

DATA SHEET

Three Phase Induction Motor - Squirrel Cage



Customer :					
Product line : IE3 Three-Phase	Product code : 12959504				
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 : B35T Rotation ¹ : Both (CW and CCW) Starting method : Direct On Line Approx. weight ² : 211 kg Moment of inertia (J) : 0.2097 kgm ²				
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]	42.3/24.4	41.0/23.8	40.6	36.0	
L. R. Amperes [A]	309/178	316/183	329	317	
LRC [A]	7.3	7.7	8.1	8.8	
No load current [A]	17.0/9.79	18.6/10.8	20.2	17.2	
Rated speed [RPM]	1475	1478	1480	1780	
Slip [%]	1.67	1.47	1.33	1.11	
Rated torque [kgfm]	14.5	14.5	14.5	12.0	
Locked rotor torque [%]	290	330	360	380	
Breakdown torque [%]	310	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 ²	61.0 dB(A)	61.0 dB(A)	61.0 dB(A)	63.0 dB(A)	
Efficiency (%)	25%				
	50%	92.5	92.3	91.9	
	75%	92.8	93.0	92.8	
	100%	93.0	93.2	93.0	
Power Factor	25%				
	50%	0.70	0.66	0.62	
	75%	0.81	0.77	0.74	
	100%	0.85	0.83	0.81	
Losses at normative operating points (speed;torque), in percentage of rated output power					
Losses (%)	P1 (0,9;1,0)	7.2	7.0	7.2	6.6
	P2 (0,5;1,0)	6.2	6.0	6.2	5.6
	P3 (0,25;1,0)	6.1	5.9	6.1	5.5
	P4 (0,9;0,5)	3.4	3.3	3.4	3.1
	P5 (0,5;0,5)	2.4	2.4	2.4	2.2
	P6 (0,5;0,25)	1.6	1.5	1.6	1.5
	P7 (0,25;0,25)	1.1	1.1	1.1	1.0
Bearing type	Drive end : 6311 ZZ C3	Non drive end : 6211 ZZ C3	Foundation loads		
Sealing	Oil Seal	Lip Seal	Max. traction	: 584 kgf	
Lubrication interval	-	-	Max. compression	: 795 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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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

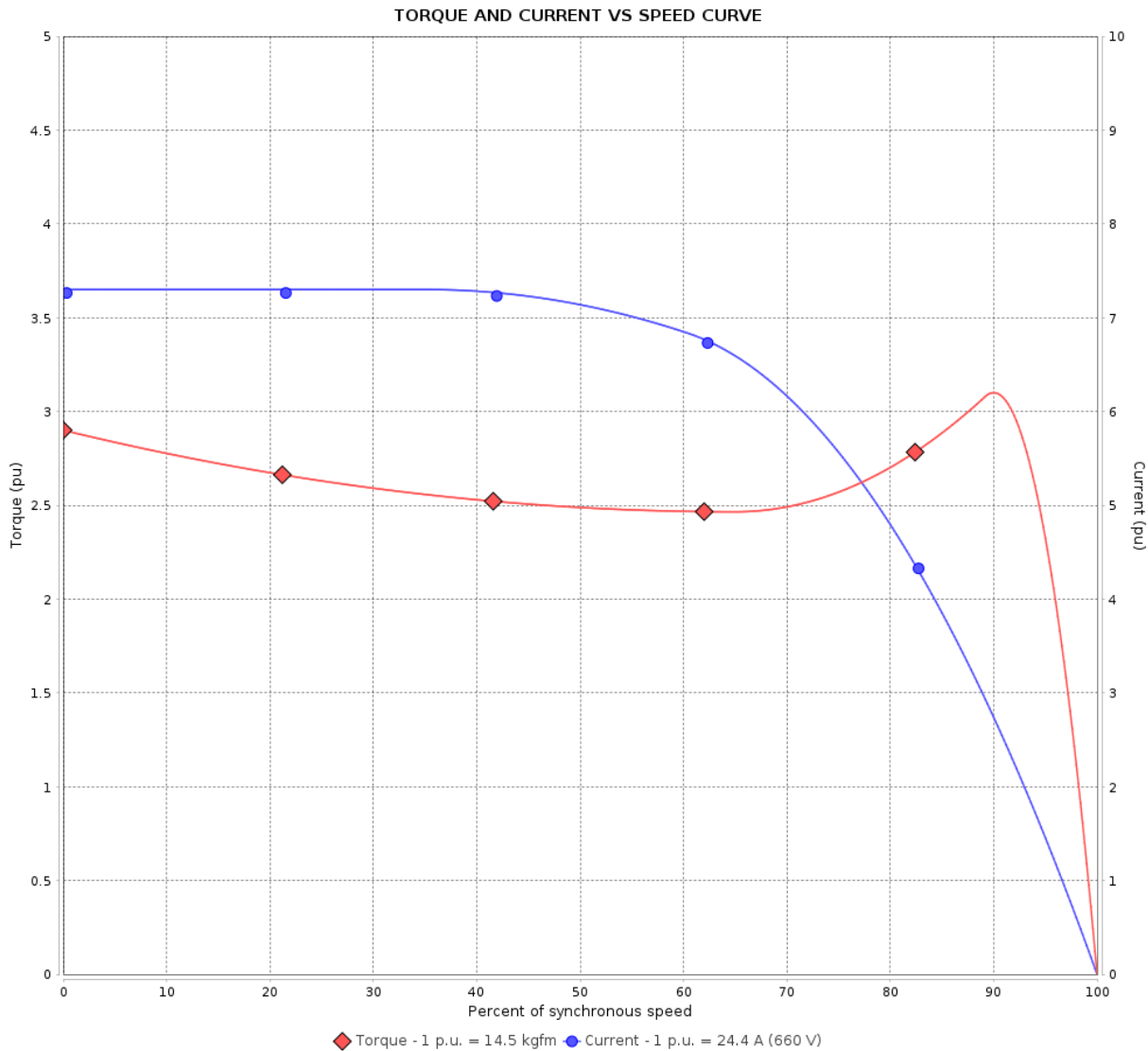
Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : IE3 Three-Phase

Product code : 12959504



Performance : 380/660 V 50 Hz 4P

Rated current	: 42.3/24.4 A	Moment of inertia (J)	: 0.2097 kgm ²
LRC	: 7.3	Duty cycle	: S1
Rated torque	: 14.5 kgfm	Insulation class	: F
Locked rotor torque	: 290 %	Service factor	: 1.00
Breakdown torque	: 310 %	Temperature rise	: 80 K
Rated speed	: 1475 rpm	Design	: N

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

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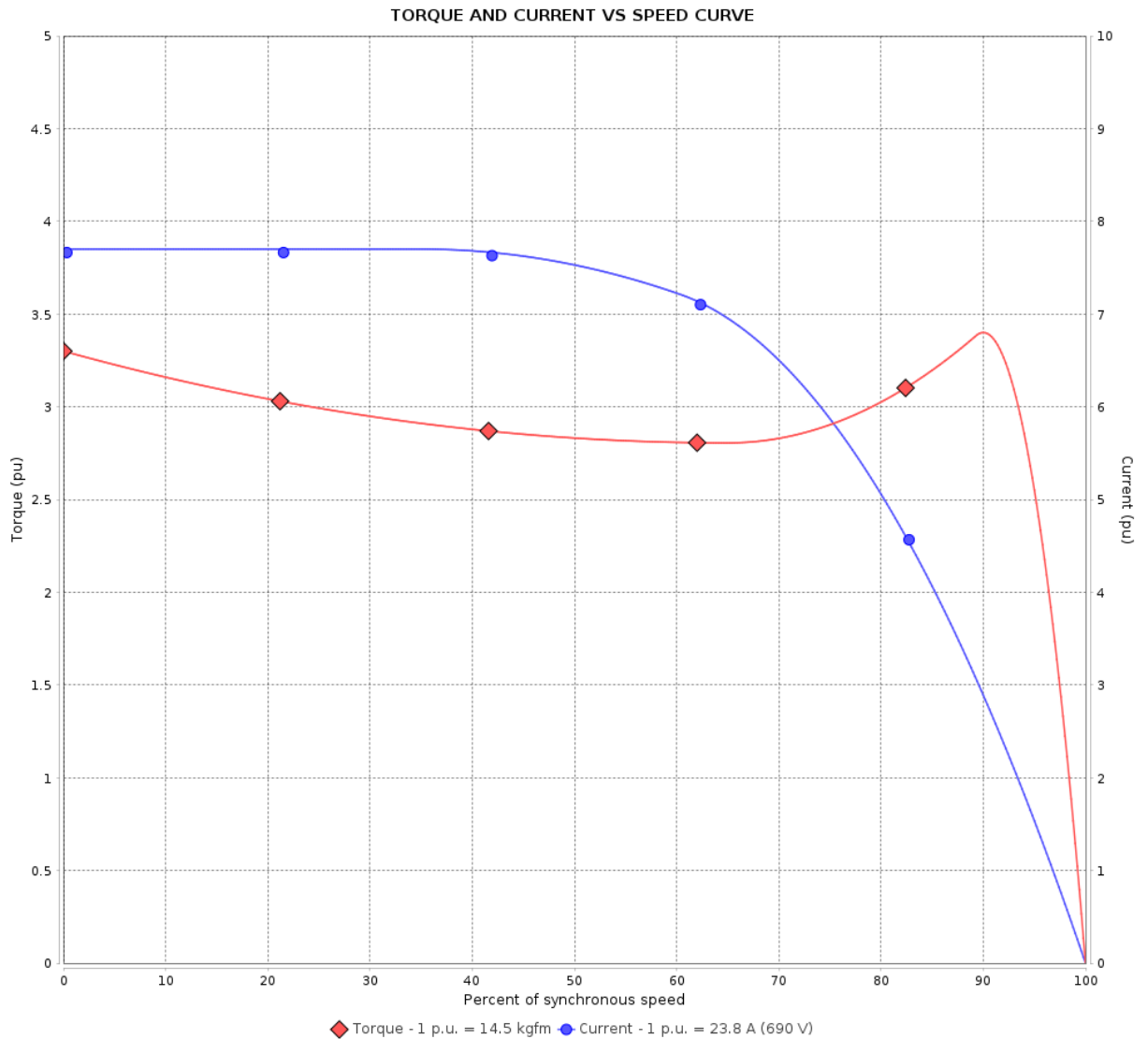
Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : IE3 Three-Phase

Product code : 12959504



Performance : 400/690 V 50 Hz 4P

Rated current	: 41.0/23.8 A	Moment of inertia (J)	: 0.2097 kgm ²
LRC	: 7.7	Duty cycle	: S1
Rated torque	: 14.5 kgfm	Insulation class	: F
Locked rotor torque	: 330 %	Service factor	: 1.00
Breakdown torque	: 340 %	Temperature rise	: 80 K
Rated speed	: 1478 rpm	Design	: N

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

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TORQUE AND CURRENT VS SPEED CURVE

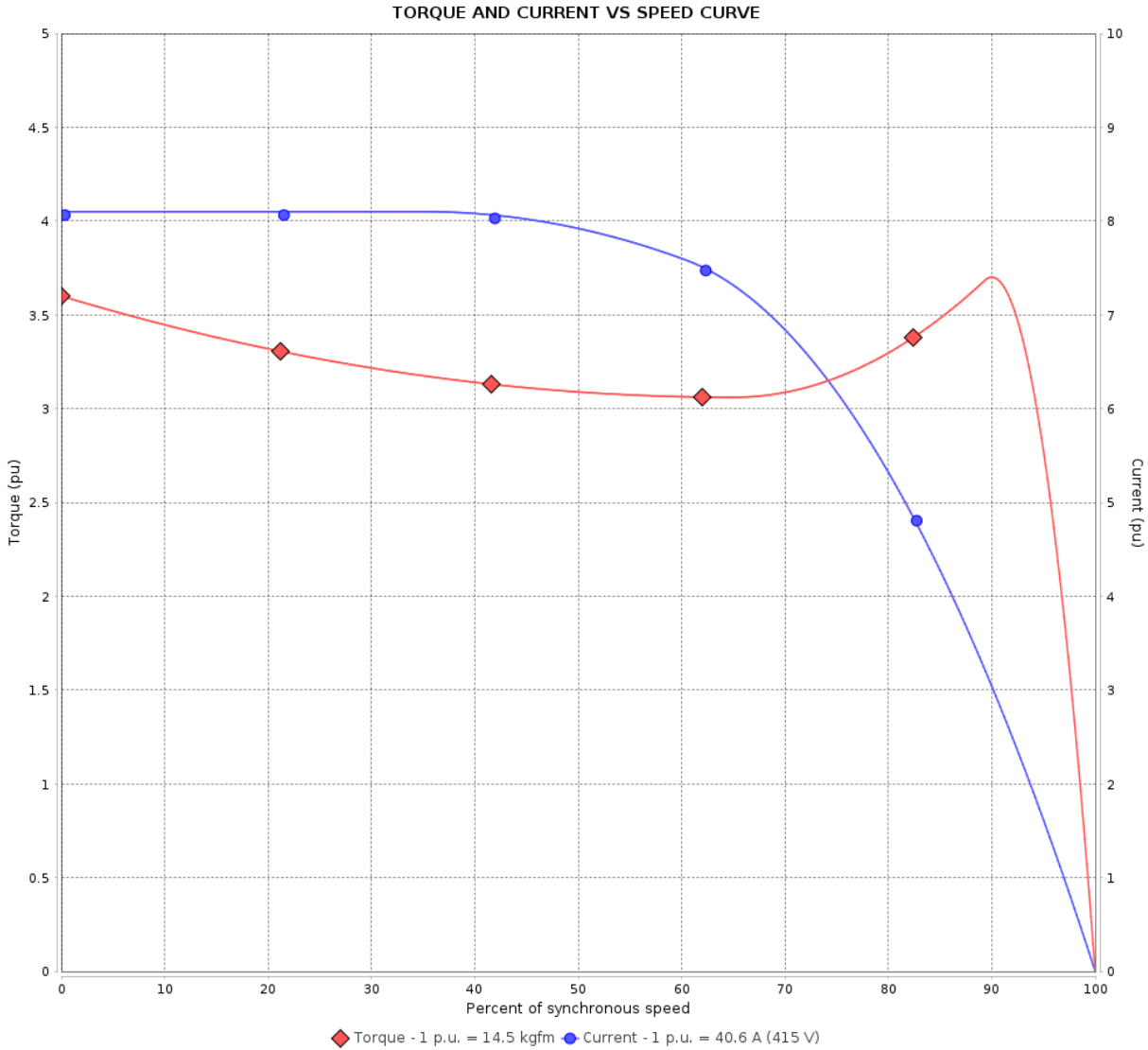
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Customer :

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Performance : 415 V 50 Hz 4P

Rated current	: 40.6 A	Moment of inertia (J)	: 0.2097 kgm ²
LRC	: 8.1	Duty cycle	: S1
Rated torque	: 14.5 kgfm	Insulation class	: F
Locked rotor torque	: 360 %	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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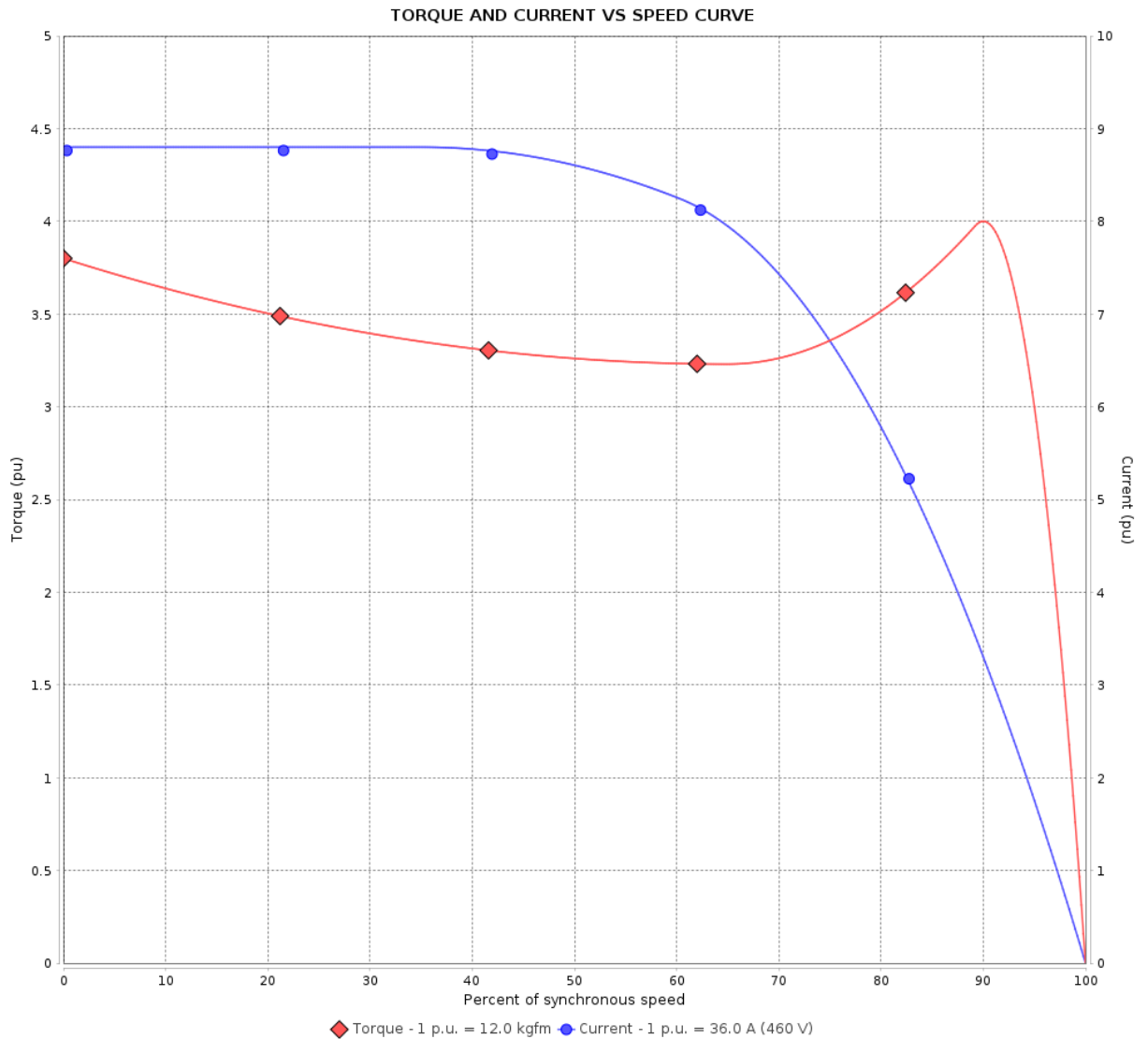
Three Phase Induction Motor - Squirrel Cage



Customer :

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Product code : 12959504



Performance : 460 V 60 Hz 4P

Rated current	: 36.0 A	Moment of inertia (J)	: 0.2097 kgm ²
LRC	: 8.8	Duty cycle	: S1
Rated torque	: 12.0 kgfm	Insulation class	: F
Locked rotor torque	: 380 %	Service factor	: 1.00
Breakdown torque	: 400 %	Temperature rise	: 80 K
Rated speed	: 1780 rpm	Design	: N

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

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LOAD PERFORMANCE CURVE

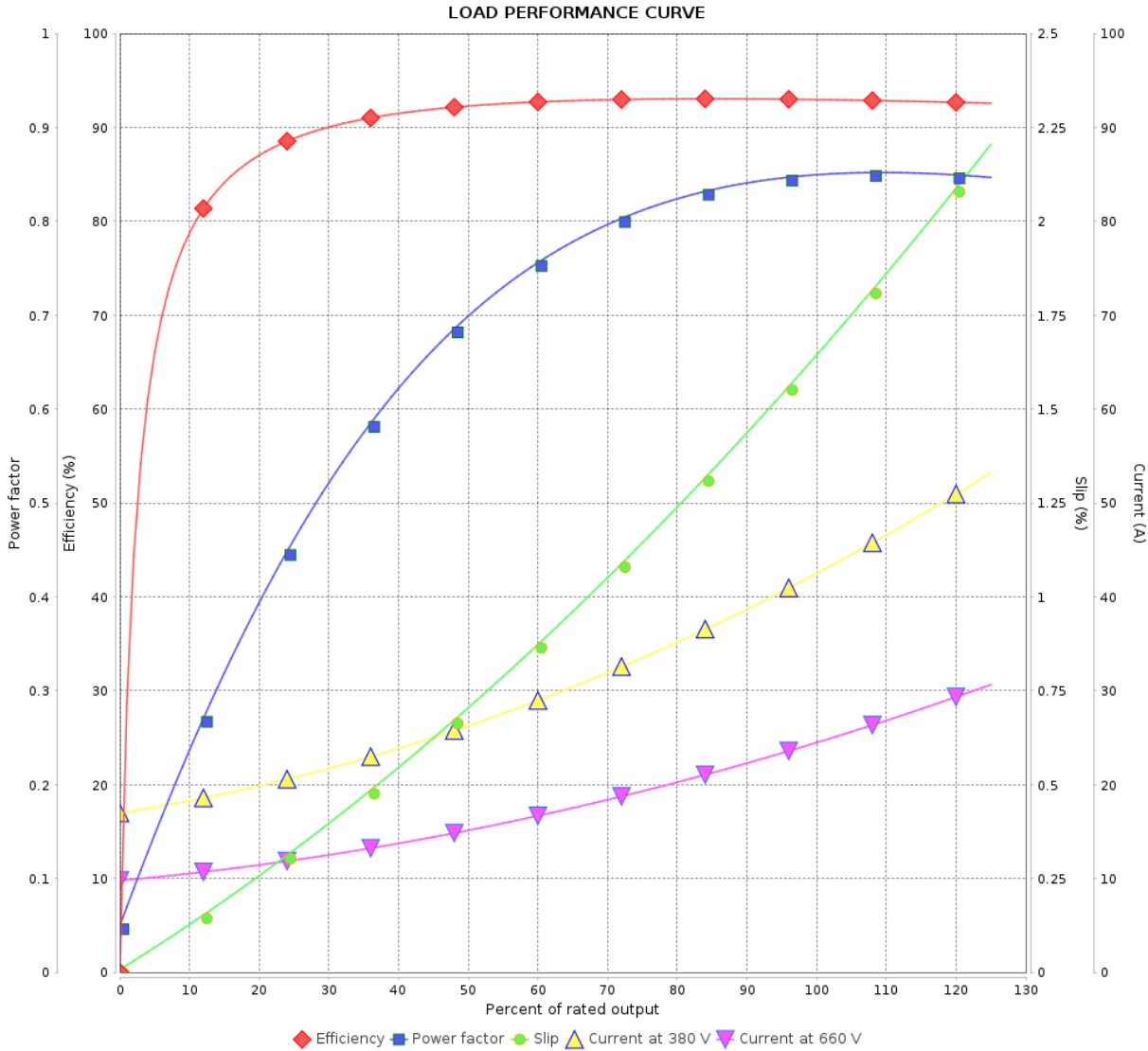
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Moment of inertia (J) : 0.2097 kgm²
 Duty cycle : S1
 Insulation class : F
 Service factor : 1.00
 Temperature rise : 80 K
 Design : N

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LOAD PERFORMANCE CURVE

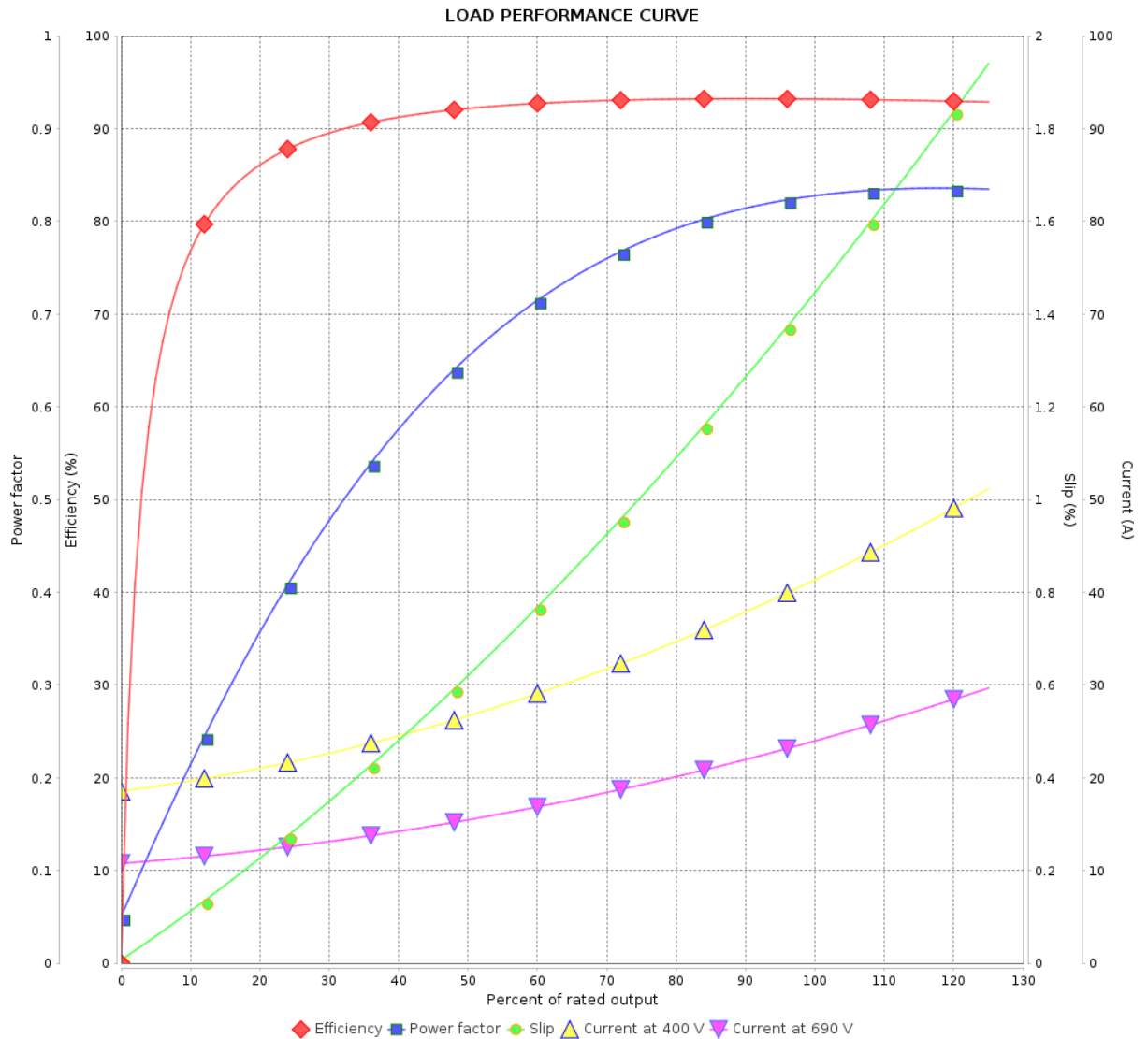
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 Breakdown torque : 340 %
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 Duty cycle : S1
 Insulation class : F
 Service factor : 1.00
 Temperature rise : 80 K
 Design : N

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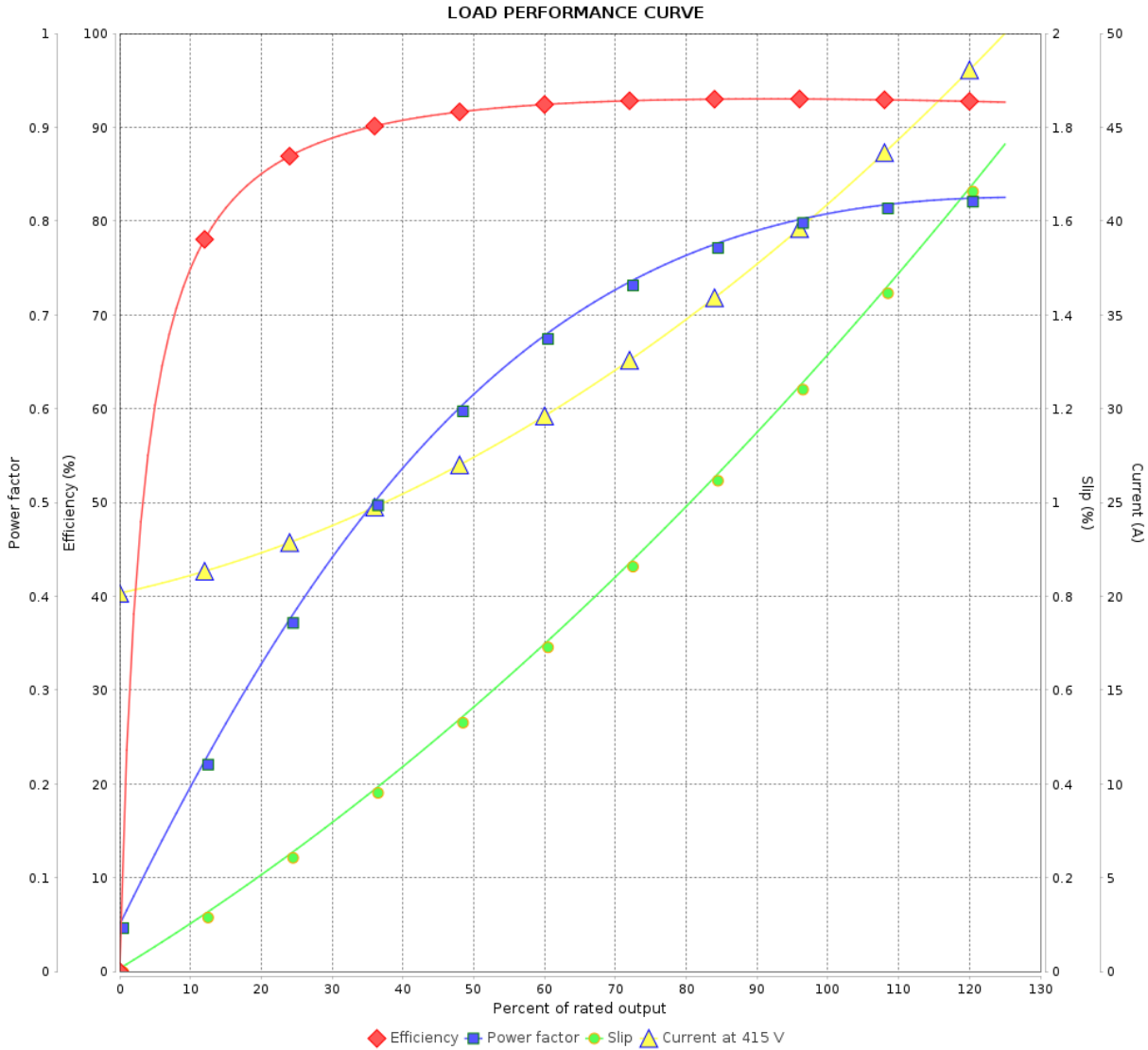
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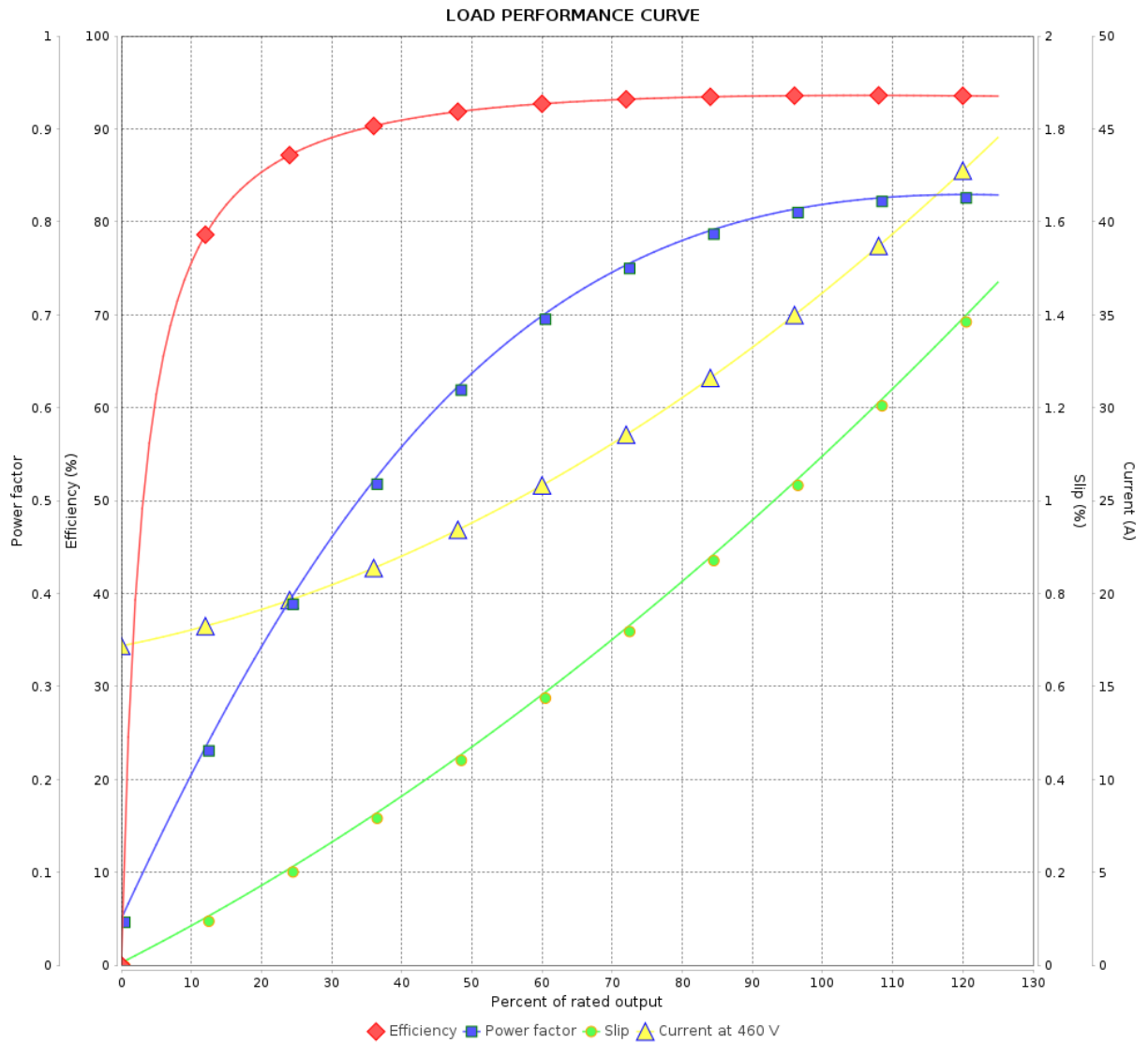
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THERMAL LIMIT CURVE

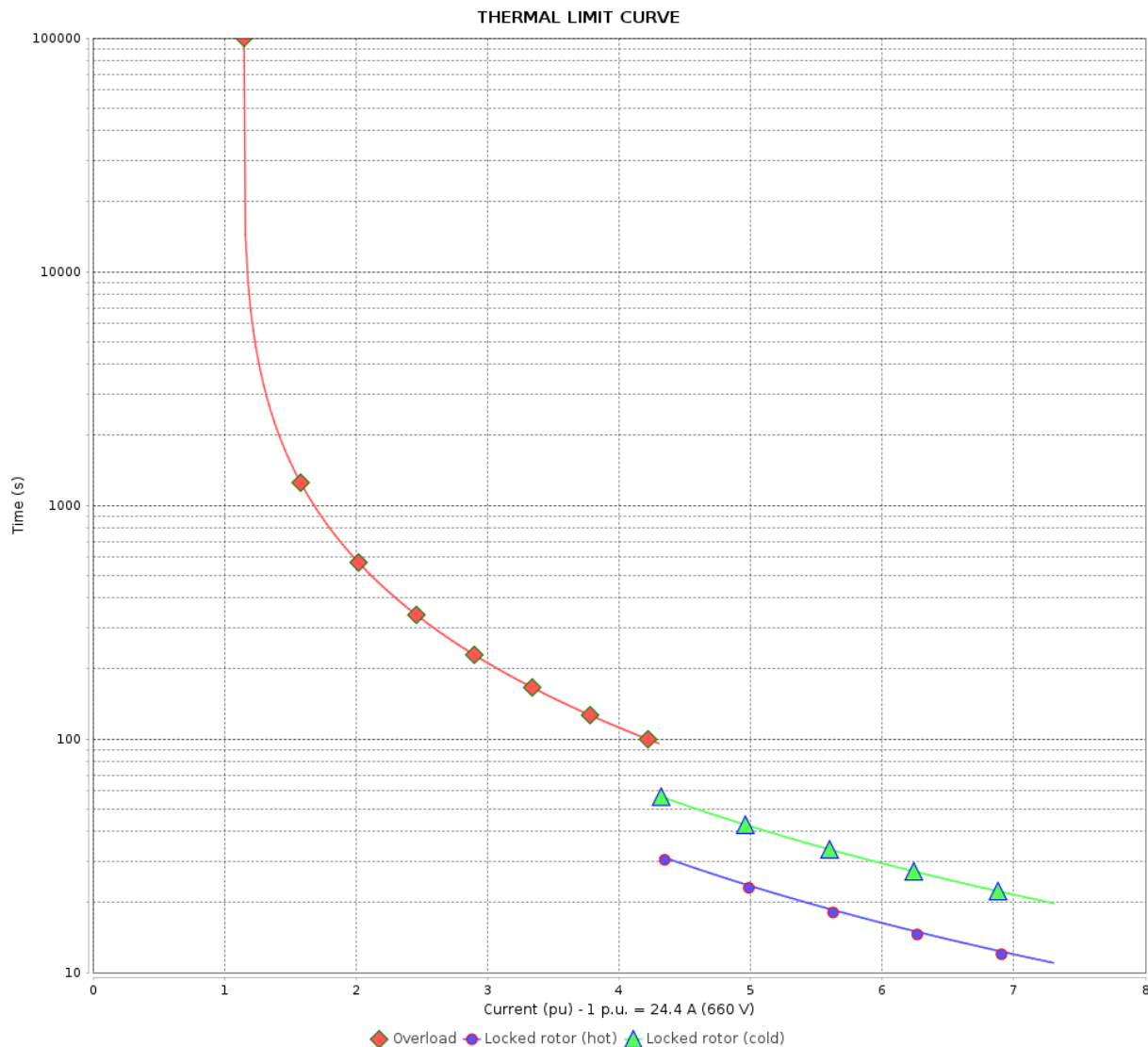
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 Service factor : 1.00
 Temperature rise : 80 K
 Design : N

Heating constant
 Cooling constant

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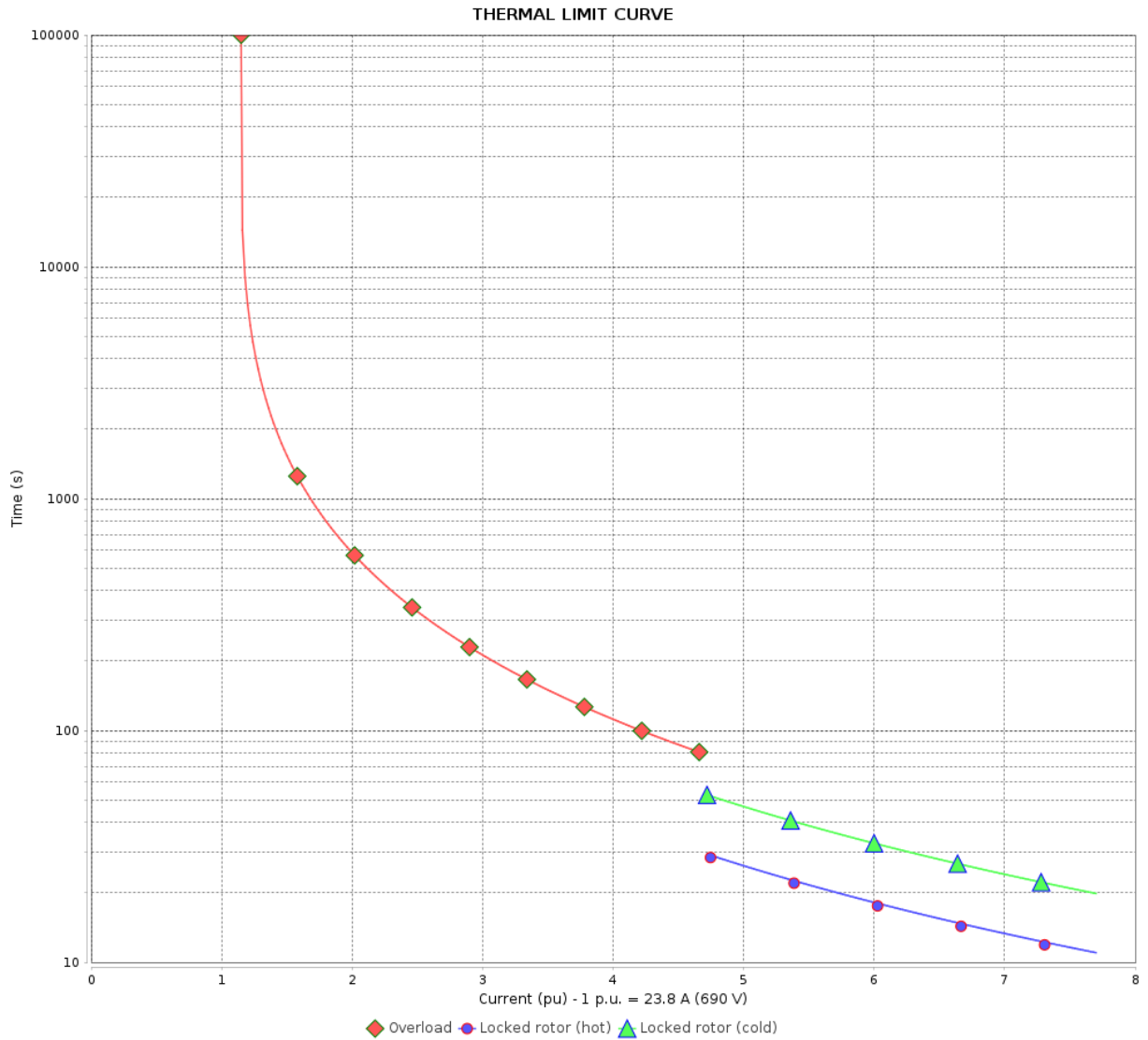
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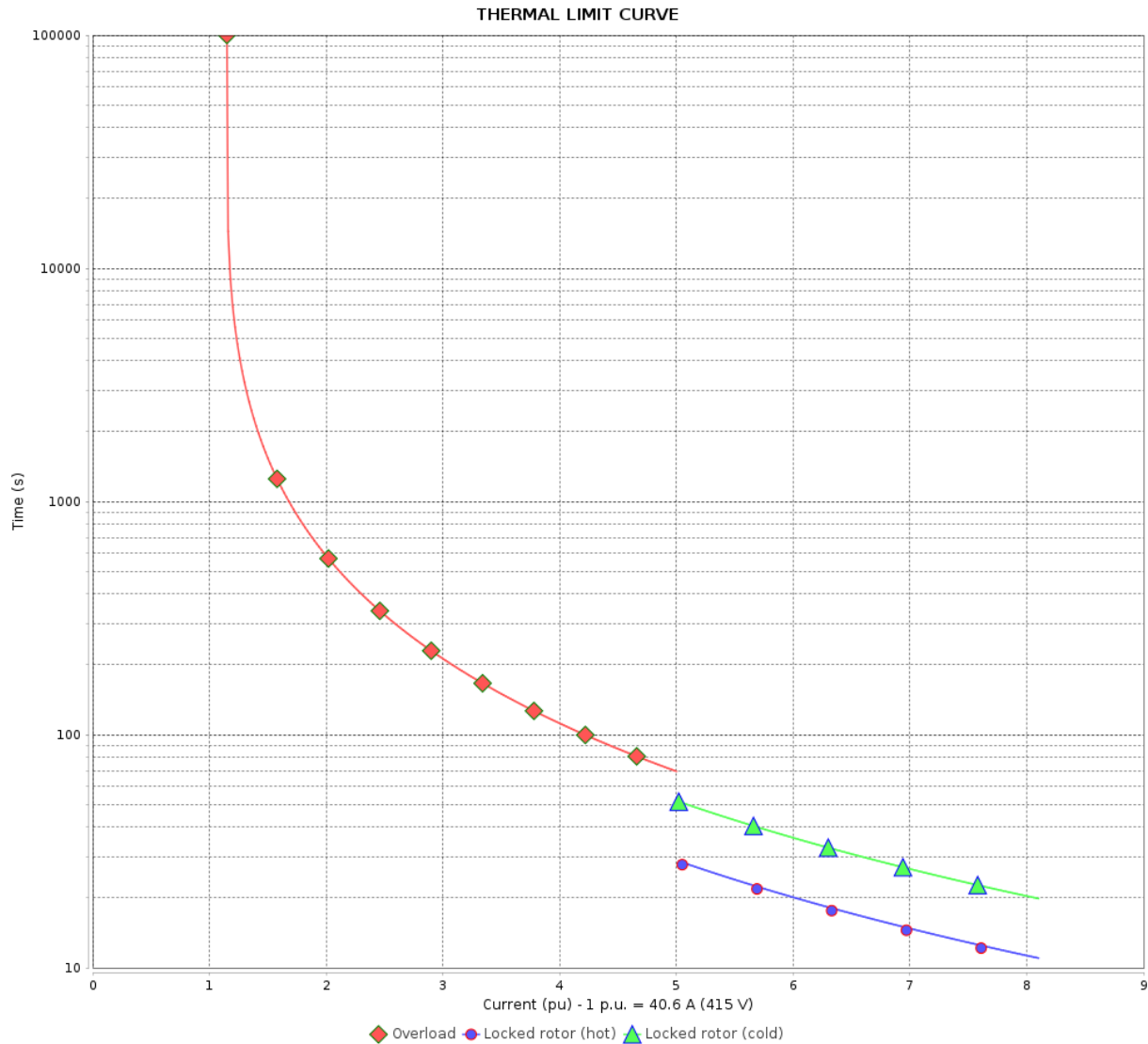
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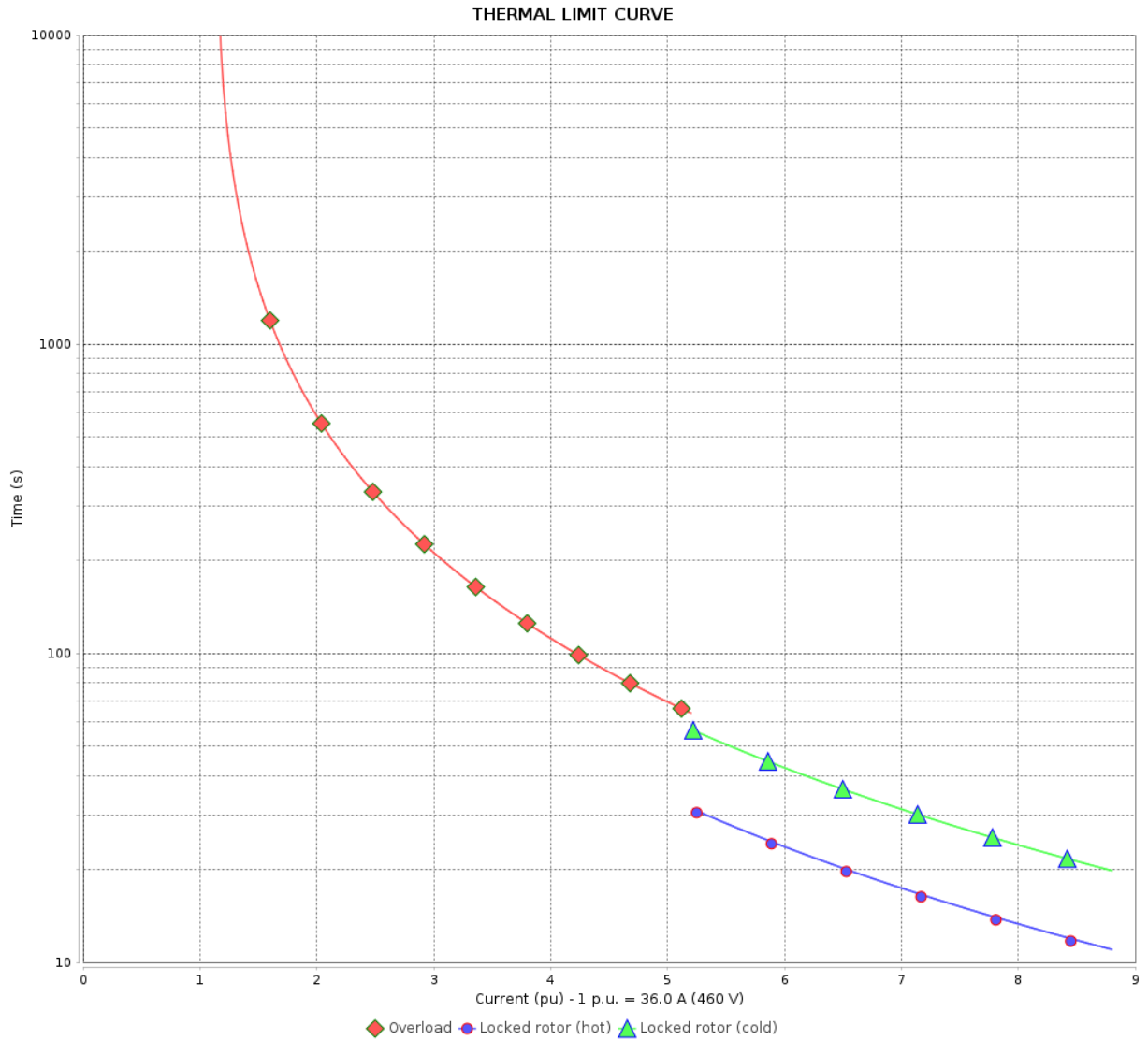
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VFD OPERATION CURVE

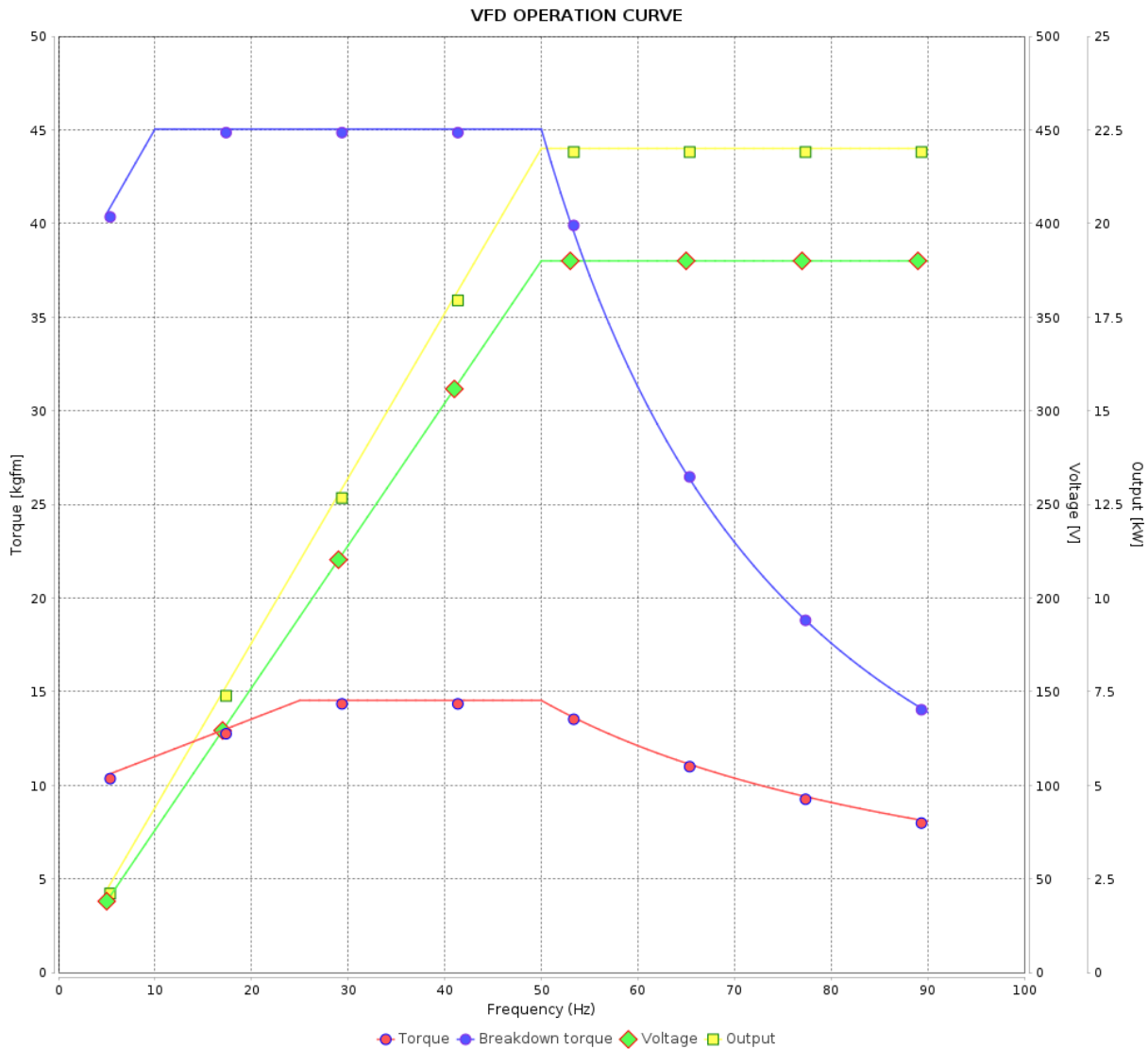
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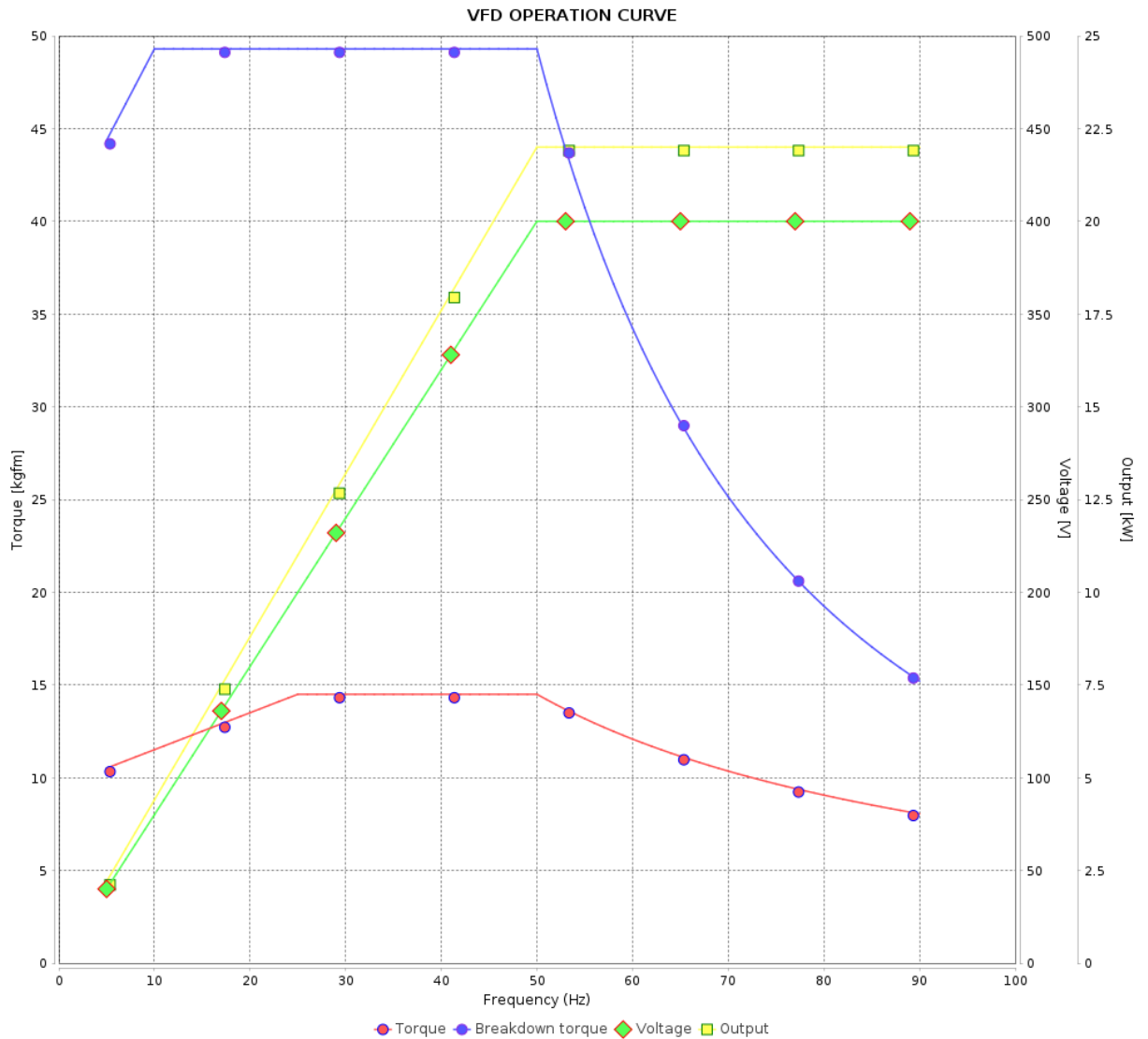
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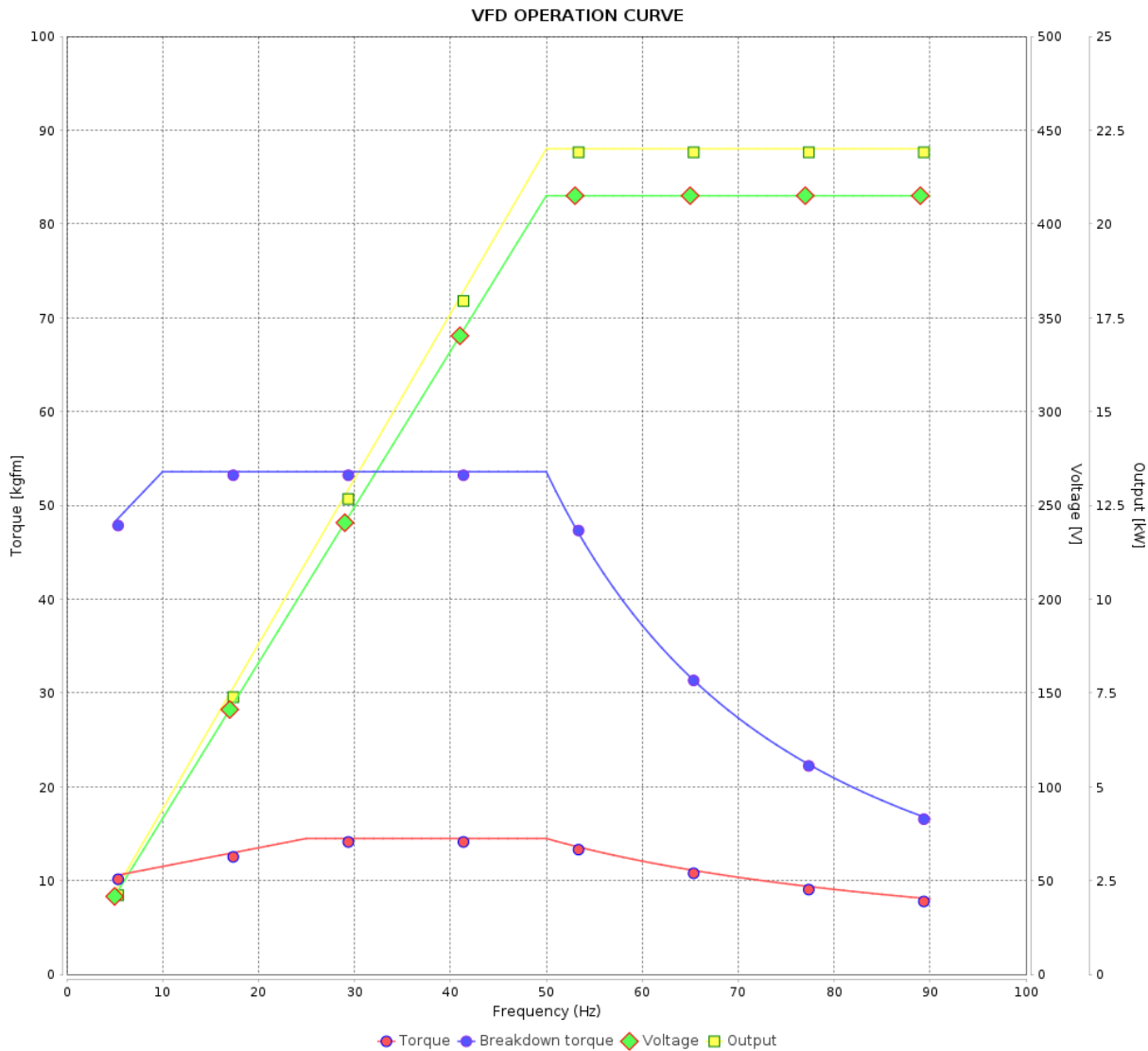
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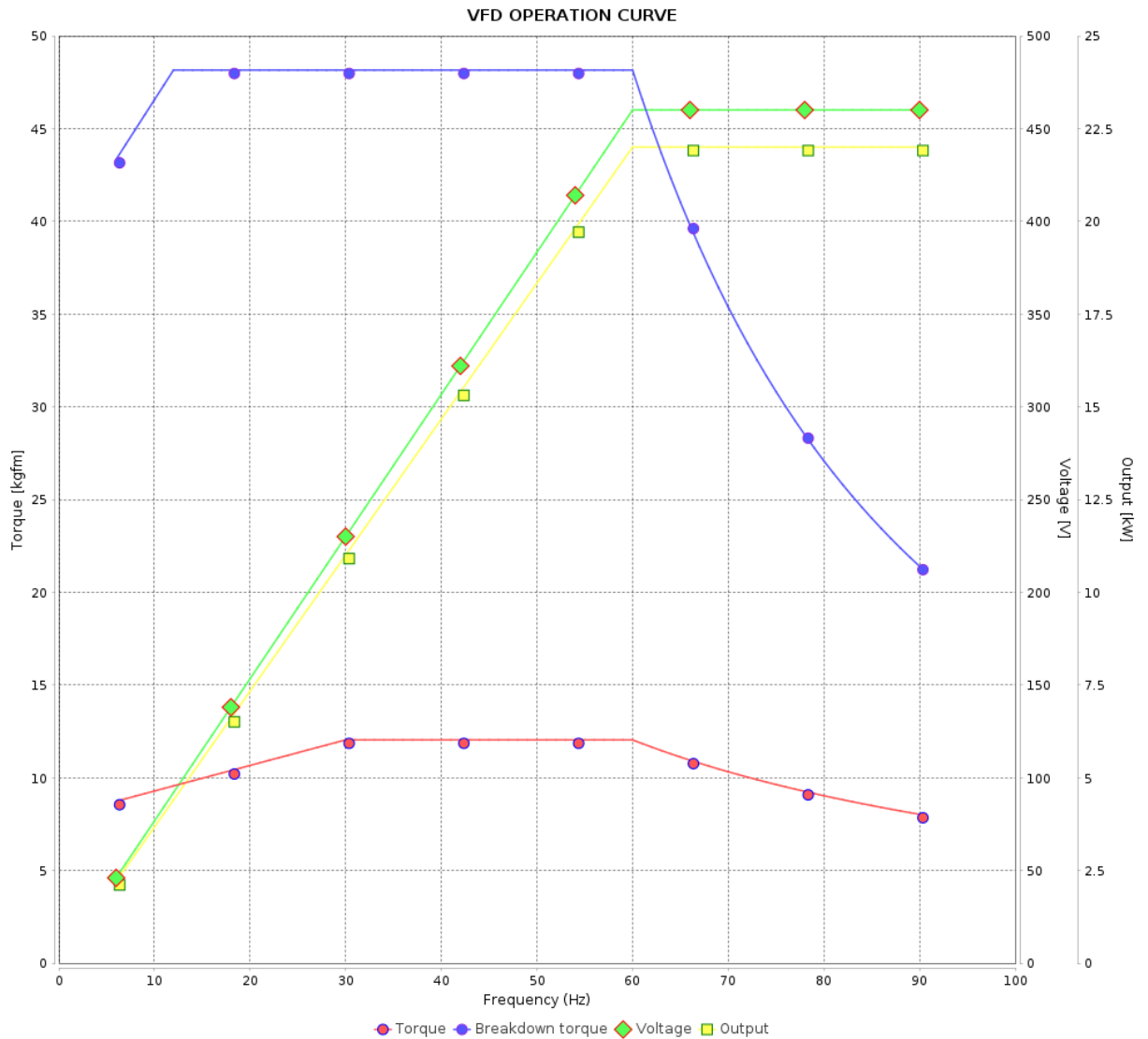
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