

# DATA SHEET

## Three Phase Induction Motor - Squirrel Cage



Customer :					
Product line	: NEMA Premium Efficiency Three-Phase	Product code :	14335121		
		Catalog # :	45012ET3GRB586/7-W22		
Frame	: 586/7T	Cooling method	: IC411 - TEFC		
Insulation class	: F	Mounting	: F-1		
Duty cycle	: Cont.(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>2</sup>	: 4385 lb		
Protection degree	: IP55	Moment of inertia (J)	: 368 sq.ft.lb		
Output [HP]	450	400	400	400	
Poles	6	6	6	6	
Frequency [Hz]	60	50	50	50	
Rated voltage [V]	460	380	400	415	
Rated current [A]	532	580	558	542	
L. R. Amperes [A]	3245	3074	3292	3415	
LRC [A]	6.1x(Code G)	5.3x(Code F)	5.9x(Code G)	6.3x(Code G)	
No load current [A]	210	208	223	235	
Rated speed [RPM]	1190	990	990	990	
Slip [%]	0.83	1.00	1.00	1.00	
Rated torque [ft.lb]	1980	2120	2120	2120	
Locked rotor torque [%]	210	180	200	220	
Breakdown torque [%]	210	190	210	229	
Service factor	1.15	1.00	1.00	1.00	
Temperature rise	80 K	105 K	105 K	105 K	
Locked rotor time	45s (cold) 25s (hot)	36s (cold) 20s (hot)	36s (cold) 20s (hot)	36s (cold) 20s (hot)	
Noise level <sup>2</sup>	77.0 dB(A)	73.0 dB(A)	73.0 dB(A)	73.0 dB(A)	
Efficiency (%)	25%	95.7	96.0	95.7	
	50%	95.8	95.8	95.8	
	75%	96.2	96.2	96.2	
	100%	96.2	95.8	96.2	
Power Factor	25%	0.43	0.45	0.39	
	50%	0.67	0.70	0.64	
	75%	0.77	0.79	0.75	
	100%	0.81	0.82	0.80	
Bearing type	: <u>Drive end</u> NU-322 C3	<u>Non drive end</u> 6319 C3	Foundation loads		
Sealing	: Taconite	Taconite	Max. traction	: 7989 lb	
	Labyrinth	Labyrinth	Max. compression	: 12374 lb	
Lubrication interval	: 7000 h	13000 h			
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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# DATA SHEET

## Three Phase Induction Motor - Squirrel Cage



Customer : \_\_\_\_\_

### Space heater information

Voltage: 200 - 240 V

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# TORQUE AND CURRENT VS SPEED CURVE



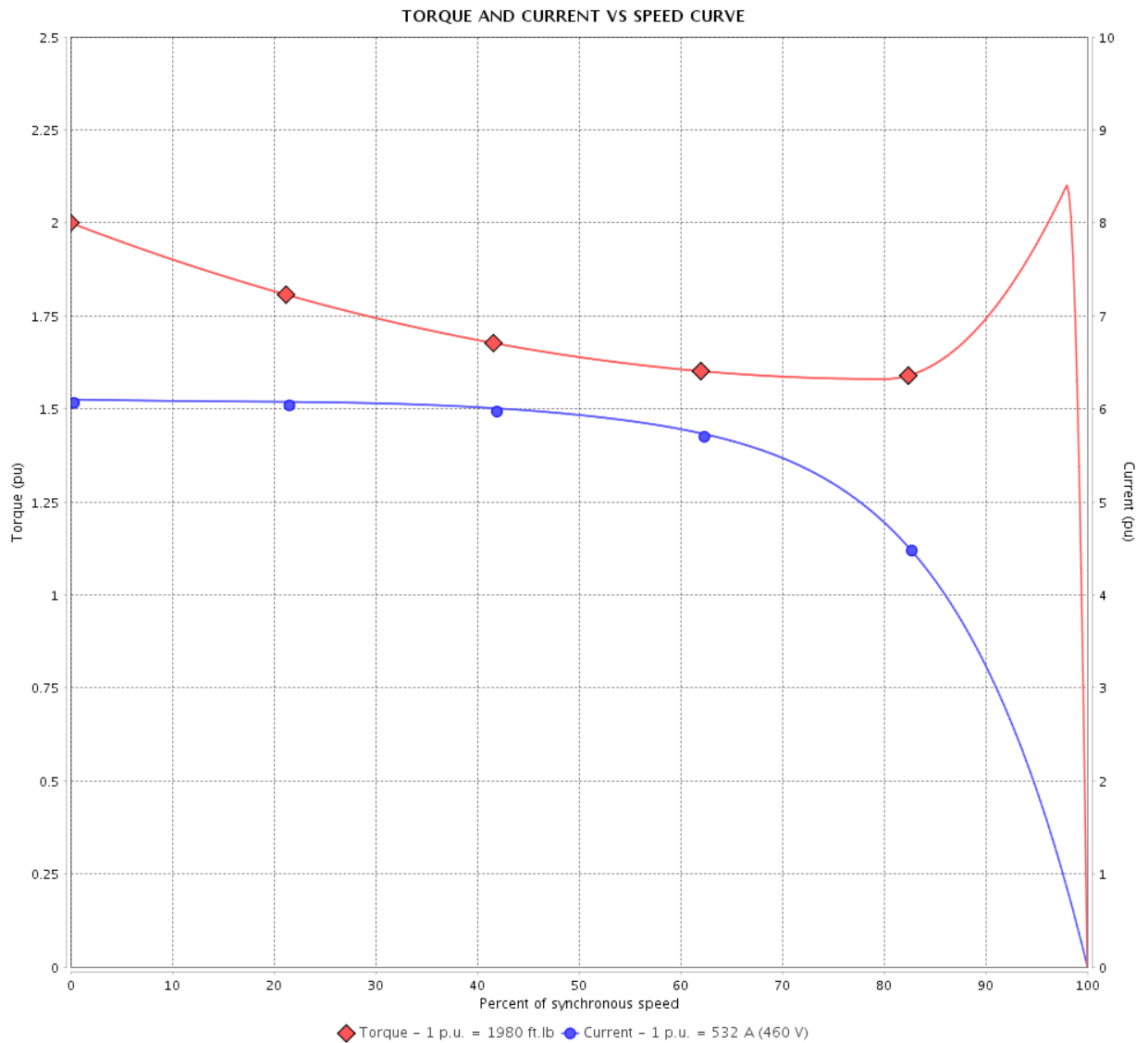
## Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 14335121

Catalog # : 45012ET3GRB586/7-W22



Performance : 460 V 60 Hz 6P

Rated current : 532 A  
 LRC : 6.1  
 Rated torque : 1980 ft.lb  
 Locked rotor torque : 210 %  
 Breakdown torque : 210 %  
 Rated speed : 1190 rpm

Moment of inertia (J) : 368 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.15  
 Temperature rise : 80 K

Locked rotor time : 45s (cold) 25s (hot)

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# TORQUE AND CURRENT VS SPEED CURVE

## Three Phase Induction Motor - Squirrel Cage



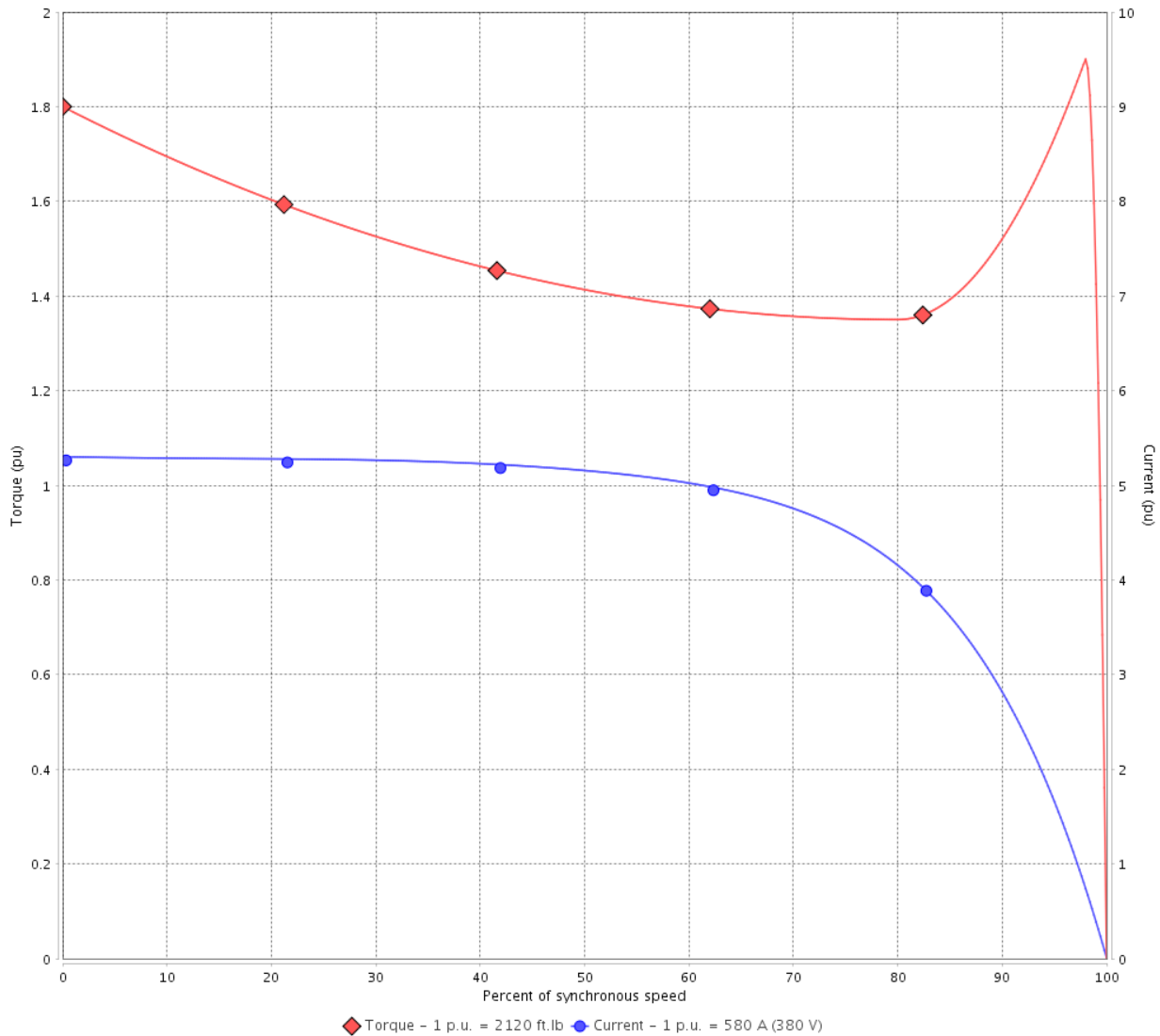
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 14335121

Catalog # : 45012ET3GRB586/7-W22

TORQUE AND CURRENT VS SPEED CURVE



Performance : 380 V 50 Hz 6P IE3

Rated current	: 580 A	Moment of inertia (J)	: 368 sq.ft.lb
LRC	: 5.3	Duty cycle	: Cont.(S1)
Rated torque	: 2120 ft.lb	Insulation class	: F
Locked rotor torque	: 180 %	Service factor	: 1.00
Breakdown torque	: 190 %	Temperature rise	: 105 K
Rated speed	: 990 rpm		

Locked rotor time : 36s (cold) 20s (hot)

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# TORQUE AND CURRENT VS SPEED CURVE



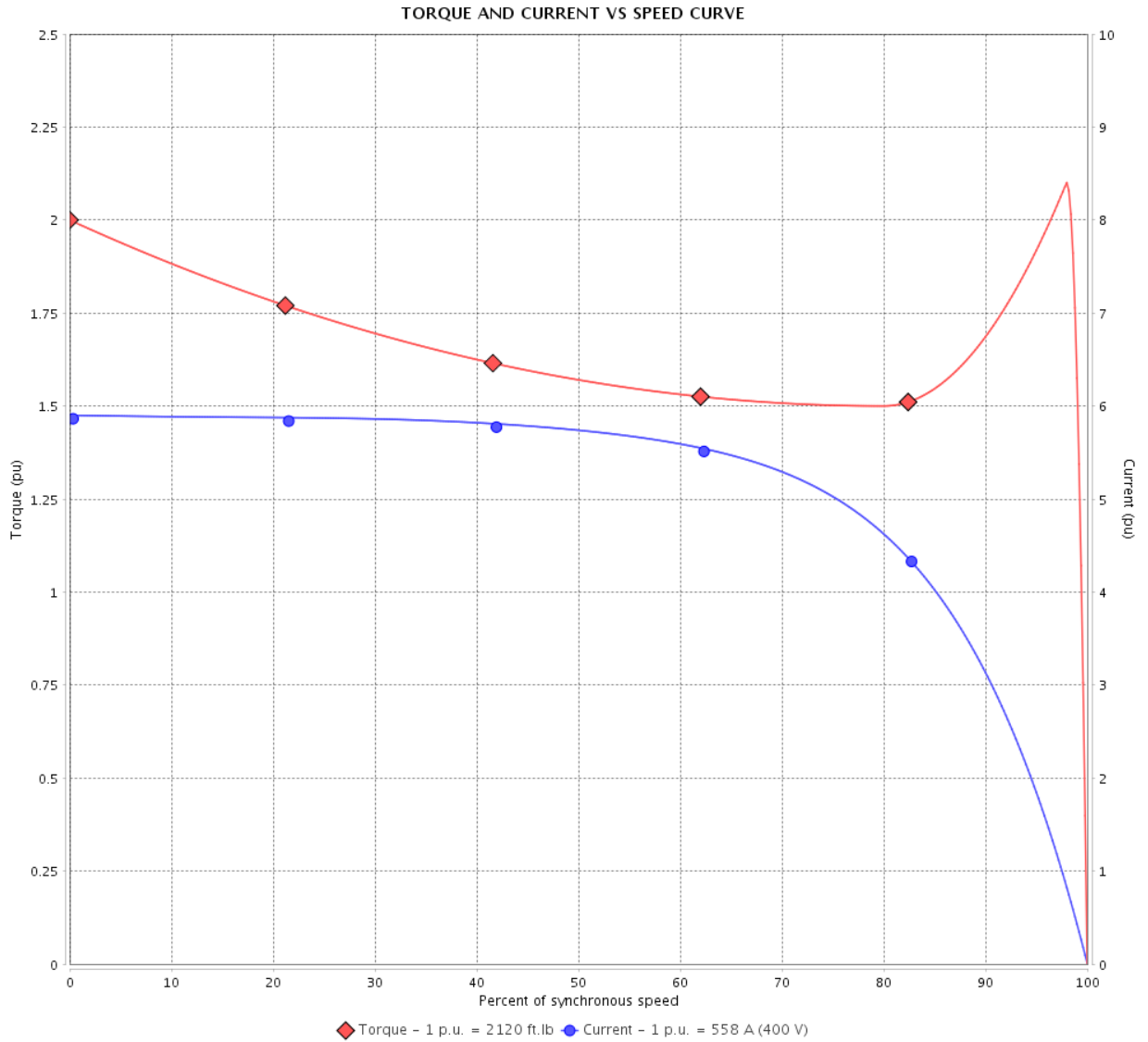
## Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 14335121

Catalog # : 45012ET3GRB586/7-W22



Performance : 400 V 50 Hz 6P IE3

Rated current	: 558 A	Moment of inertia (J)	: 368 sq.ft.lb
LRC	: 5.9	Duty cycle	: Cont.(S1)
Rated torque	: 2120 ft.lb	Insulation class	: F
Locked rotor torque	: 200 %	Service factor	: 1.00
Breakdown torque	: 210 %	Temperature rise	: 105 K
Rated speed	: 990 rpm		

Locked rotor time : 36s (cold) 20s (hot)

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# TORQUE AND CURRENT VS SPEED CURVE

## Three Phase Induction Motor - Squirrel Cage



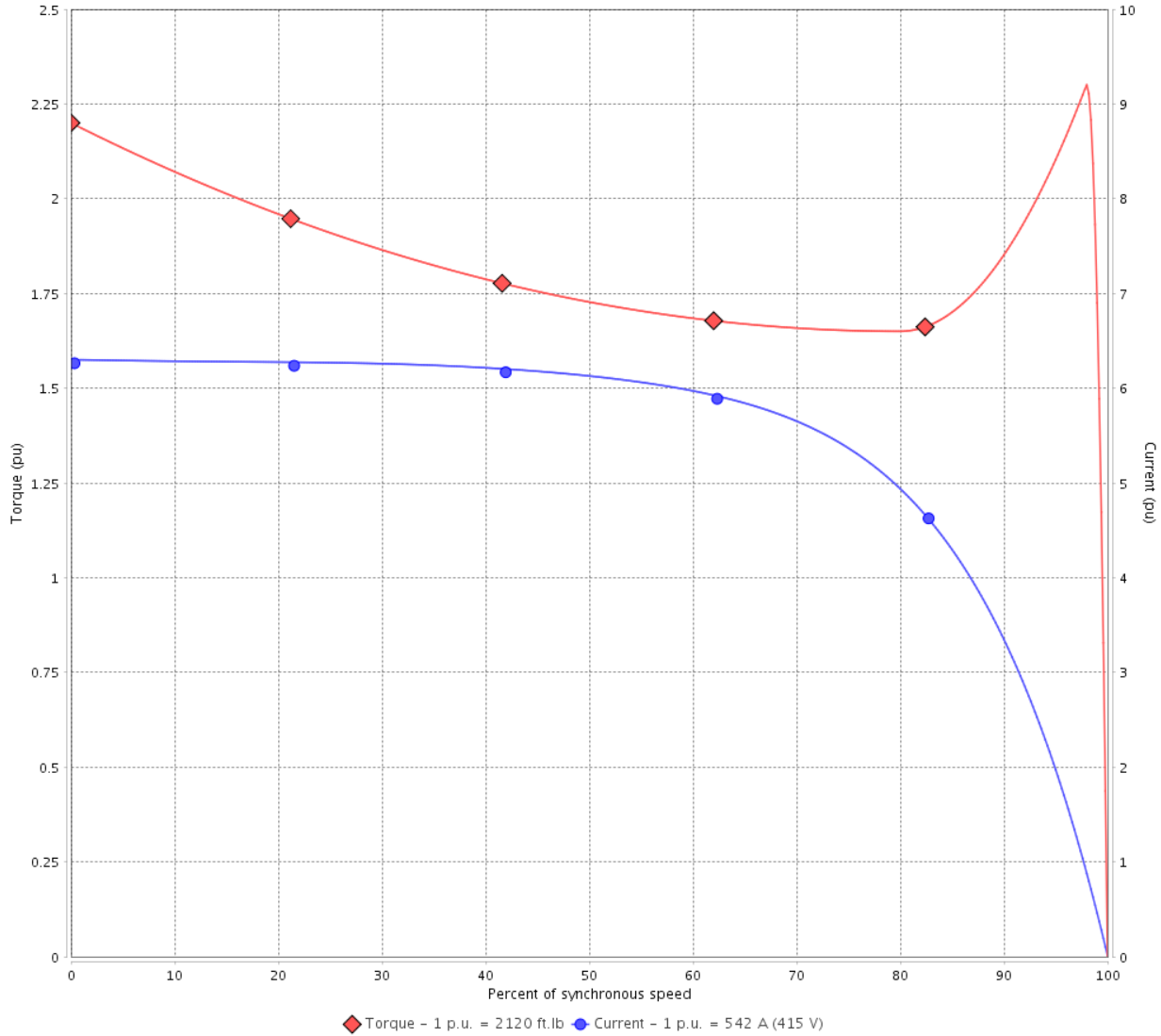
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Product code : 14335121

Catalog # : 45012ET3GRB586/7-W22

TORQUE AND CURRENT VS SPEED CURVE



Performance : 415 V 50 Hz 6P IE3

Rated current	: 542 A	Moment of inertia (J)	: 368 sq.ft.lb
LRC	: 6.3	Duty cycle	: Cont.(S1)
Rated torque	: 2120 ft.lb	Insulation class	: F
Locked rotor torque	: 220 %	Service factor	: 1.00
Breakdown torque	: 229 %	Temperature rise	: 105 K
Rated speed	: 990 rpm		

Locked rotor time : 36s (cold) 20s (hot)

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# LOAD PERFORMANCE CURVE

## Three Phase Induction Motor - Squirrel Cage

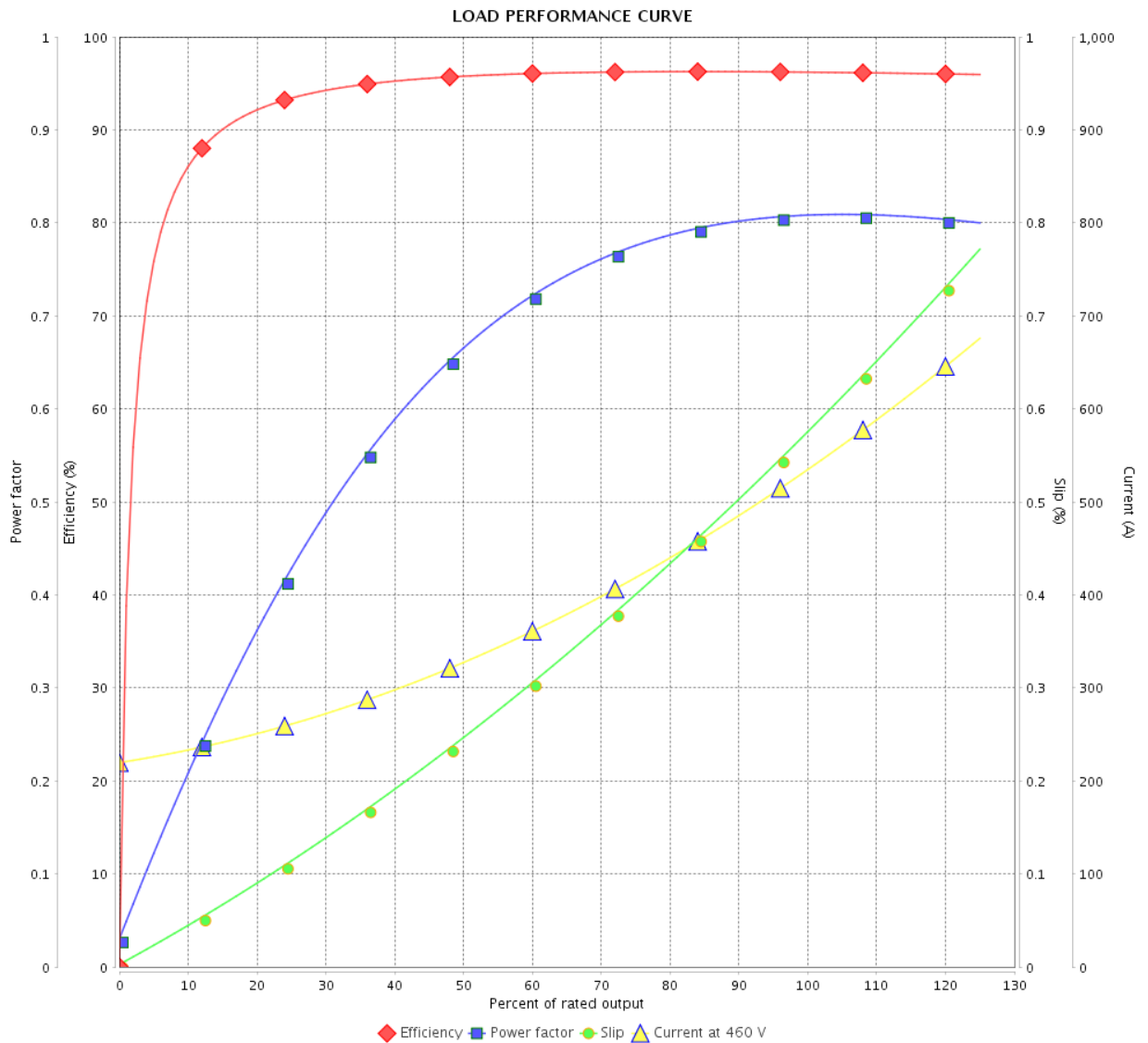


Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 14335121

Catalog # : 45012ET3GRB586/7-W22



Performance : 460 V 60 Hz 6P

Rated current : 532 A  
 LRC : 6.1  
 Rated torque : 1980 ft.lb  
 Locked rotor torque : 210 %  
 Breakdown torque : 210 %  
 Rated speed : 1190 rpm

Moment of inertia (J) : 368 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.15  
 Temperature rise : 80 K

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# LOAD PERFORMANCE CURVE

Three Phase Induction Motor - Squirrel Cage

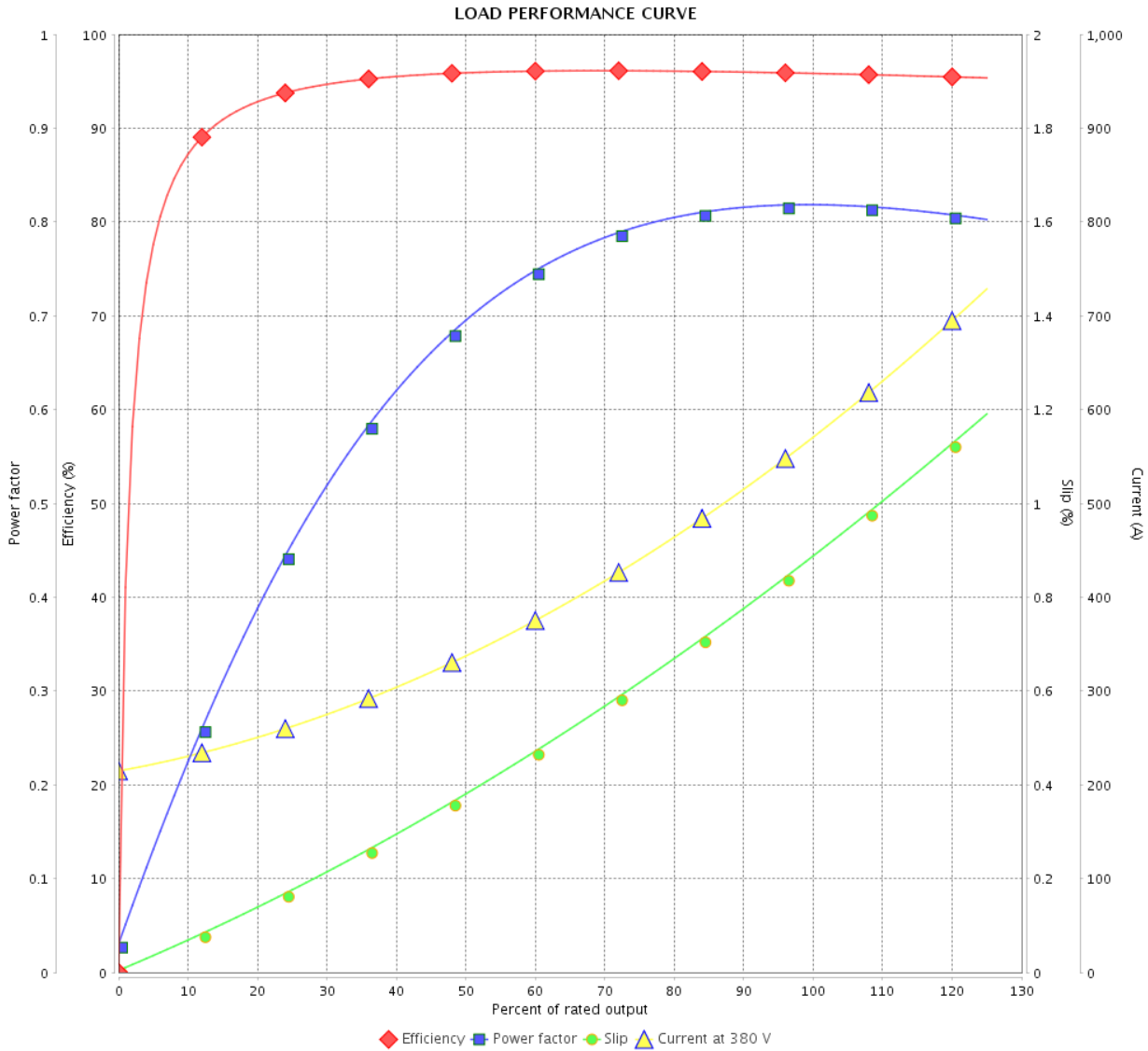


Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 14335121

Catalog # : 45012ET3GRB586/7-W22



Performance : 380 V 50 Hz 6P IE3

Rated current : 580 A  
 LRC : 5.3  
 Rated torque : 2120 ft.lb  
 Locked rotor torque : 180 %  
 Breakdown torque : 190 %  
 Rated speed : 990 rpm

Moment of inertia (J) : 368 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 105 K

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# LOAD PERFORMANCE CURVE

## Three Phase Induction Motor - Squirrel Cage

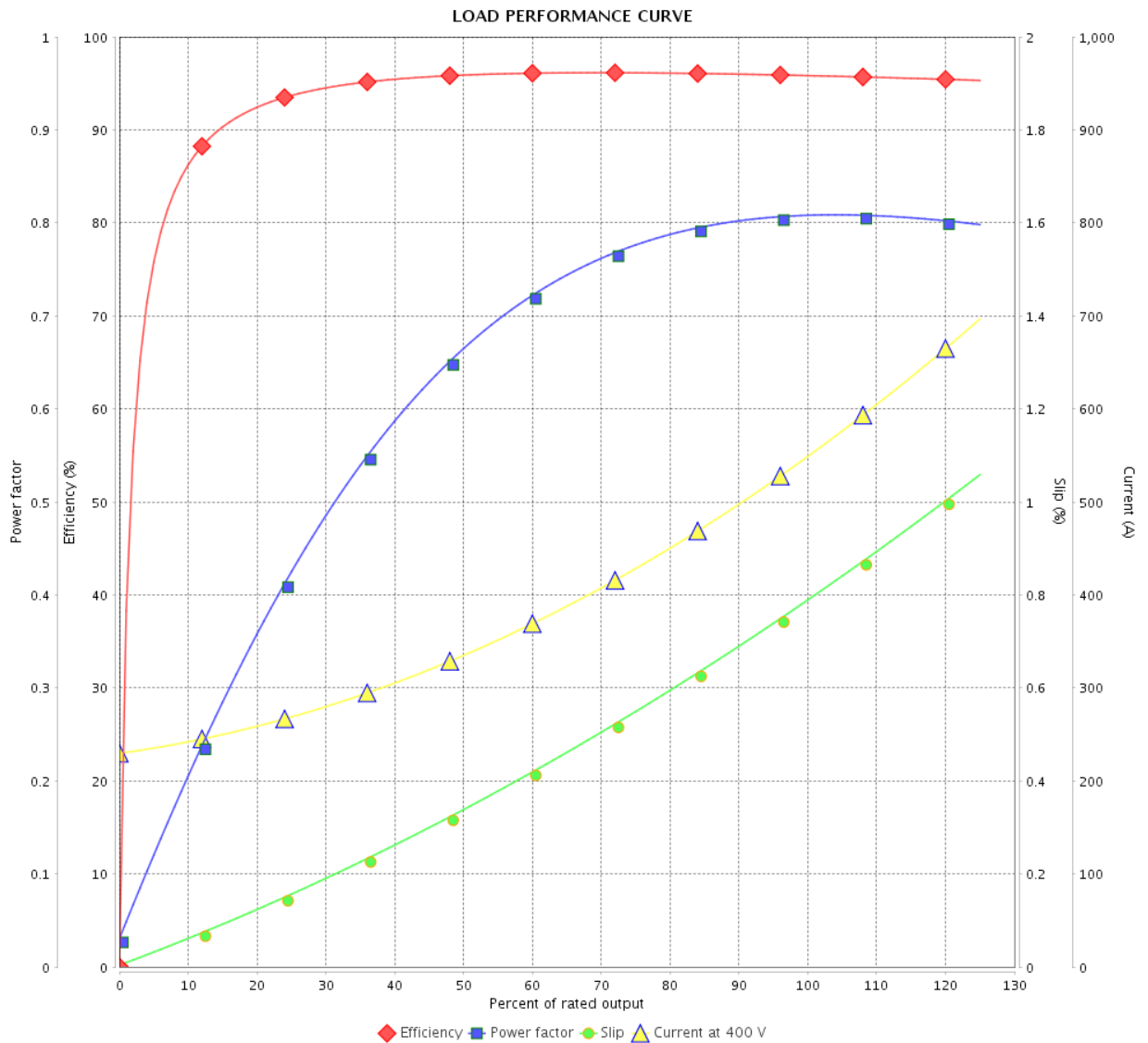


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Product code : 14335121

Catalog # : 45012ET3GRB586/7-W22



Performance : 400 V 50 Hz 6P IE3

Rated current : 558 A  
 LRC : 5.9  
 Rated torque : 2120 ft.lb  
 Locked rotor torque : 200 %  
 Breakdown torque : 210 %  
 Rated speed : 990 rpm

Moment of inertia (J) : 368 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 105 K

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# LOAD PERFORMANCE CURVE

Three Phase Induction Motor - Squirrel Cage

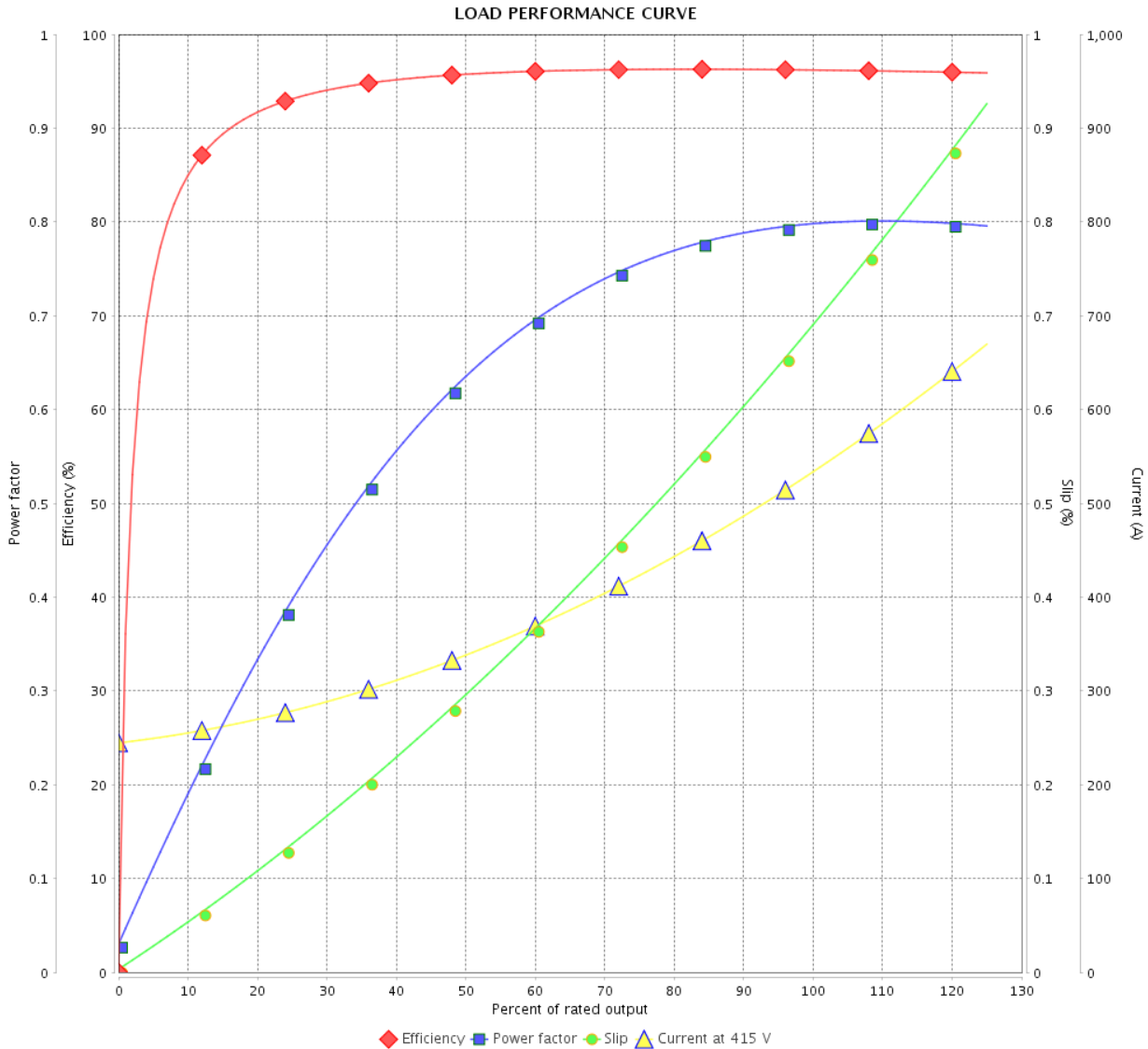


Customer : \_\_\_\_\_

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 Breakdown torque : 229 %  
 Rated speed : 990 rpm

Moment of inertia (J) : 368 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 105 K

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# THERMAL LIMIT CURVE



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Locked rotor torque : 210 %	Service factor : 1.15
Breakdown torque : 210 %	Temperature rise : 80 K
Rated speed : 1190 rpm	

Heating constant

Cooling constant

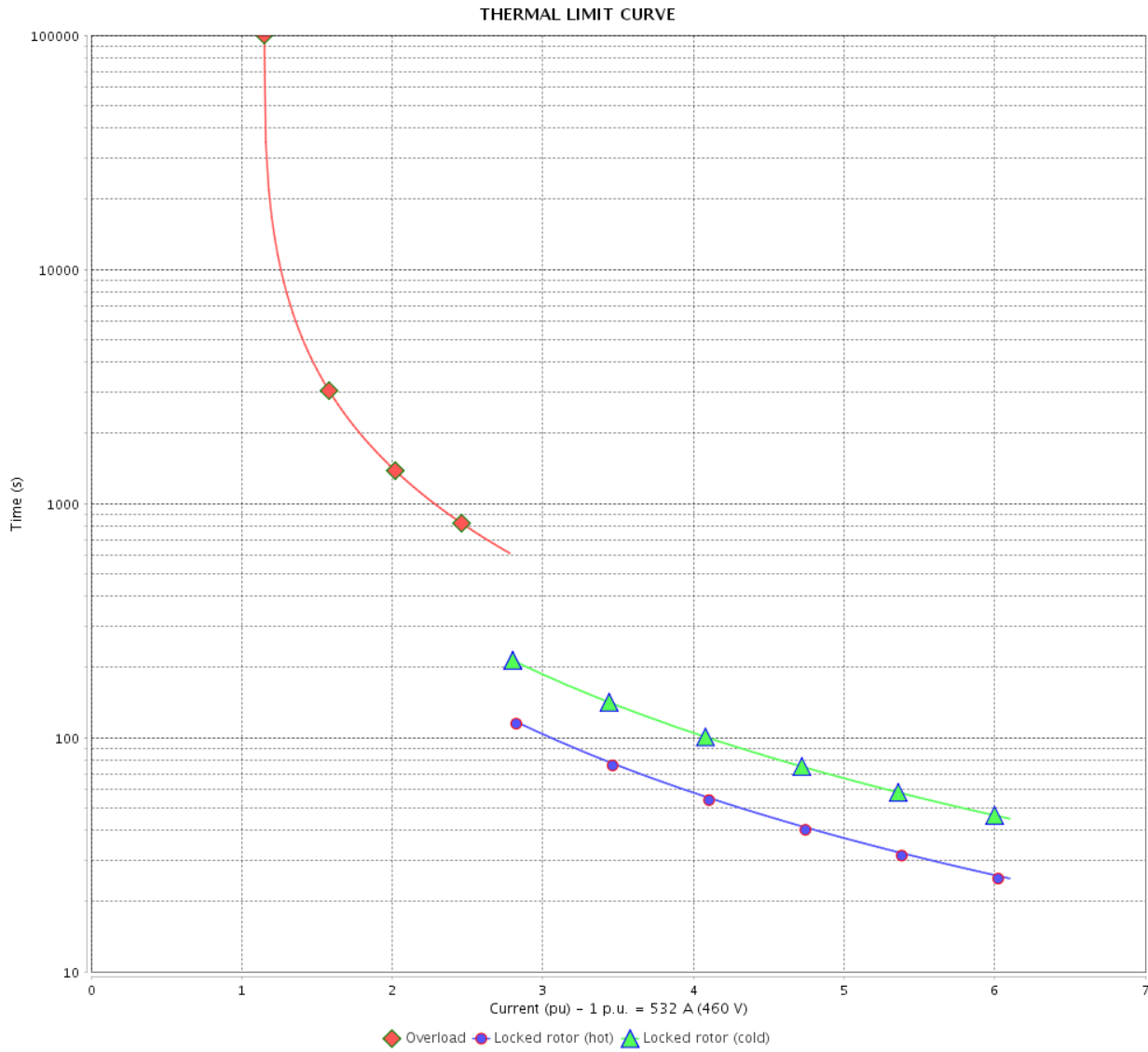
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Performance : 380 V 50 Hz 6P IE3

Rated current : 580 A	Moment of inertia (J) : 368 sq.ft.lb
LRC : 5.3	Duty cycle : Cont.(S1)
Rated torque : 2120 ft.lb	Insulation class : F
Locked rotor torque : 180 %	Service factor : 1.00
Breakdown torque : 190 %	Temperature rise : 105 K
Rated speed : 990 rpm	

Heating constant

Cooling constant

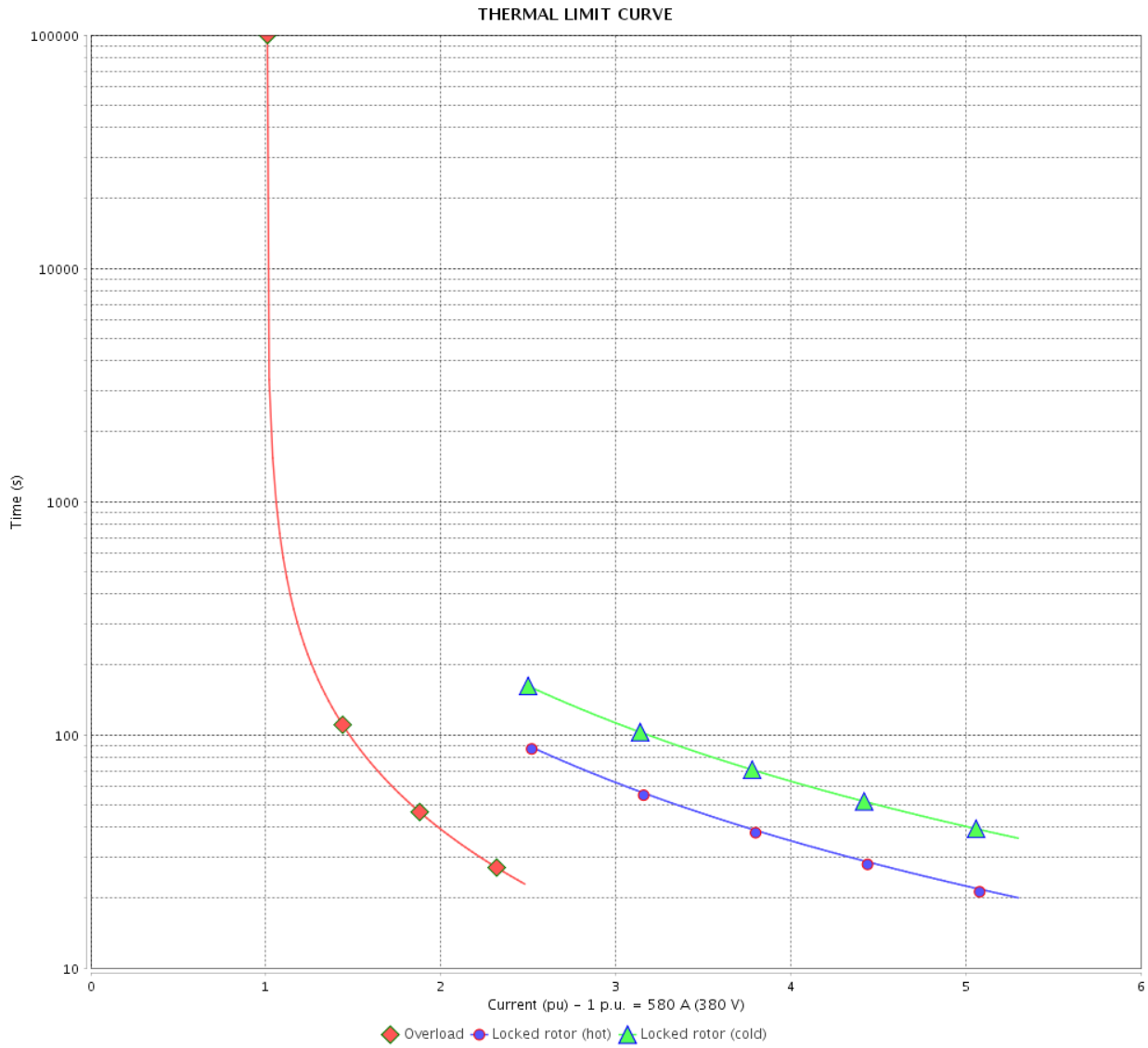
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Rated current : 558 A	Moment of inertia (J) : 368 sq.ft.lb
LRC : 5.9	Duty cycle : Cont.(S1)
Rated torque : 2120 ft.lb	Insulation class : F
Locked rotor torque : 200 %	Service factor : 1.00
Breakdown torque : 210 %	Temperature rise : 105 K
Rated speed : 990 rpm	

Heating constant

Cooling constant

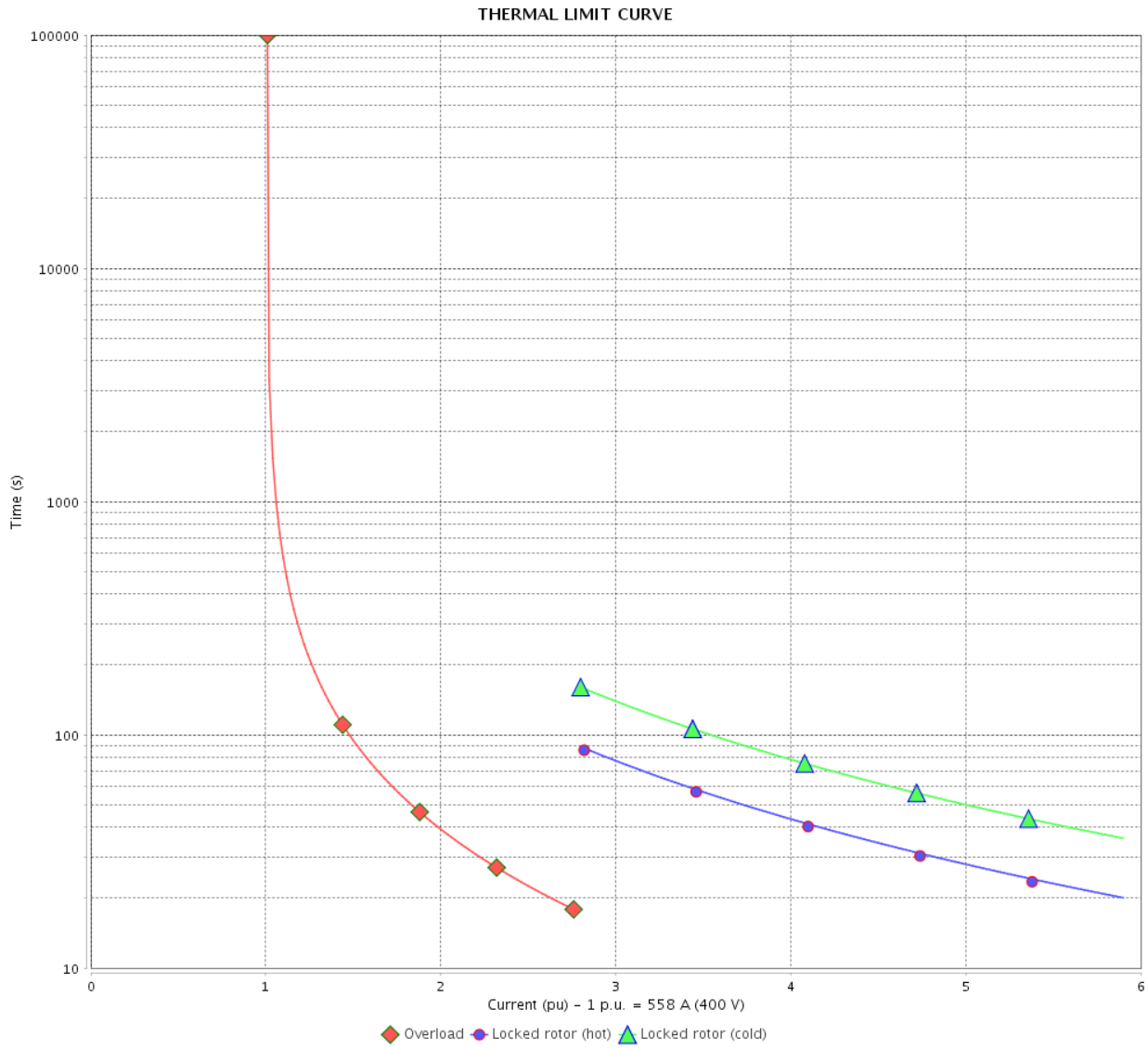
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Performance : 415 V 50 Hz 6P IE3

Rated current : 542 A	Moment of inertia (J) : 368 sq.ft.lb
LRC : 6.3	Duty cycle : Cont.(S1)
Rated torque : 2120 ft.lb	Insulation class : F
Locked rotor torque : 220 %	Service factor : 1.00
Breakdown torque : 229 %	Temperature rise : 105 K
Rated speed : 990 rpm	

Heating constant

Cooling constant

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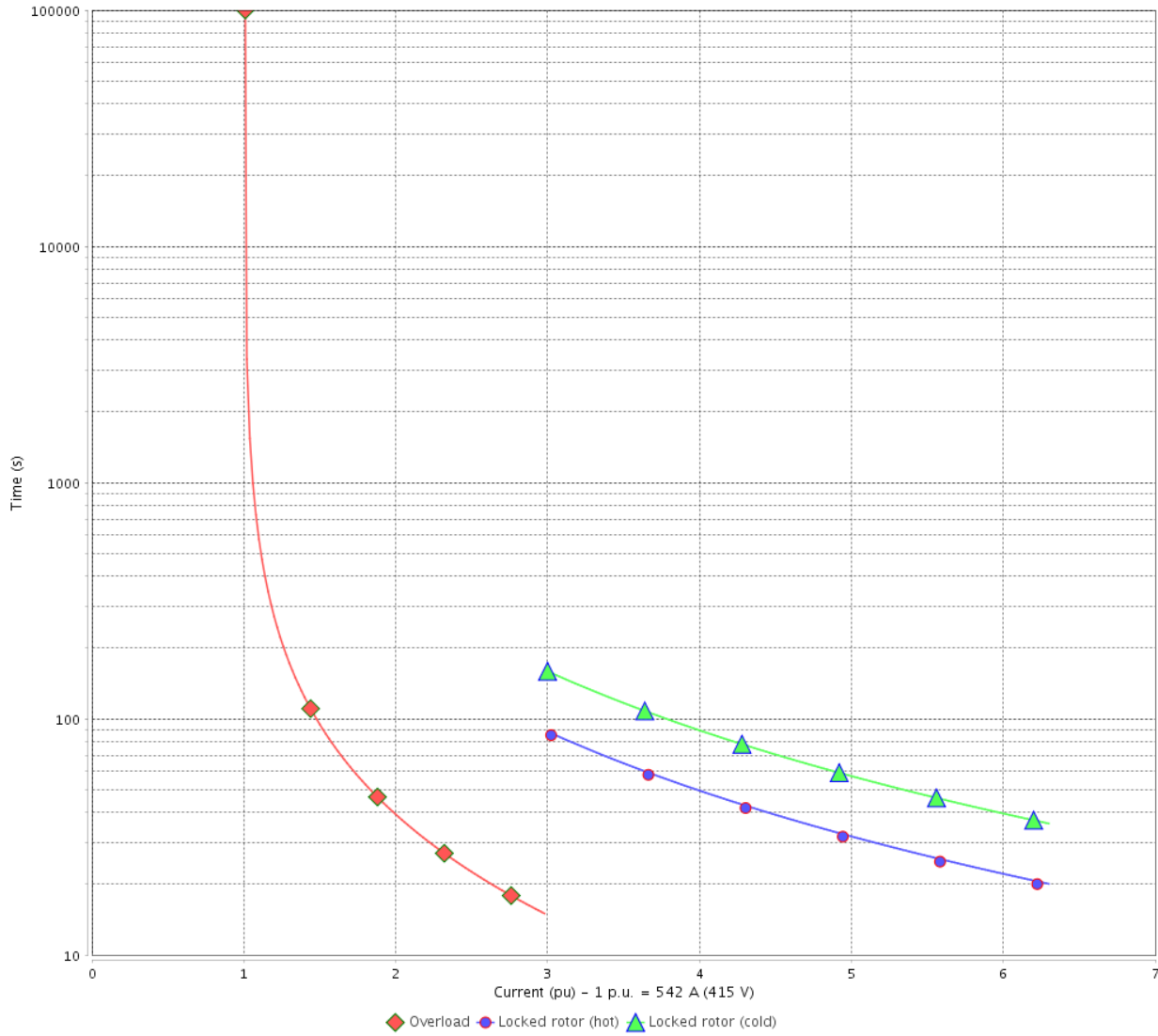
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Customer : \_\_\_\_\_

THERMAL LIMIT CURVE



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# VFD OPERATION CURVE

## Three Phase Induction Motor - Squirrel Cage

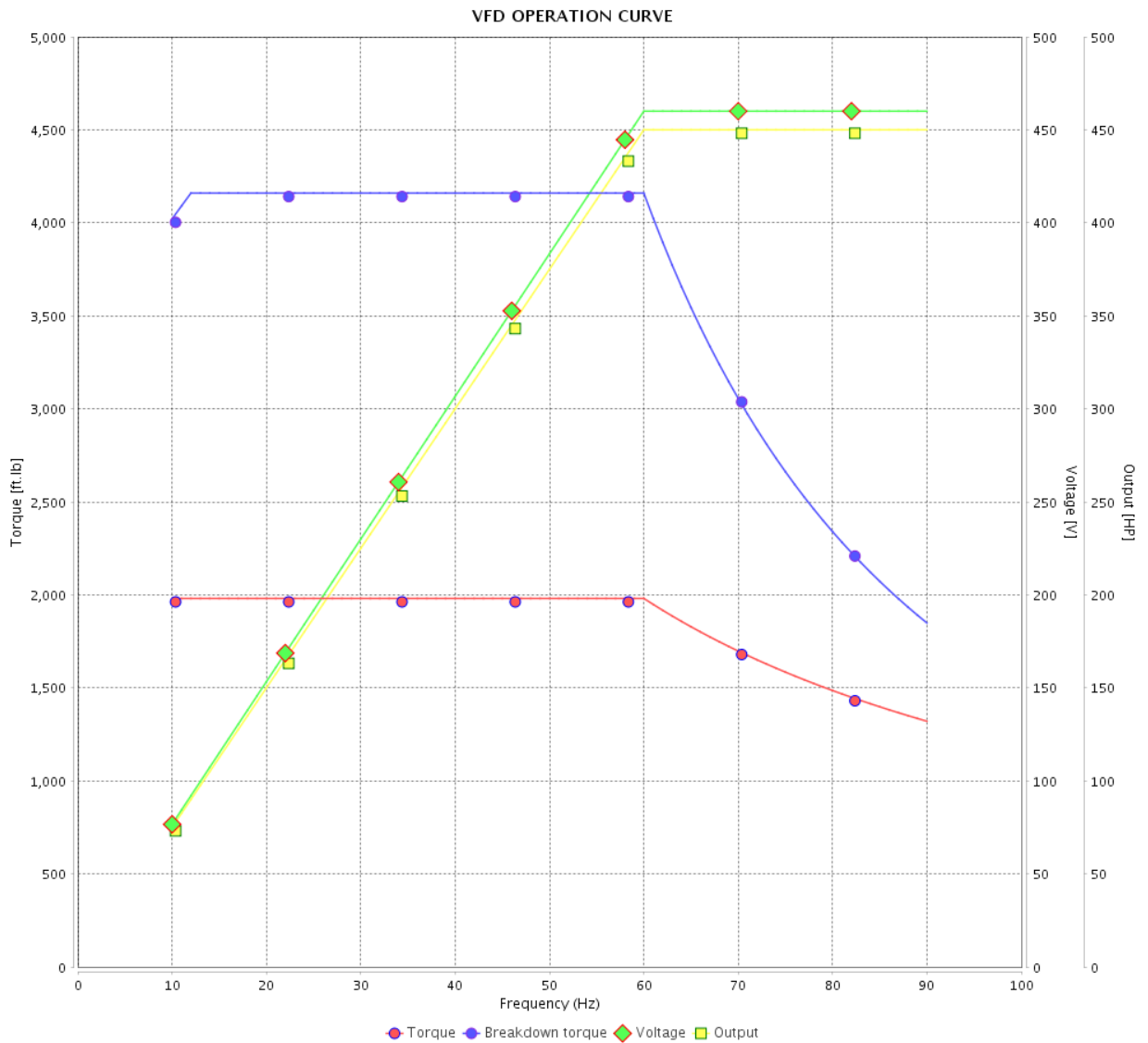


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 Insulation class : F  
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# VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage



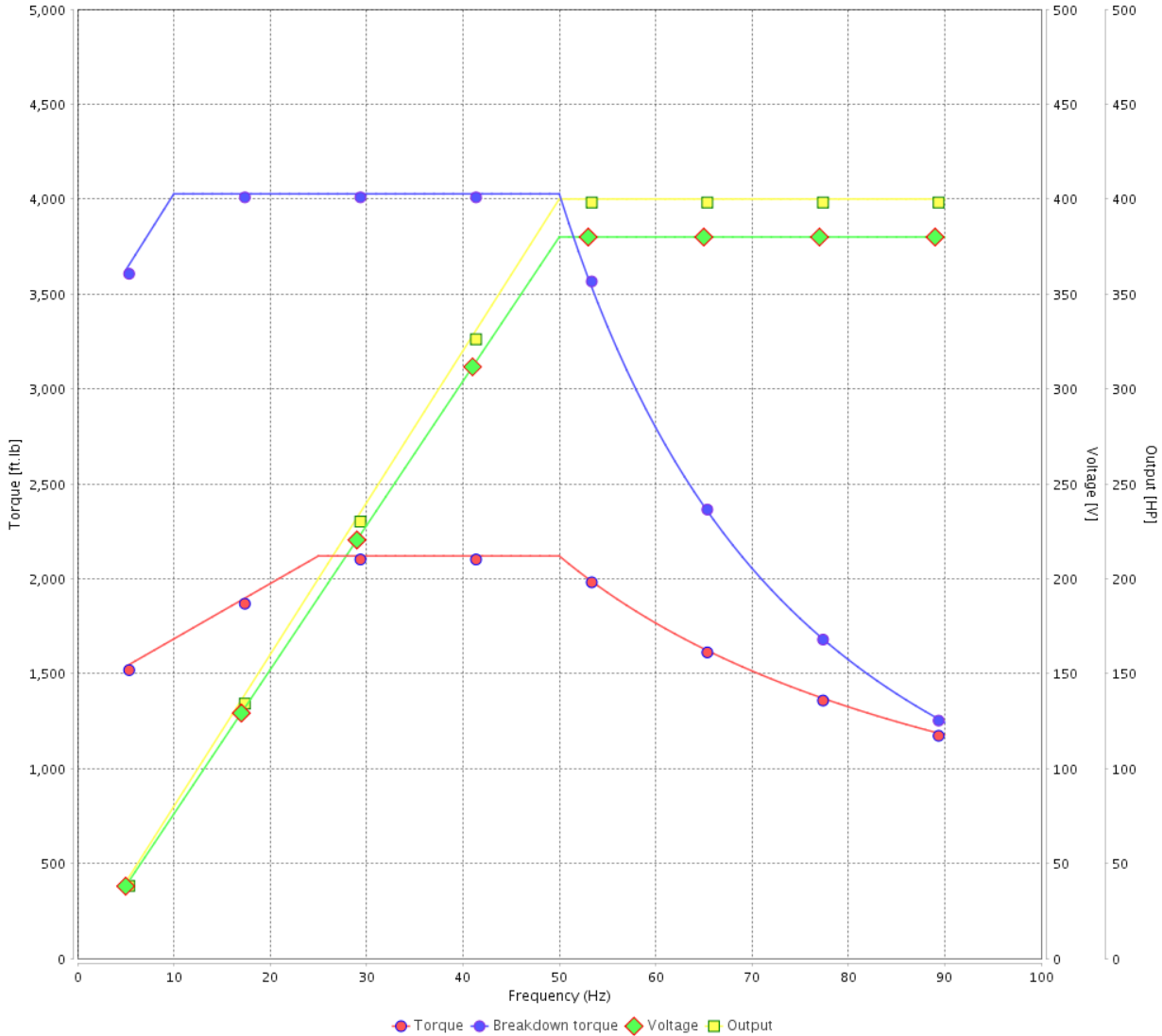
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VFD OPERATION CURVE



Performance : 380 V 50 Hz 6P IE3

Rated current : 580 A  
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 Rated torque : 2120 ft.lb  
 Locked rotor torque : 180 %  
 Breakdown torque : 190 %  
 Rated speed : 990 rpm

Moment of inertia (J) : 368 sq.ft.lb  
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 Insulation class : F  
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Three Phase Induction Motor - Squirrel Cage

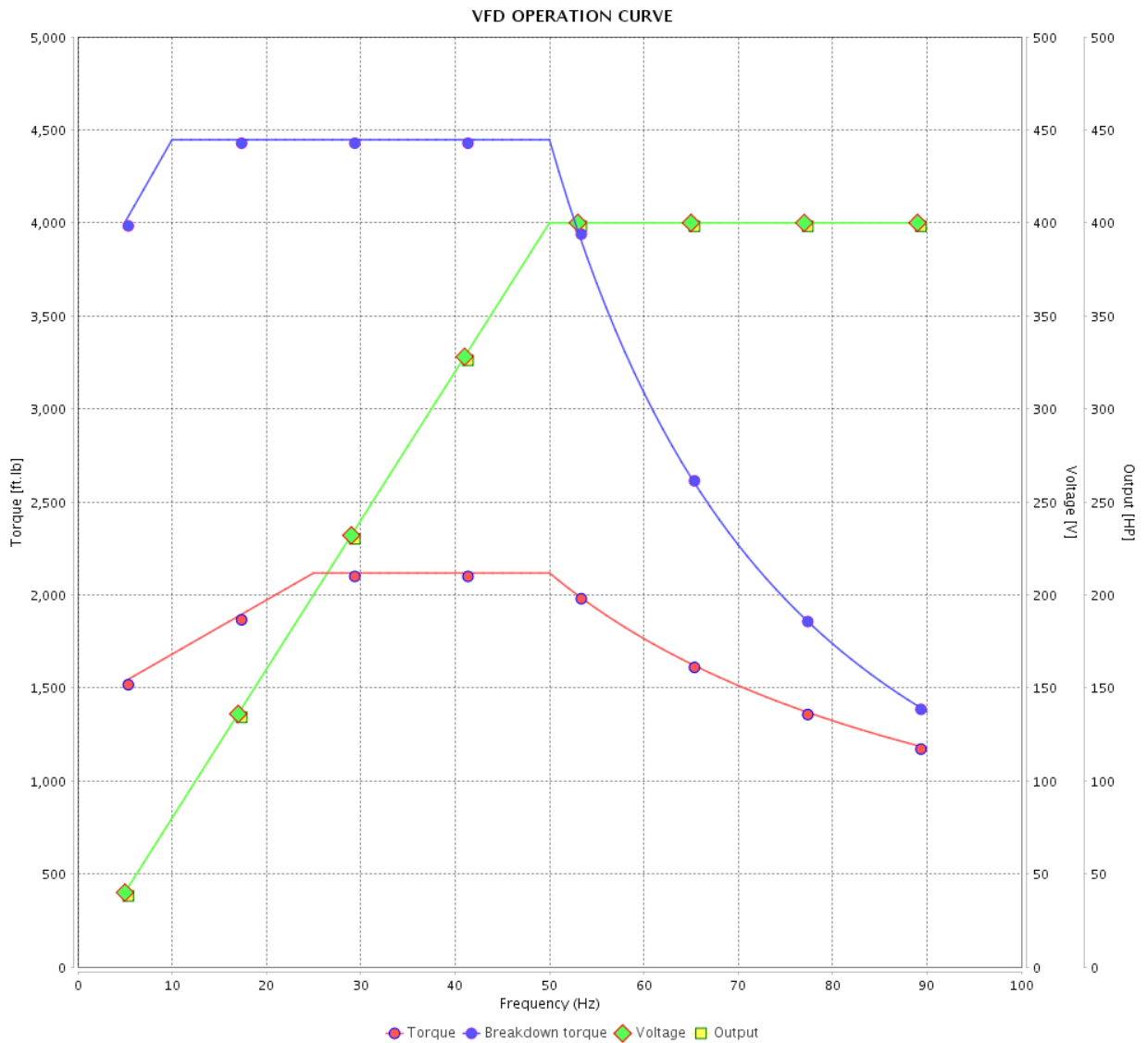


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# VFD OPERATION CURVE

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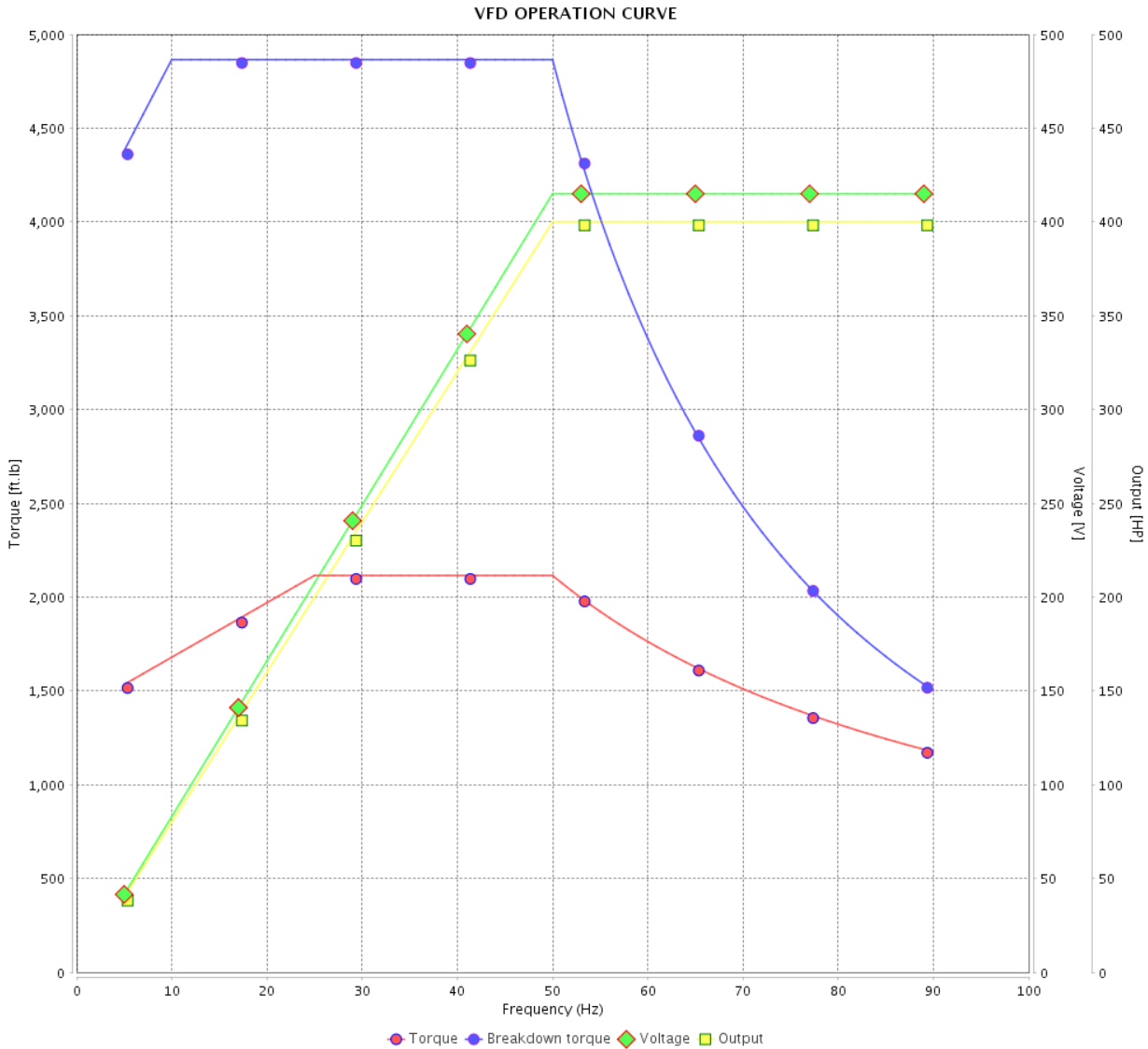


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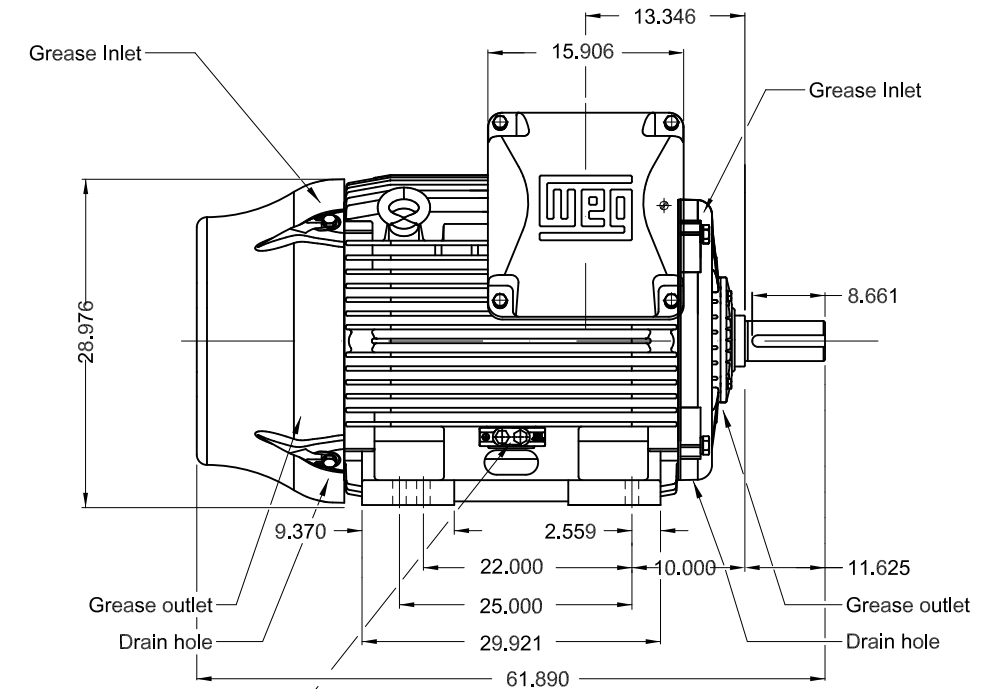
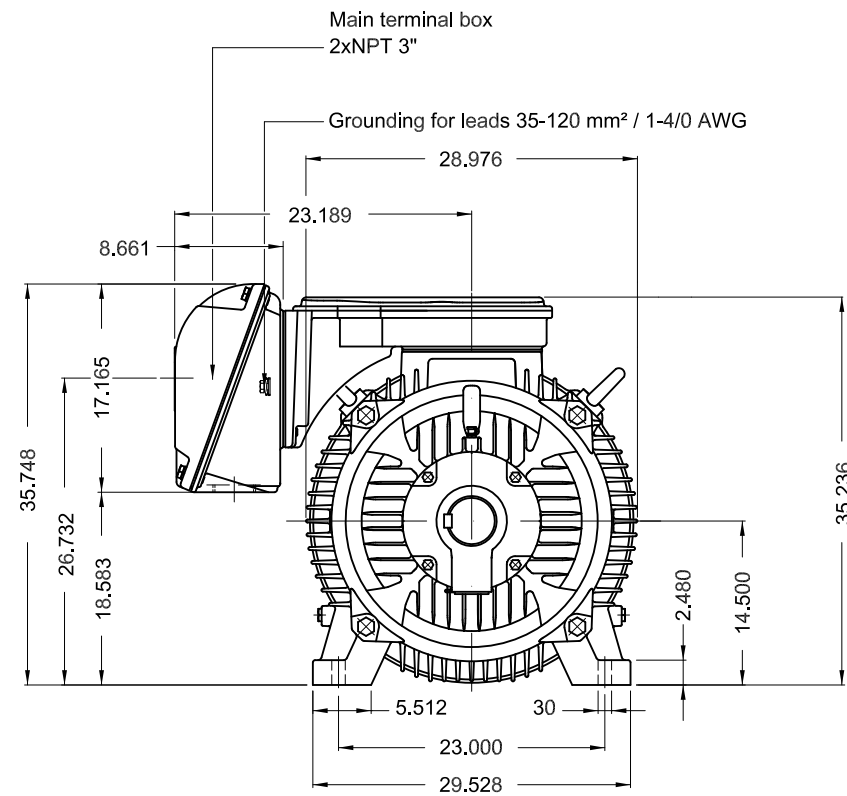


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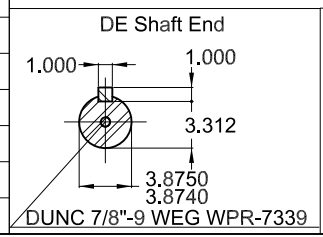
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- Without vertical jackscrews
- DE roller bearing
- Shaft locking device
- NDE endshield with electrically insulated bearing hub
- Color RAL 5009
- Painting plan 203A
- Mounting NEMA F-1
- Mounting B3R(D)



450 HP 06 Poles 60 Hz A

ECM	LOC	SUMMARY OF MODIFICATIONS				EXECUTED	CHECKED	RELEASED	DATE	VER
EXECUTED	PIRWUSER		THREE PH. MOTOR W22 PREM. EFF.				<b>PREVIEW</b> WDD		SHEET 1 / 1	XME A3
CHECKED			FRAME 586/7T IP55 TEFC							
RELEASED										
REL DT.			WMO	Jaragua do Sul	Product Engineering					