

# DATA SHEET

## Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : W22 IE3 Three-Phase

Product code : 15834980

Frame : 180L  
Insulation class : F  
Duty cycle : S1  
Ambient temperature : -20°C to +40°C  
Altitude : 1000 m.a.s.l.  
Protection degree : IP55  
Design : N

Cooling method : IC411 - TEFC  
Mounting : B3T  
Rotation<sup>1</sup> : Both (CW and CCW)  
Starting method : Direct On Line  
Approx. weight<sup>3</sup> : 203 kg  
Moment of inertia (J) : 0.2097 kgm<sup>2</sup>

Output [kW]	22	22	22	22
Poles	4	4	4	4
Frequency [Hz]	50	50	50	60
Rated voltage [V]	380/660	400/690	415	460
Rated current [A]	42.3/24.3	41.5/24.1	40.6	36.4
L. R. Amperes [A]	309/178	320/185	329	320
LRC [A]	7.3	7.7	8.1	8.8
No load current [A]	16.5/9.50	18.0/10.4	19.5	17.0
Rated speed [RPM]	1475	1478	1480	1781
Slip [%]	1.67	1.47	1.33	1.06
Rated torque [kgfm]	14.5	14.5	14.5	12.0
Locked rotor torque [%]	280	320	350	370
Breakdown torque [%]	300	340	370	400
Service factor	1.00	1.00	1.00	1.00
Temperature rise	80 K	80 K	80 K	80 K
Locked rotor time	19s (cold) 11s (hot)	19s (cold) 11s (hot)	19s (cold) 11s (hot)	19s (cold) 11s (hot)
Noise level <sup>2</sup>	61.0 dB(A)	61.0 dB(A)	61.0 dB(A)	63.0 dB(A)
Efficiency (%)	25%			
	50%	92.5	92.3	92.1
	75%	92.8	93.0	93.2
	100%	93.0	93.2	93.6
Power Factor	25%			
	50%	0.70	0.66	0.63
	75%	0.80	0.77	0.75
	100%	0.85	0.82	0.81

Losses at normative operating points (speed;torque), in percentage of rated output power

Losses (%)	P1 (0,9;1,0)	6.1	6.0	6.2	6.6
	P2 (0,5;1,0)	4.5	4.4	4.6	4.9
	P3 (0,25;1,0)	3.8	3.8	3.9	4.1
	P4 (0,9;0,5)	3.9	3.8	4.0	4.2
	P5 (0,5;0,5)	2.4	2.4	2.5	2.6
	P6 (0,5;0,25)	2.0	1.9	2.0	2.1
	P7 (0,25;0,25)	1.3	1.2	1.3	1.4

Drive end Non drive end  
Bearing type : 6311 C3 6211 C3  
Sealing : V'Ring V'Ring  
Lubrication interval : 20000 h 20000 h  
Lubricant amount : 18 g 11 g  
Lubricant type : Mobil Polyrex EM

Foundation loads  
Max. traction : 588 kgf  
Max. compression : 791 kgf

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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## Three Phase Induction Motor - Squirrel Cage



Customer :

Notes

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## Three Phase Induction Motor - Squirrel Cage



Customer :

Thermal protection

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

Space heater information

Voltage: 110-127/200-240 V

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# TORQUE AND CURRENT VS SPEED CURVE

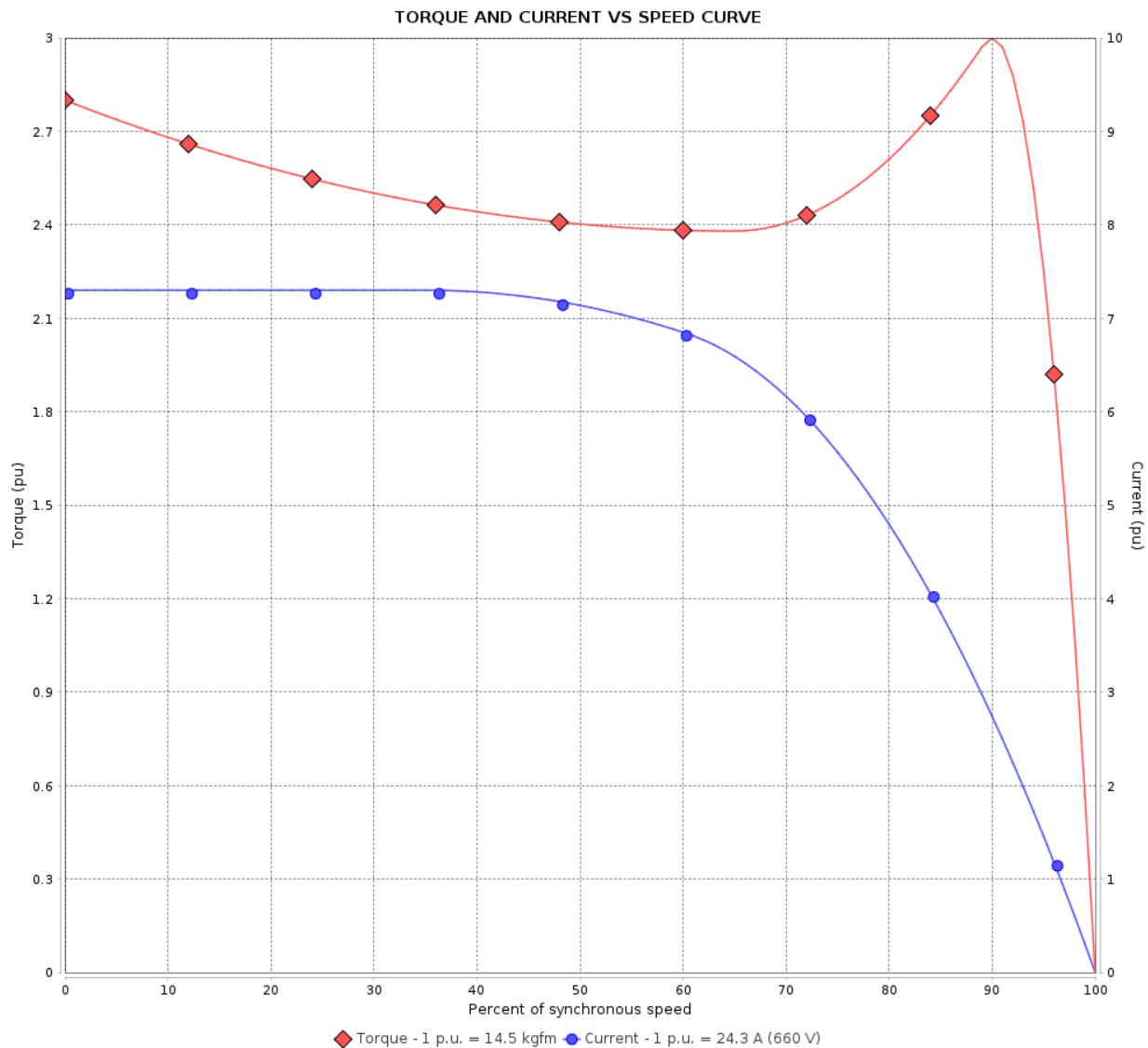
## Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : W22 IE3 Three-Phase

Product code : 15834980



Performance : 380/660 V 50 Hz 4P

Rated current : 42.3/24.3 A  
LRC : 7.3  
Rated torque : 14.5 kgfm  
Locked rotor torque : 280 %  
Breakdown torque : 300 %  
Rated speed : 1475 rpm

Moment of inertia (J) : 0.2097 kgm<sup>2</sup>  
Duty cycle : S1  
Insulation class : F  
Service factor : 1.00  
Temperature rise : 80 K  
Design : N

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

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# TORQUE AND CURRENT VS SPEED CURVE

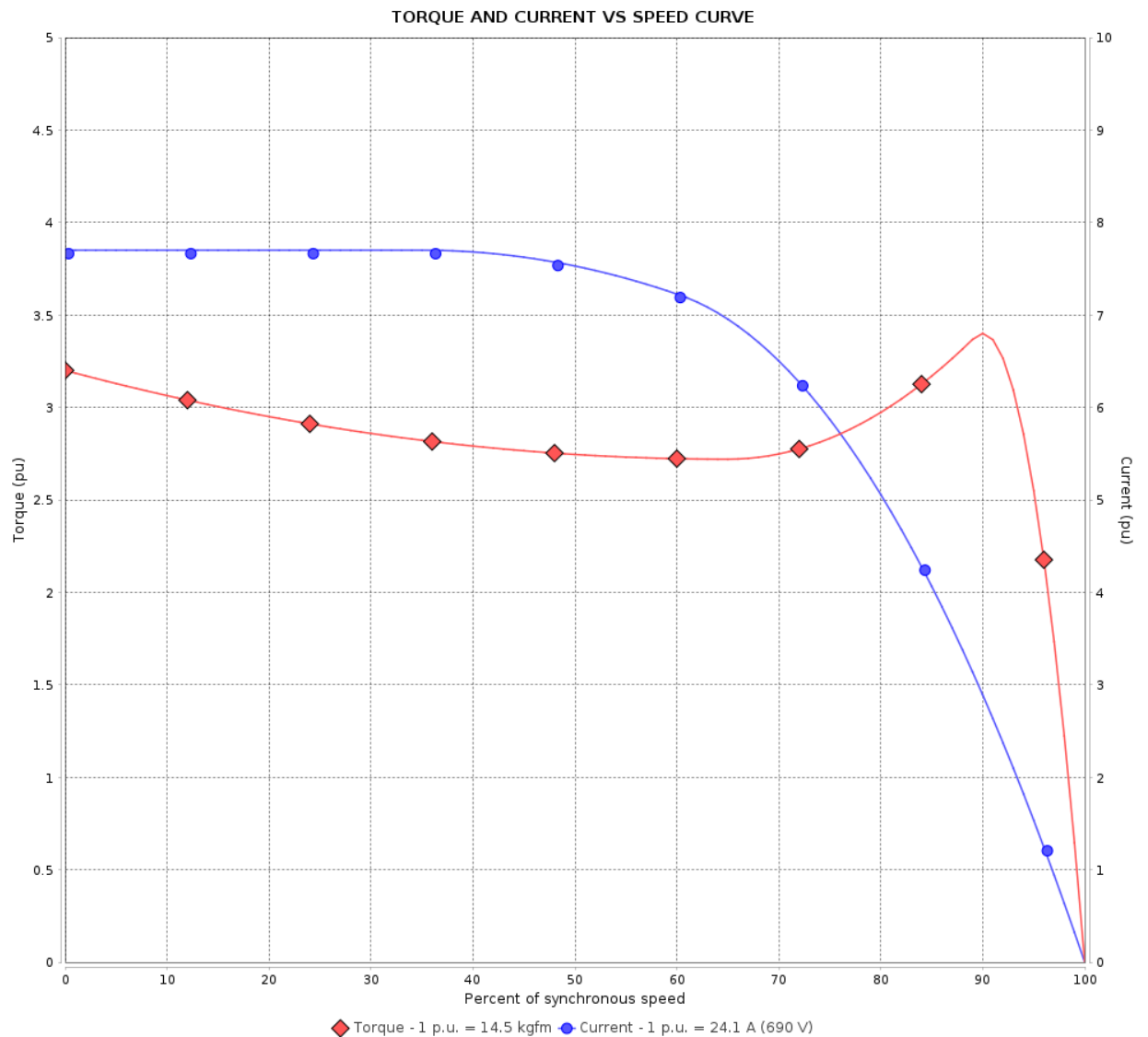
## Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : W22 IE3 Three-Phase

Product code : 15834980



Performance : 400/690 V 50 Hz 4P

Rated current : 41.5/24.1 A  
LRC : 7.7  
Rated torque : 14.5 kgfm  
Locked rotor torque : 320 %  
Breakdown torque : 340 %  
Rated speed : 1478 rpm

Moment of inertia (J) : 0.2097 kgm<sup>2</sup>  
Duty cycle : S1  
Insulation class : F  
Service factor : 1.00  
Temperature rise : 80 K  
Design : N

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

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# TORQUE AND CURRENT VS SPEED CURVE

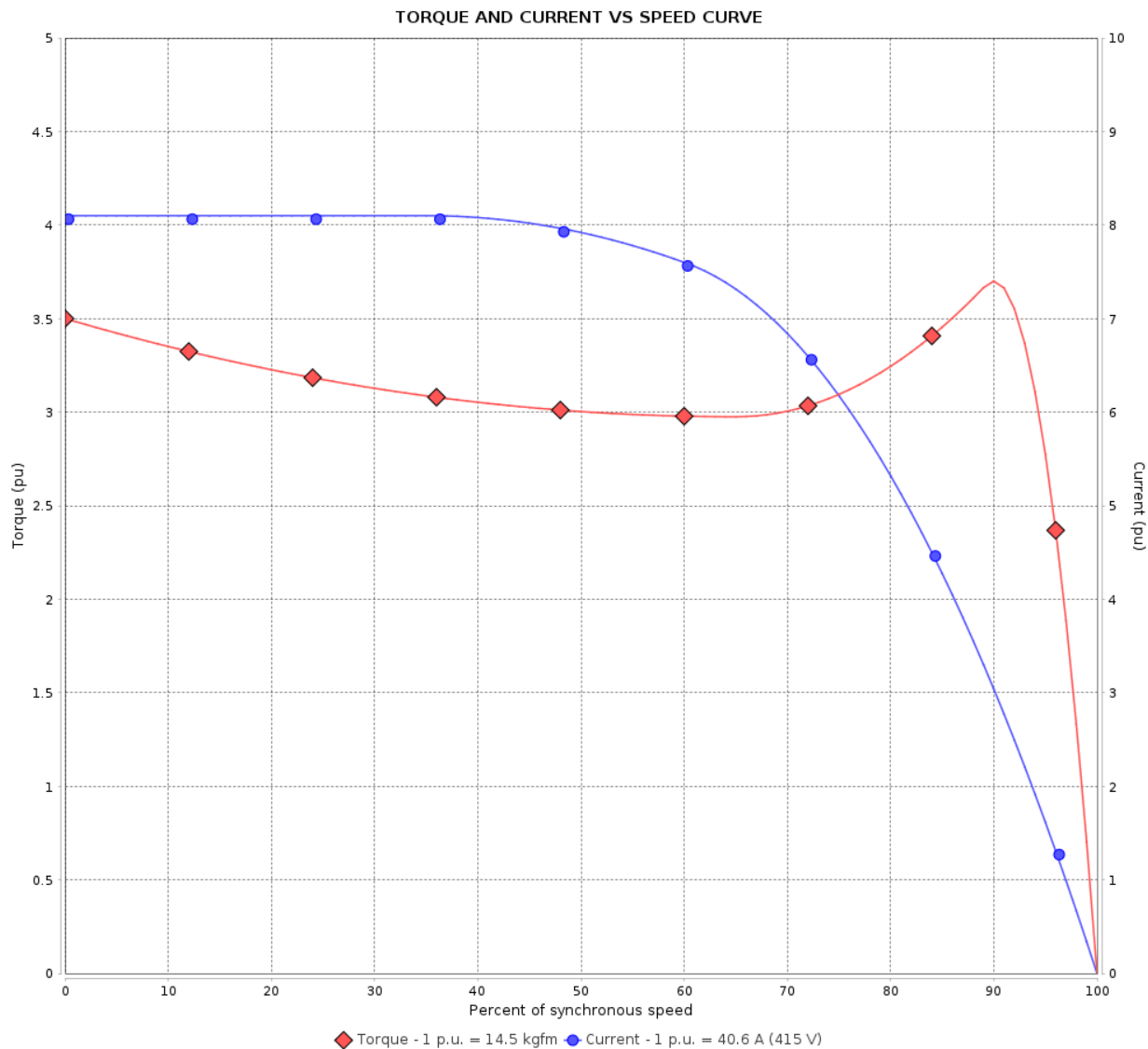
## Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : W22 IE3 Three-Phase

Product code : 15834980



Performance : 415 V 50 Hz 4P

Rated current	: 40.6 A	Moment of inertia (J)	: 0.2097 kgm <sup>2</sup>
LRC	: 8.1	Duty cycle	: S1
Rated torque	: 14.5 kgfm	Insulation class	: F
Locked rotor torque	: 350 %	Service factor	: 1.00
Breakdown torque	: 370 %	Temperature rise	: 80 K
Rated speed	: 1480 rpm	Design	: N

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

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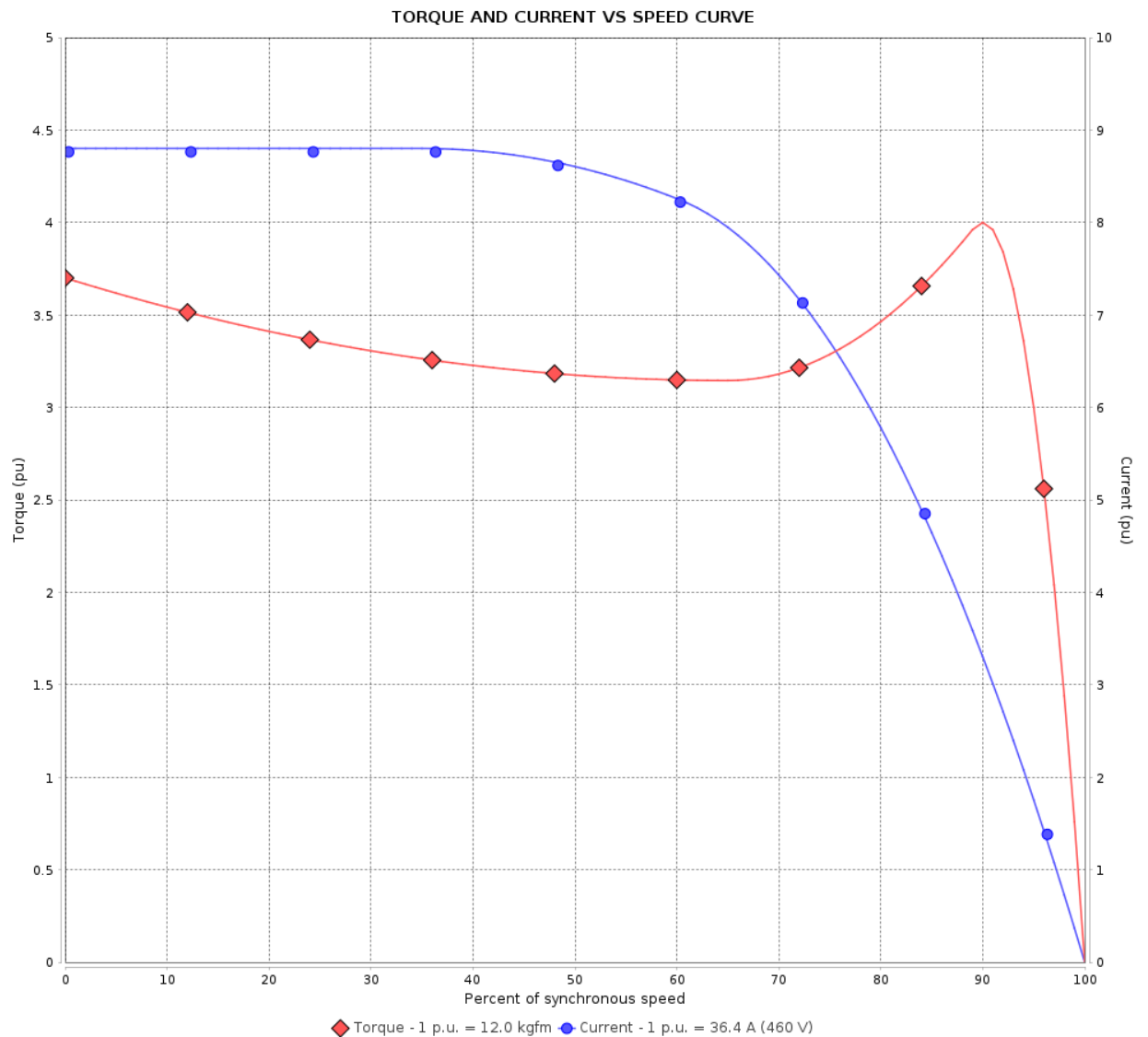
## Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : W22 IE3 Three-Phase

Product code : 15834980



Performance : 460 V 60 Hz 4P

Rated current	: 36.4 A	Moment of inertia (J)	: 0.2097 kgm <sup>2</sup>
LRC	: 8.8	Duty cycle	: S1
Rated torque	: 12.0 kgfm	Insulation class	: F
Locked rotor torque	: 370 %	Service factor	: 1.00
Breakdown torque	: 400 %	Temperature rise	: 80 K
Rated speed	: 1781 rpm	Design	: N

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

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# LOAD PERFORMANCE CURVE

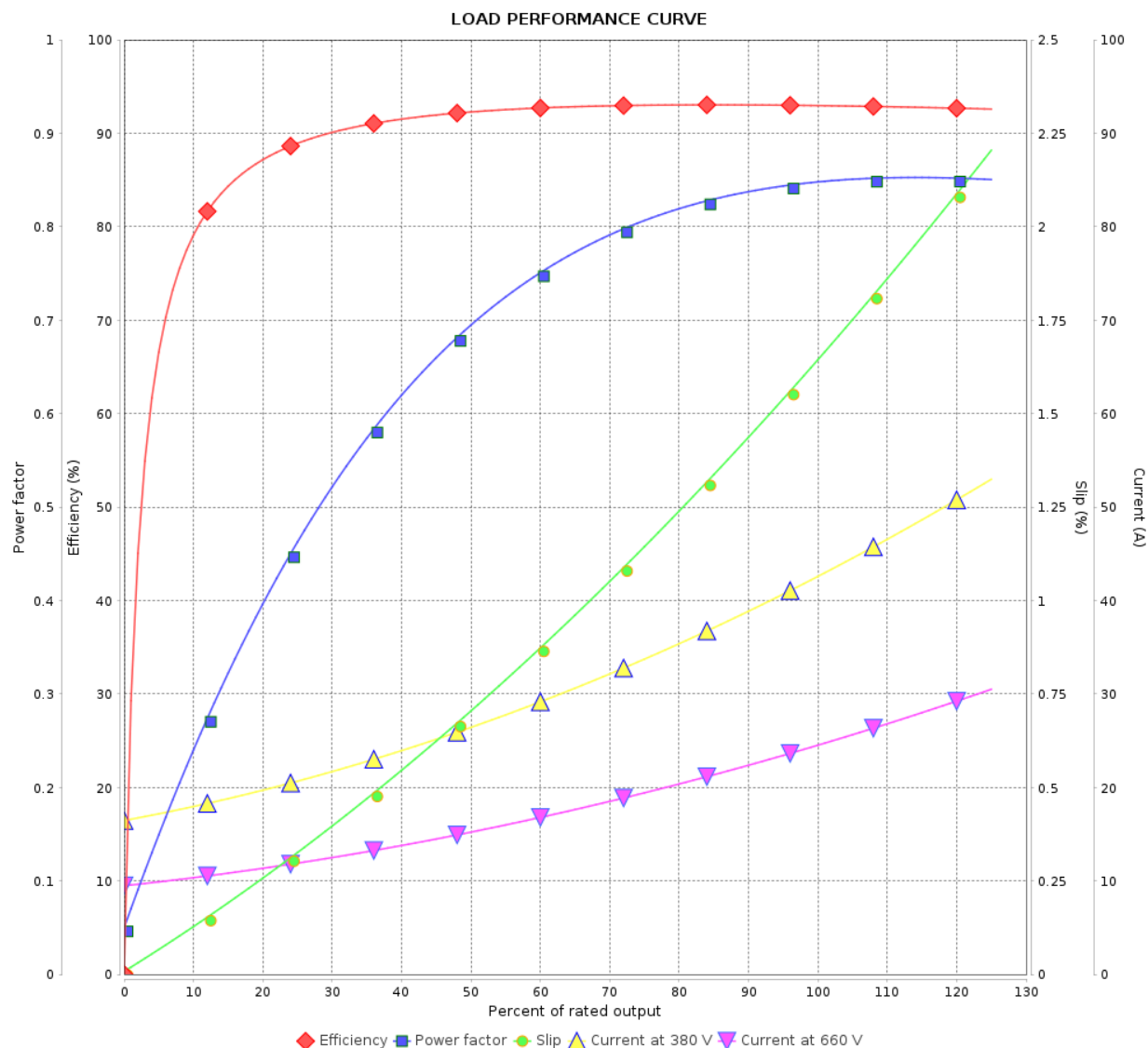
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Performance : 380/660 V 50 Hz 4P

Rated current : 42.3/24.3 A  
LRC : 7.3  
Rated torque : 14.5 kgfm  
Locked rotor torque : 280 %  
Breakdown torque : 300 %  
Rated speed : 1475 rpm

Moment of inertia (J) : 0.2097 kgm<sup>2</sup>  
Duty cycle : S1  
Insulation class : F  
Service factor : 1.00  
Temperature rise : 80 K  
Design : N

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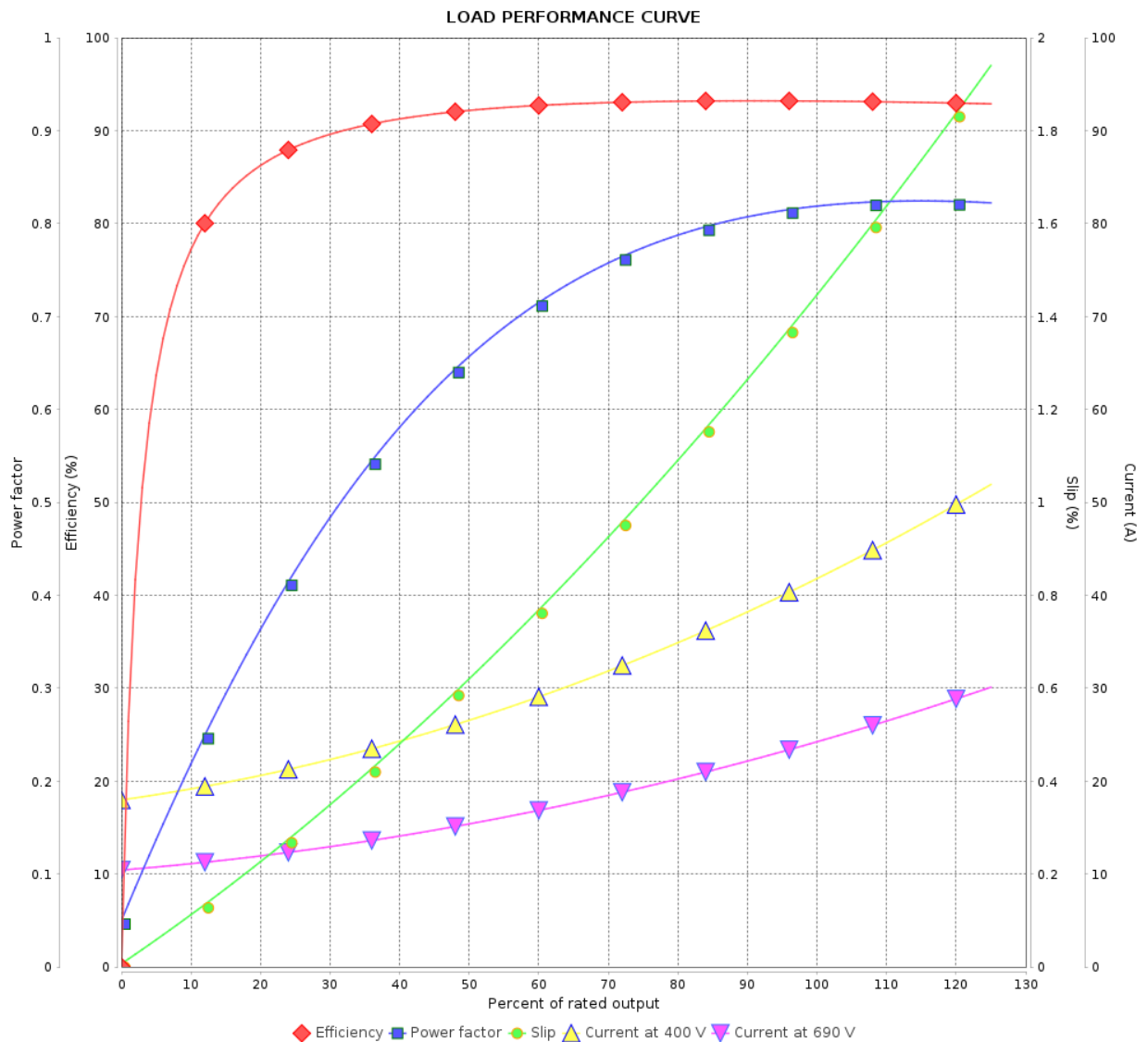
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Rated speed : 1478 rpm

Moment of inertia (J) : 0.2097 kgm<sup>2</sup>  
Duty cycle : S1  
Insulation class : F  
Service factor : 1.00  
Temperature rise : 80 K  
Design : N

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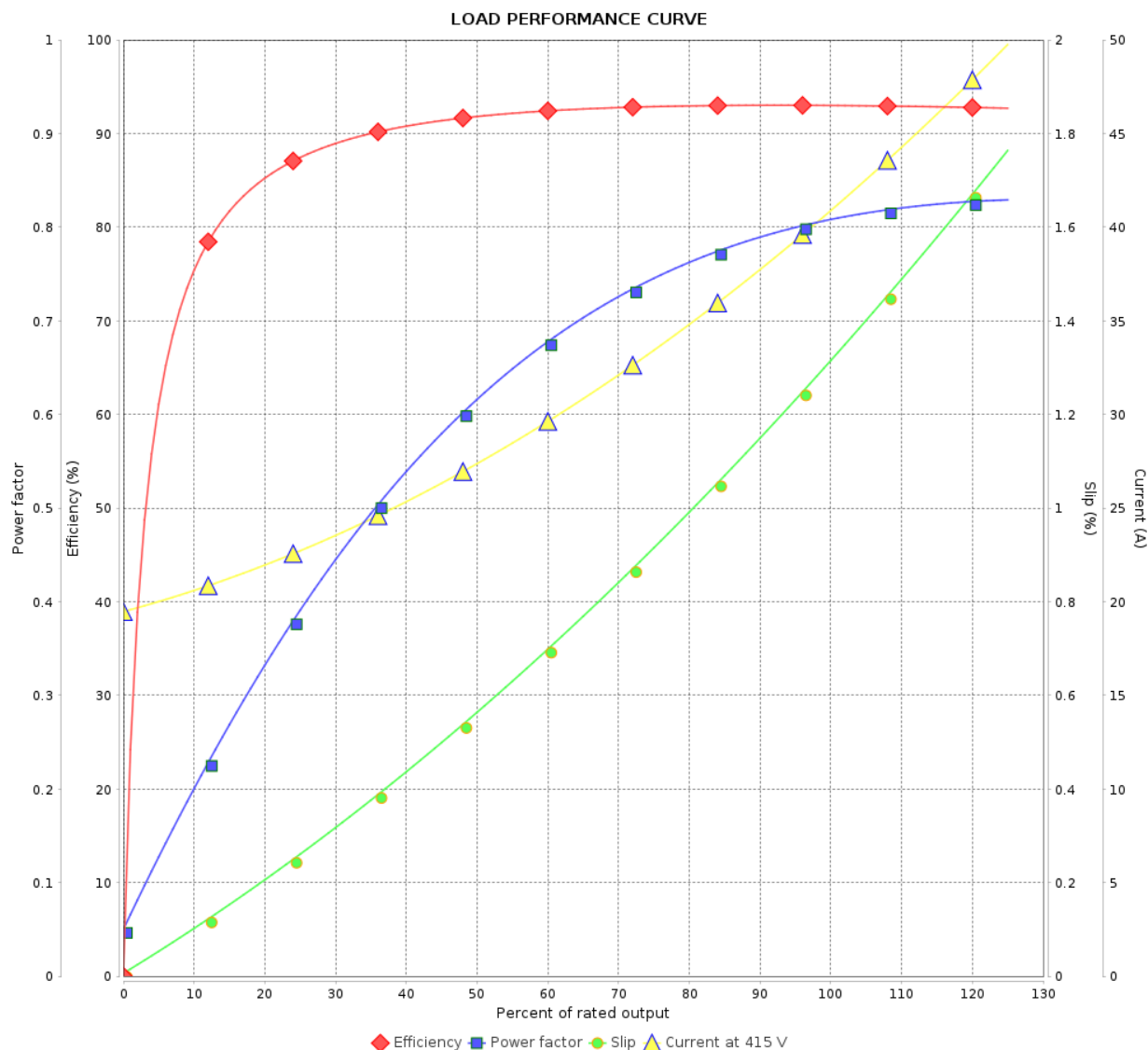
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Customer :

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Performance : 415 V 50 Hz 4P

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Rated torque : 14.5 kgfm  
Locked rotor torque : 350 %  
Breakdown torque : 370 %  
Rated speed : 1480 rpm

Moment of inertia (J) : 0.2097 kgm<sup>2</sup>  
Duty cycle : S1  
Insulation class : F  
Service factor : 1.00  
Temperature rise : 80 K  
Design : N

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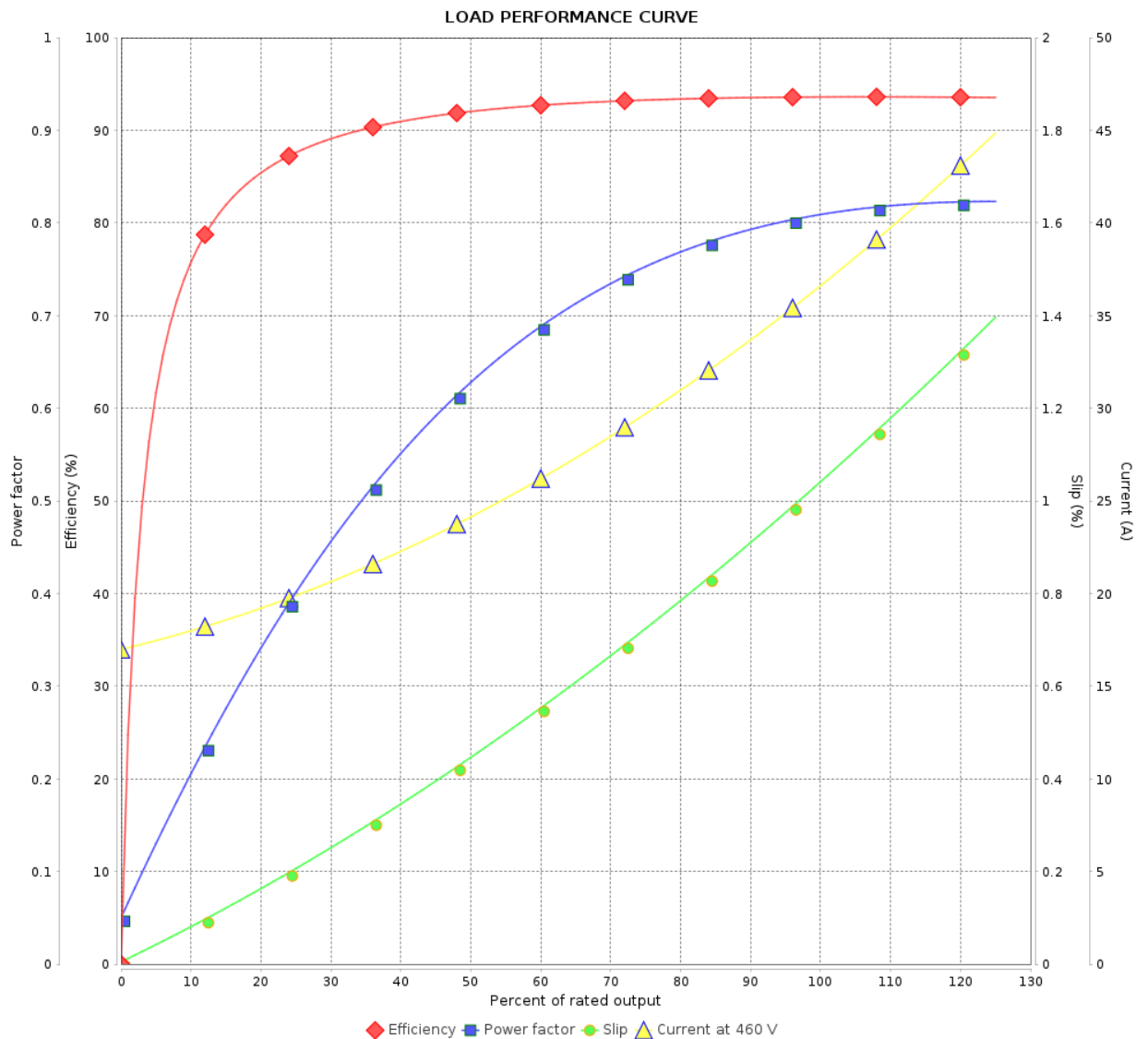
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Rated current	: 36.4 A	Moment of inertia (J)	: 0.2097 kgm <sup>2</sup>
LRC	: 8.8	Duty cycle	: S1
Rated torque	: 12.0 kgfm	Insulation class	: F
Locked rotor torque	: 370 %	Service factor	: 1.00
Breakdown torque	: 400 %	Temperature rise	: 80 K
Rated speed	: 1781 rpm	Design	: N

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# THERMAL LIMIT CURVE

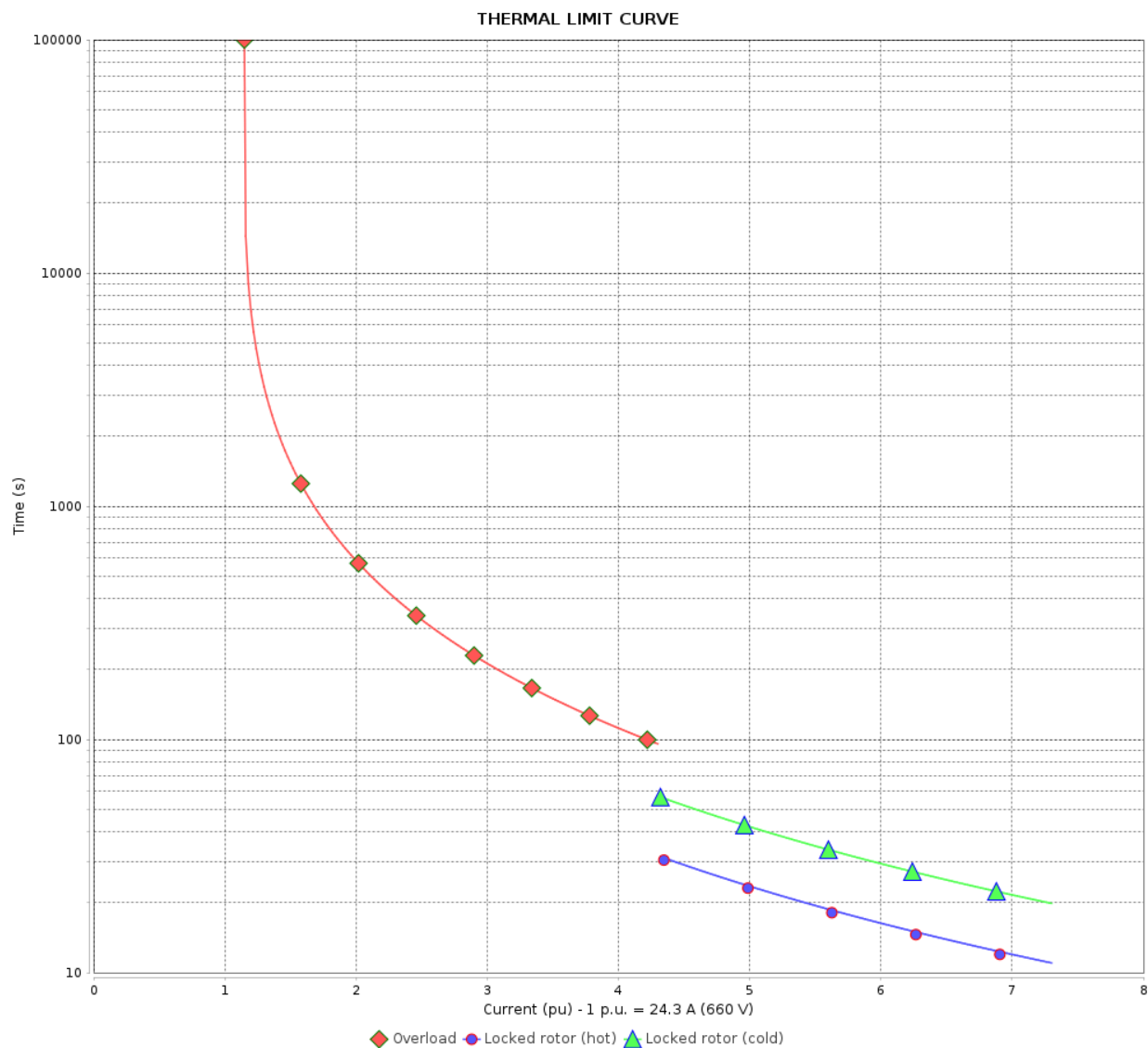
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Moment of inertia (J) : 0.2097 kgm<sup>2</sup>  
Duty cycle : S1  
Insulation class : F  
Service factor : 1.00  
Temperature rise : 80 K  
Design : N

Heating constant

Cooling constant

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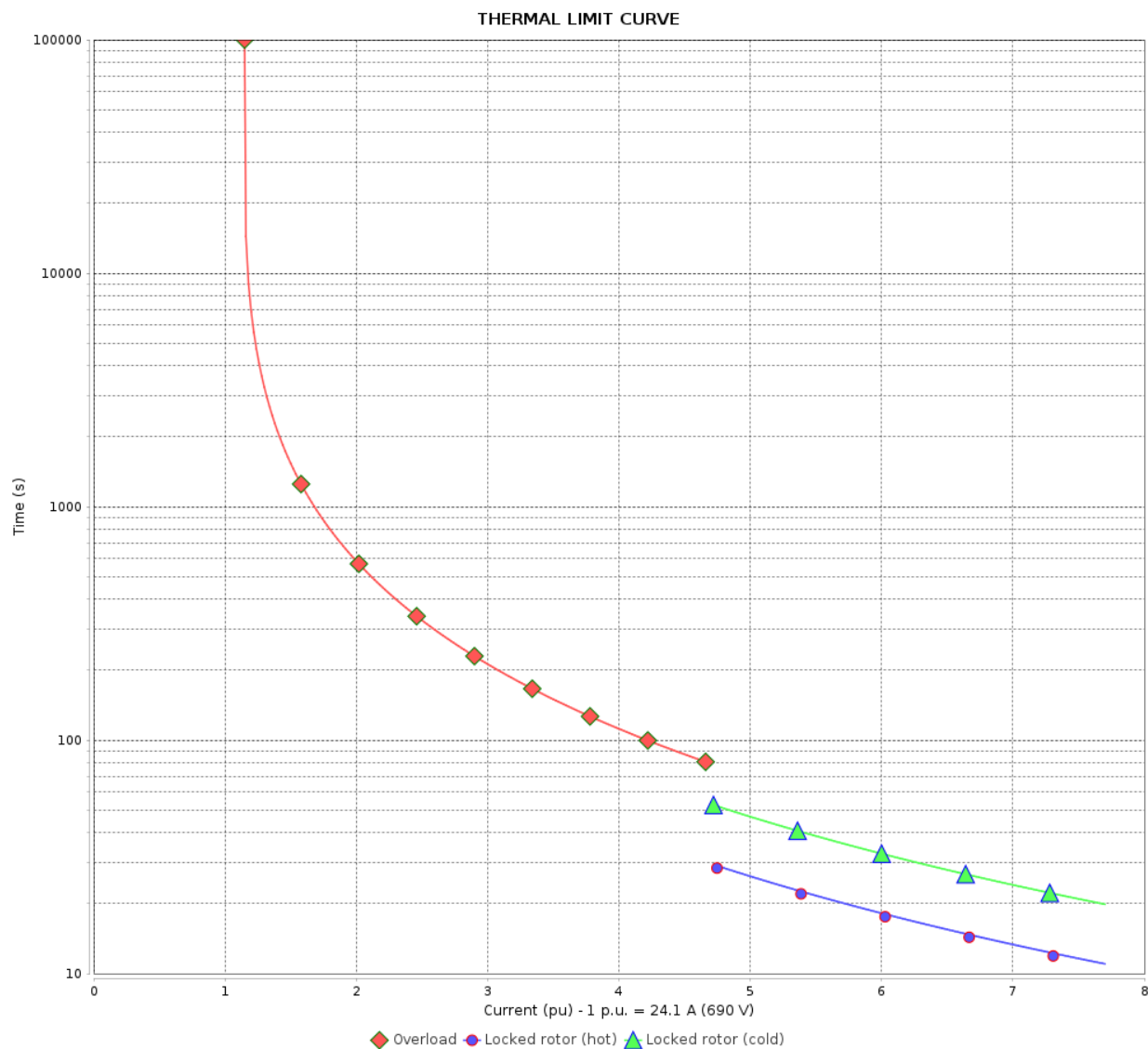
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Duty cycle : S1  
Insulation class : F  
Service factor : 1.00  
Temperature rise : 80 K  
Design : N

Heating constant

Cooling constant

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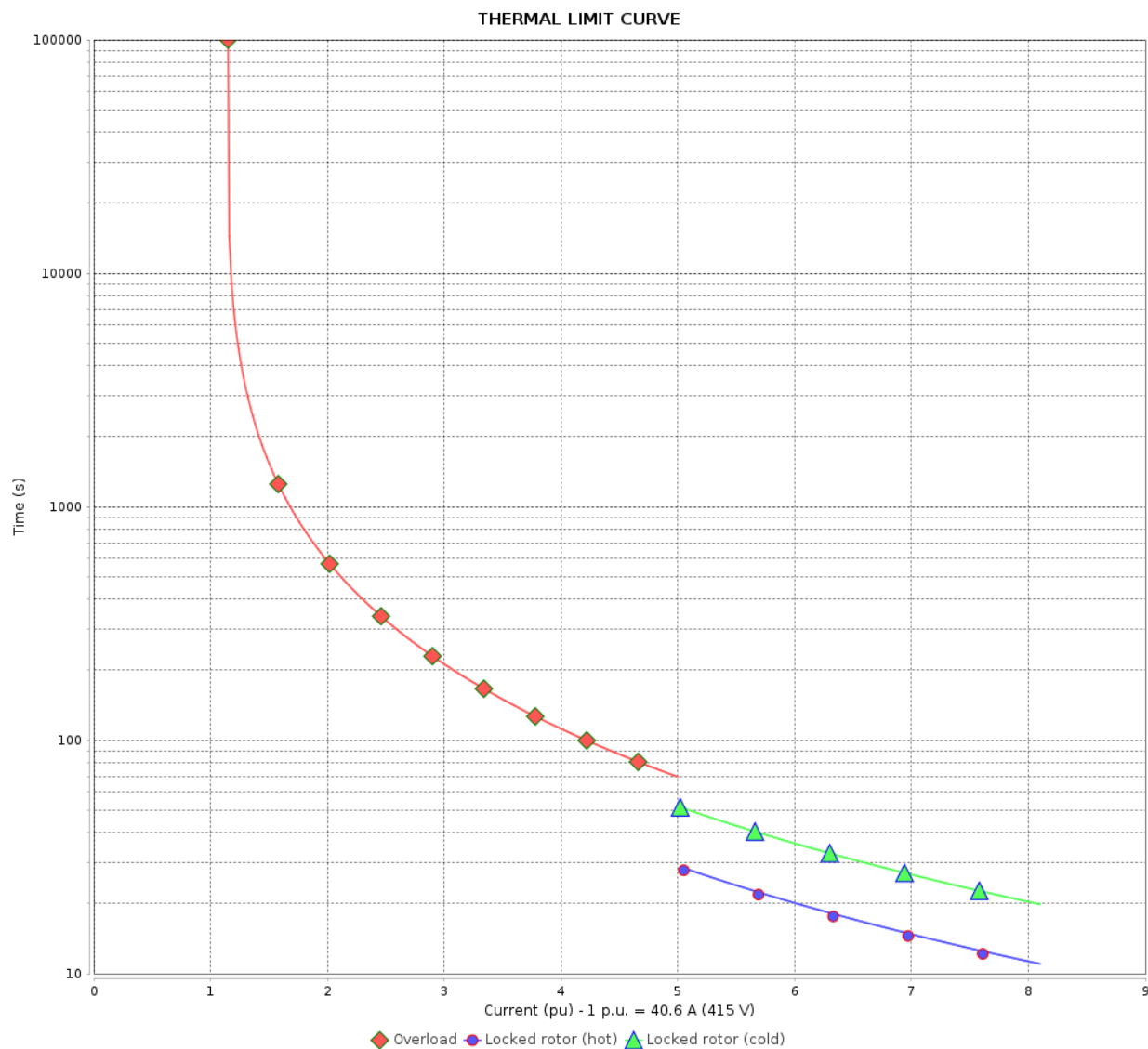
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Performance : 415 V 50 Hz 4P

Rated current	: 40.6 A	Moment of inertia (J)	: 0.2097 kgm <sup>2</sup>
LRC	: 8.1	Duty cycle	: S1
Rated torque	: 14.5 kgfm	Insulation class	: F
Locked rotor torque	: 350 %	Service factor	: 1.00
Breakdown torque	: 370 %	Temperature rise	: 80 K
Rated speed	: 1480 rpm	Design	: N

Heating constant

Cooling constant

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# THERMAL LIMIT CURVE

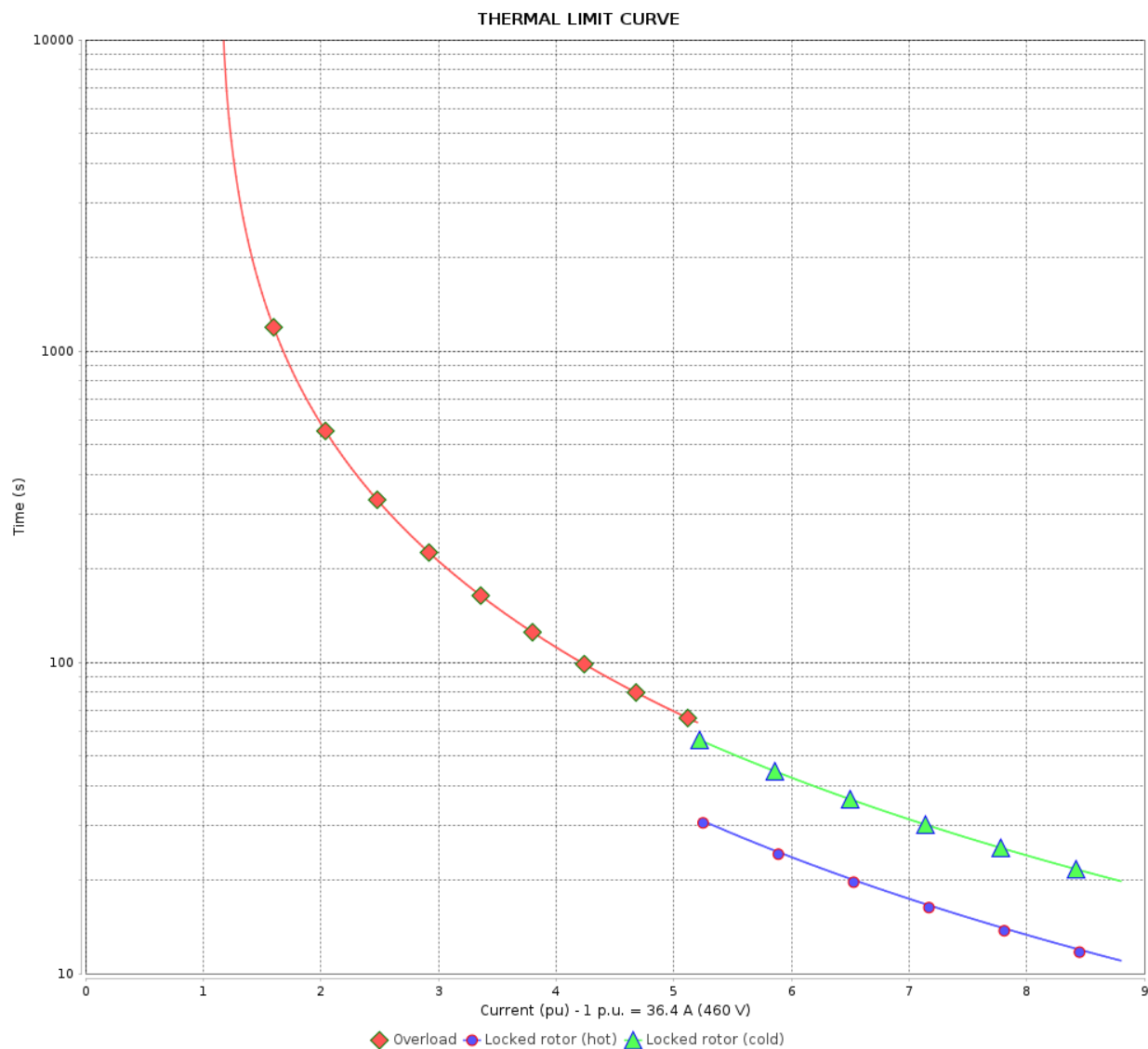
## Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : W22 IE3 Three-Phase

Product code : 15834980



Performance : 460 V 60 Hz 4P

Rated current : 36.4 A  
LRC : 8.8  
Rated torque : 12.0 kgfm  
Locked rotor torque : 370 %  
Breakdown torque : 400 %  
Rated speed : 1781 rpm

Moment of inertia (J) : 0.2097 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

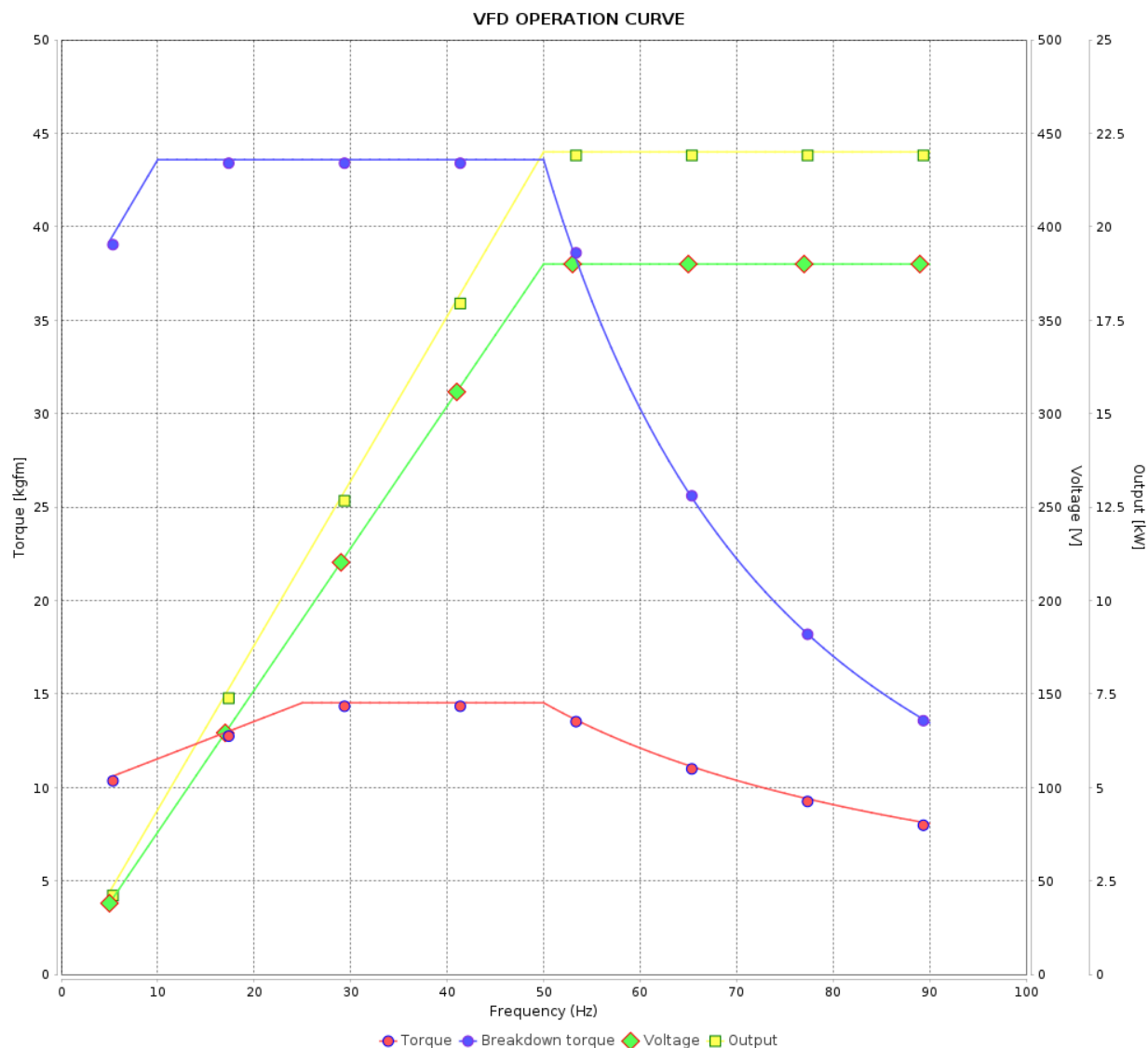
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Temperature rise : 80 K  
Design : N

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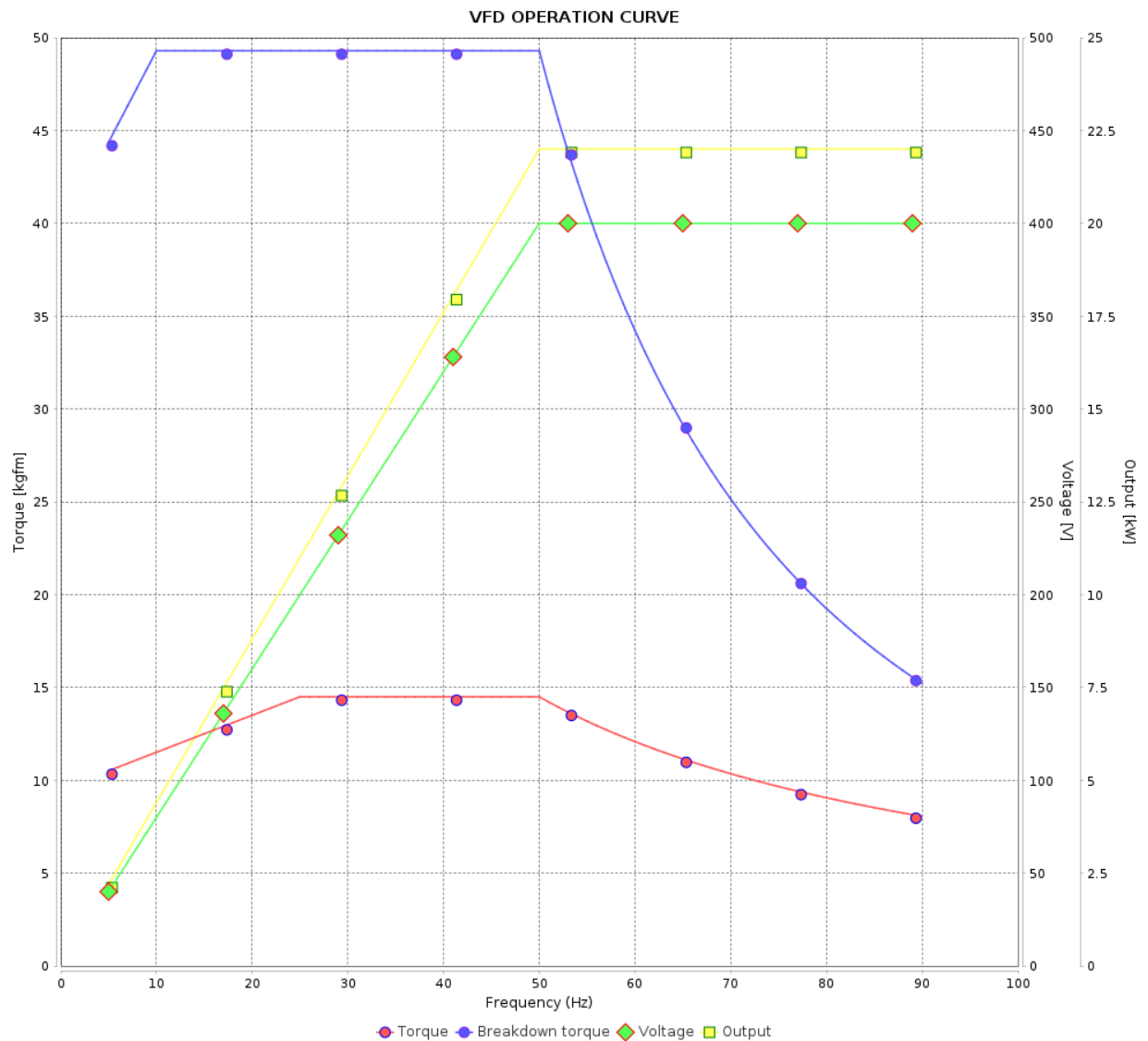
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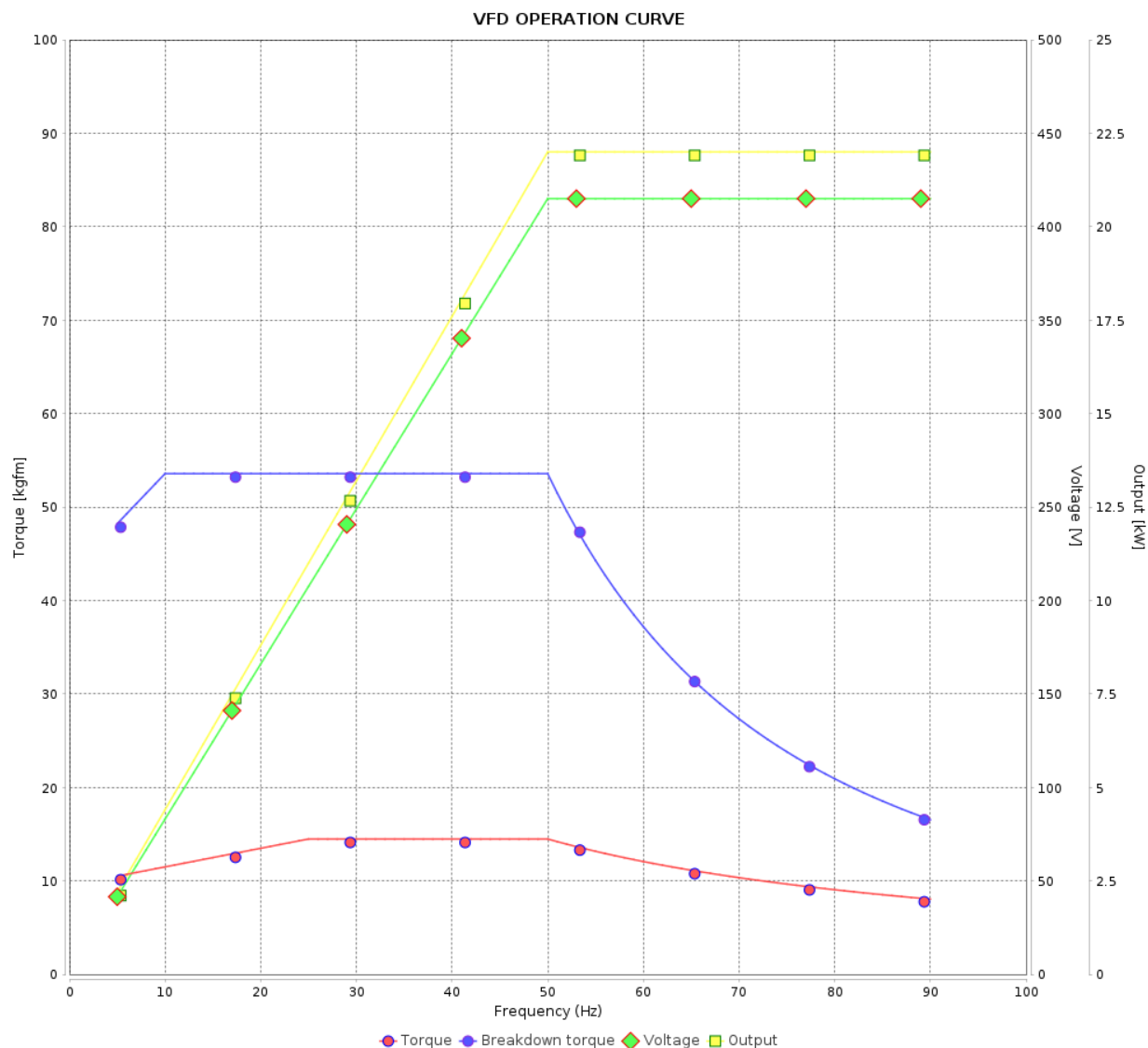
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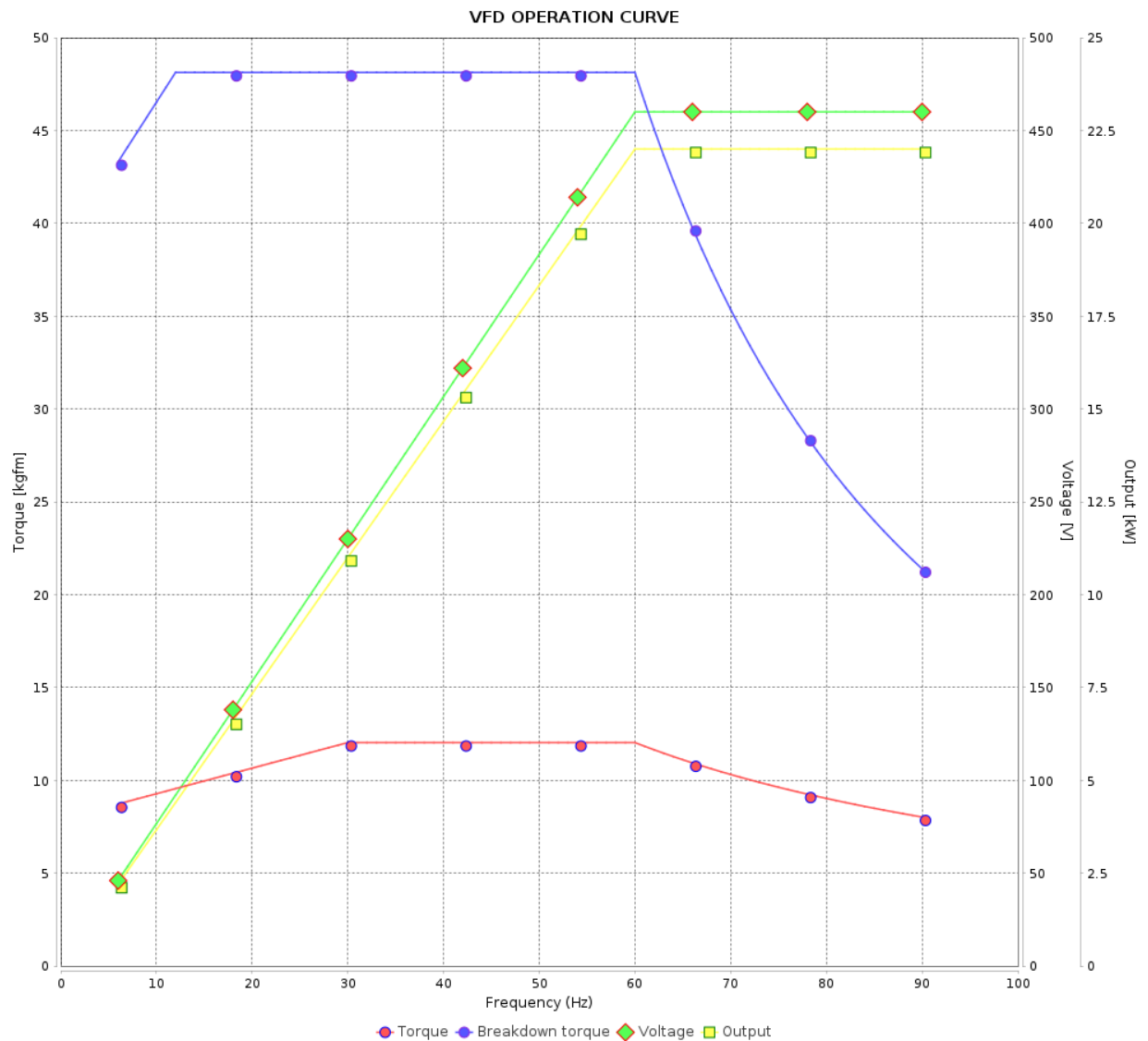
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