

DATA SHEET

Three Phase Induction Motor - Squirrel Cage



Customer		: Astraprom d.o.o.			
Product line		: IE3 Three-Phase		Product code : 12862535	
Frame	: 180M	Cooling method	: IC411 - TEFC		
Insulation class	: F	Mounting	: B5T		
Duty cycle	: S1	Rotation ¹	: Both (CW and CCW)		
Ambient temperature	: -20°C to +40°C	Starting method	: Direct On Line		
Altitude	: 1000 m.a.s.l.	Approx. weight ³	: 176 kg		
Protection degree	: IP55	Moment of inertia (J)	: 0.1740 kgm ²		
Design	: N				
Output [kW]	18.5	18.5	18.5	18.5	18.5
Poles	4	4	4	4	4
Frequency [Hz]	50	50	50	50	60
Rated voltage [V]	380/660	400/690	415	460	460
Rated current [A]	36.1/20.8	35.2/20.4	34.7	30.6	30.6
L. R. Amperes [A]	253/145	264/153	278	260	260
LRC [A]	7.0	7.5	8.0	8.5	8.5
No load current [A]	14.2/8.18	16.0/9.28	17.7	14.5	14.5
Rated speed [RPM]	1473	1476	1477	1780	1780
Slip [%]	1.80	1.60	1.53	1.11	1.11
Rated torque [kgfm]	12.2	12.2	12.2	10.1	10.1
Locked rotor torque [%]	260	300	320	340	340
Breakdown torque [%]	290	320	350	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	14s (cold) 8s (hot)	14s (cold) 8s (hot)	14s (cold) 8s (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)	63.0 dB(A)
Efficiency (%)	25%				
	50%	92.2	91.8	91.8	92.0
	75%	92.6	92.6	92.6	93.0
	100%	92.6	92.6	92.6	93.6
Power Factor	25%				
	50%	0.69	0.64	0.61	0.62
	75%	0.79	0.76	0.73	0.74
	100%	0.84	0.82	0.80	0.81
Losses at normative operating points (speed;torque), in percentage of rated output power					
Losses (%)	P1 (0,9;1,0)	7.8	7.8	7.8	6.7
	P2 (0,5;1,0)	6.7	6.7	6.7	5.8
	P3 (0,25;1,0)	6.2	6.2	6.2	5.3
	P4 (0,9;0,5)	3.6	3.6	3.6	3.1
	P5 (0,5;0,5)	2.6	2.6	2.6	2.2
	P6 (0,5;0,25)	1.7	1.7	1.7	1.4
	P7 (0,25;0,25)	1.2	1.2	1.2	1.0
Bearing type	: Drive end 6311 ZZ C3 Non drive end 6211 ZZ C3	Foundation loads			
Sealing	: Oil Seal Lip Seal	Max. traction : 463 kgf			
Lubrication interval	: - -	Max. compression : 639 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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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

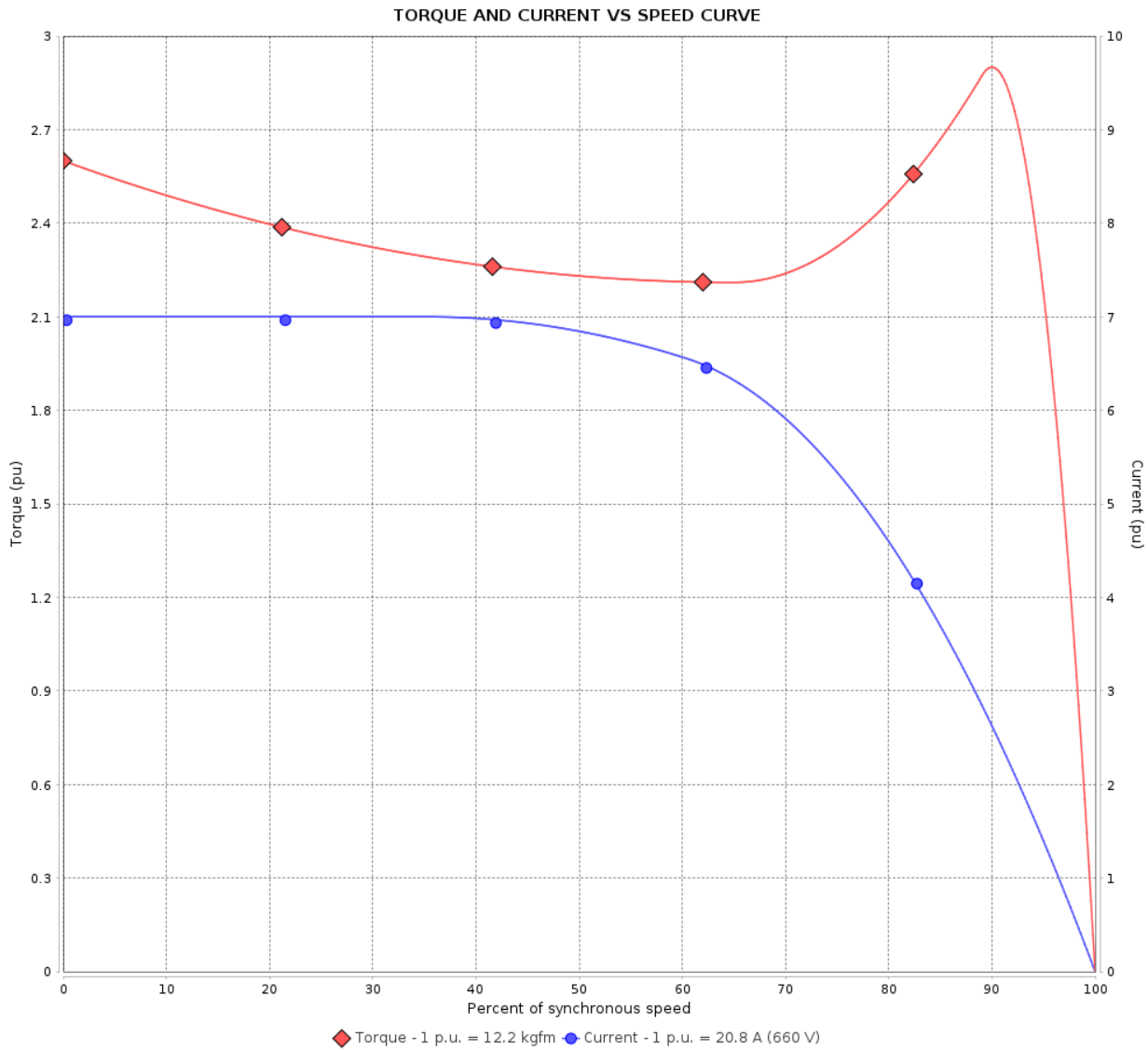
Three Phase Induction Motor - Squirrel Cage



Customer : Astraprom d.o.o.

Product line : IE3 Three-Phase

Product code : 12862535



Performance : 380/660 V 50 Hz 4P

Rated current : 36.1/20.8 A
 LRC : 7.0
 Rated torque : 12.2 kgfm
 Locked rotor torque : 260 %
 Breakdown torque : 290 %
 Rated speed : 1473 rpm

Moment of inertia (J) : 0.1740 kgm²
 Duty cycle : S1
 Insulation class : F
 Service factor : 1.00
 Temperature rise : 80 K
 Design : N

Locked rotor time : 14s (cold) 8s (hot)

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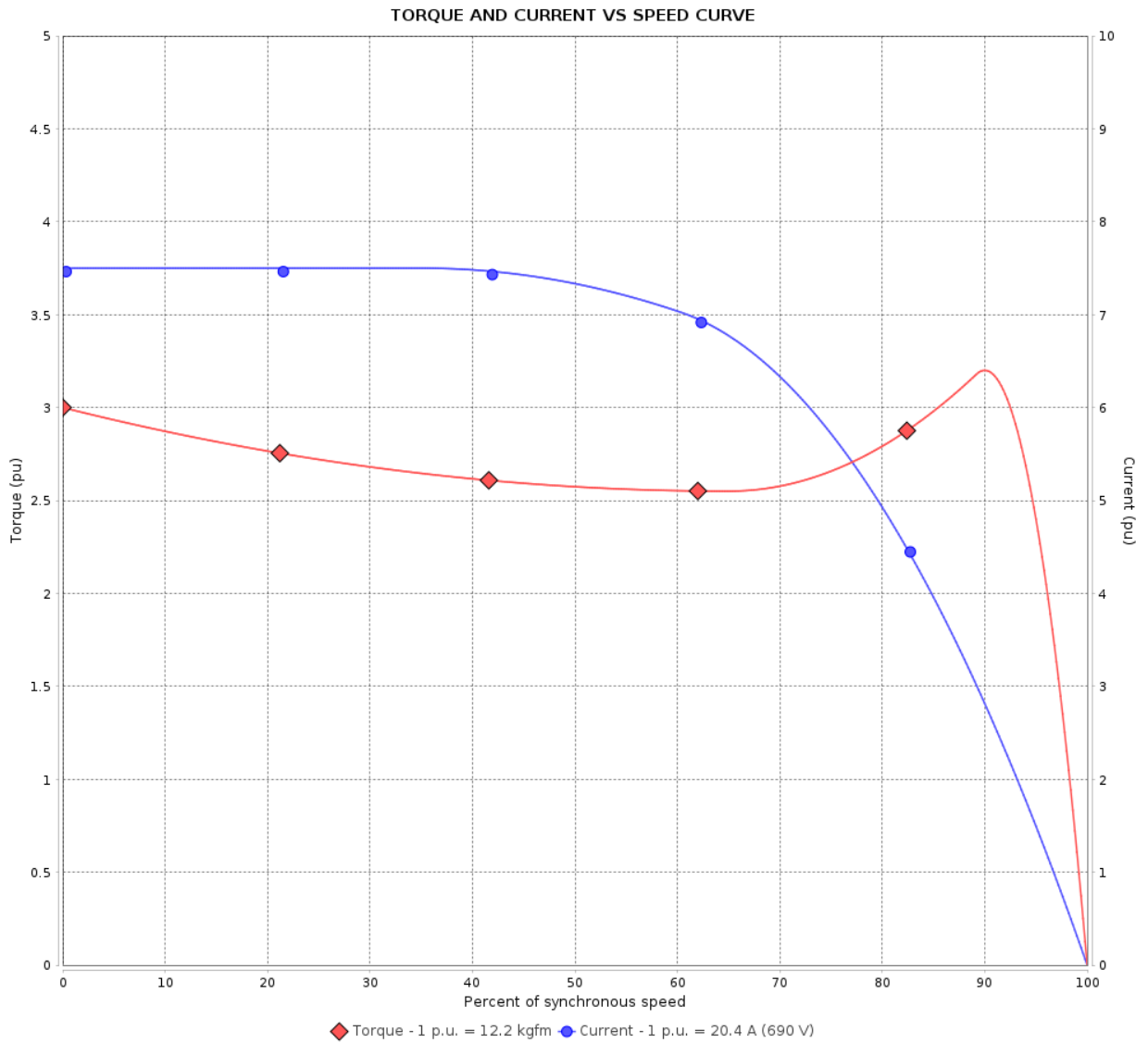
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Performance : 400/690 V 50 Hz 4P

Rated current	: 35.2/20.4 A	Moment of inertia (J)	: 0.1740 kgm ²
LRC	: 7.5	Duty cycle	: S1
Rated torque	: 12.2 kgfm	Insulation class	: F
Locked rotor torque	: 300 %	Service factor	: 1.00
Breakdown torque	: 320 %	Temperature rise	: 80 K
Rated speed	: 1476 rpm	Design	: N

Locked rotor time : 14s (cold) 8s (hot)

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TORQUE AND CURRENT VS SPEED CURVE

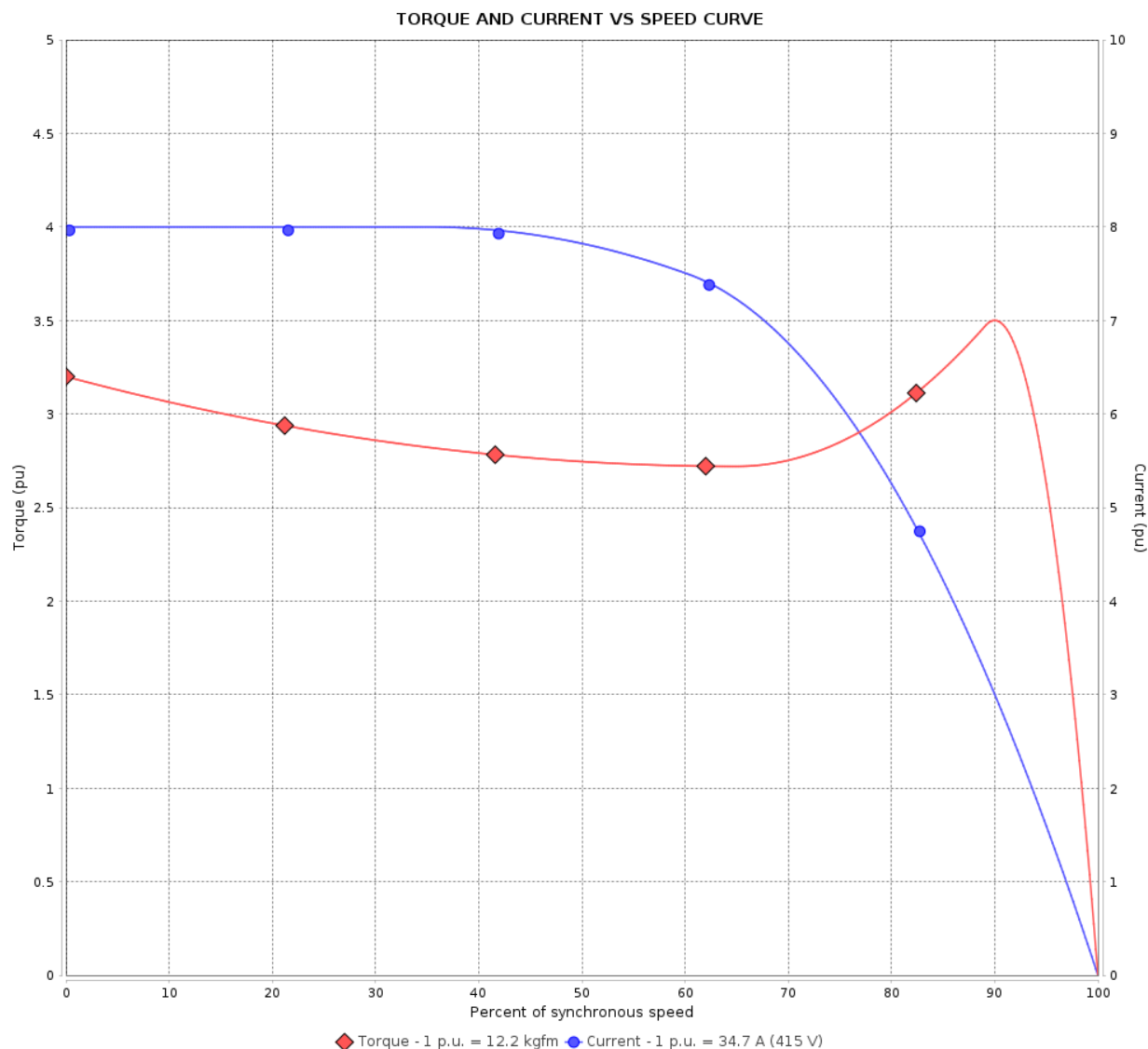
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Performance : 415 V 50 Hz 4P

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LRC	: 8.0	Duty cycle	: S1
Rated torque	: 12.2 kgfm	Insulation class	: F
Locked rotor torque	: 320 %	Service factor	: 1.00
Breakdown torque	: 350 %	Temperature rise	: 80 K
Rated speed	: 1477 rpm	Design	: N

Locked rotor time : 14s (cold) 8s (hot)

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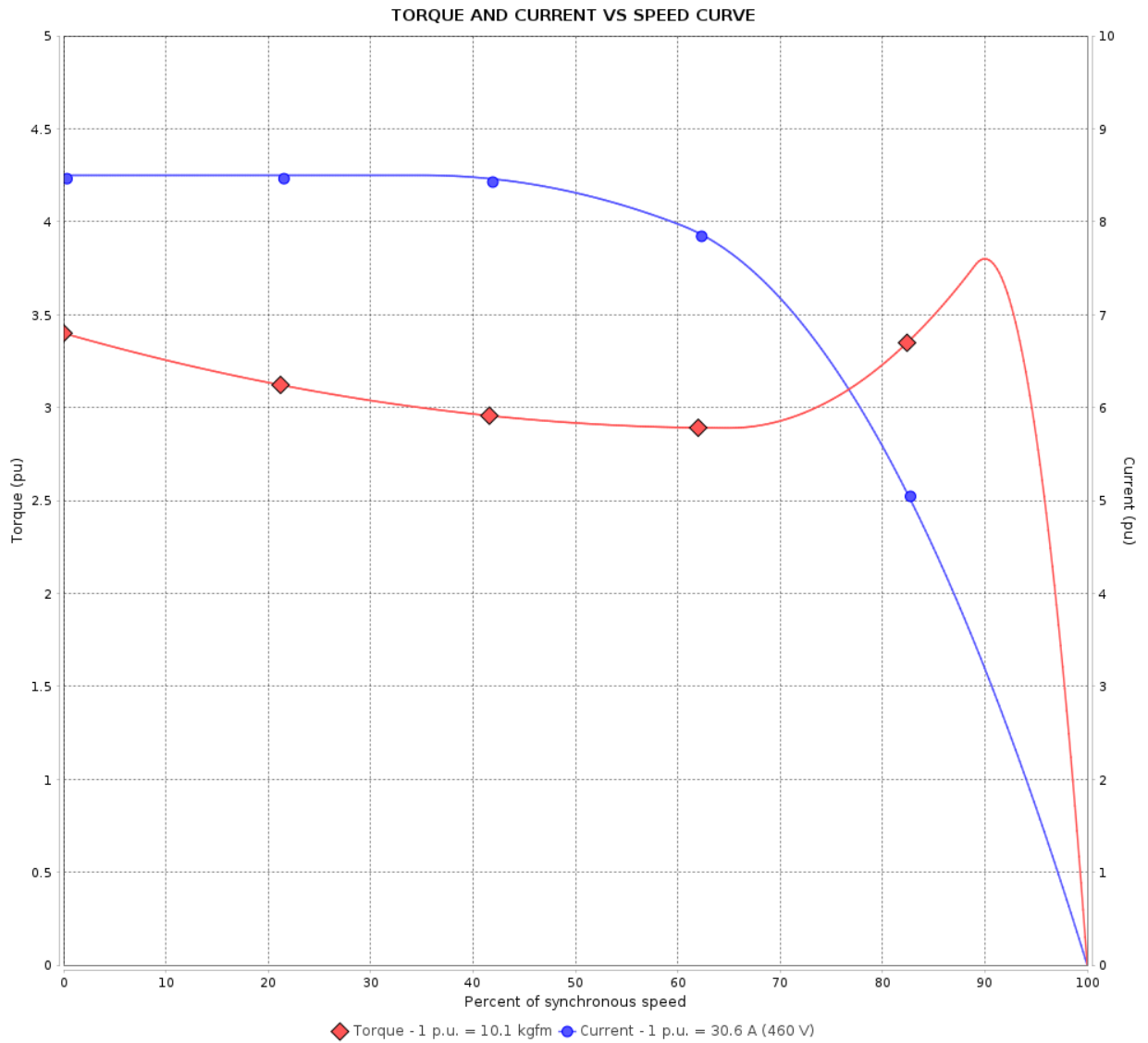
Three Phase Induction Motor - Squirrel Cage



Customer : Astraprom d.o.o.

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Performance : 460 V 60 Hz 4P

Rated current	: 30.6 A	Moment of inertia (J)	: 0.1740 kgm ²
LRC	: 8.5	Duty cycle	: S1
Rated torque	: 10.1 kgfm	Insulation class	: F
Locked rotor torque	: 340 %	Service factor	: 1.00
Breakdown torque	: 380 %	Temperature rise	: 80 K
Rated speed	: 1780 rpm	Design	: N

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

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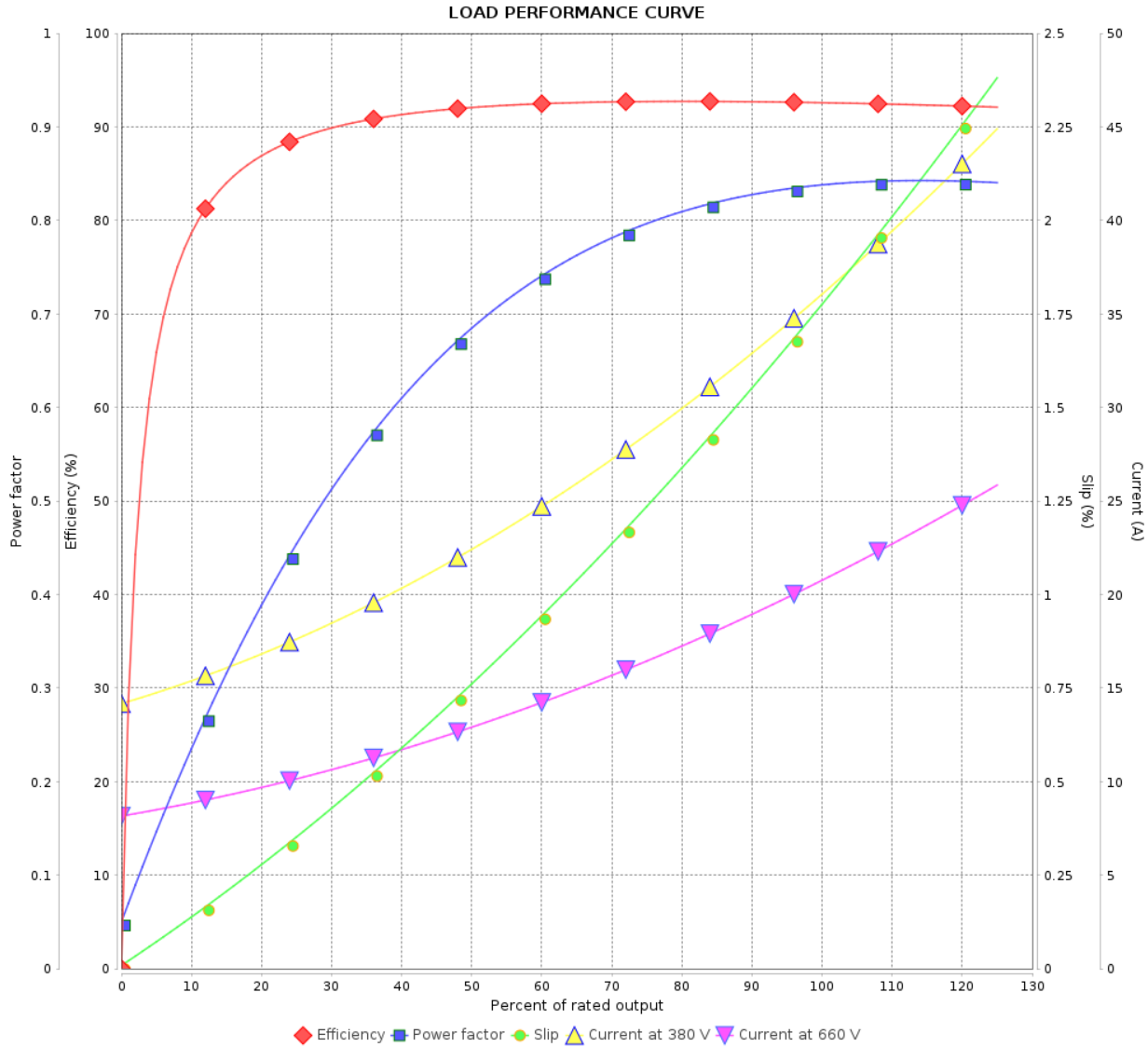
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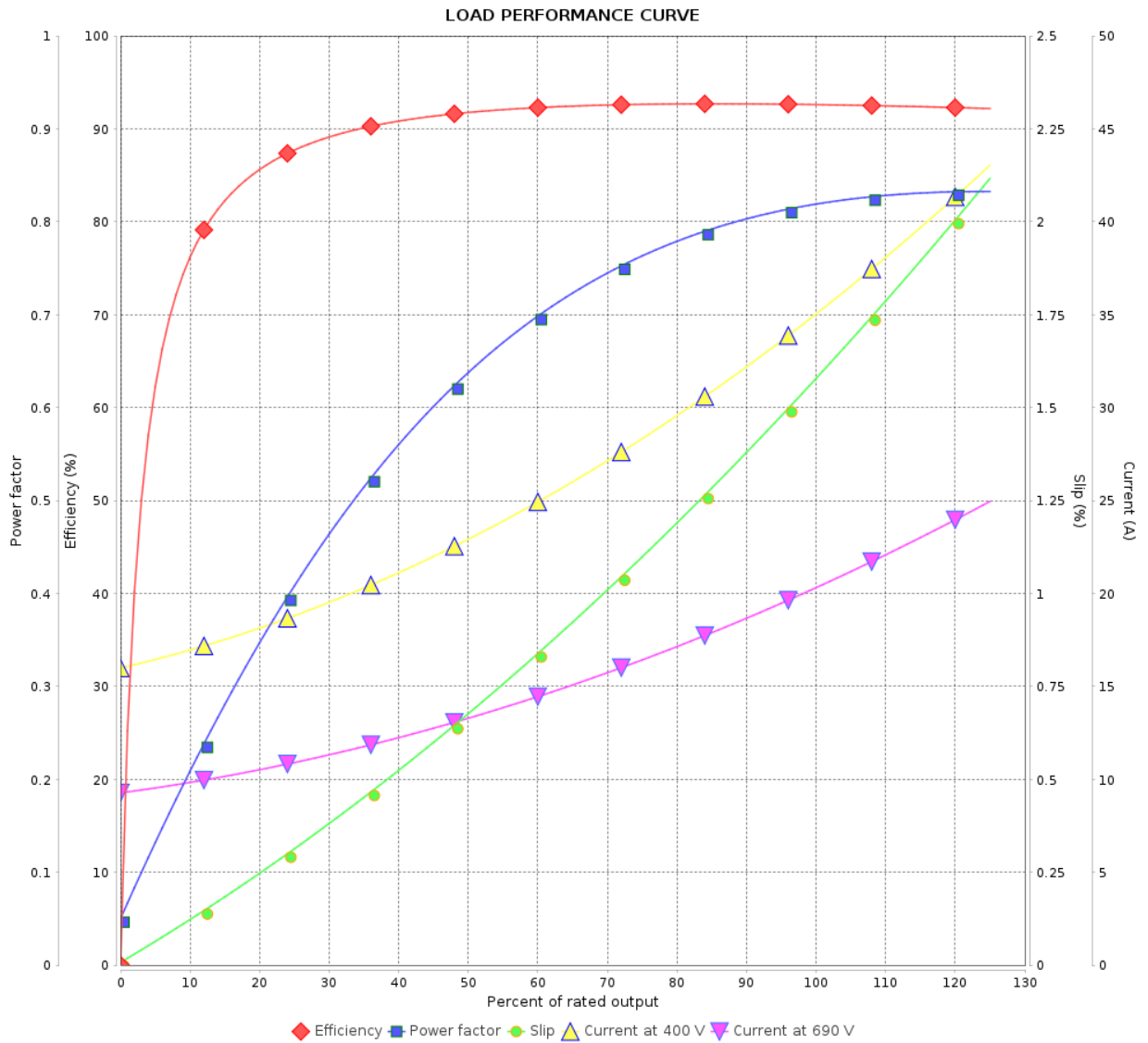
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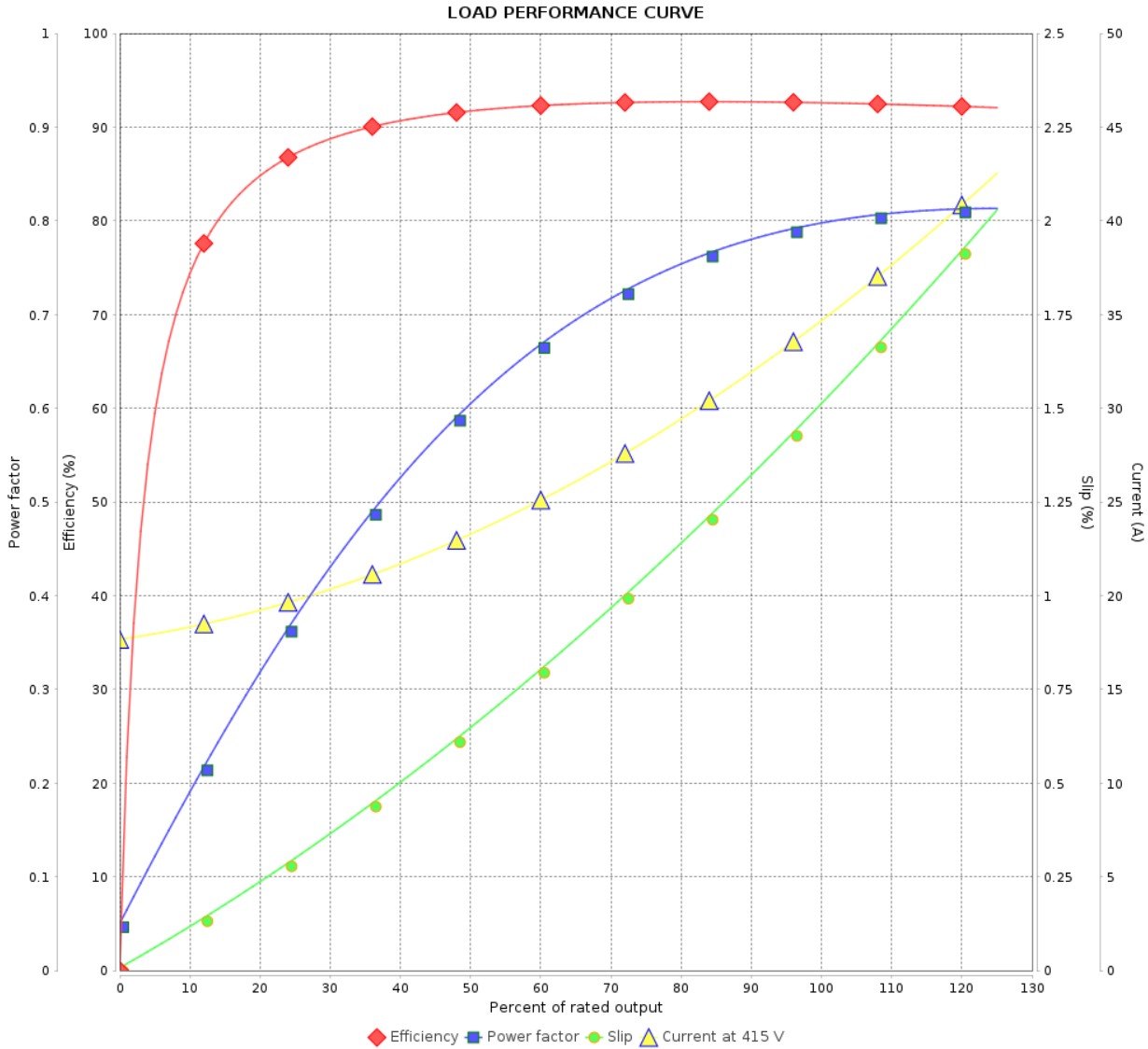
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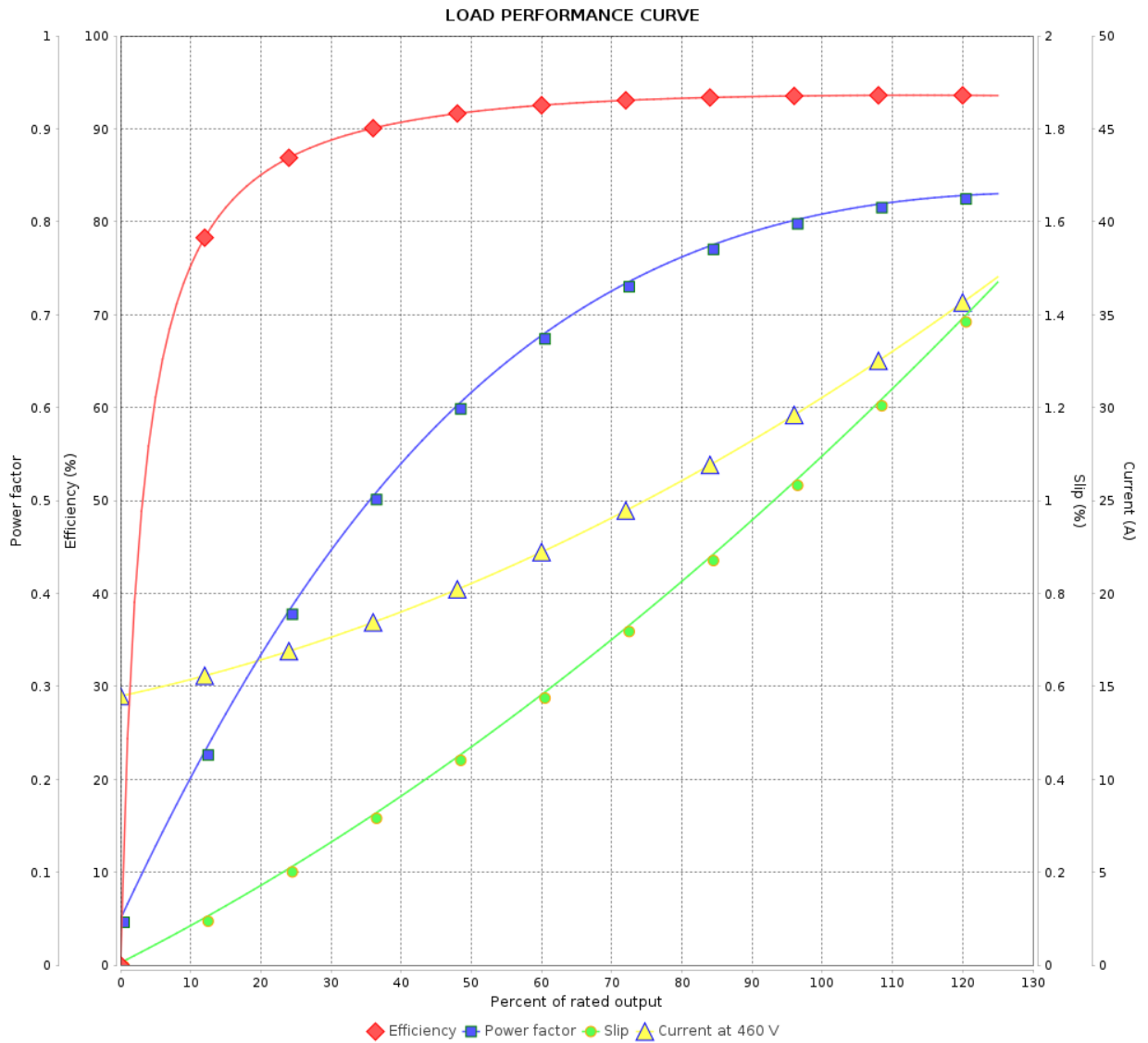
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THERMAL LIMIT CURVE

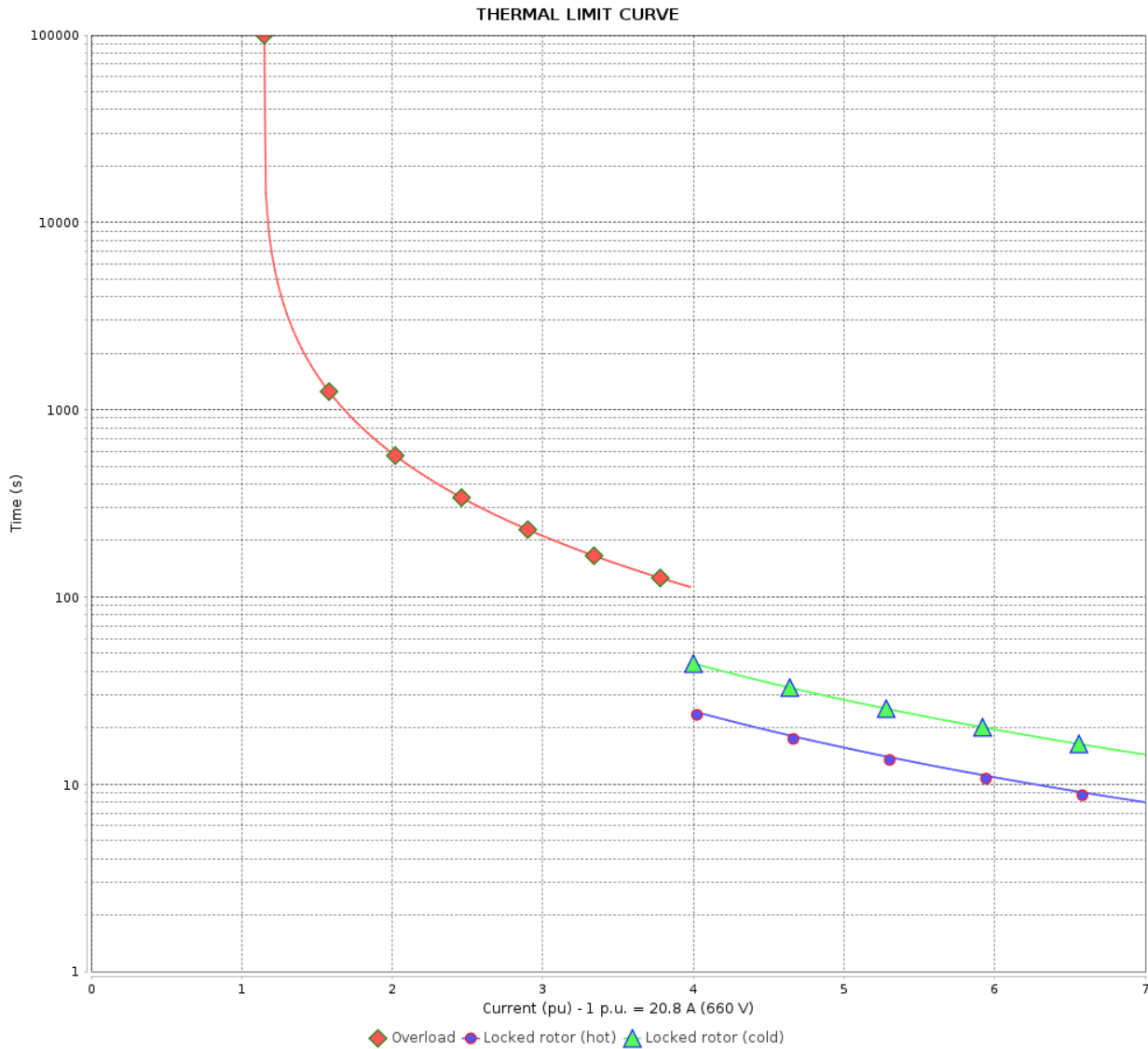
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Heating constant

Cooling constant

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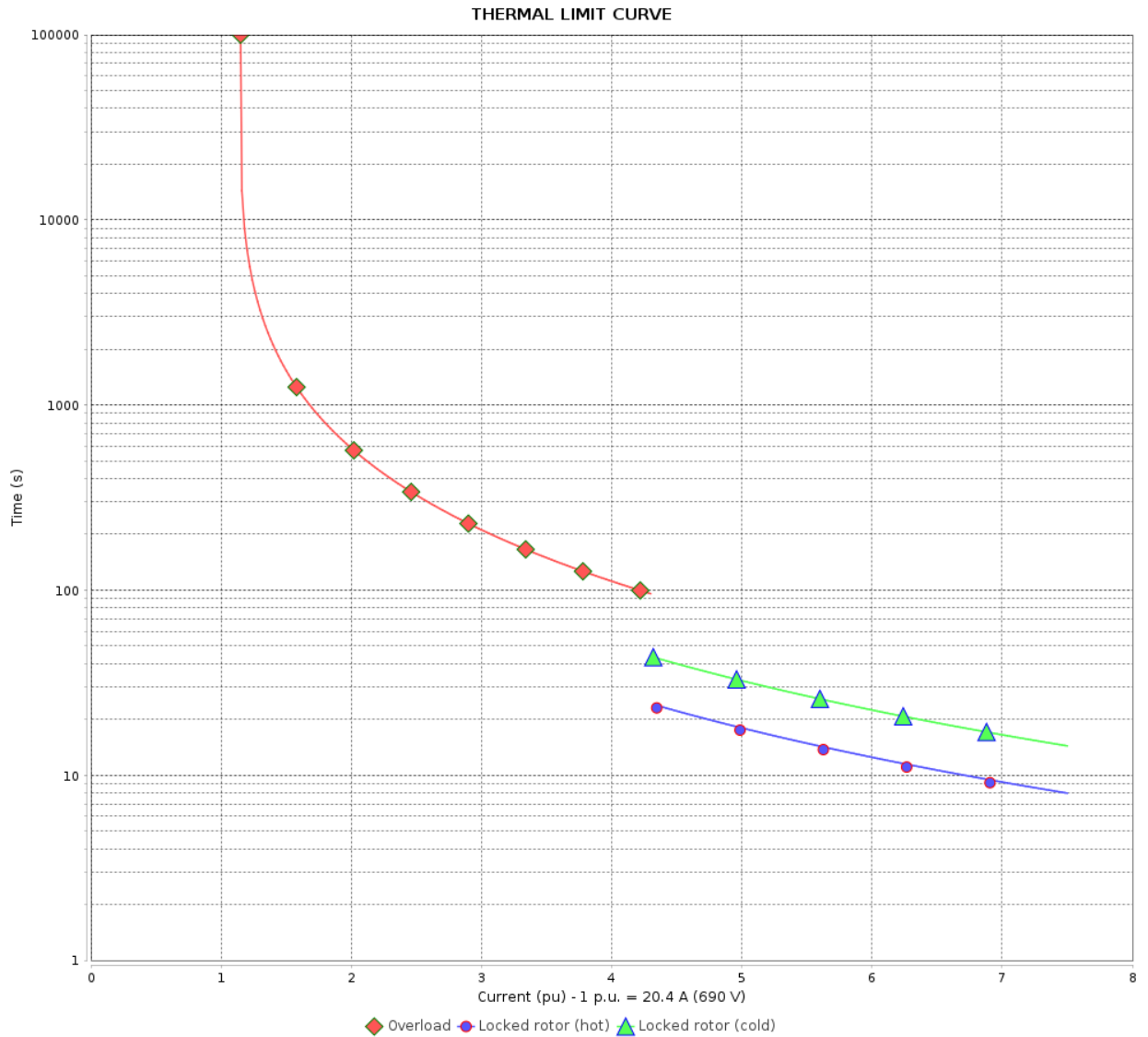
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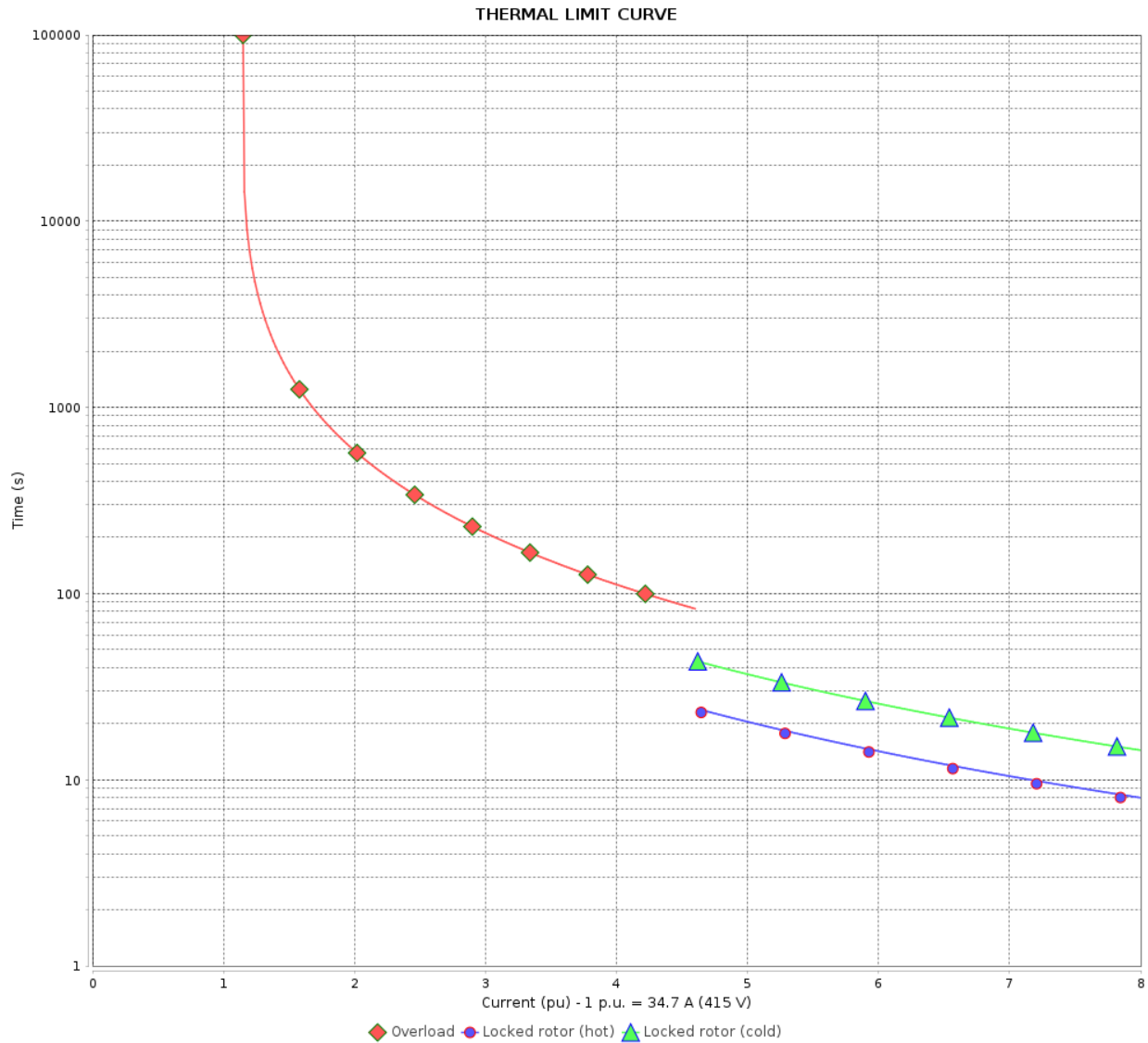
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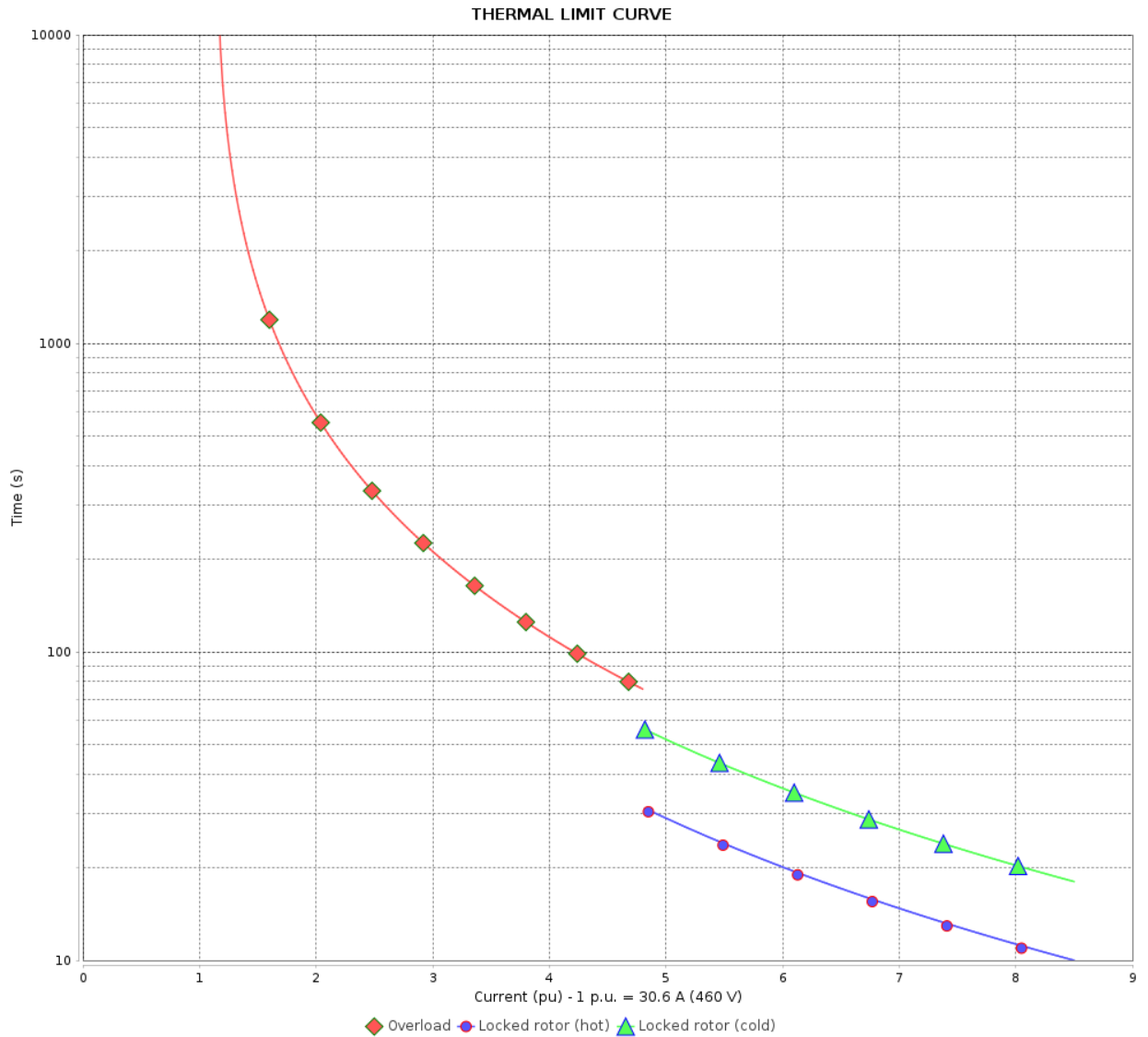
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VFD OPERATION CURVE

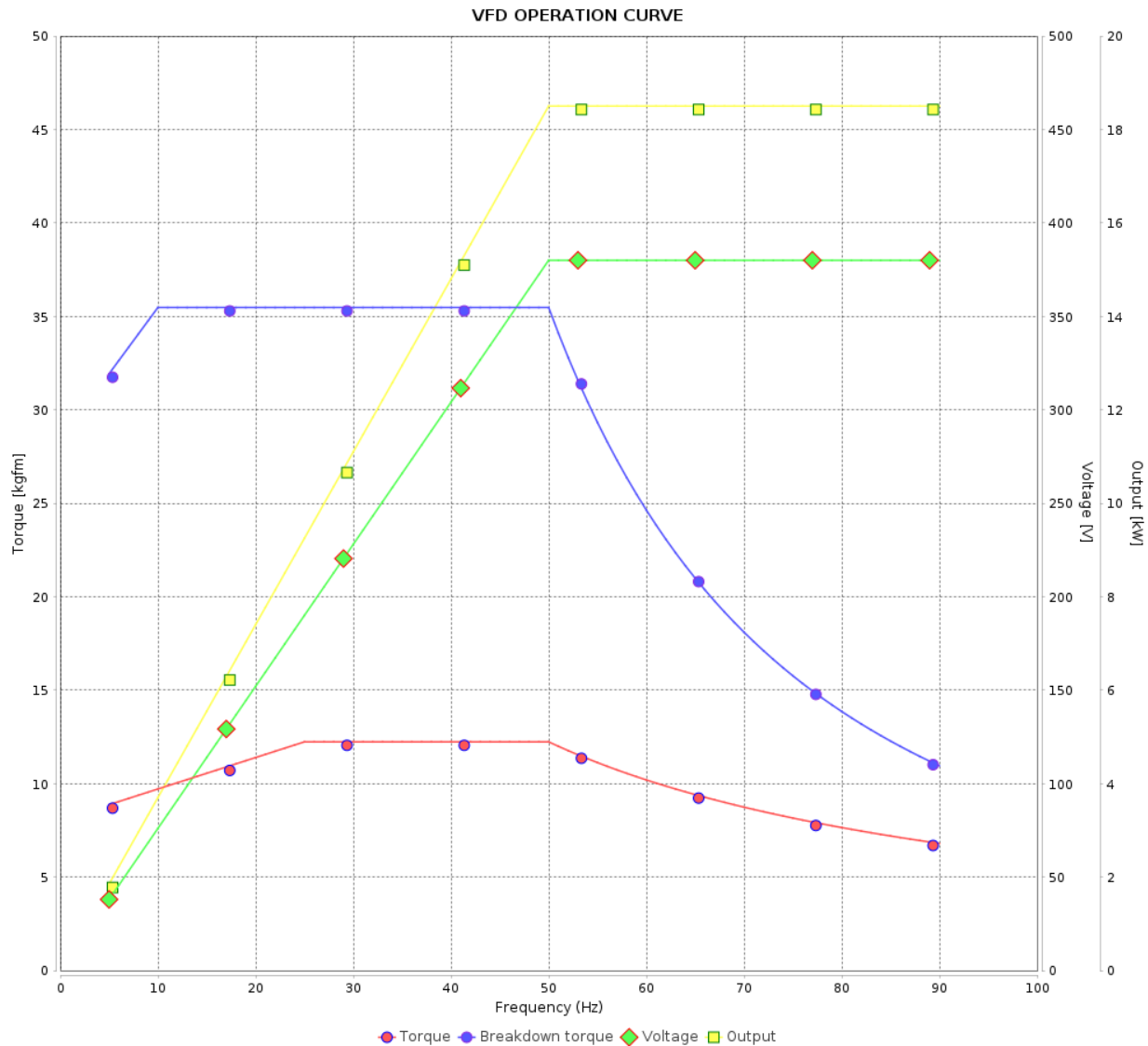
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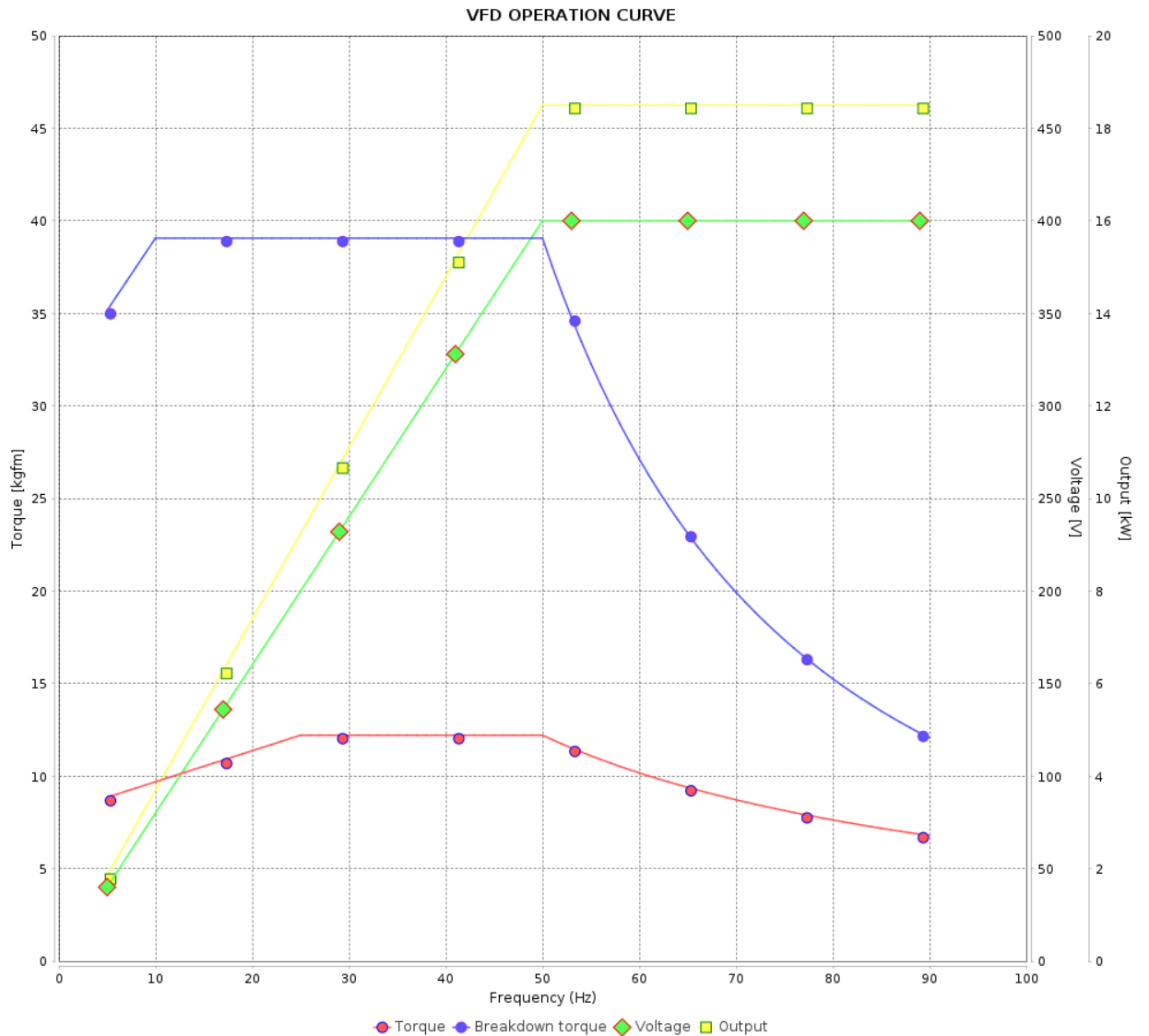
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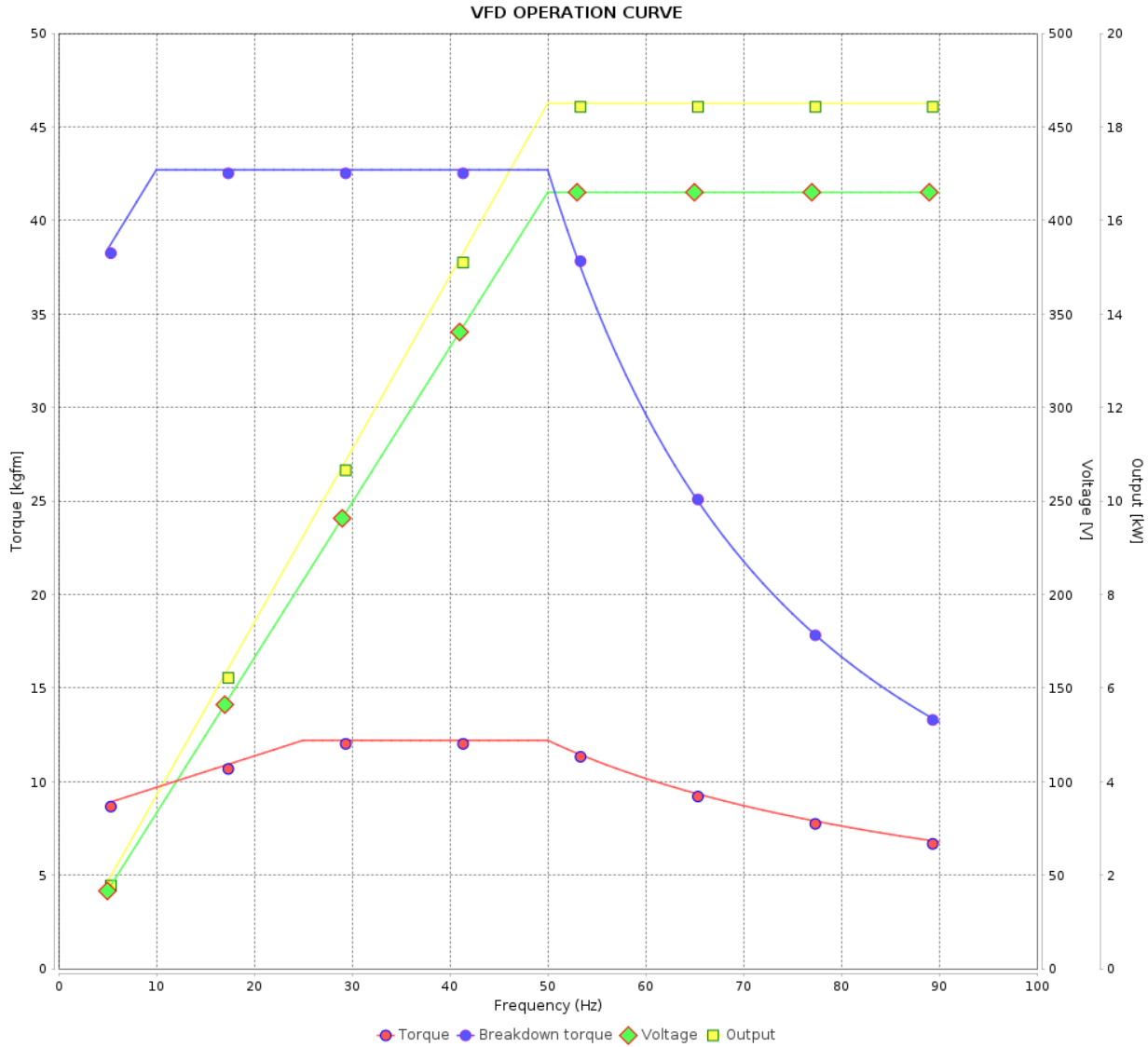
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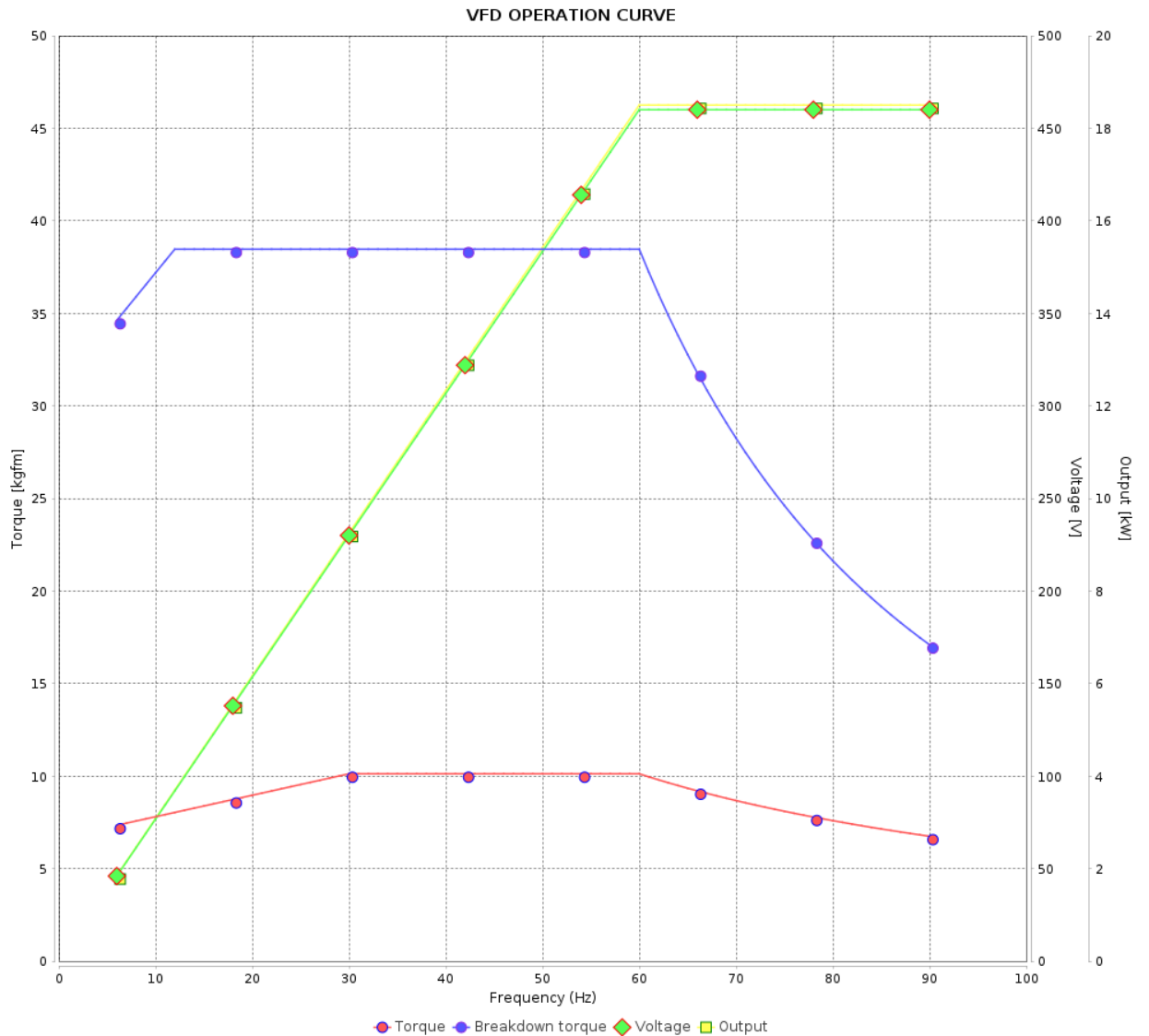
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