

DATA SHEET

Three Phase Induction Motor - Squirrel Cage



Customer					
Product line	: NEMA Premium Efficiency Three-Phase	Product code	: 11408913		
		Catalog #	: 50018ET3GRB449T-W22		
Frame	: L447/9T	Cooling method	: IC411 - TEFC		
Insulation class	: F	Mounting	: F-1		
Duty cycle	: Cont.(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 ²	: 3528 lb		
Protection degree	: IP55	Moment of inertia (J)	: 160 sq.ft.lb		
Design	: B				
Output [HP]	500	450	450	450	450
Poles	4	4	4	4	4
Frequency [Hz]	60	50	50	50	50
Rated voltage [V]	460	380	400	415	415
Rated current [A]	568	606	589	582	582
L. R. Amperes [A]	4998	4303	4712	5122	5122
LRC [A]	8.8x(Code J)	7.1x(Code G)	8.0x(Code J)	8.8x(Code K)	8.8x(Code K)
No load current [A]	225	222	245	267	267
Rated speed [RPM]	1789	1487	1489	1490	1490
Slip [%]	0.61	0.87	0.73	0.67	0.67
Rated torque [ft.lb]	1470	1590	1590	1590	1590
Locked rotor torque [%]	300	270	300	320	320
Breakdown torque [%]	280	260	290	310	310
Service factor	1.00	1.00	1.00	1.00	1.00
Temperature rise	105 K	125 K	125 K	105 K	105 K
Locked rotor time	39s (cold) 22s (hot)	37s (cold) 21s (hot)	34s (cold) 19s (hot)	32s (cold) 18s (hot)	32s (cold) 18s (hot)
Noise level ²	79.0 dB(A)	74.0 dB(A)	74.0 dB(A)	74.0 dB(A)	74.0 dB(A)
Efficiency (%)	25%	95.3	95.7	95.0	95.0
	50%	95.4	95.8	95.4	95.4
	75%	96.2	96.2	95.8	95.8
	100%	96.2	96.2	96.2	96.2
Power Factor	25%	0.45	0.48	0.44	0.40
	50%	0.72	0.74	0.70	0.66
	75%	0.81	0.83	0.80	0.77
	100%	0.85	0.86	0.84	0.82
Bearing type	: <u>Drive end</u> NU-322 C3	<u>Non drive end</u> 6319 C3	Foundation loads		
Sealing	: WSeal	WSeal	Max. traction	: 11343 lb	
Lubrication interval	: 4000 h	8000 h	Max. compression	: 14871 lb	
Lubricant amount	: 60 g	45 g			
Lubricant type	: Mobil Polyrex EM				
Notes					
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 NEMA MG-1.		
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TORQUE AND CURRENT VS SPEED CURVE

Three Phase Induction Motor - Squirrel Cage



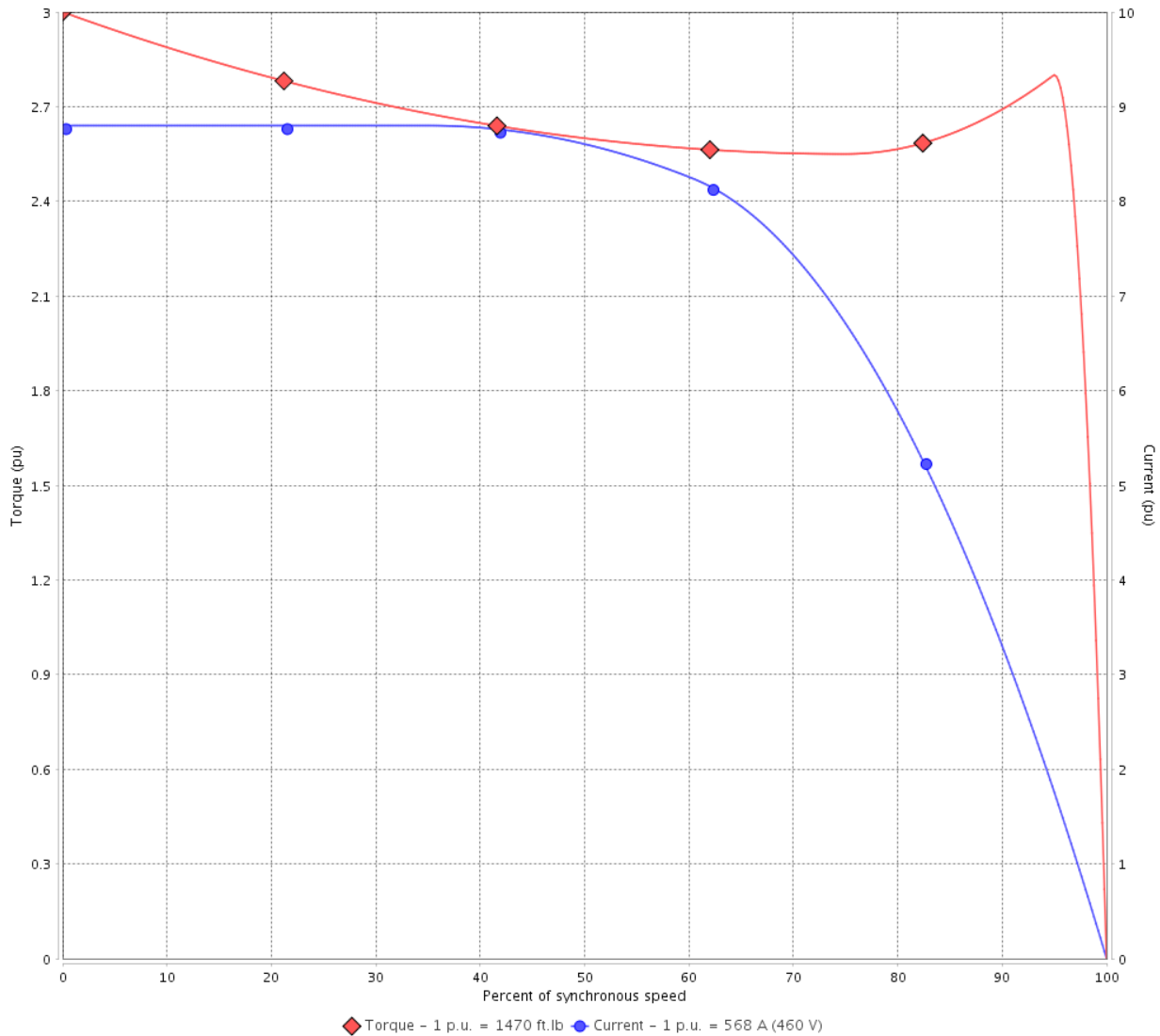
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 11408913

Catalog # : 50018ET3GRB449T-W22

TORQUE AND CURRENT VS SPEED CURVE



Performance : 460 V 60 Hz 4P

Rated current	: 568 A	Moment of inertia (J)	: 160 sq.ft.lb
LRC	: 8.8	Duty cycle	: Cont.(S1)
Rated torque	: 1470 ft.lb	Insulation class	: F
Locked rotor torque	: 300 %	Service factor	: 1.00
Breakdown torque	: 280 %	Temperature rise	: 105 K
Rated speed	: 1789 rpm	Design	: B

Locked rotor time : 39s (cold) 22s (hot)

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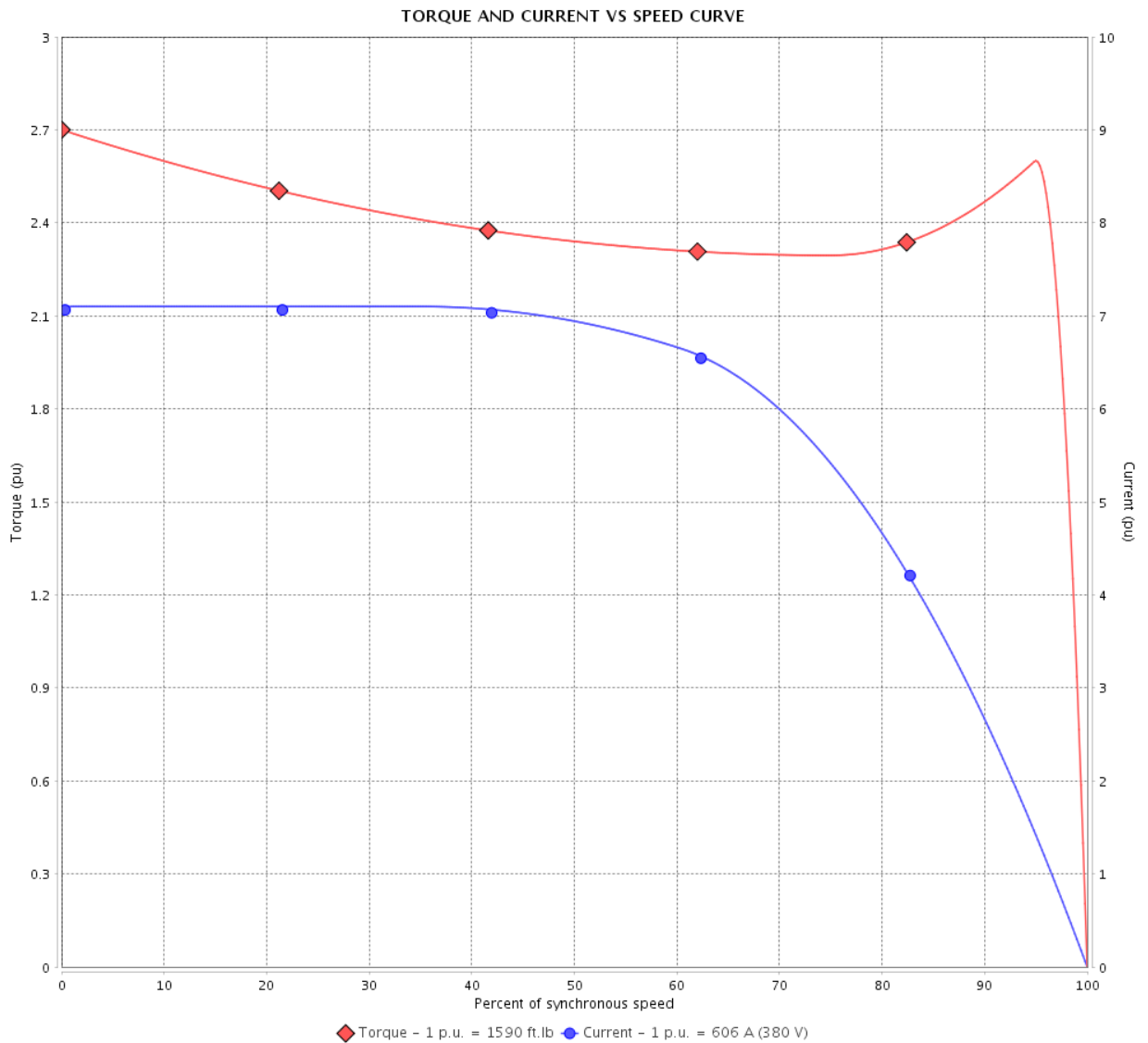
TORQUE AND CURRENT VS SPEED CURVE



Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : NEMA Premium Efficiency Three-Phase
 Product code : 11408913
 Catalog # : 50018ET3GRB449T-W22



Performance : 380 V 50 Hz 4P IE3

Rated current	: 606 A	Moment of inertia (J)	: 160 sq.ft.lb
LRC	: 7.1	Duty cycle	: Cont.(S1)
Rated torque	: 1590 ft.lb	Insulation class	: F
Locked rotor torque	: 270 %	Service factor	: 1.00
Breakdown torque	: 260 %	Temperature rise	: 125 K
Rated speed	: 1487 rpm	Design	: B

Locked rotor time : 37s (cold) 21s (hot)

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TORQUE AND CURRENT VS SPEED CURVE

Three Phase Induction Motor - Squirrel Cage



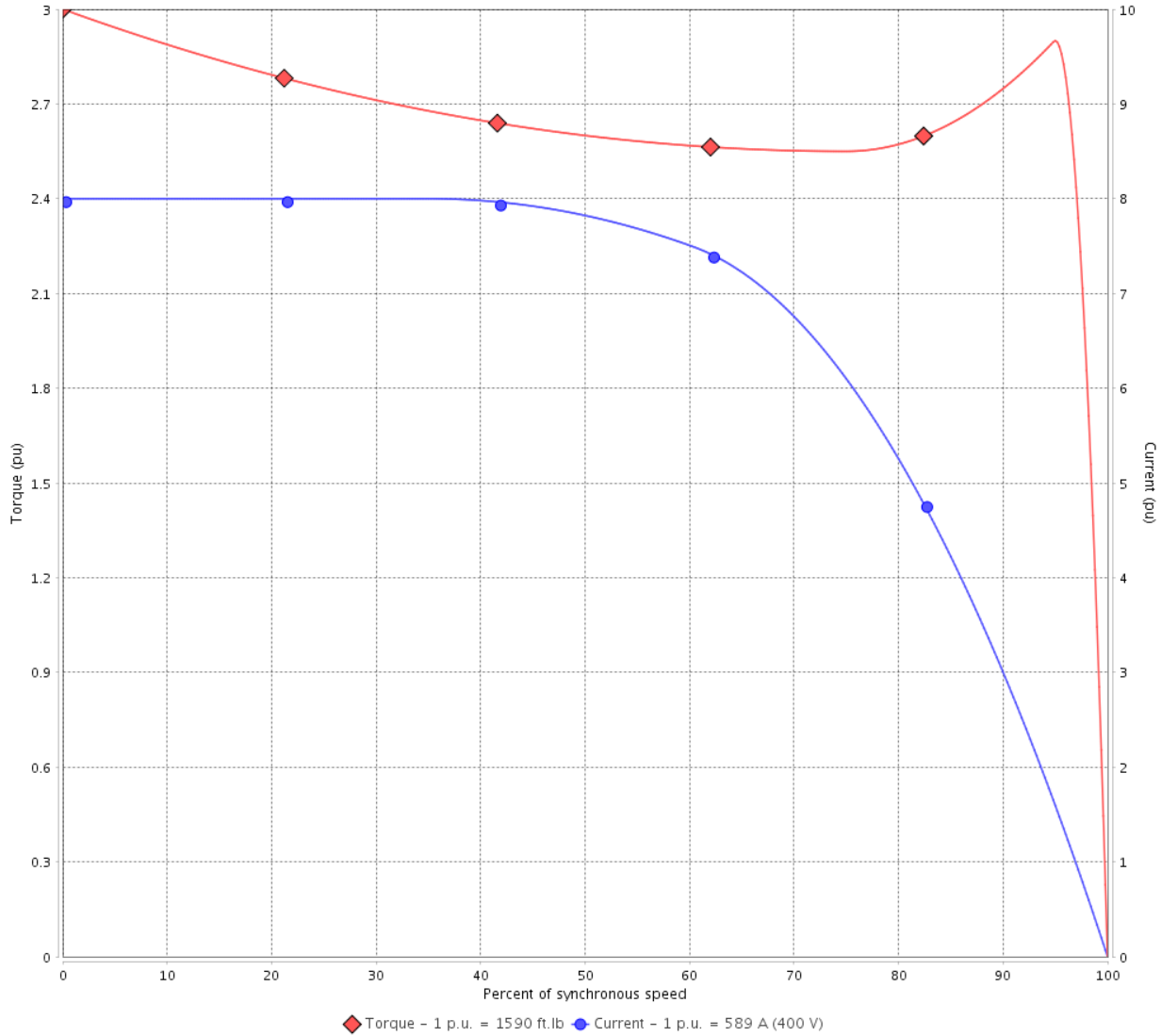
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 11408913

Catalog # : 50018ET3GRB449T-W22

TORQUE AND CURRENT VS SPEED CURVE



Performance : 400 V 50 Hz 4P IE3

Rated current	: 589 A	Moment of inertia (J)	: 160 sq.ft.lb
LRC	: 8.0	Duty cycle	: Cont.(S1)
Rated torque	: 1590 ft.lb	Insulation class	: F
Locked rotor torque	: 300 %	Service factor	: 1.00
Breakdown torque	: 290 %	Temperature rise	: 125 K
Rated speed	: 1489 rpm	Design	: B

Locked rotor time : 34s (cold) 19s (hot)

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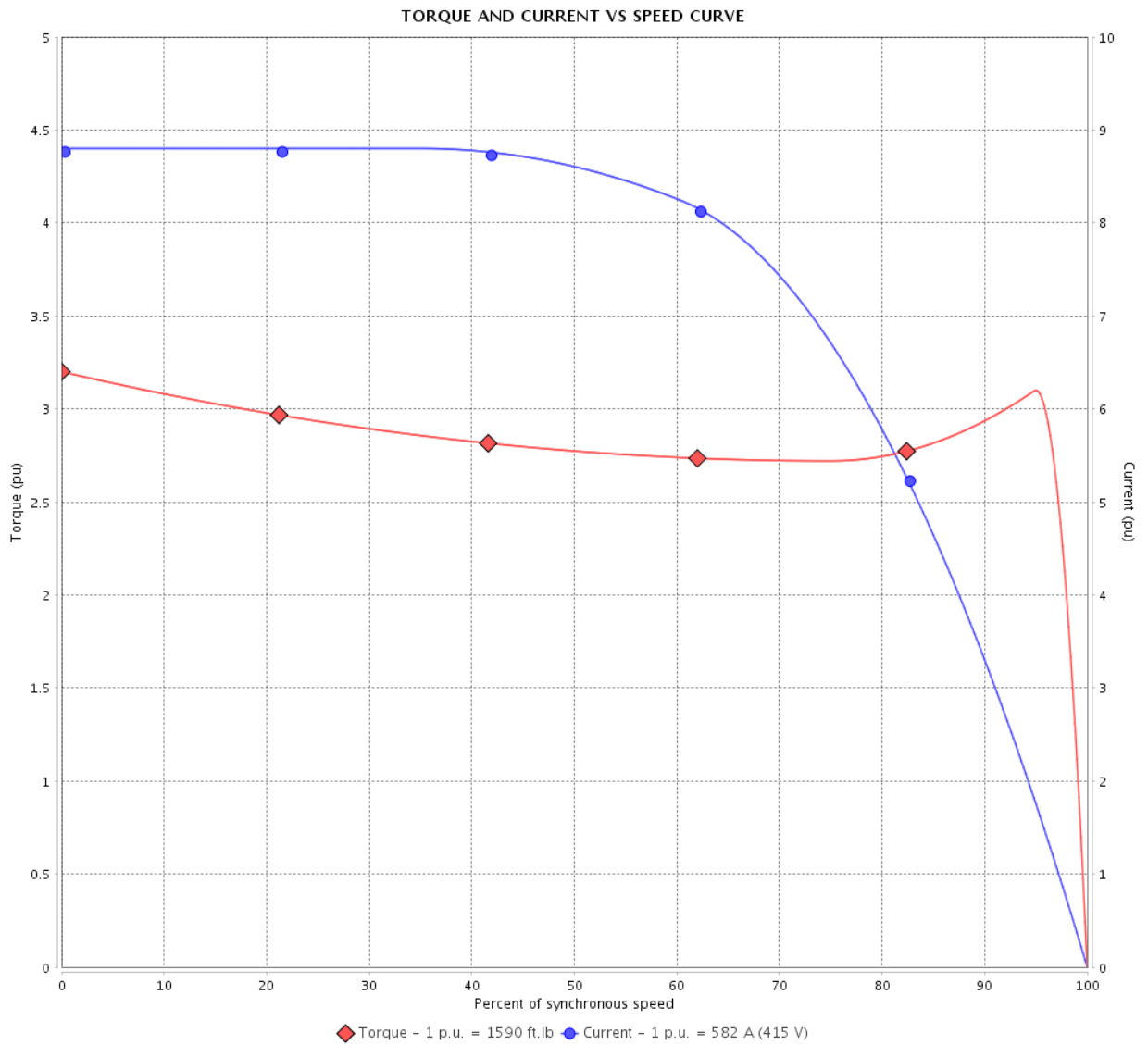
TORQUE AND CURRENT VS SPEED CURVE



Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : NEMA Premium Efficiency Three-Phase
 Product code : 11408913
 Catalog # : 50018ET3GRB449T-W22



Performance : 415 V 50 Hz 4P IE3

Rated current	: 582 A	Moment of inertia (J)	: 160 sq.ft.lb
LRC	: 8.8	Duty cycle	: Cont.(S1)
Rated torque	: 1590 ft.lb	Insulation class	: F
Locked rotor torque	: 320 %	Service factor	: 1.00
Breakdown torque	: 310 %	Temperature rise	: 105 K
Rated speed	: 1490 rpm	Design	: B

Locked rotor time : 32s (cold) 18s (hot)

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LOAD PERFORMANCE CURVE

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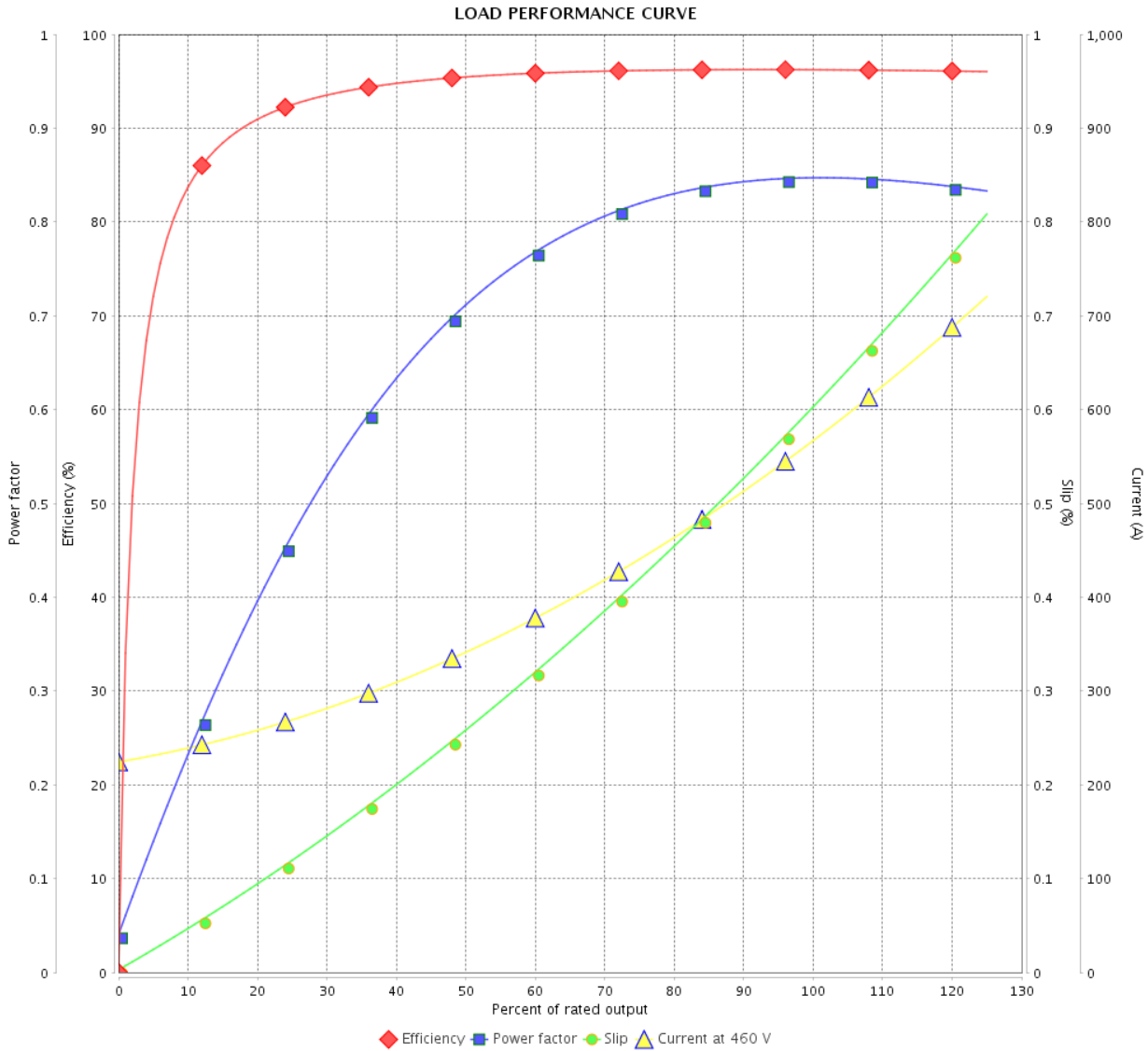


Customer :

Product line : NEMA Premium Efficiency Three-Phase

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Catalog # : 50018ET3GRB449T-W22



Performance : 460 V 60 Hz 4P

Rated current	: 568 A	Moment of inertia (J)	: 160 sq.ft.lb
LRC	: 8.8	Duty cycle	: Cont.(S1)
Rated torque	: 1470 ft.lb	Insulation class	: F
Locked rotor torque	: 300 %	Service factor	: 1.00
Breakdown torque	: 280 %	Temperature rise	: 105 K
Rated speed	: 1789 rpm	Design	: B

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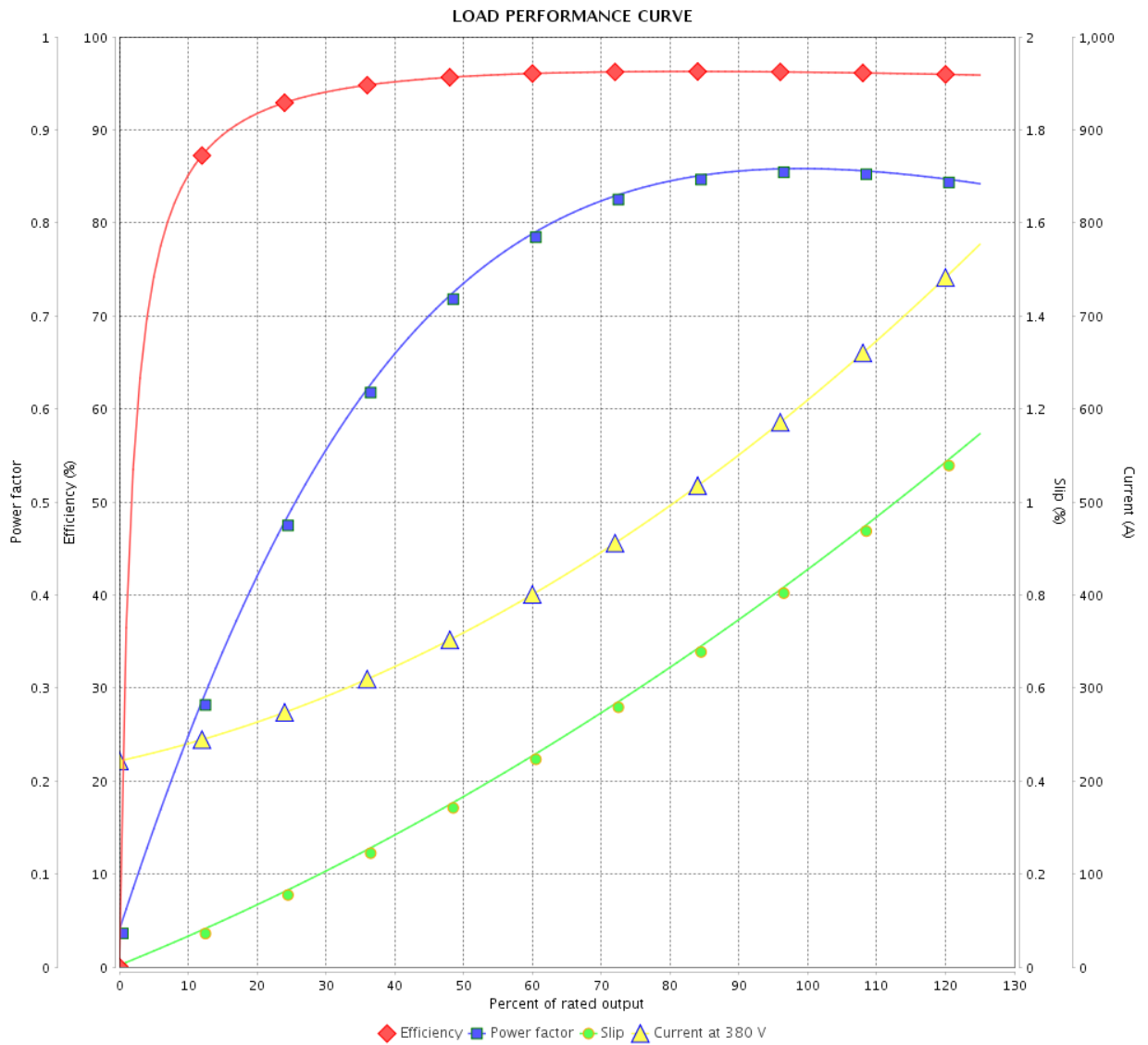


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Performance : 380 V 50 Hz 4P IE3

Rated current : 606 A
 LRC : 7.1
 Rated torque : 1590 ft.lb
 Locked rotor torque : 270 %
 Breakdown torque : 260 %
 Rated speed : 1487 rpm

Moment of inertia (J) : 160 sq.ft.lb
 Duty cycle : Cont.(S1)
 Insulation class : F
 Service factor : 1.00
 Temperature rise : 125 K
 Design : B

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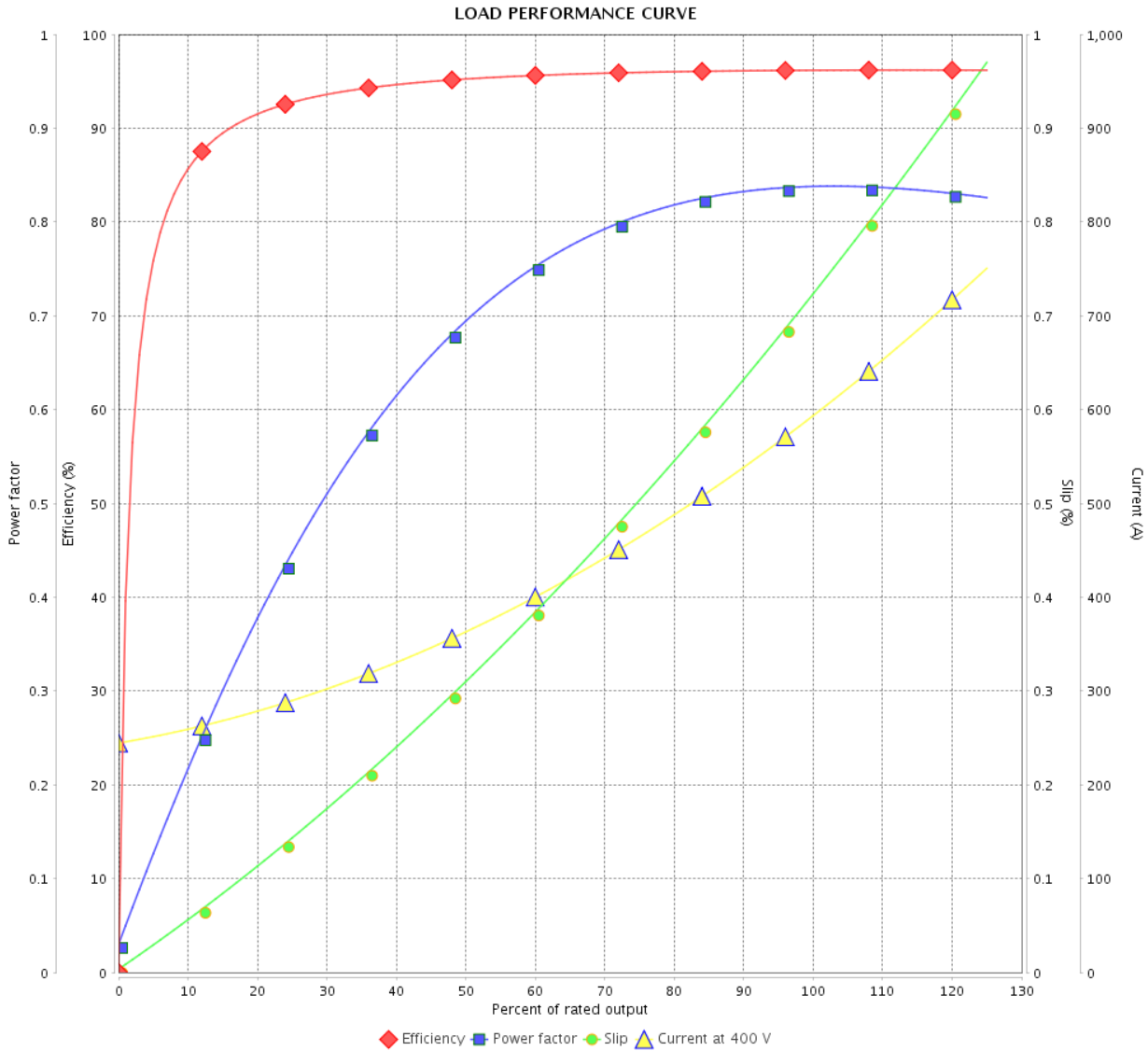


Customer : _____

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Performance : 400 V 50 Hz 4P IE3

Rated current	: 589 A	Moment of inertia (J)	: 160 sq.ft.lb
LRC	: 8.0	Duty cycle	: Cont.(S1)
Rated torque	: 1590 ft.lb	Insulation class	: F
Locked rotor torque	: 300 %	Service factor	: 1.00
Breakdown torque	: 290 %	Temperature rise	: 125 K
Rated speed	: 1489 rpm	Design	: B

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LOAD PERFORMANCE CURVE

Three Phase Induction Motor - Squirrel Cage

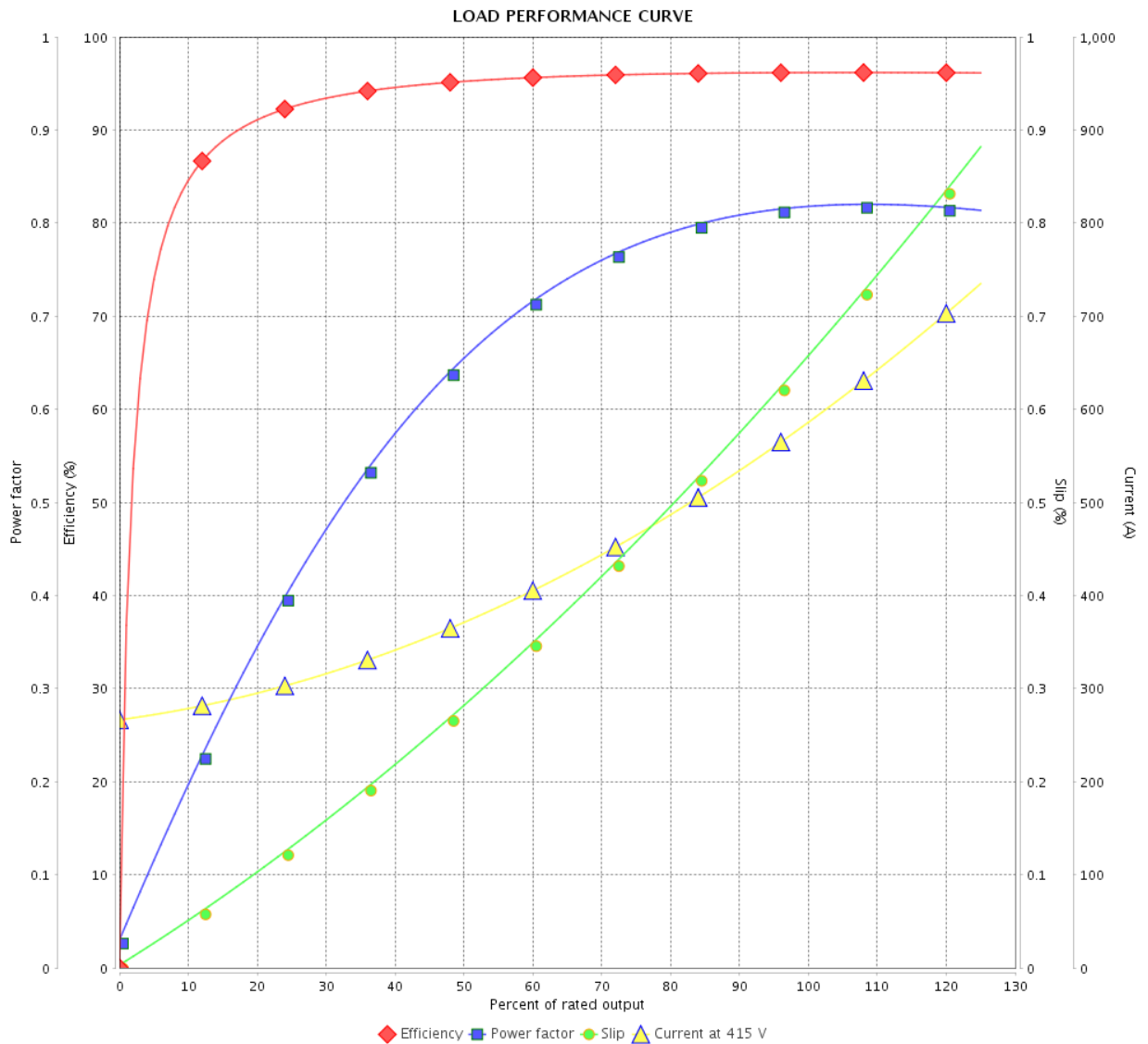


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 Breakdown torque : 310 %
 Rated speed : 1490 rpm

Moment of inertia (J) : 160 sq.ft.lb
 Duty cycle : Cont.(S1)
 Insulation class : F
 Service factor : 1.00
 Temperature rise : 105 K
 Design : B

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THERMAL LIMIT CURVE

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Locked rotor torque	: 300 %	Service factor	: 1.00
Breakdown torque	: 280 %	Temperature rise	: 105 K
Rated speed	: 1789 rpm	Design	: B

Heating constant

Cooling constant

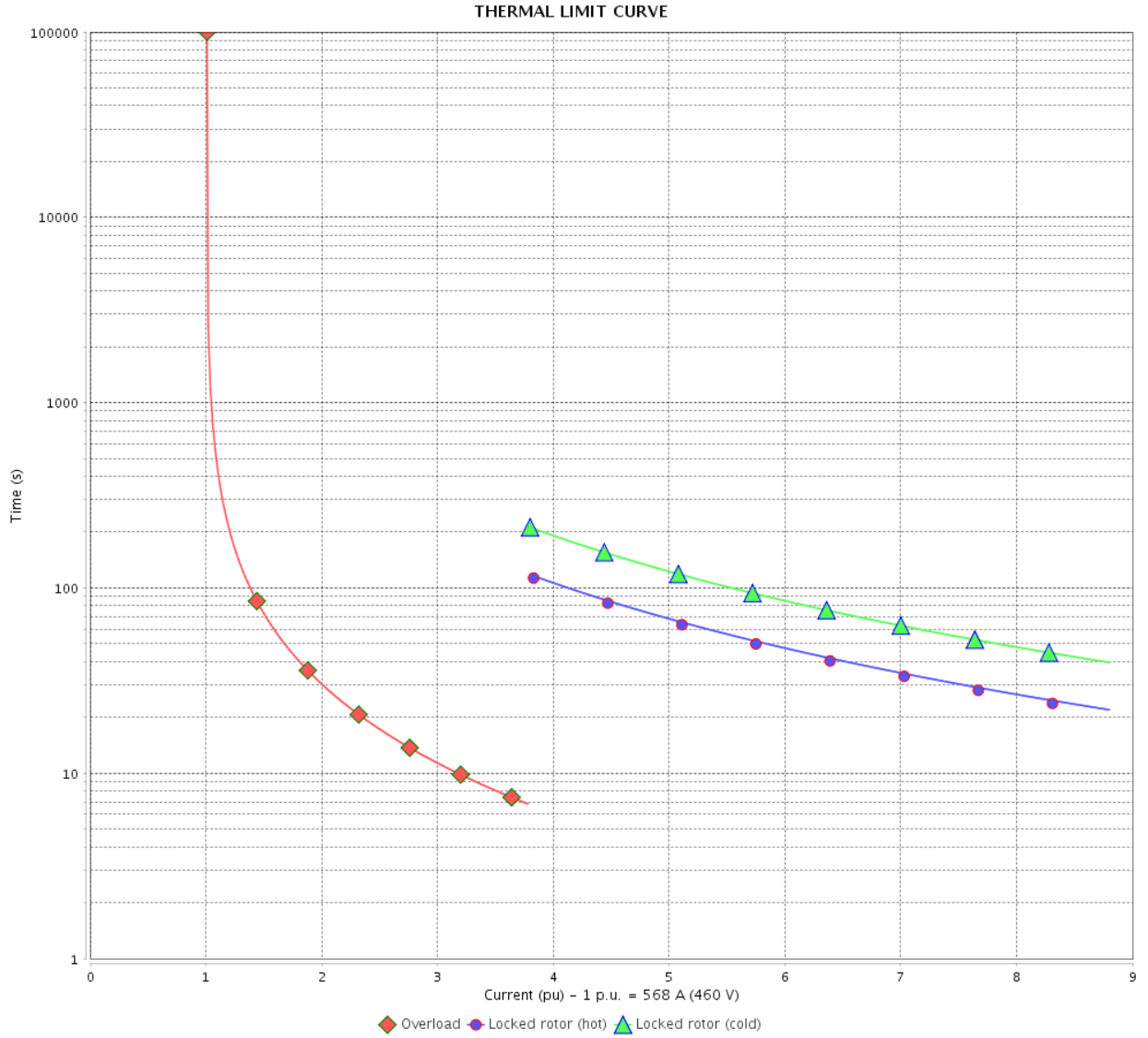
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LRC	: 7.1	Duty cycle	: Cont.(S1)
Rated torque	: 1590 ft.lb	Insulation class	: F
Locked rotor torque	: 270 %	Service factor	: 1.00
Breakdown torque	: 260 %	Temperature rise	: 125 K
Rated speed	: 1487 rpm	Design	: B

Heating constant

Cooling constant

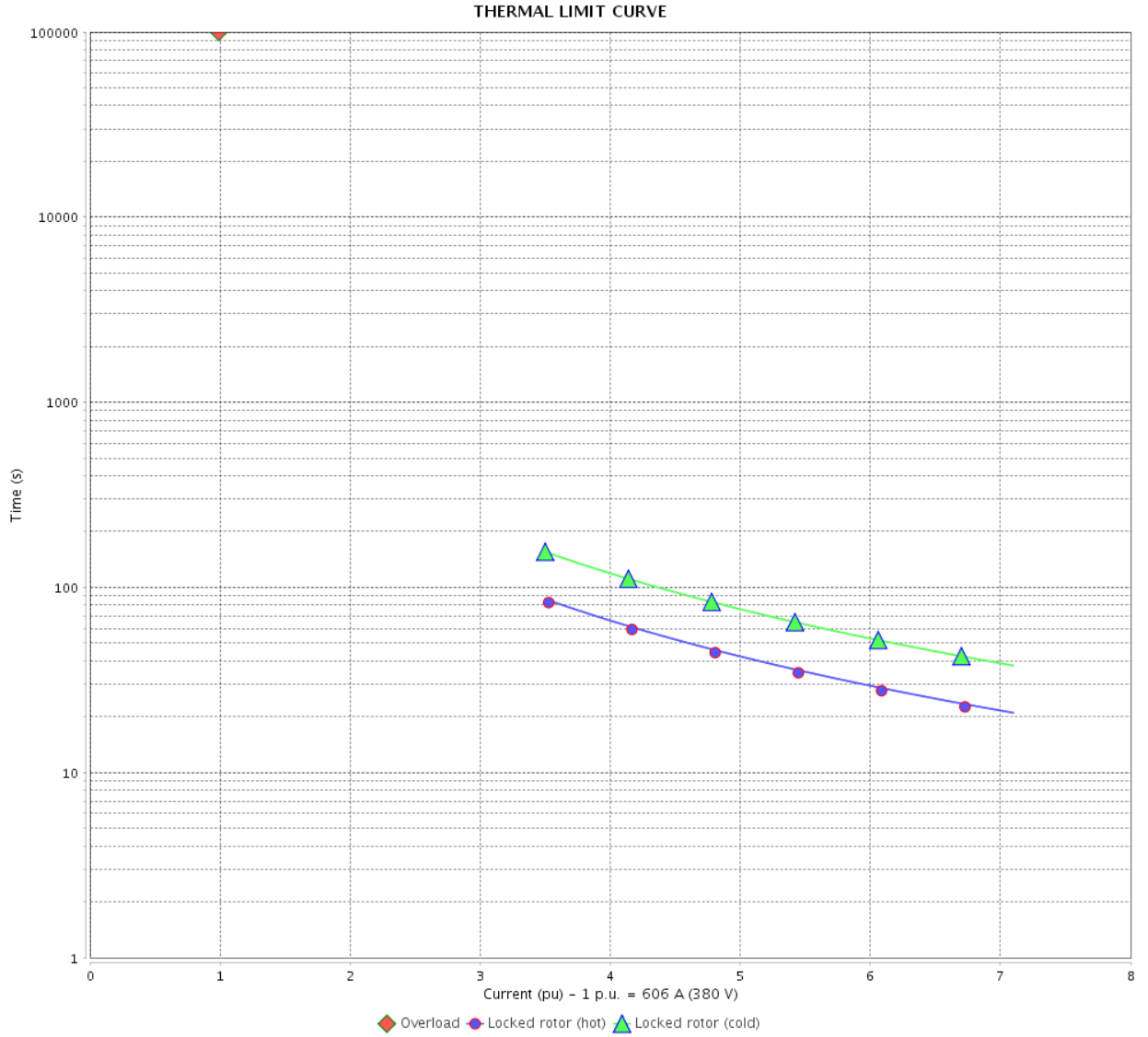
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LRC	: 8.0	Duty cycle	: Cont.(S1)
Rated torque	: 1590 ft.lb	Insulation class	: F
Locked rotor torque	: 300 %	Service factor	: 1.00
Breakdown torque	: 290 %	Temperature rise	: 125 K
Rated speed	: 1489 rpm	Design	: B

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Cooling constant

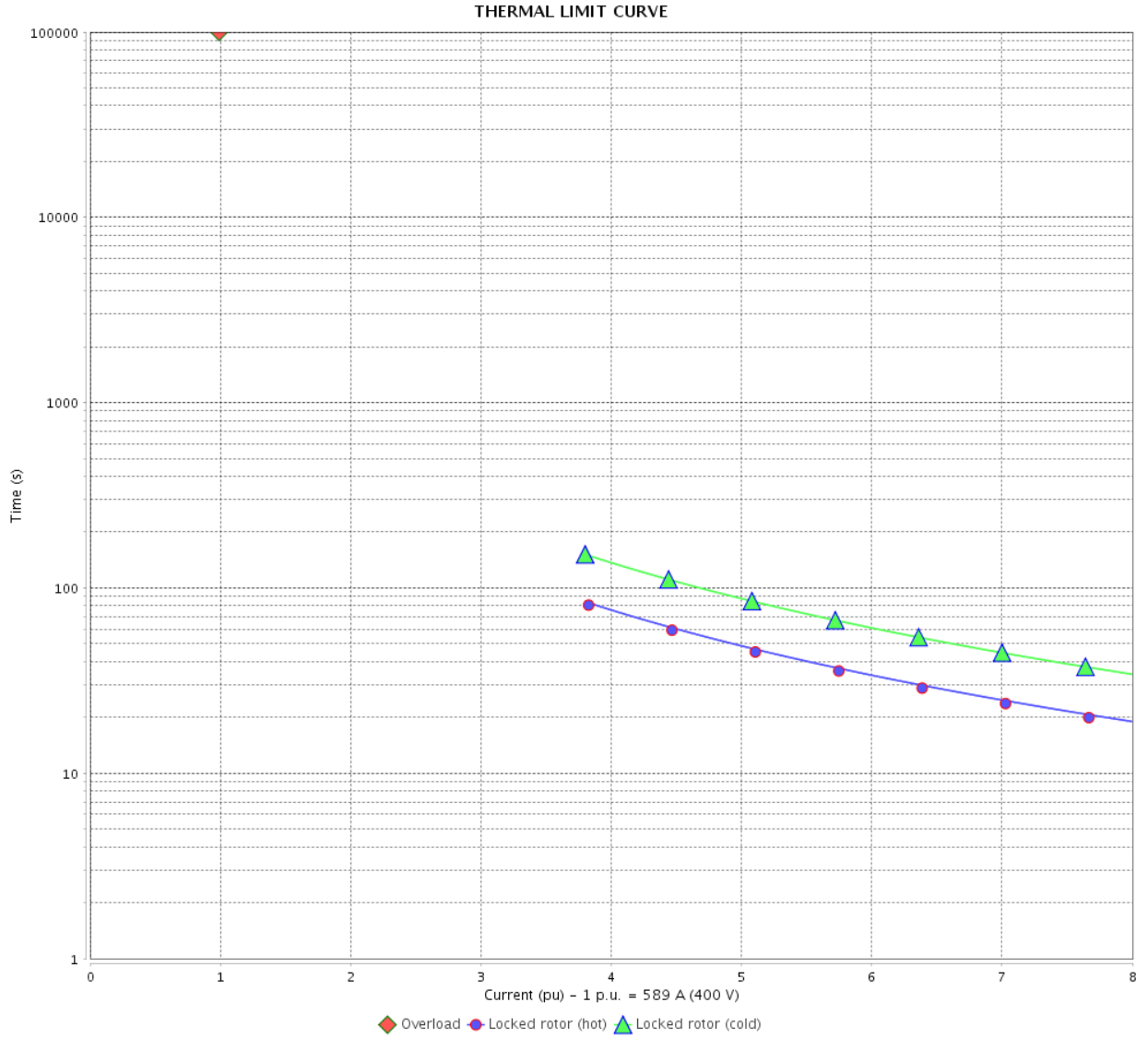
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THERMAL LIMIT CURVE



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Rated current : 582 A	Moment of inertia (J) : 160 sq.ft.lb
LRC : 8.8	Duty cycle : Cont.(S1)
Rated torque : 1590 ft.lb	Insulation class : F
Locked rotor torque : 320 %	Service factor : 1.00
Breakdown torque : 310 %	Temperature rise : 105 K
Rated speed : 1490 rpm	Design : B

Heating constant

Cooling constant

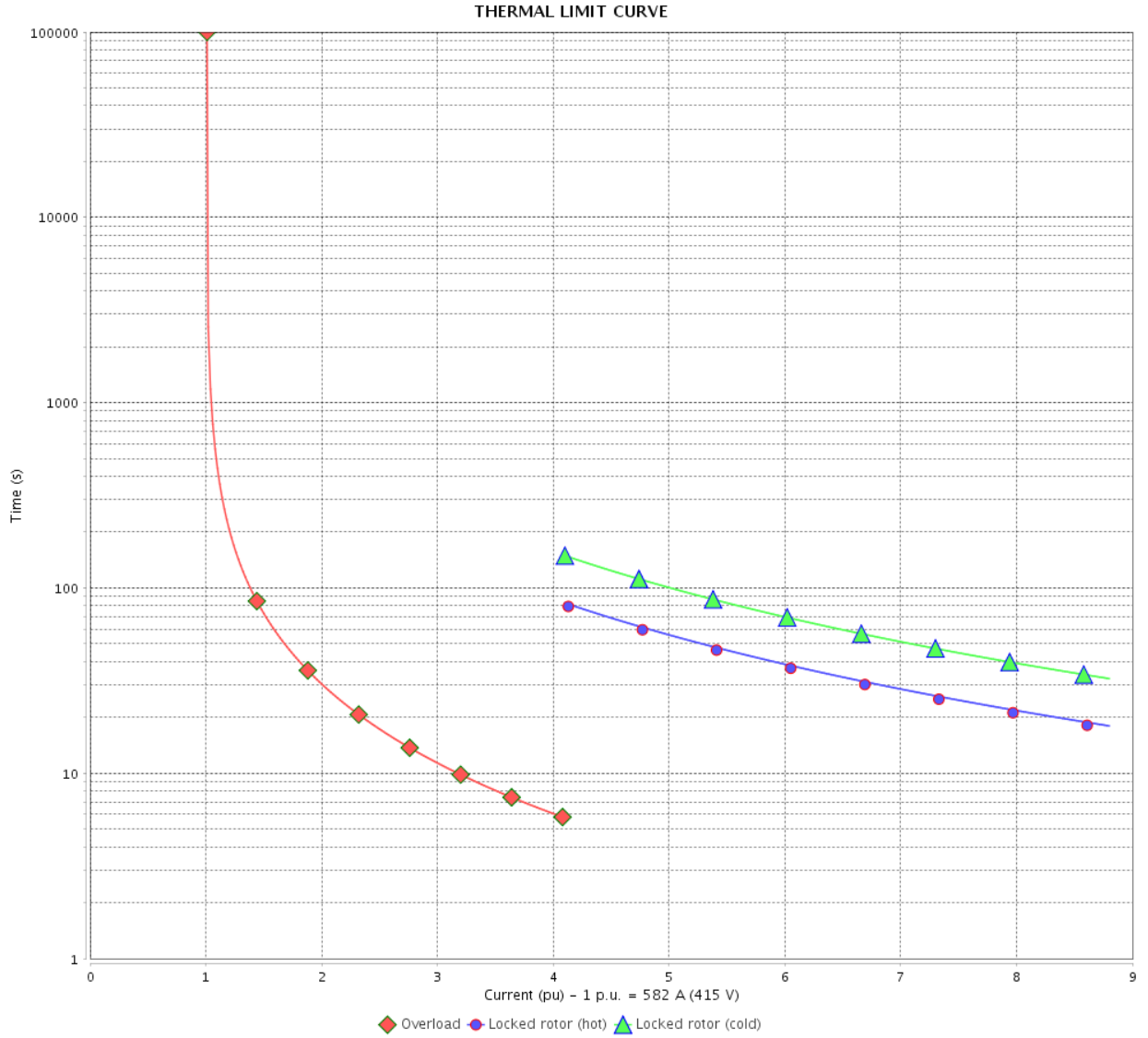
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THERMAL LIMIT CURVE

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VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage

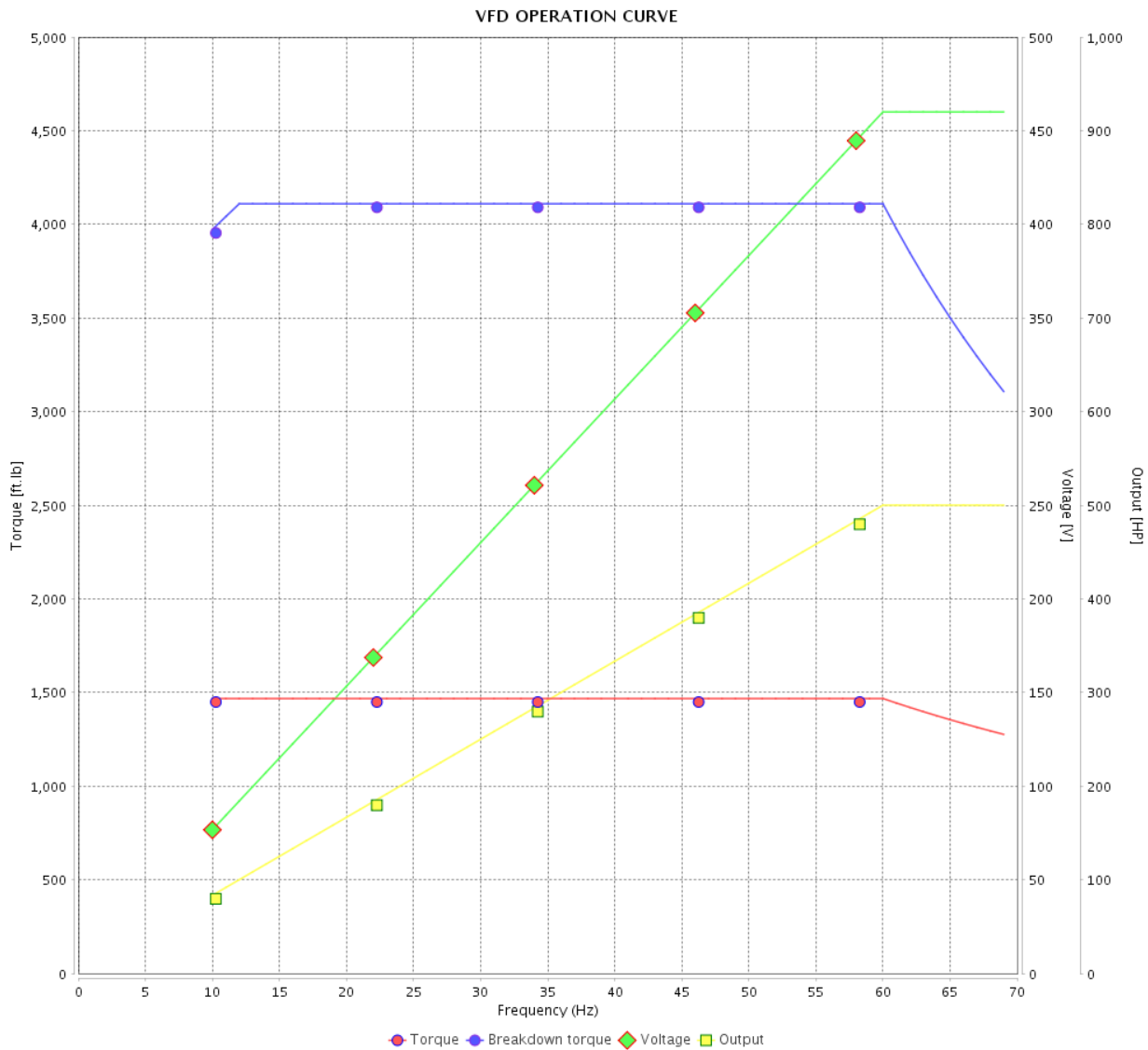


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LRC	: 8.8	Duty cycle	: Cont.(S1)
Rated torque	: 1470 ft.lb	Insulation class	: F
Locked rotor torque	: 300 %	Service factor	: 1.00
Breakdown torque	: 280 %	Temperature rise	: 105 K
Rated speed	: 1789 rpm	Design	: B

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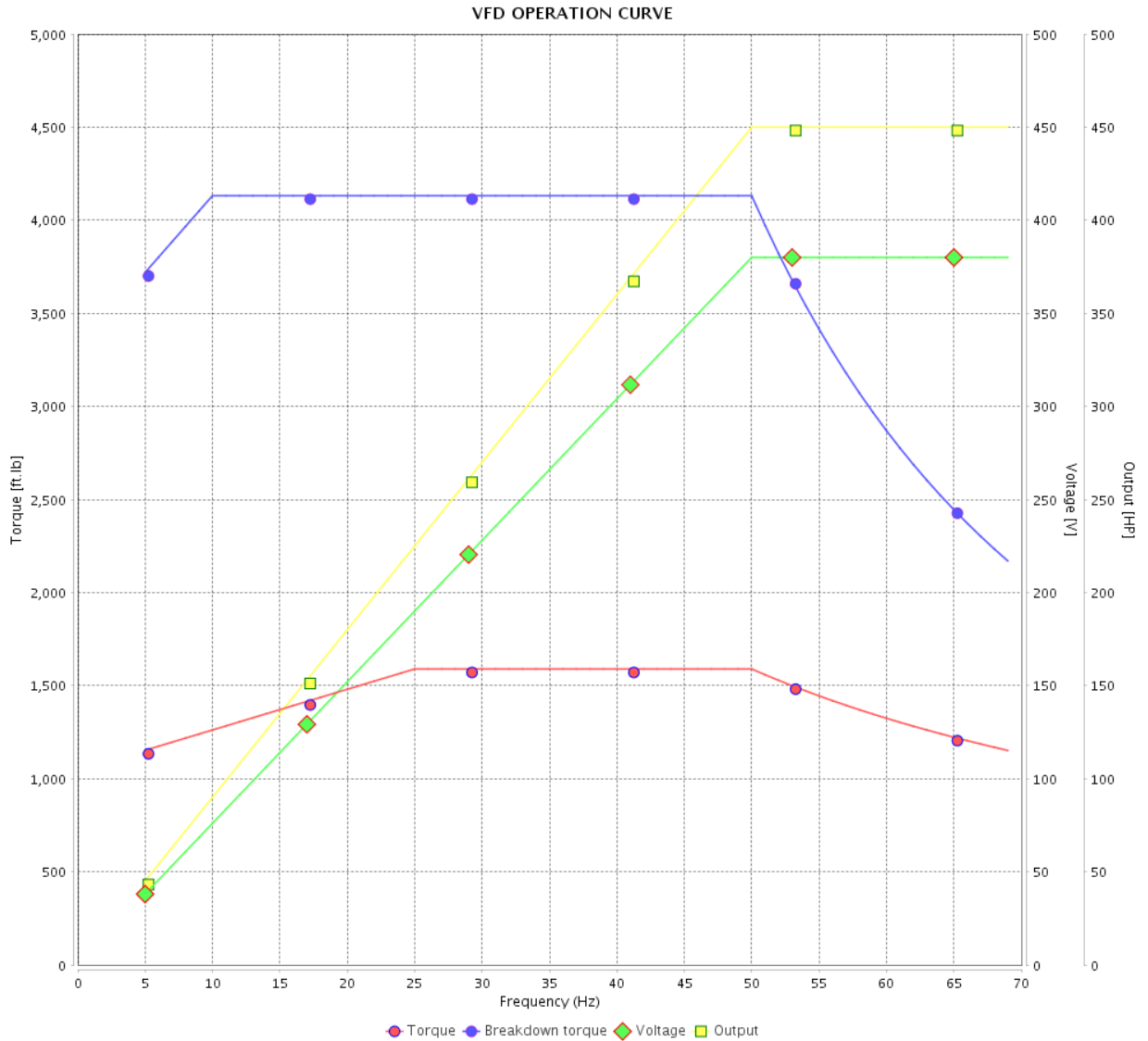
VFD OPERATION CURVE

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Performance : 380 V 50 Hz 4P IE3

Rated current : 606 A
 LRC : 7.1
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 Breakdown torque : 260 %
 Rated speed : 1487 rpm

Moment of inertia (J) : 160 sq.ft.lb
 Duty cycle : Cont.(S1)
 Insulation class : F
 Service factor : 1.00
 Temperature rise : 125 K
 Design : B

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VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage

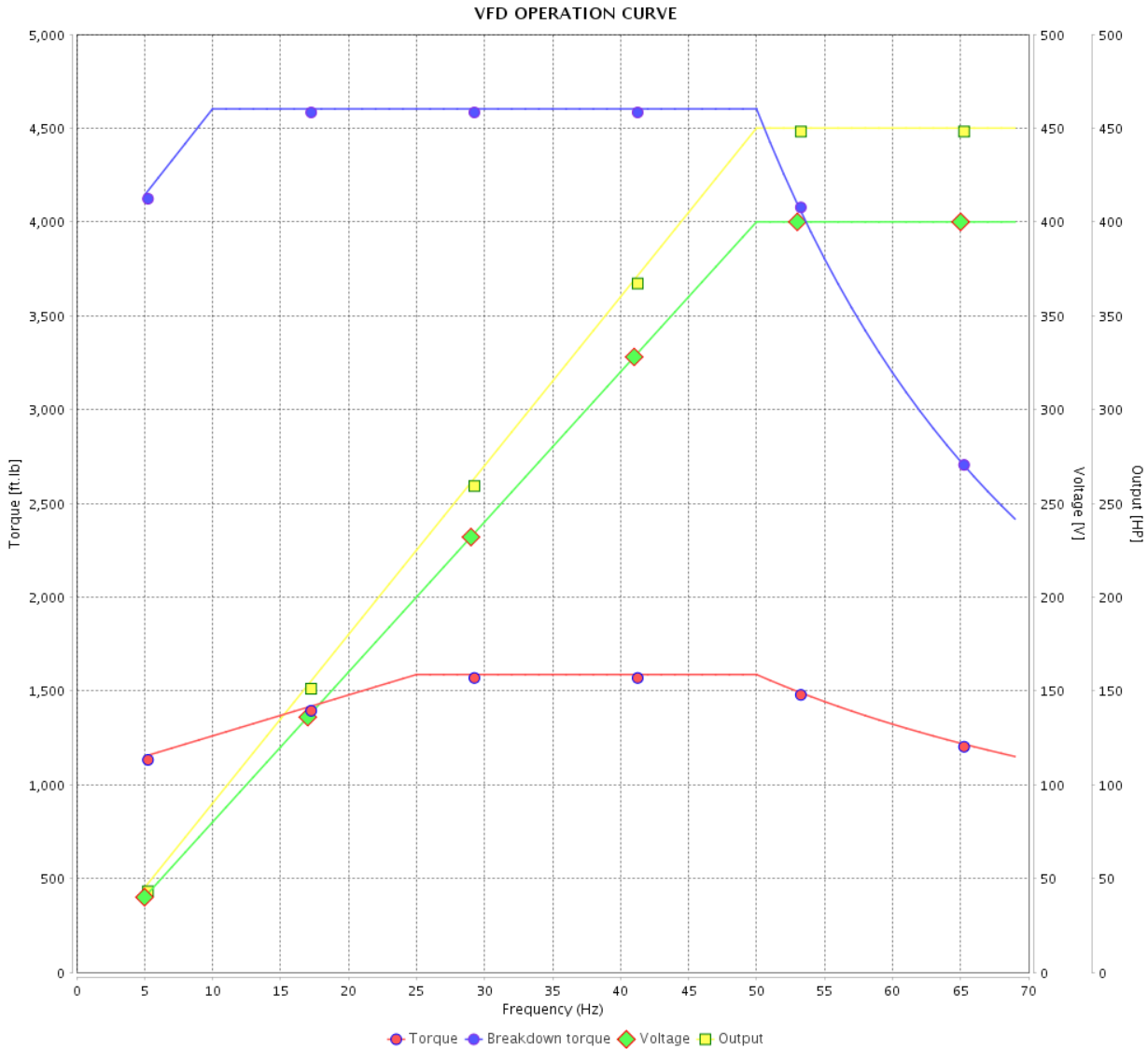


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Locked rotor torque	: 300 %	Service factor	: 1.00
Breakdown torque	: 290 %	Temperature rise	: 125 K
Rated speed	: 1489 rpm	Design	: B

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VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage

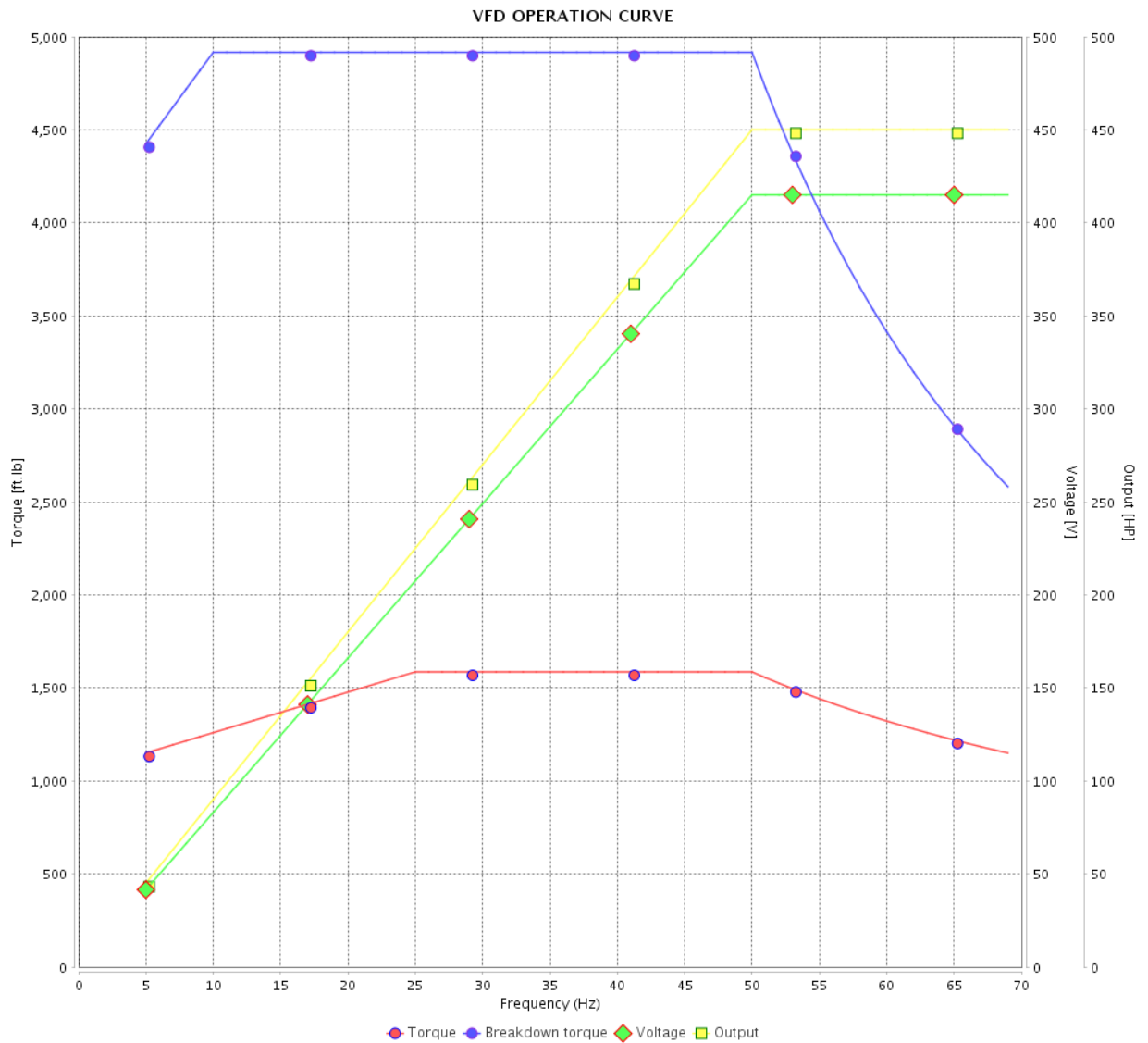


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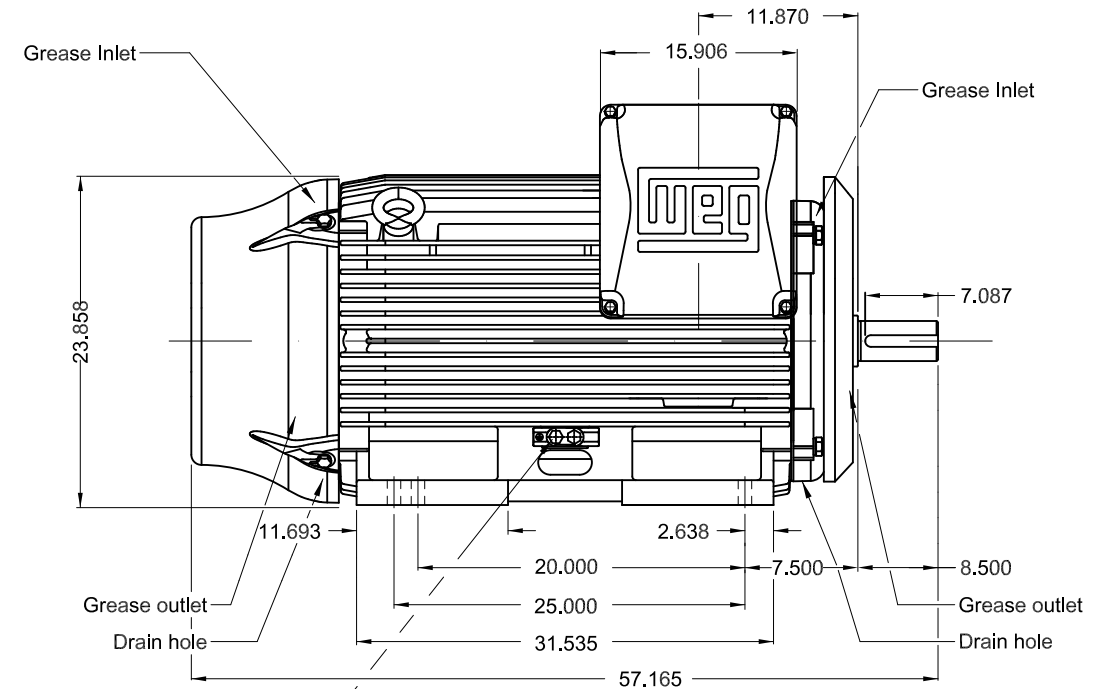
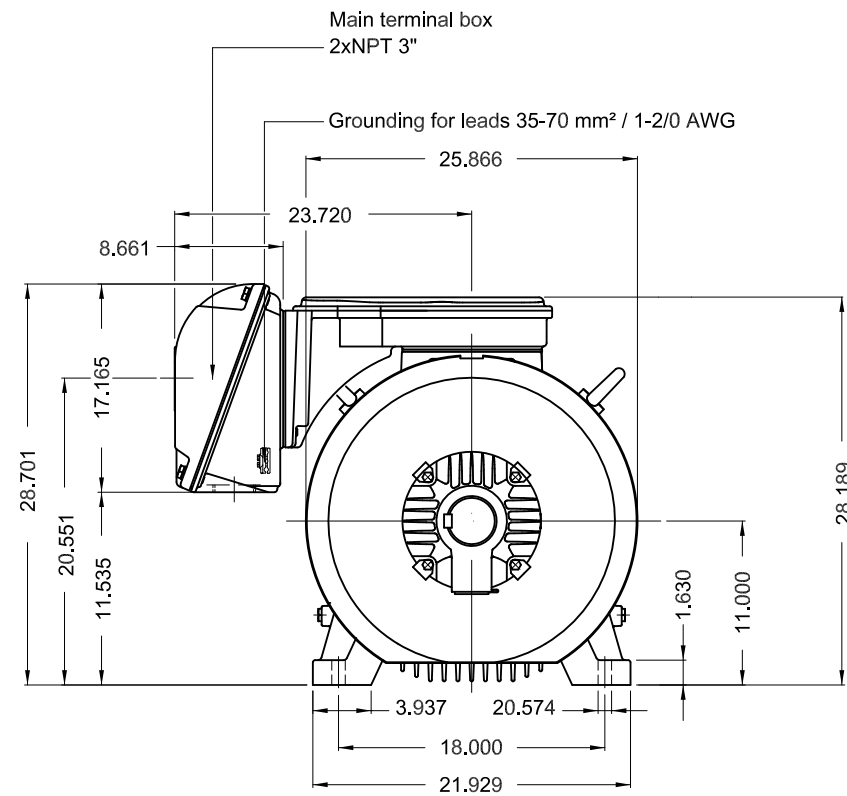


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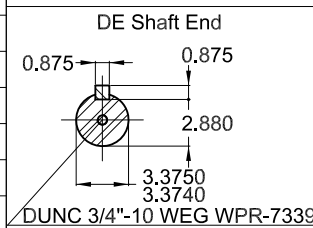


Grounding for leads 25-185 mm² / 3AWG-350MCM

500 HP 04 Poles 60 Hz

Dimensions in inches

- DE roller bearing
- Shaft locking device
- NDE endshield with electrically insulated bearing hub
- Drive-End Air Deflector
- Color RAL 6002
- Painting plan 203A
- Mounting NEMA F-1
- Mounting B3R(D)



ECM	LOC	SUMMARY OF MODIFICATIONS	EXECUTED	CHECKED	RELEASED	DATE	VER
EXECUTED	PIRWBUSER	THREE PH. MOTOR W22 PREM. EFF. FRAME L447/9T IP55 TEFC					
CHECKED							
RELEASED							
REL DT.	WMO		Jaragua do Sul	Product Engineering	SHEET	1 / 1	

PREVIEW
WDD

