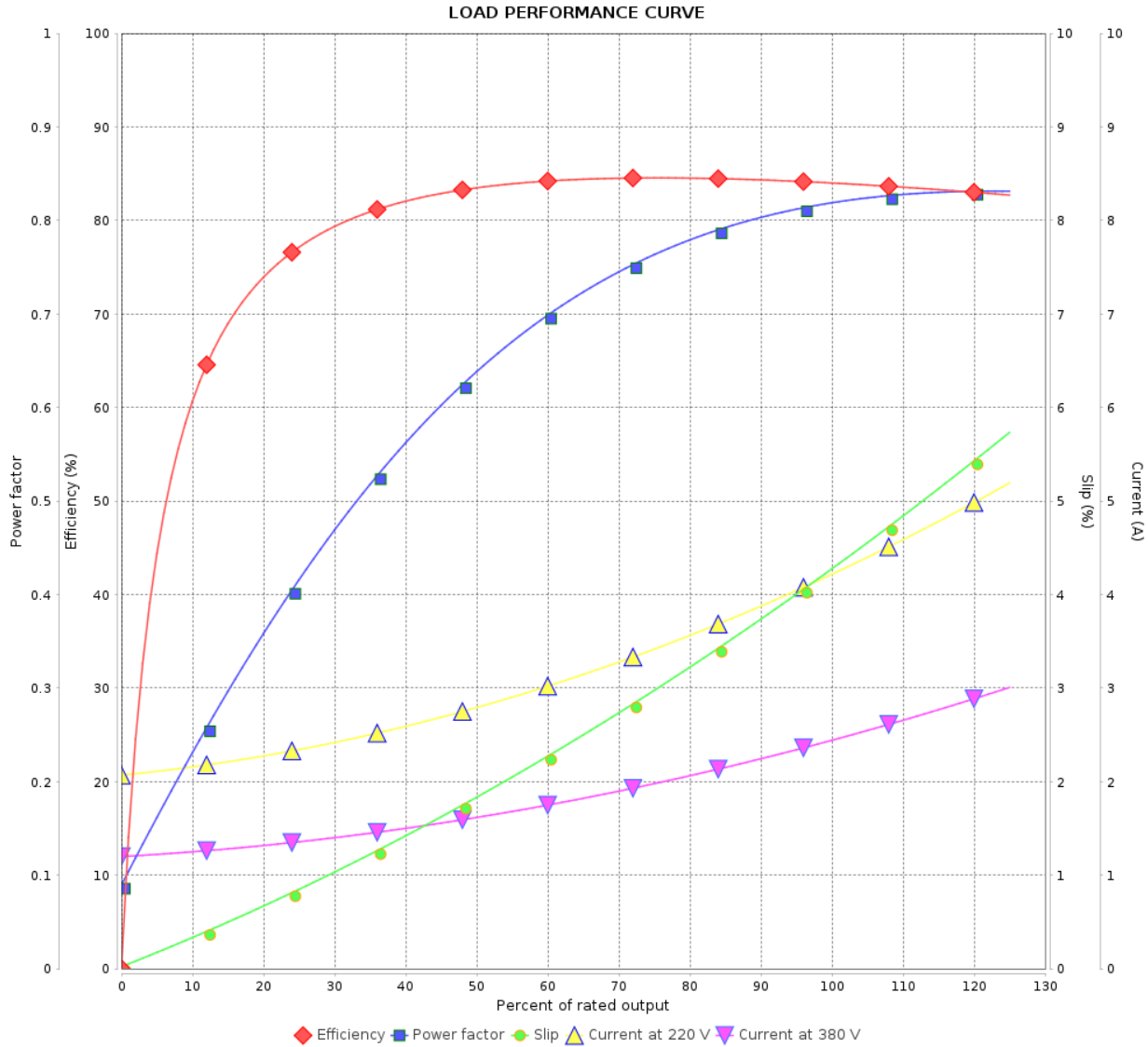
Three Phase Induction Motor - Squirrel Cage



Customer : Astraprom d.o.o.

Product line : W22

Product code : 12868146



Performance : 220/380 V 50 Hz 4P

Rated current : 4.18/2.42 A  
 LRC : 6.3  
 Rated torque : 0.747 kgfm  
 Locked rotor torque : 210 %  
 Breakdown torque : 240 %  
 Rated speed : 1435 rpm

Moment of inertia (J) : 0.0055 kgm<sup>2</sup>  
 Duty cycle : S1  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 80 K  
 Design : N

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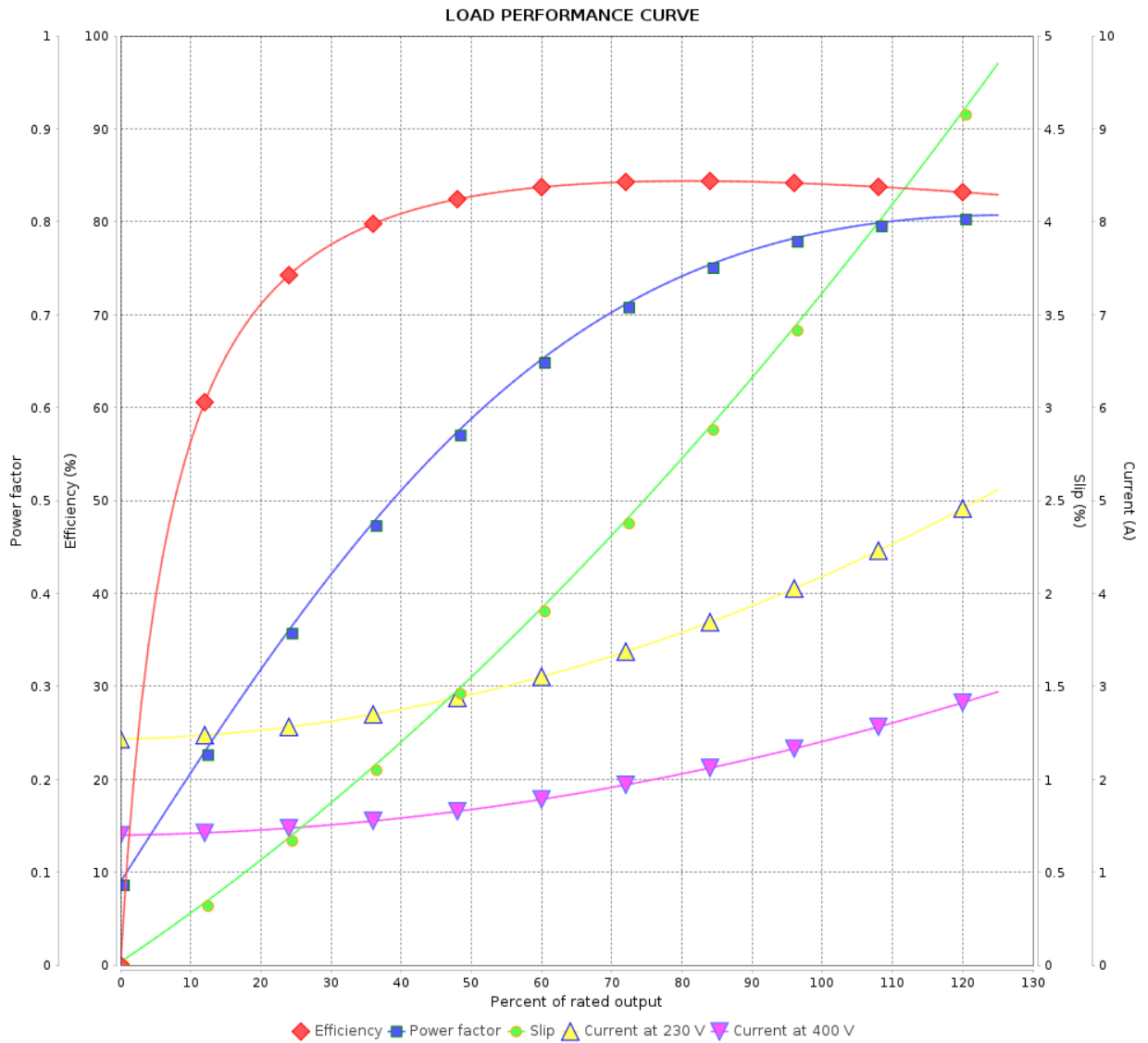
## Three Phase Induction Motor - Squirrel Cage



Customer : Astraprom d.o.o.

Product line : W22

Product code : 12868146



Performance : 230/400 V 50 Hz 4P

Rated current : 4.16/2.39 A  
 LRC : 6.6  
 Rated torque : 0.741 kgfm  
 Locked rotor torque : 229 %  
 Breakdown torque : 270 %  
 Rated speed : 1445 rpm

Moment of inertia (J) : 0.0055 kgm<sup>2</sup>  
 Duty cycle : S1  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 80 K  
 Design : N

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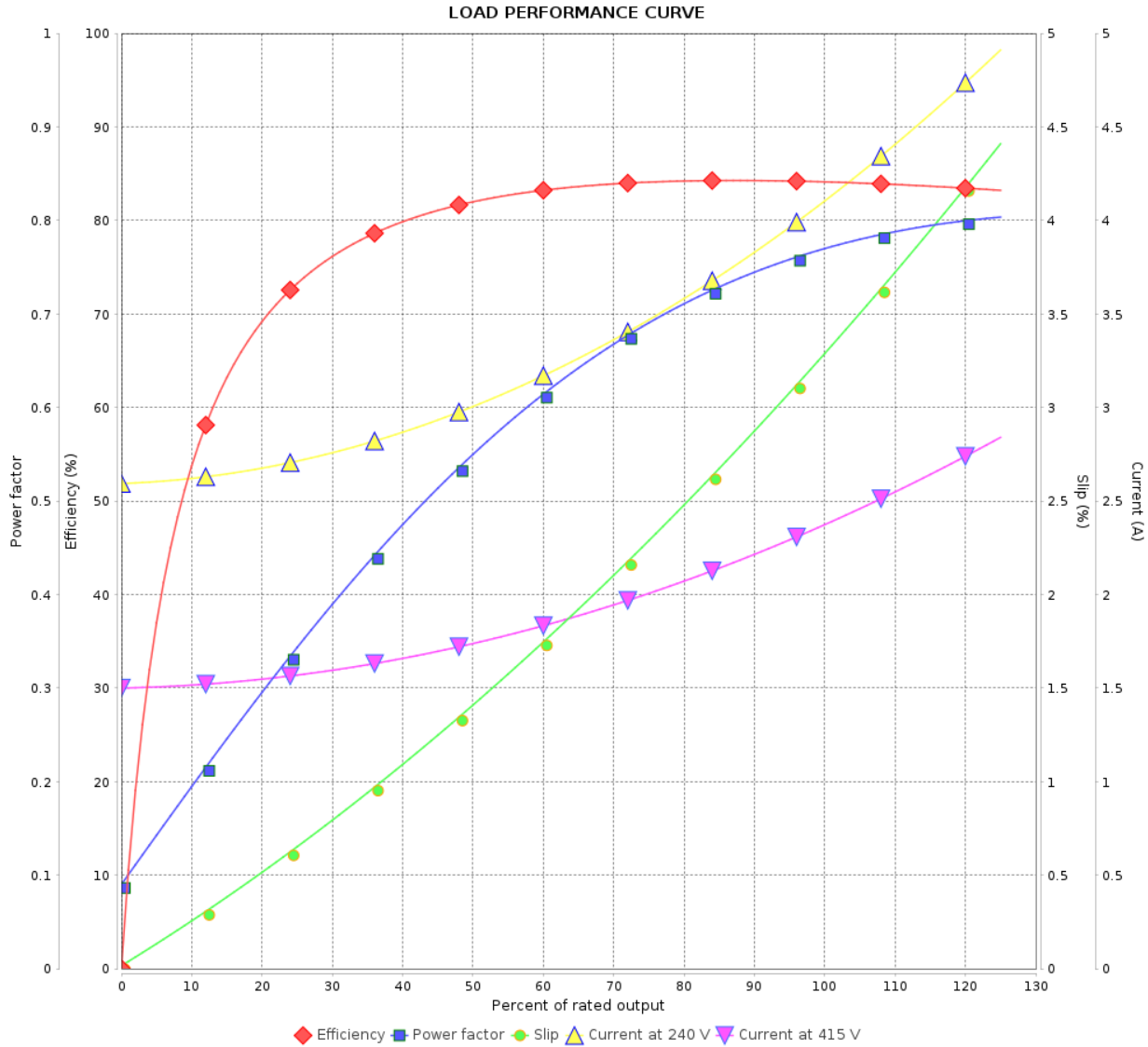
Three Phase Induction Motor - Squirrel Cage



Customer : Astraprom d.o.o.

Product line : W22

Product code : 12868146



Performance : 240/415 V 50 Hz 4P

Rated current : 4.08/2.36 A  
 LRC : 7.1  
 Rated torque : 0.739 kgfm  
 Locked rotor torque : 250 %  
 Breakdown torque : 300 %  
 Rated speed : 1450 rpm

Moment of inertia (J) : 0.0055 kgm<sup>2</sup>  
 Duty cycle : S1  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 80 K  
 Design : N

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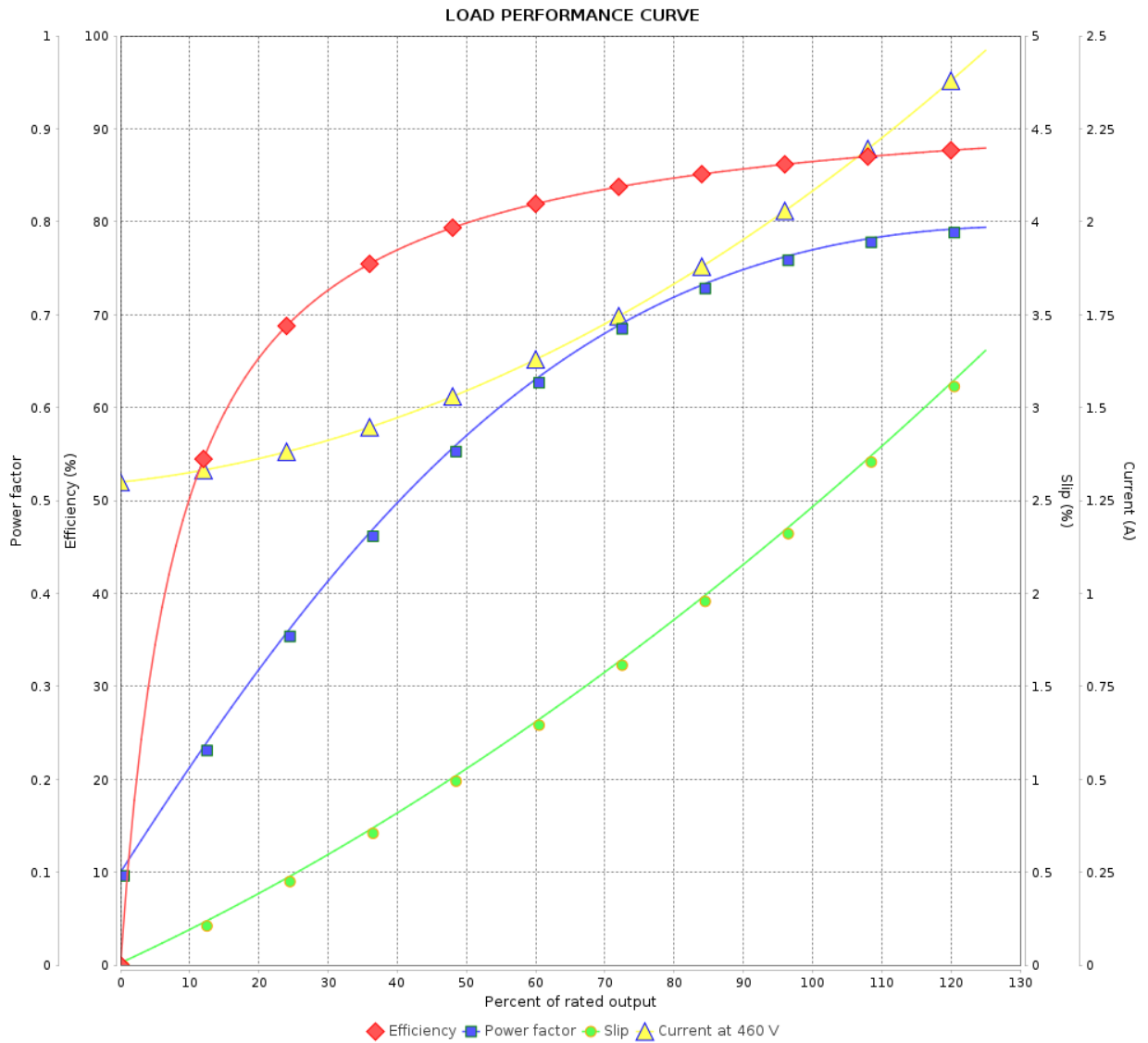
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Product line : W22

Product code : 12868146



Performance : 460 V 60 Hz 4P

Rated current : 2.07 A  
 LRC : 7.9  
 Rated torque : 0.610 kgfm  
 Locked rotor torque : 270 %  
 Breakdown torque : 340 %  
 Rated speed : 1755 rpm

Moment of inertia (J) : 0.0055 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

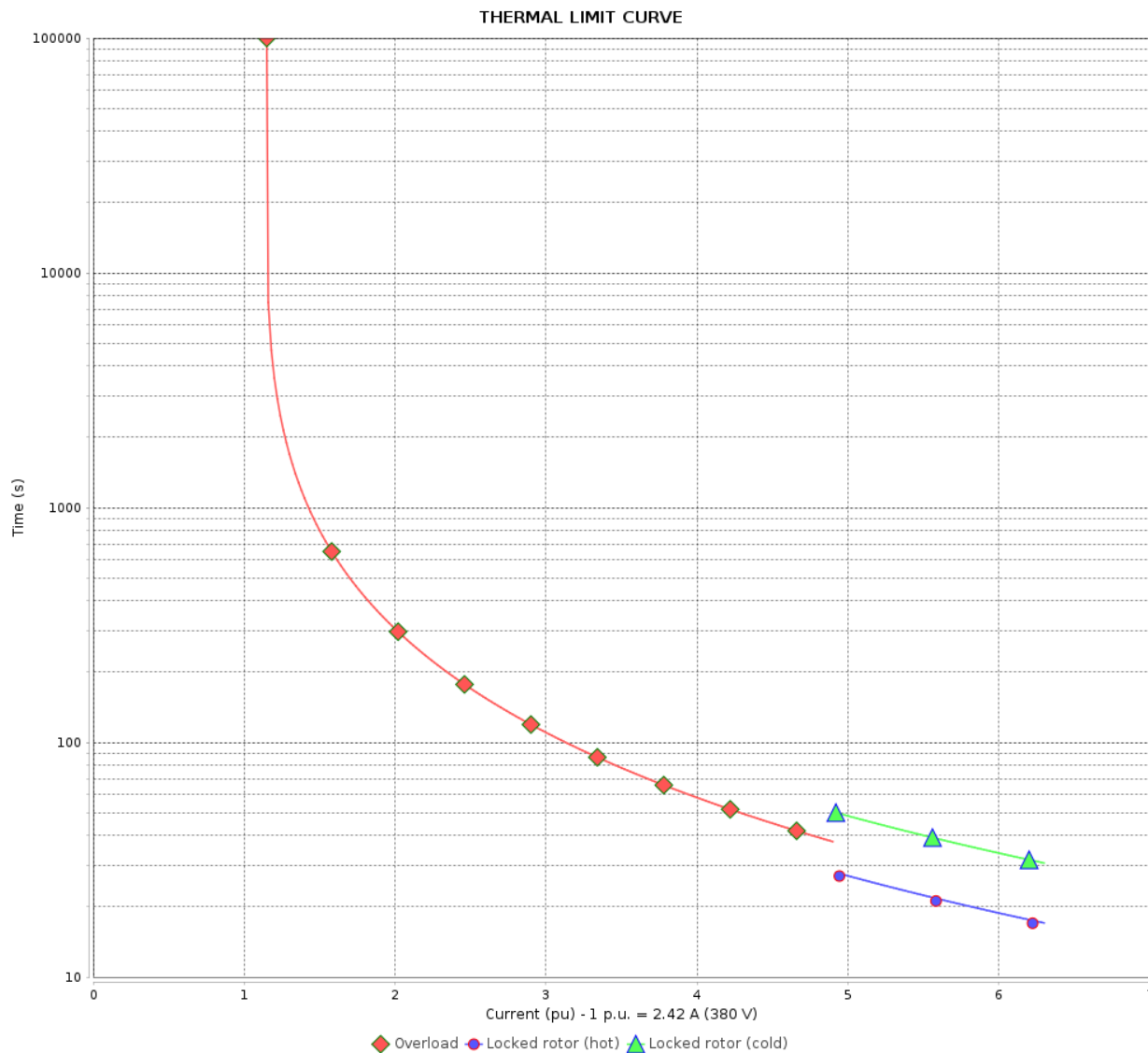
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Customer : Astraprom d.o.o.

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Product code : 12868146



Performance : 220/380 V 50 Hz 4P

Rated current : 4.18/2.42 A  
 LRC : 6.3  
 Rated torque : 0.747 kgfm  
 Locked rotor torque : 210 %  
 Breakdown torque : 240 %  
 Rated speed : 1435 rpm

Moment of inertia (J) : 0.0055 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

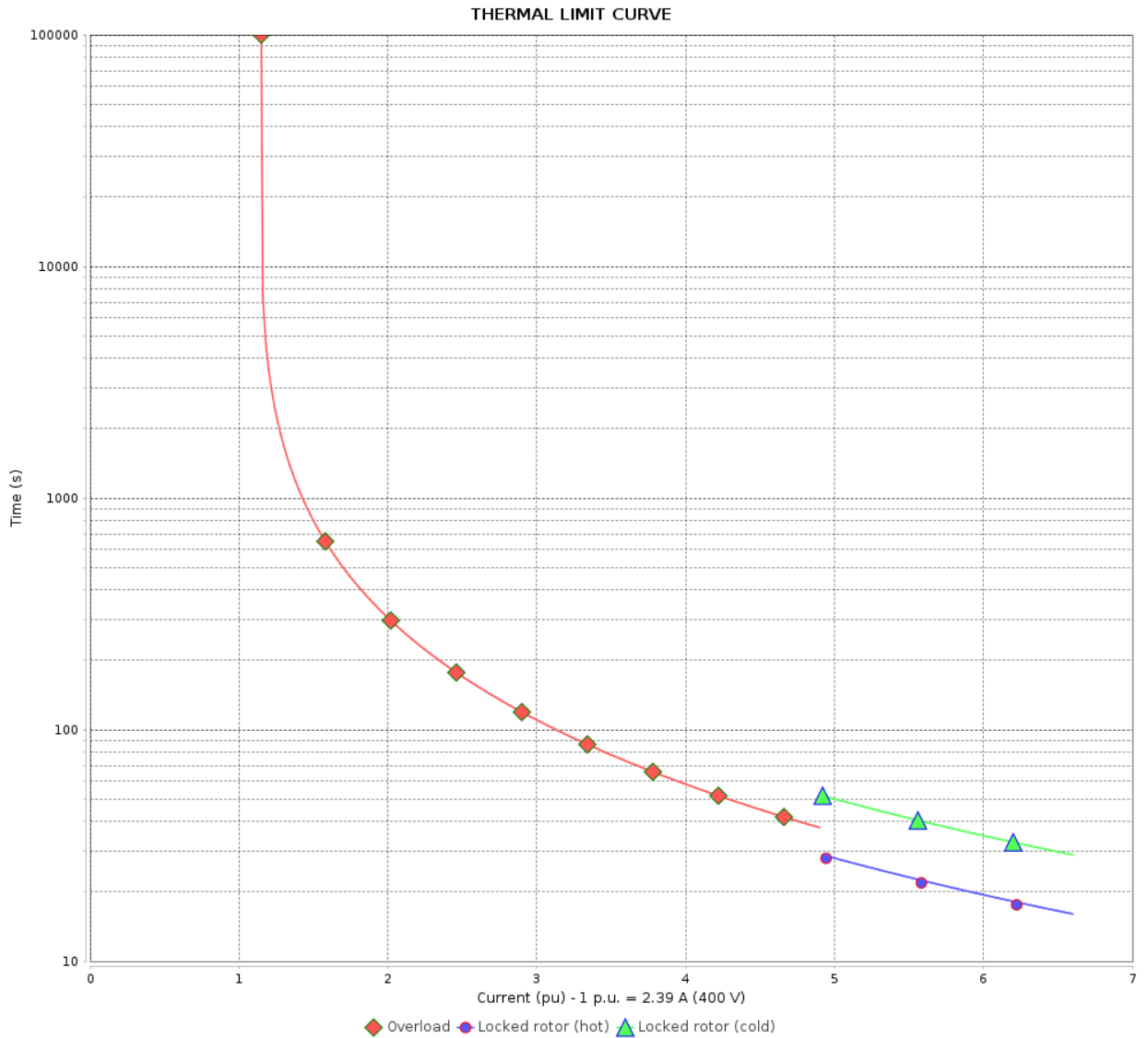
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 Breakdown torque : 270 %  
 Rated speed : 1445 rpm

Moment of inertia (J) : 0.0055 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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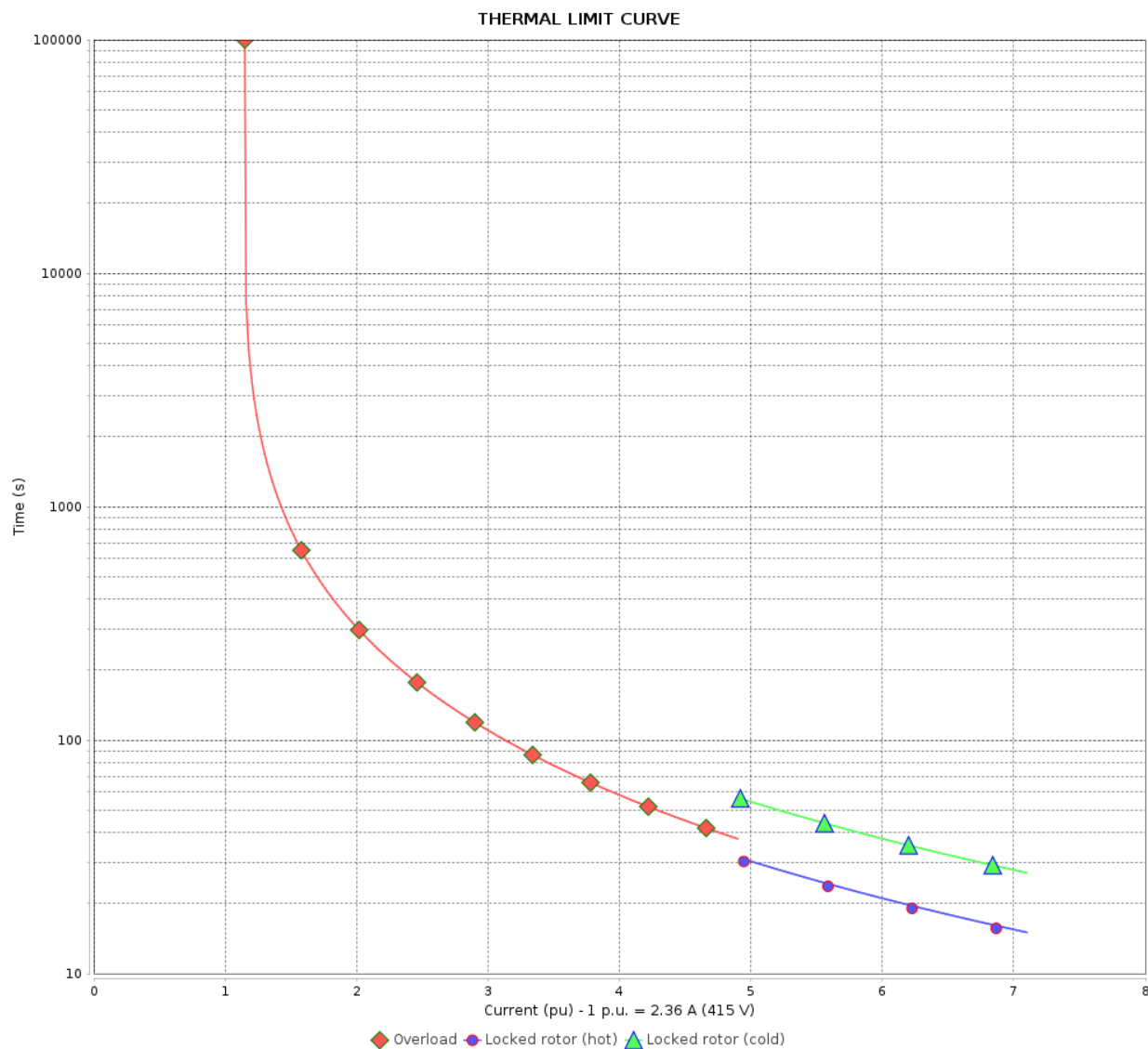
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Customer : Astraprom d.o.o.

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Performance : 240/415 V 50 Hz 4P

Rated current : 4.08/2.36 A  
 LRC : 7.1  
 Rated torque : 0.739 kgfm  
 Locked rotor torque : 250 %  
 Breakdown torque : 300 %  
 Rated speed : 1450 rpm

Moment of inertia (J) : 0.0055 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

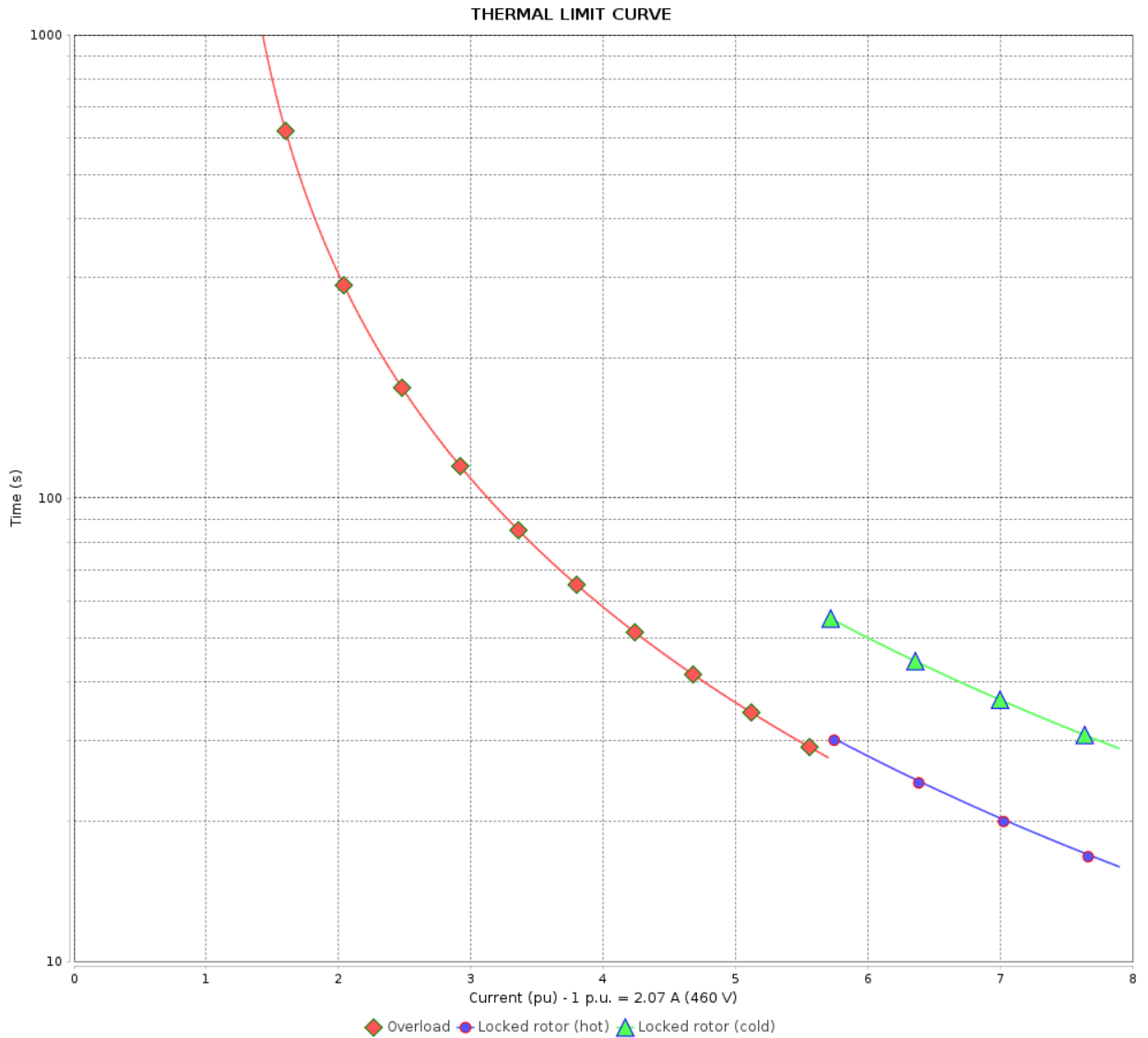
Three Phase Induction Motor - Squirrel Cage



Customer : Astraprom d.o.o.

Product line : W22

Product code : 12868146



Performance : 460 V 60 Hz 4P

Rated current	: 2.07 A	Moment of inertia (J)	: 0.0055 kgm <sup>2</sup>
LRC	: 7.9	Duty cycle	: S1
Rated torque	: 0.610 kgfm	Insulation class	: F
Locked rotor torque	: 270 %	Service factor	: 1.00
Breakdown torque	: 340 %	Temperature rise	: 80 K
Rated speed	: 1755 rpm	Design	: N

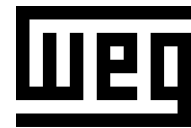
Heating constant

Cooling constant

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# VFD OPERATION CURVE

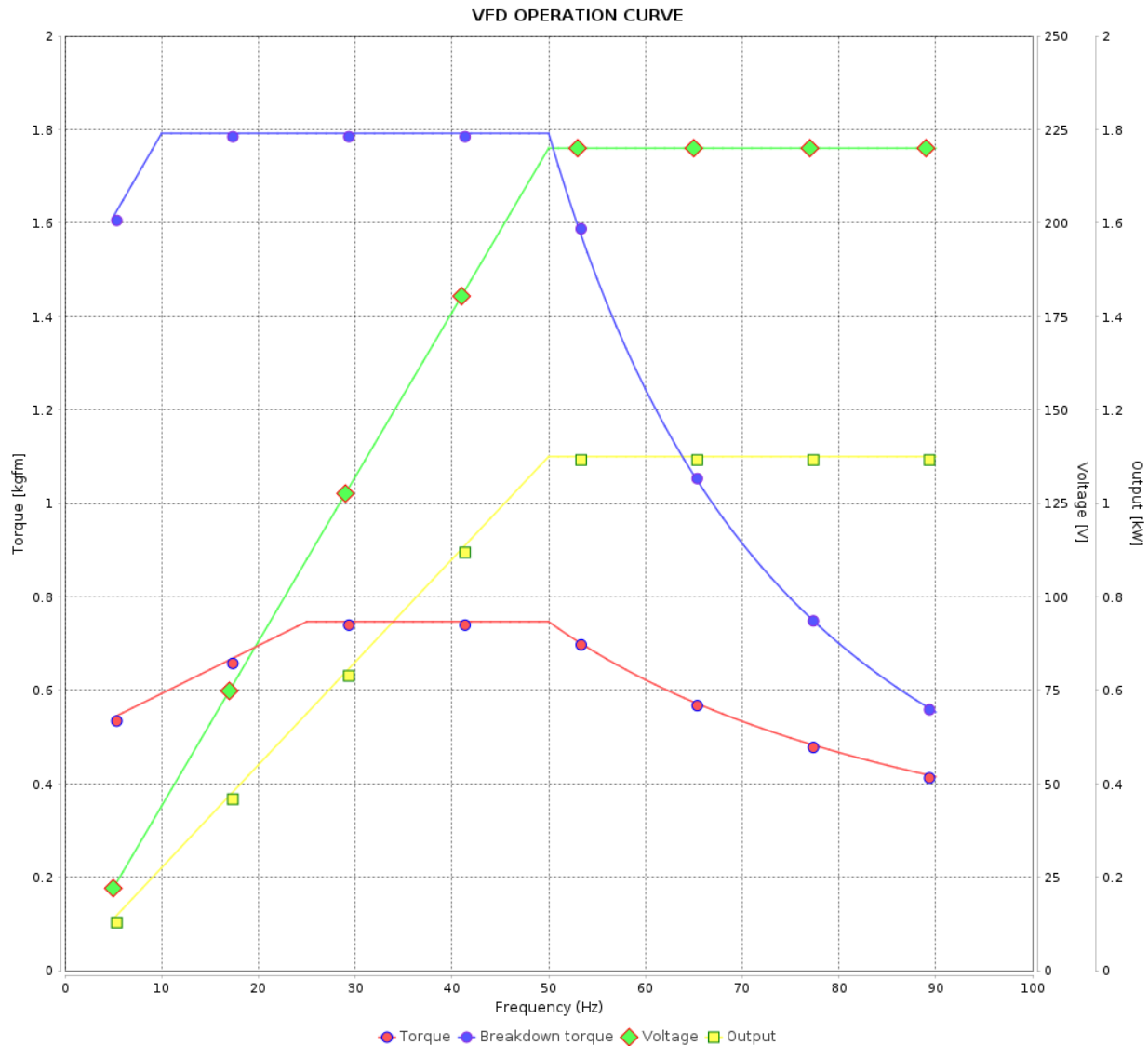
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Customer : Astraprom d.o.o.

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Performance : 220/380 V 50 Hz 4P

Rated current : 4.18/2.42 A  
 LRC : 6.3  
 Rated torque : 0.747 kgfm  
 Locked rotor torque : 210 %  
 Breakdown torque : 240 %  
 Rated speed : 1435 rpm

Moment of inertia (J) : 0.0055 kgm<sup>2</sup>  
 Duty cycle : S1  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 80 K  
 Design : N

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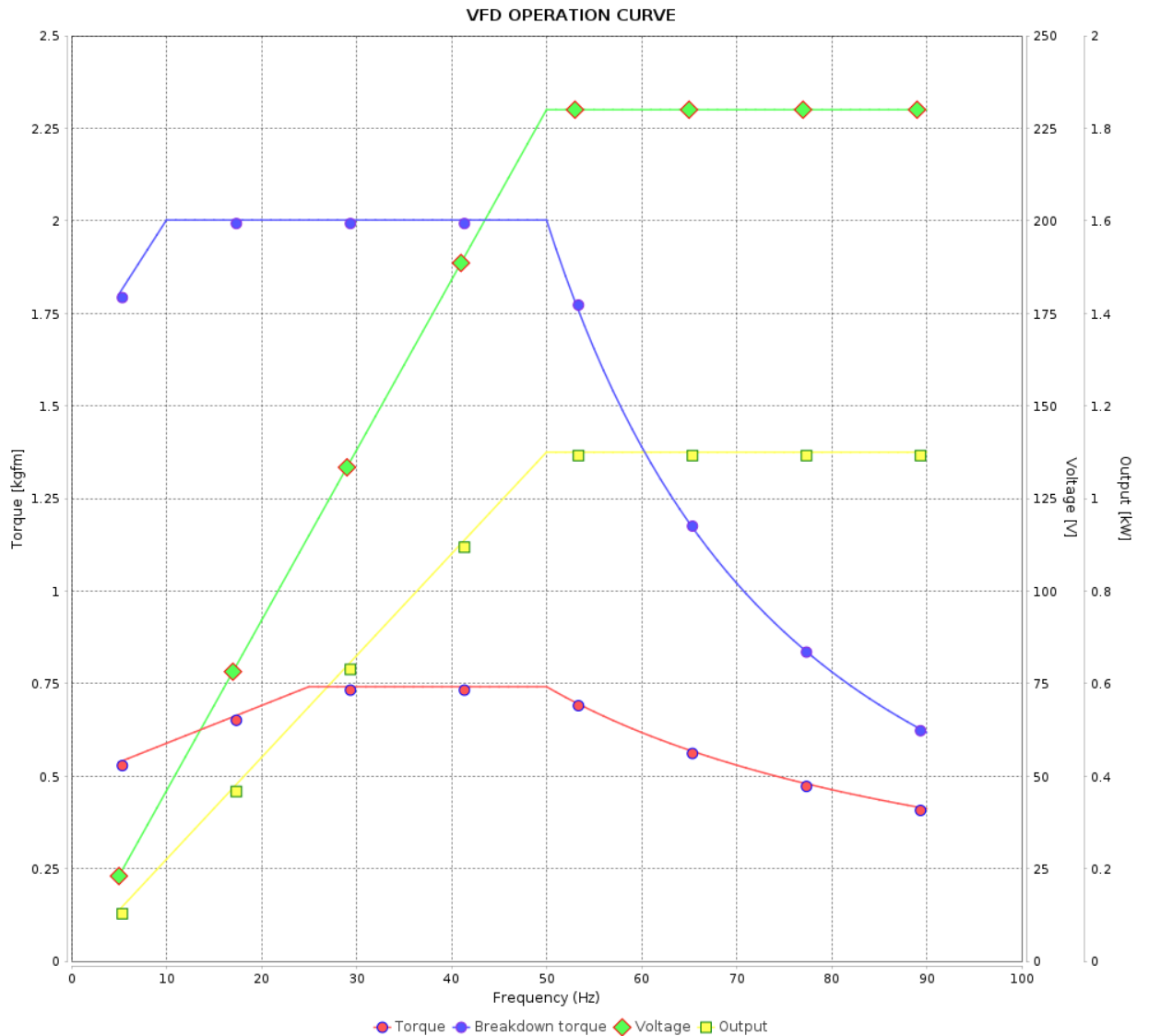
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Customer : Astraprom d.o.o.

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Performance : 230/400 V 50 Hz 4P

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 Rated torque : 0.741 kgfm  
 Locked rotor torque : 229 %  
 Breakdown torque : 270 %  
 Rated speed : 1445 rpm

Moment of inertia (J) : 0.0055 kgm<sup>2</sup>  
 Duty cycle : S1  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 80 K  
 Design : N

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# VFD OPERATION CURVE

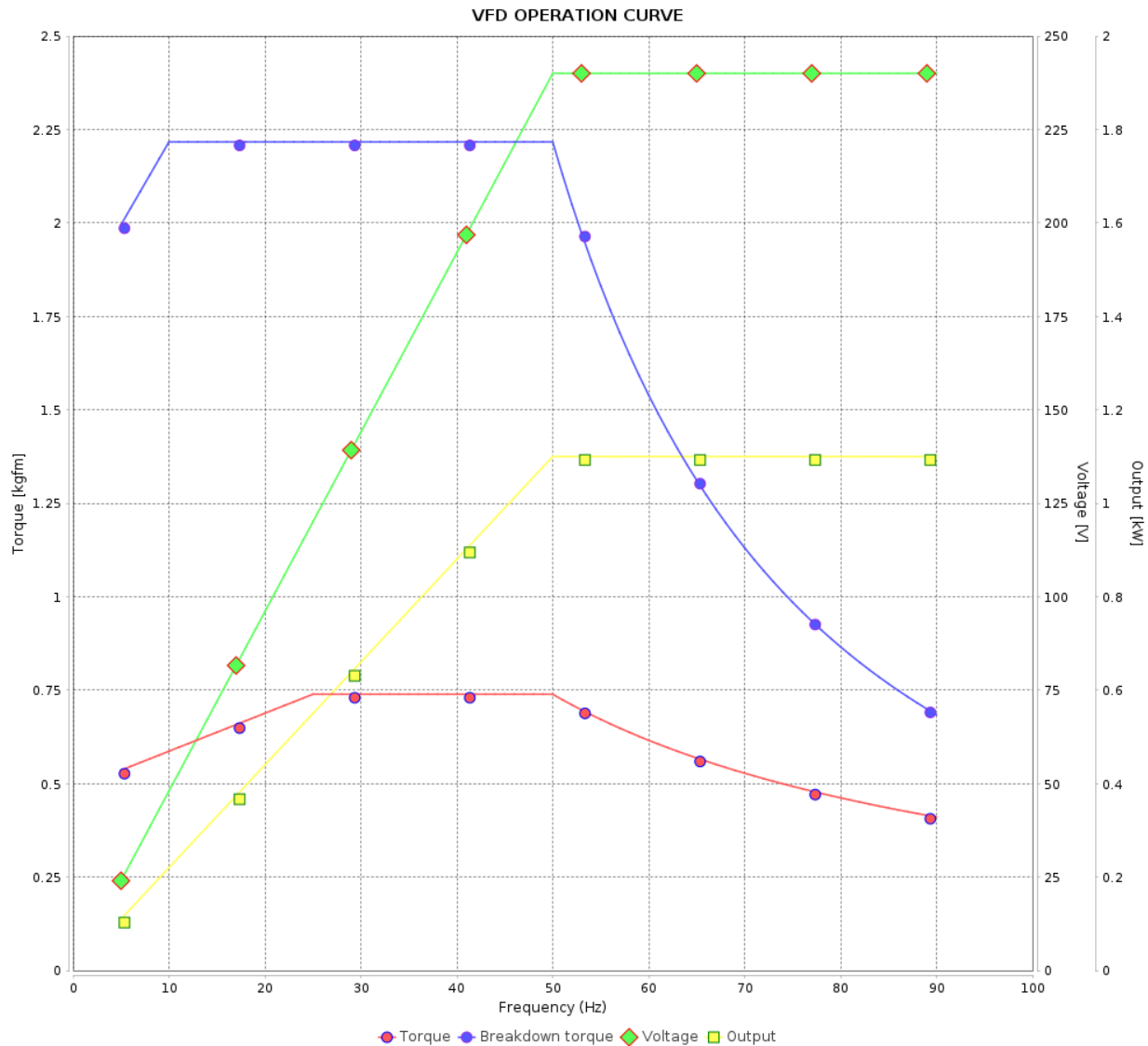
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Customer : Astraprom d.o.o.

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Product code : 12868146



Performance : 240/415 V 50 Hz 4P

Rated current : 4.08/2.36 A  
 LRC : 7.1  
 Rated torque : 0.739 kgfm  
 Locked rotor torque : 250 %  
 Breakdown torque : 300 %  
 Rated speed : 1450 rpm

Moment of inertia (J) : 0.0055 kgm<sup>2</sup>  
 Duty cycle : S1  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 80 K  
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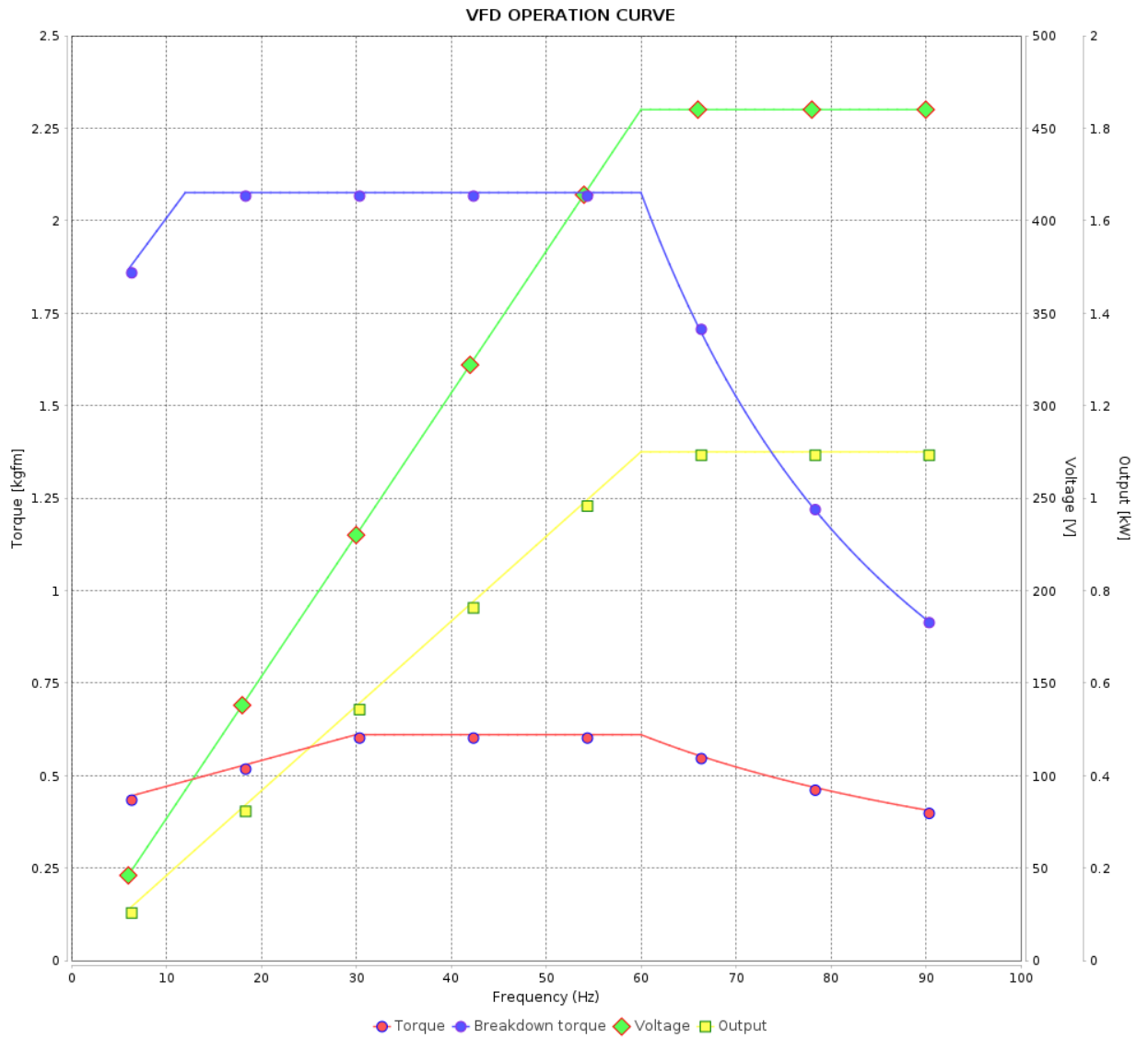
Three Phase Induction Motor - Squirrel Cage



Customer : Astraprom d.o.o.

Product line : W22

Product code : 12868146



Performance : 460 V 60 Hz 4P

Rated current : 2.07 A  
 LRC : 7.9  
 Rated torque : 0.610 kgfm  
 Locked rotor torque : 270 %  
 Breakdown torque : 340 %  
 Rated speed : 1755 rpm

Moment of inertia (J) : 0.0055 kgm<sup>2</sup>  
 Duty cycle : S1  
 Insulation class : F  
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 Temperature rise : 80 K  
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