

# DATA SHEET

## Three Phase Induction Motor - Squirrel Cage



Customer :					
Product line	: NEMA Premium Efficiency Three-Phase	Product code :	12408380		
		Catalog # :	20018XT3G447T		
Frame	: 447T	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>	: 2590 lb		
Protection degree	: IP55	Moment of inertia (J)	: 76.2 sq.ft.lb		
Design	: B				
Output [HP]	200	150	150	150	
Poles	4	4	4	4	
Frequency [Hz]	60	50	50	50	
Rated voltage [V]	460	380	400	415	
Rated current [A]	230	209	202	197	
L. R. Amperes [A]	1587	1526	1616	1675	
LRC [A]	6.9x(Code G)	7.3x(Code H)	8.0x(Code H)	8.5x(Code J)	
No load current [A]	74.0	73.0	77.0	81.0	
Rated speed [RPM]	1780	1480	1485	1485	
Slip [%]	1.11	1.33	1.00	1.00	
Rated torque [ft.lb]	589	530	530	529	
Locked rotor torque [%]	229	240	280	300	
Breakdown torque [%]	240	260	290	320	
Service factor	1.15	1.00	1.00	1.00	
Temperature rise	80 K	80 K	80 K	80 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>	82.0 dB(A)	82.0 dB(A)	82.0 dB(A)	82.0 dB(A)	
Efficiency (%)	25%	95.7	95.3	95.3	95.3
	50%	95.8	95.4	95.4	95.4
	75%	96.2	95.4	95.8	95.8
	100%	96.2	95.4	95.8	95.8
Power Factor	25%	0.47	0.44	0.41	0.38
	50%	0.70	0.67	0.63	0.61
	75%	0.80	0.78	0.75	0.73
	100%	0.85	0.84	0.82	0.81
Bearing type	: <u>Drive end</u> 6319 C3	<u>Non drive end</u> 6316 C3	Foundation loads		
Sealing	: Viton	Viton Seal	Max. traction	: 3230 lb	
	Oil Seal		Max. compression	: 5820 lb	
Lubrication interval	: 7038 h	8569 h			
Lubricant amount	: 45 g	34 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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## Three Phase Induction Motor - Squirrel Cage



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

### Thermal protection

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

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# TORQUE AND CURRENT VS SPEED CURVE



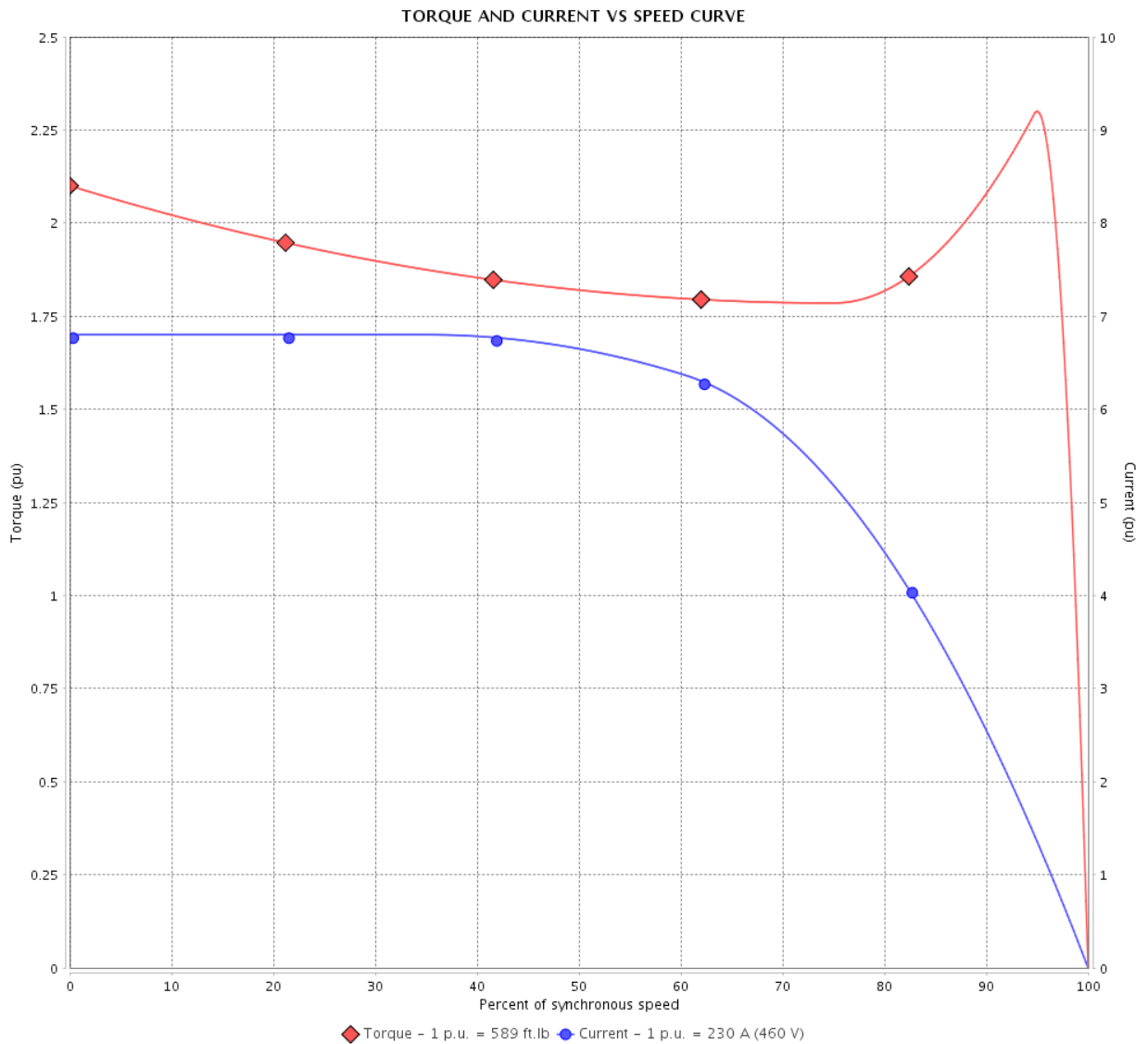
## Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12408380

Catalog # : 20018XT3G447T



Performance : 460 V 60 Hz 4P

Rated current	: 230 A	Moment of inertia (J)	: 76.2 sq.ft.lb
LRC	: 6.9	Duty cycle	: Cont.(S1)
Rated torque	: 589 ft.lb	Insulation class	: F
Locked rotor torque	: 229 %	Service factor	: 1.15
Breakdown torque	: 240 %	Temperature rise	: 80 K
Rated speed	: 1780 rpm	Design	: B

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

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# TORQUE AND CURRENT VS SPEED CURVE

## Three Phase Induction Motor - Squirrel Cage



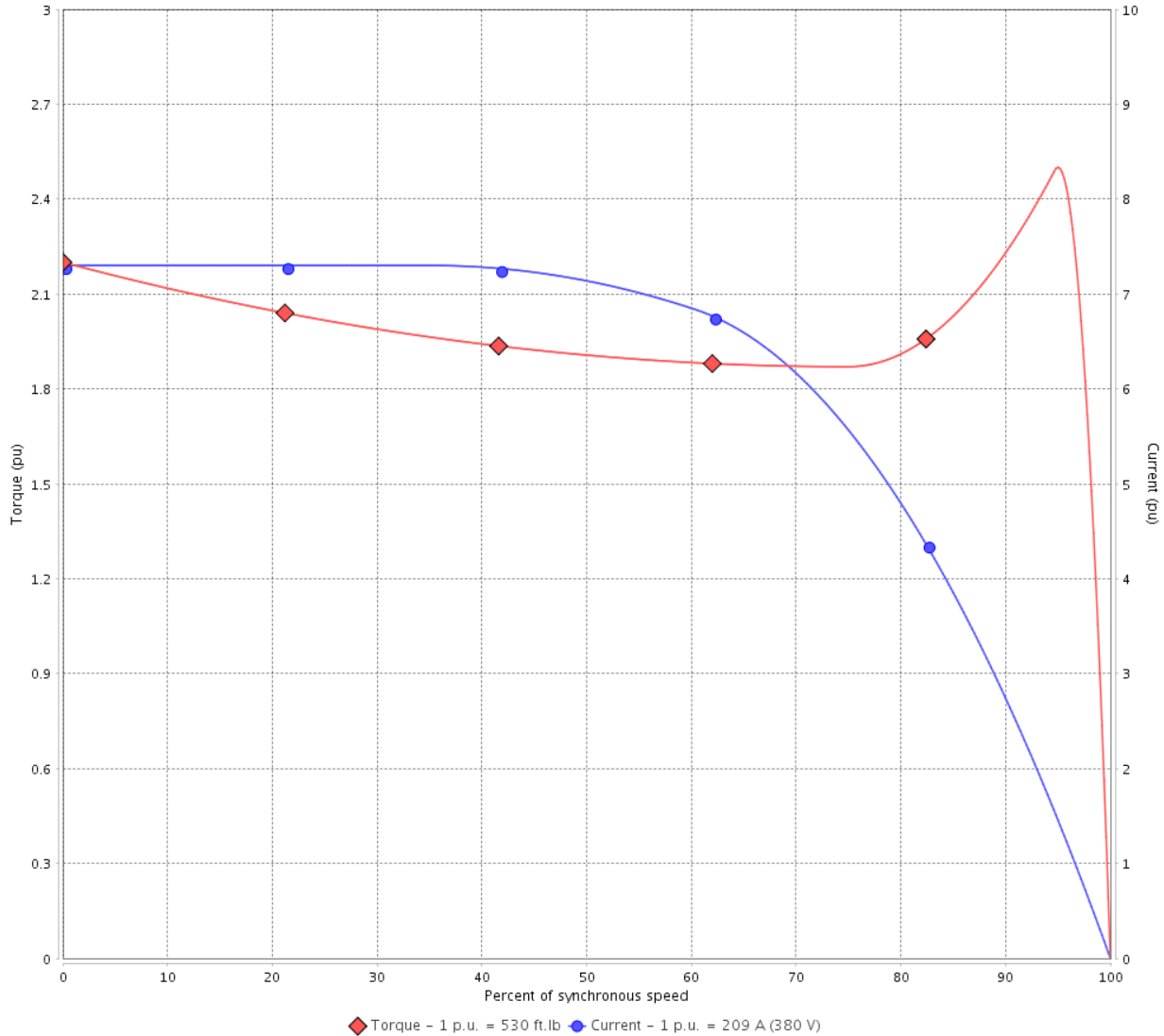
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12408380

Catalog # : 20018XT3G447T

TORQUE AND CURRENT VS SPEED CURVE



Performance : 380 V 50 Hz 4P IE3

Rated current	: 209 A	Moment of inertia (J)	: 76.2 sq.ft.lb
LRC	: 7.3	Duty cycle	: Cont.(S1)
Rated torque	: 530 ft.lb	Insulation class	: F
Locked rotor torque	: 240 %	Service factor	: 1.00
Breakdown torque	: 260 %	Temperature rise	: 80 K
Rated speed	: 1480 rpm	Design	: B

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

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# TORQUE AND CURRENT VS SPEED CURVE



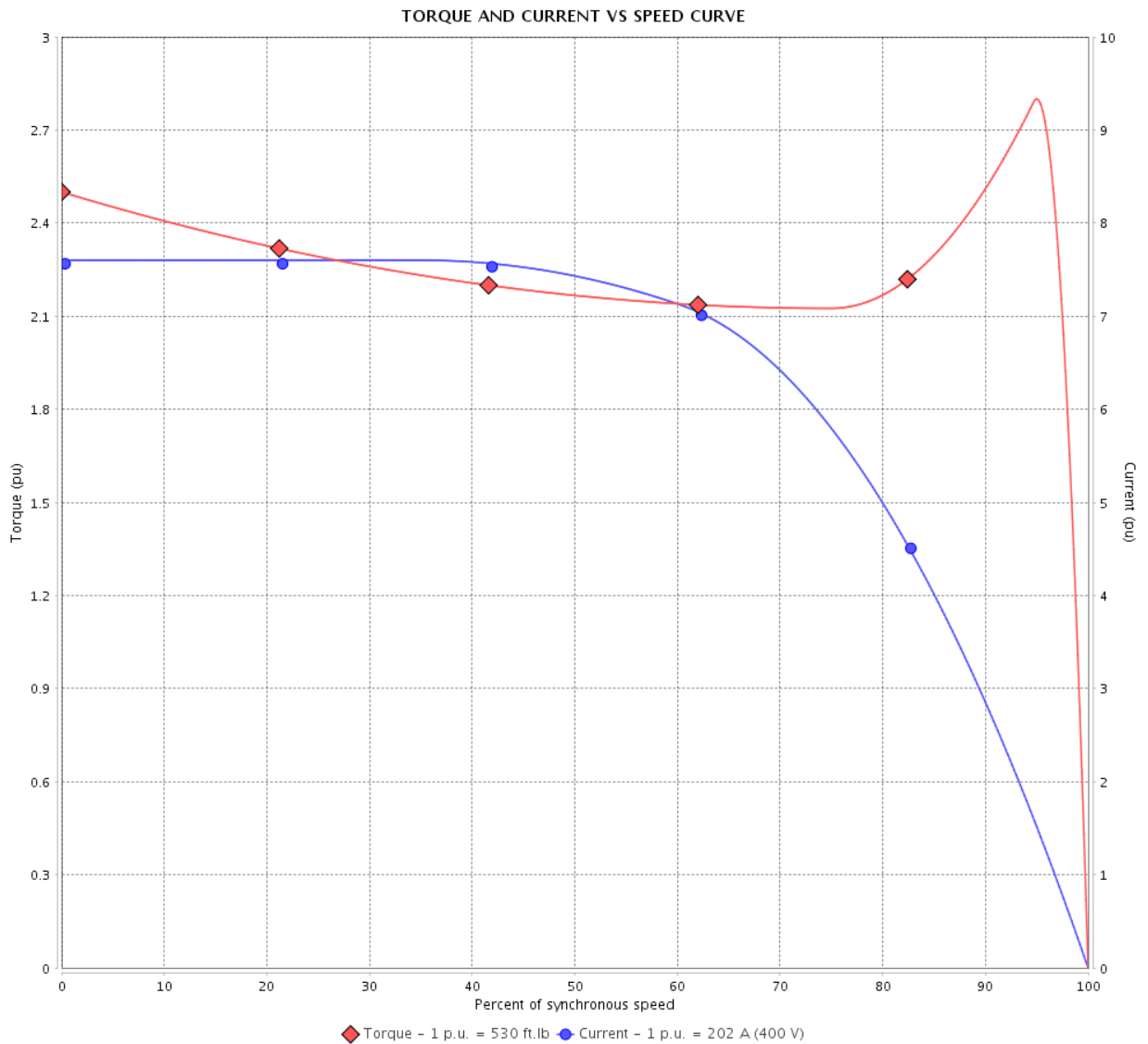
## Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12408380

Catalog # : 20018XT3G447T



Performance : 400 V 50 Hz 4P IE3

Rated current	: 202 A	Moment of inertia (J)	: 76.2 sq.ft.lb
LRC	: 8.0	Duty cycle	: Cont.(S1)
Rated torque	: 530 ft.lb	Insulation class	: F
Locked rotor torque	: 280 %	Service factor	: 1.00
Breakdown torque	: 290 %	Temperature rise	: 80 K
Rated speed	: 1485 rpm	Design	: B

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

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# TORQUE AND CURRENT VS SPEED CURVE

Three Phase Induction Motor - Squirrel Cage



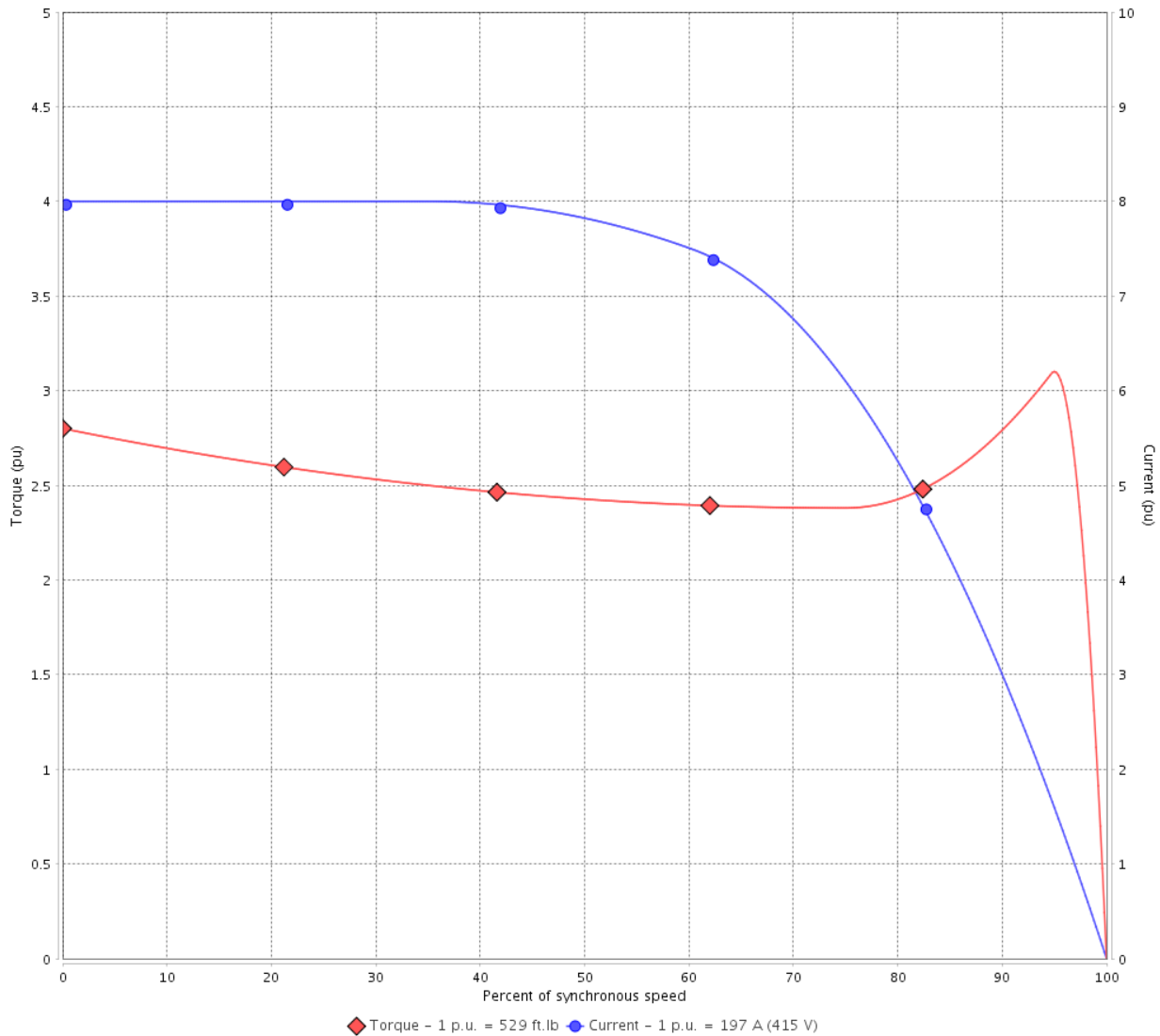
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TORQUE AND CURRENT VS SPEED CURVE



Performance : 415 V 50 Hz 4P IE3

Rated current	: 197 A	Moment of inertia (J)	: 76.2 sq.ft.lb
LRC	: 8.5	Duty cycle	: Cont.(S1)
Rated torque	: 529 ft.lb	Insulation class	: F
Locked rotor torque	: 300 %	Service factor	: 1.00
Breakdown torque	: 320 %	Temperature rise	: 80 K
Rated speed	: 1485 rpm	Design	: B

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

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# LOAD PERFORMANCE CURVE

## Three Phase Induction Motor - Squirrel Cage

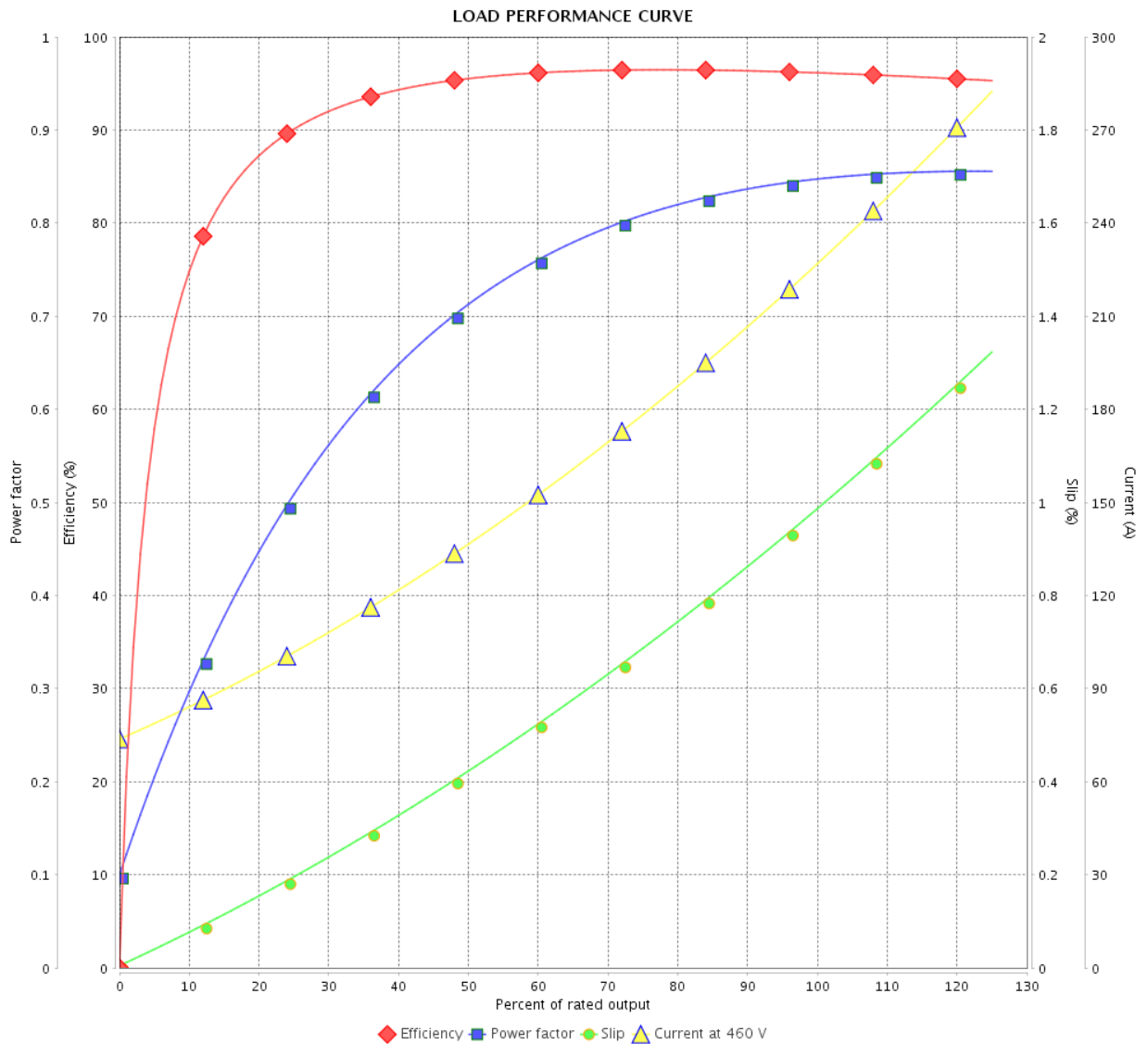


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Product line : NEMA Premium Efficiency Three-Phase

Product code : 12408380

Catalog # : 20018XT3G447T



Performance : 460 V 60 Hz 4P

Rated current : 230 A  
 LRC : 6.9  
 Rated torque : 589 ft.lb  
 Locked rotor torque : 229 %  
 Breakdown torque : 240 %  
 Rated speed : 1780 rpm

Moment of inertia (J) : 76.2 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.15  
 Temperature rise : 80 K  
 Design : B

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# LOAD PERFORMANCE CURVE

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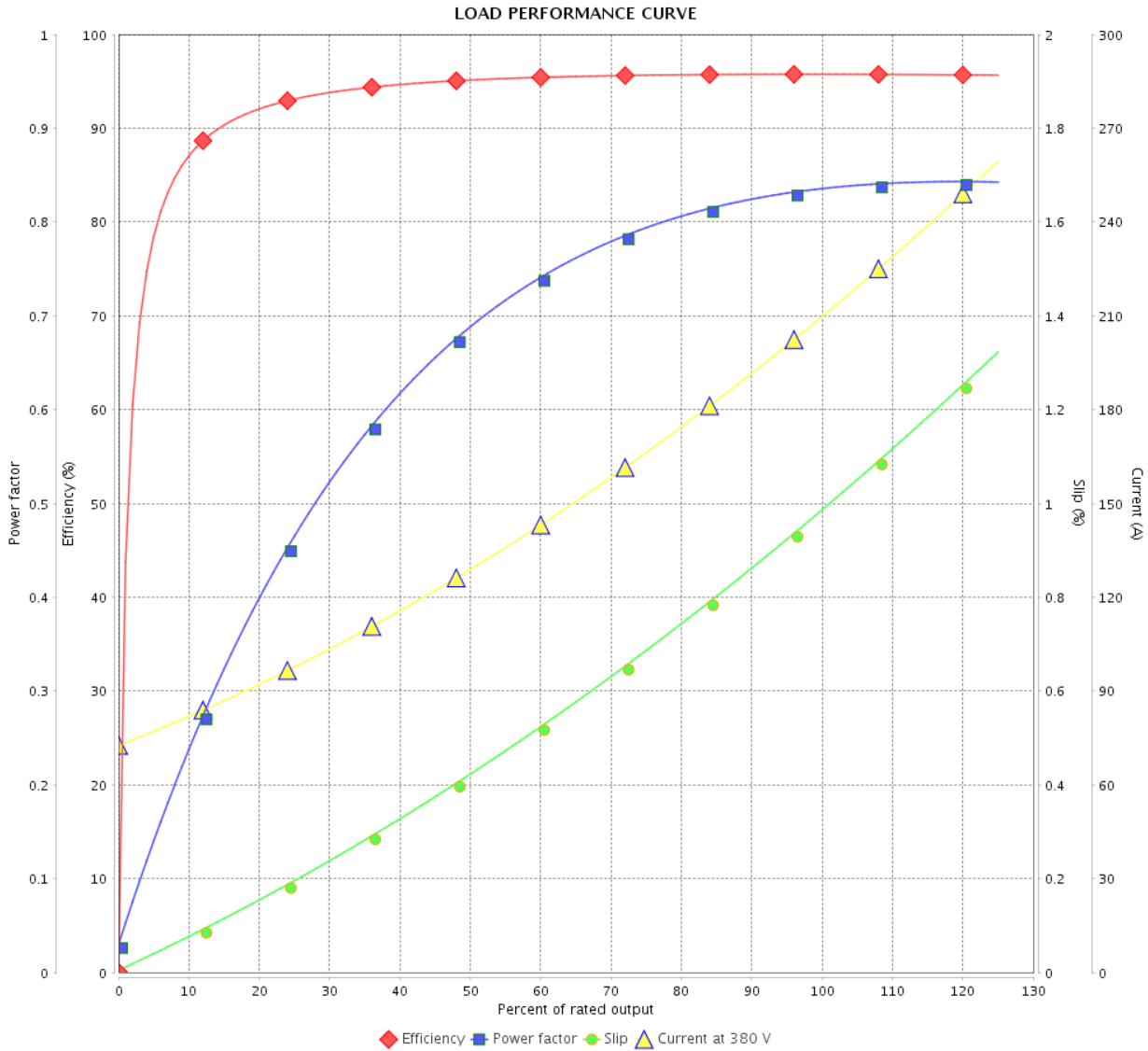


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Performance : 380 V 50 Hz 4P IE3

Rated current	: 209 A	Moment of inertia (J)	: 76.2 sq.ft.lb
LRC	: 7.3	Duty cycle	: Cont.(S1)
Rated torque	: 530 ft.lb	Insulation class	: F
Locked rotor torque	: 240 %	Service factor	: 1.00
Breakdown torque	: 260 %	Temperature rise	: 80 K
Rated speed	: 1480 rpm	Design	: B

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# LOAD PERFORMANCE CURVE

## Three Phase Induction Motor - Squirrel Cage

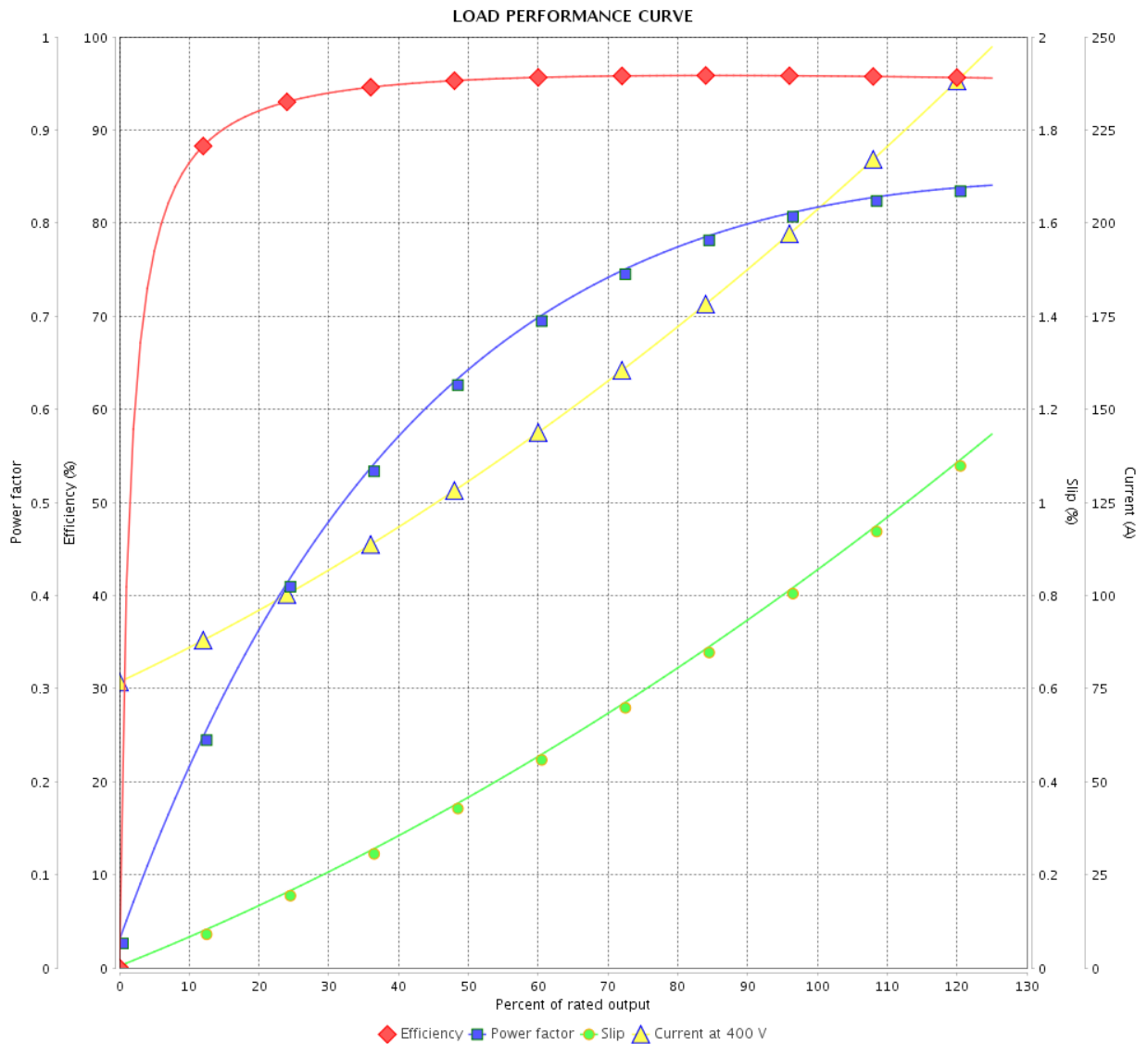


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Performance : 400 V 50 Hz 4P IE3

Rated current : 202 A  
 LRC : 8.0  
 Rated torque : 530 ft.lb  
 Locked rotor torque : 280 %  
 Breakdown torque : 290 %  
 Rated speed : 1485 rpm

Moment of inertia (J) : 76.2 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 80 K  
 Design : B

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Three Phase Induction Motor - Squirrel Cage



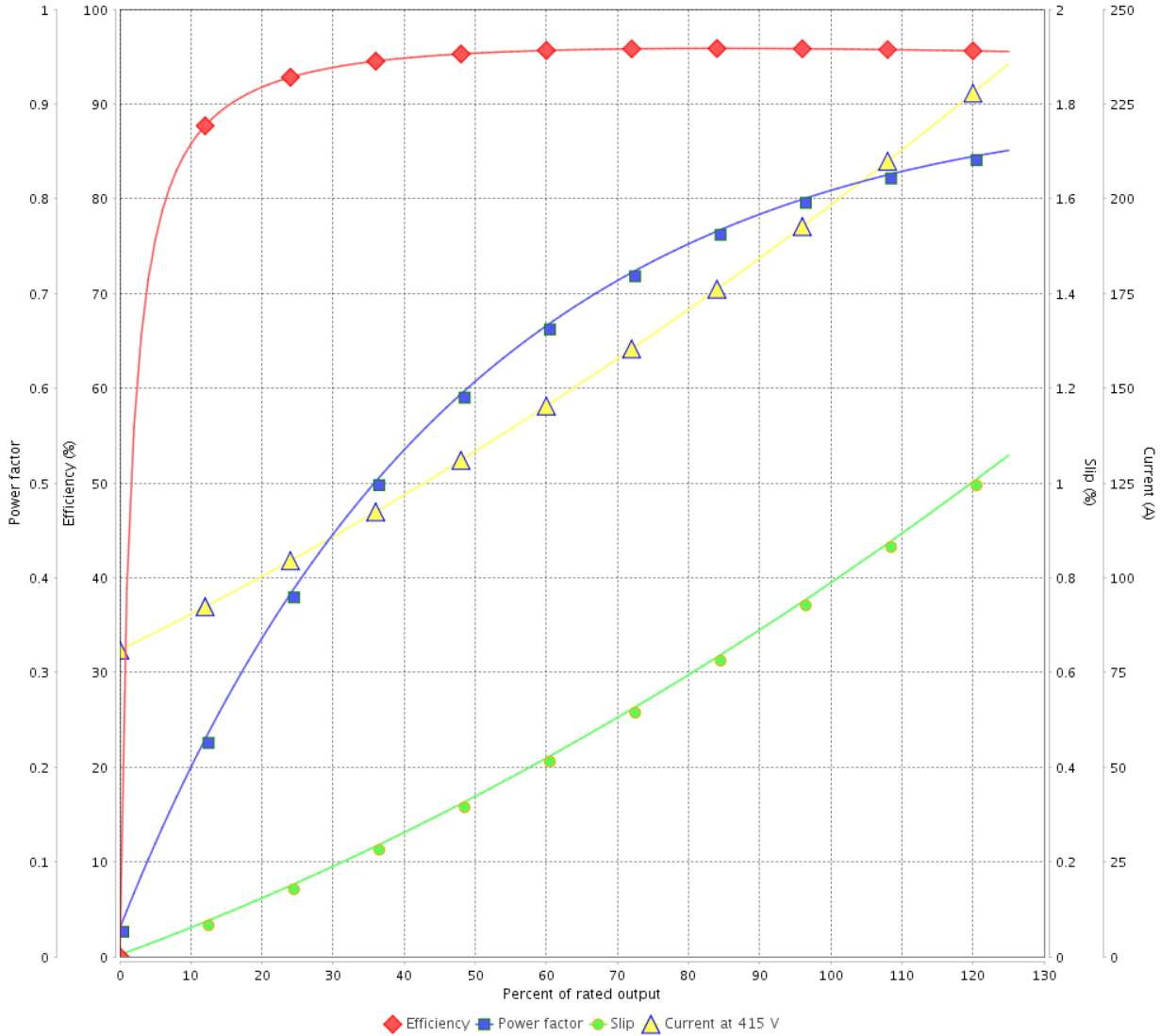
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 Rated speed : 1485 rpm

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 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 80 K  
 Design : B

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# THERMAL LIMIT CURVE



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Locked rotor torque : 229 %	Service factor : 1.15
Breakdown torque : 240 %	Temperature rise : 80 K
Rated speed : 1780 rpm	Design : B

Heating constant

Cooling constant

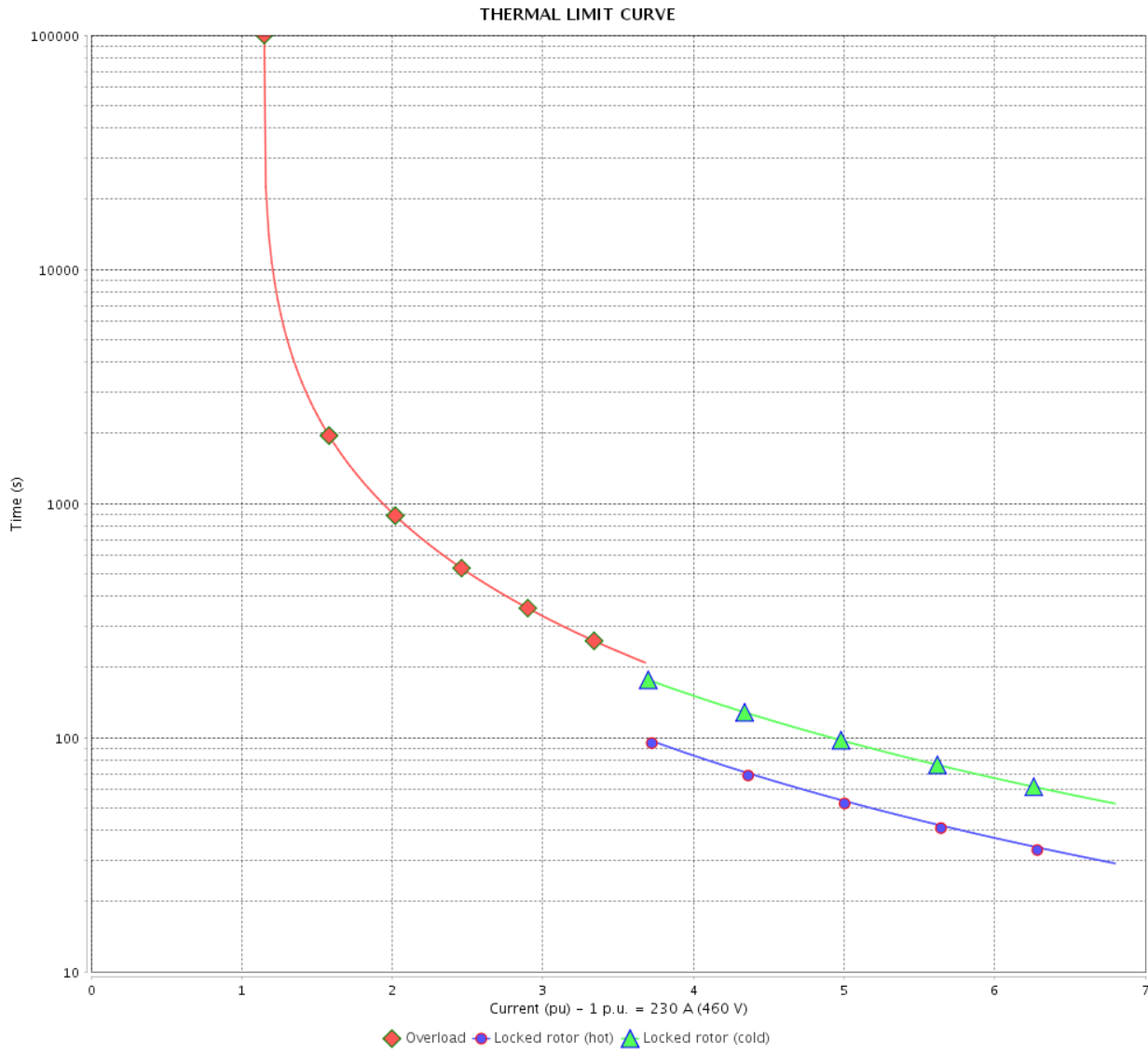
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# THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



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Rated current : 209 A	Moment of inertia (J) : 76.2 sq.ft.lb
LRC : 7.3	Duty cycle : Cont.(S1)
Rated torque : 530 ft.lb	Insulation class : F
Locked rotor torque : 240 %	Service factor : 1.00
Breakdown torque : 260 %	Temperature rise : 80 K
Rated speed : 1480 rpm	Design : B

Heating constant

Cooling constant

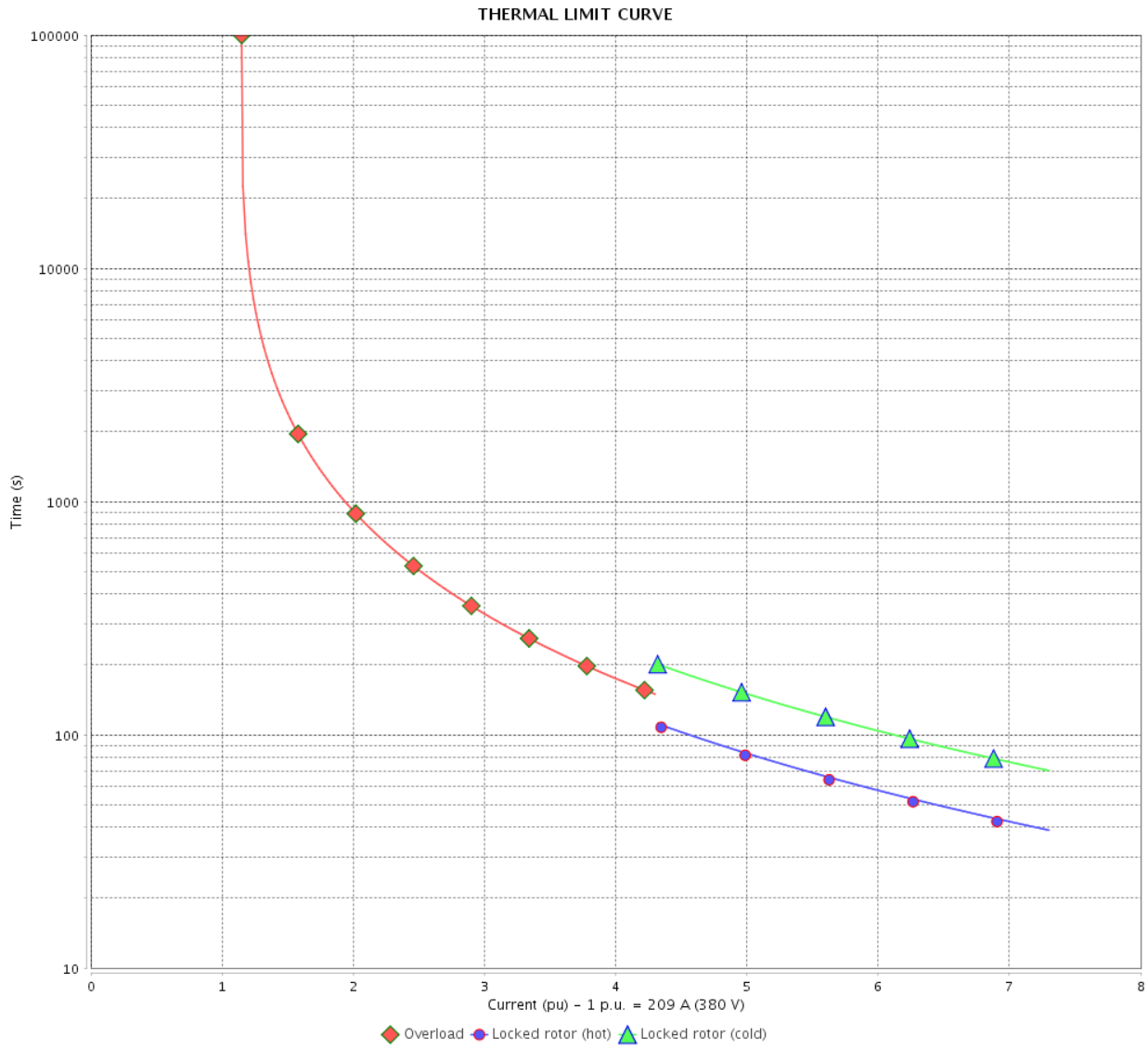
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Performance : 400 V 50 Hz 4P IE3

Rated current : 202 A	Moment of inertia (J) : 76.2 sq.ft.lb
LRC : 8.0	Duty cycle : Cont.(S1)
Rated torque : 530 ft.lb	Insulation class : F
Locked rotor torque : 280 %	Service factor : 1.00
Breakdown torque : 290 %	Temperature rise : 80 K
Rated speed : 1485 rpm	Design : B

Heating constant

Cooling constant

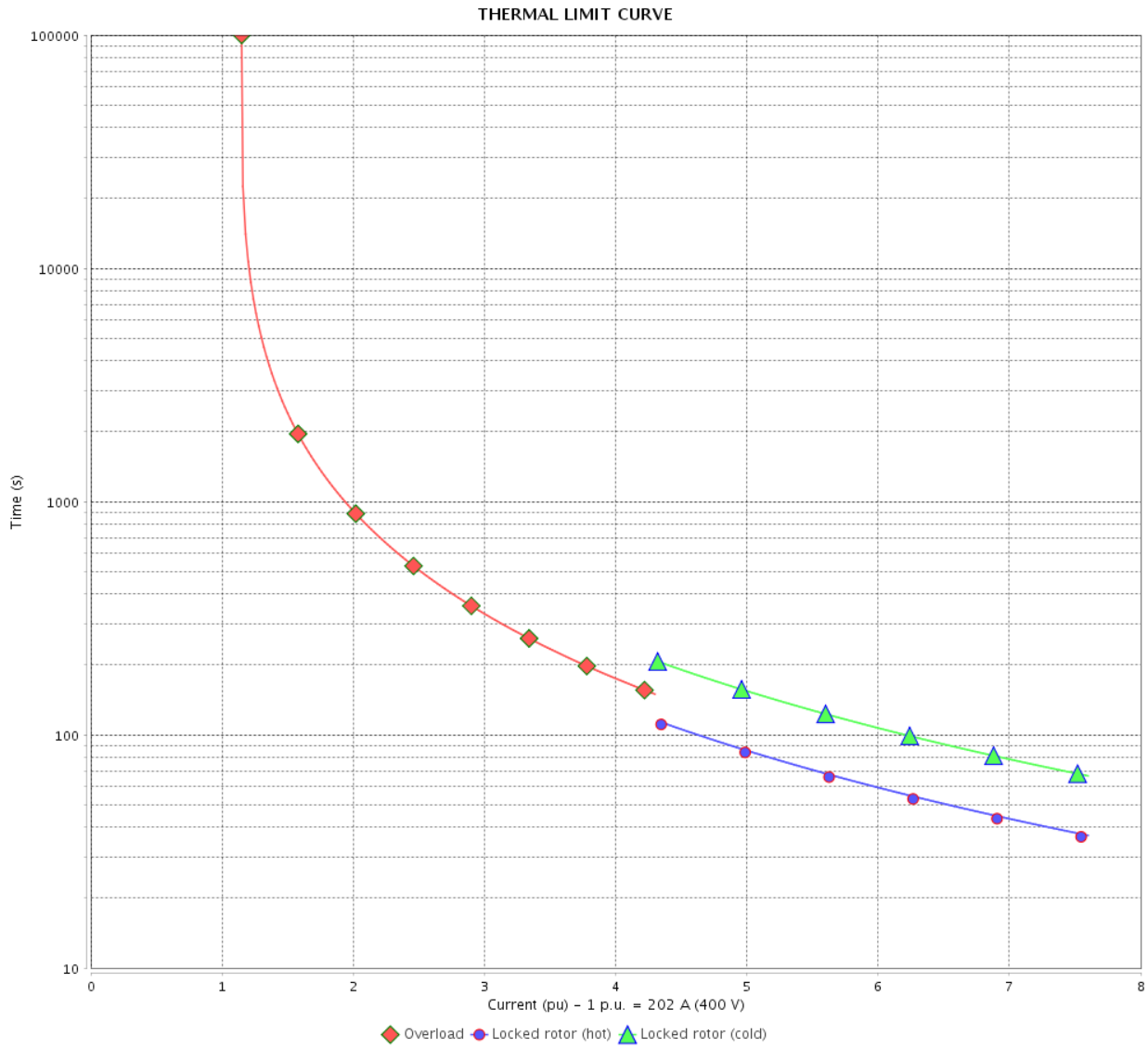
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 Catalog # : 20018XT3G447T

Performance : 415 V 50 Hz 4P IE3

Rated current : 197 A	Moment of inertia (J) : 76.2 sq.ft.lb
LRC : 8.5	Duty cycle : Cont.(S1)
Rated torque : 529 ft.lb	Insulation class : F
Locked rotor torque : 300 %	Service factor : 1.00
Breakdown torque : 320 %	Temperature rise : 80 K
Rated speed : 1485 rpm	Design : B

Heating constant

Cooling constant

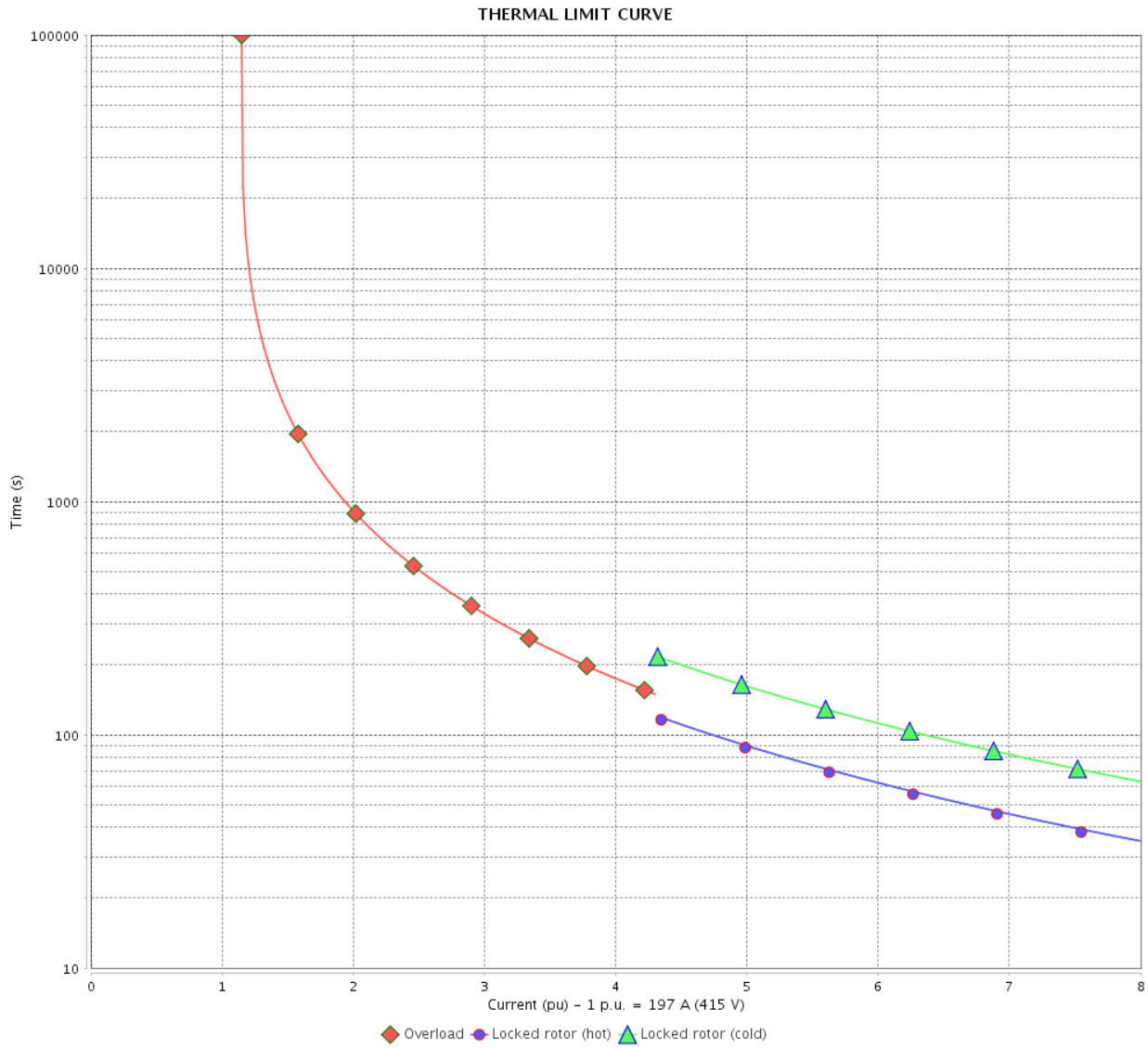
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# THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



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Date				

# VFD OPERATION CURVE

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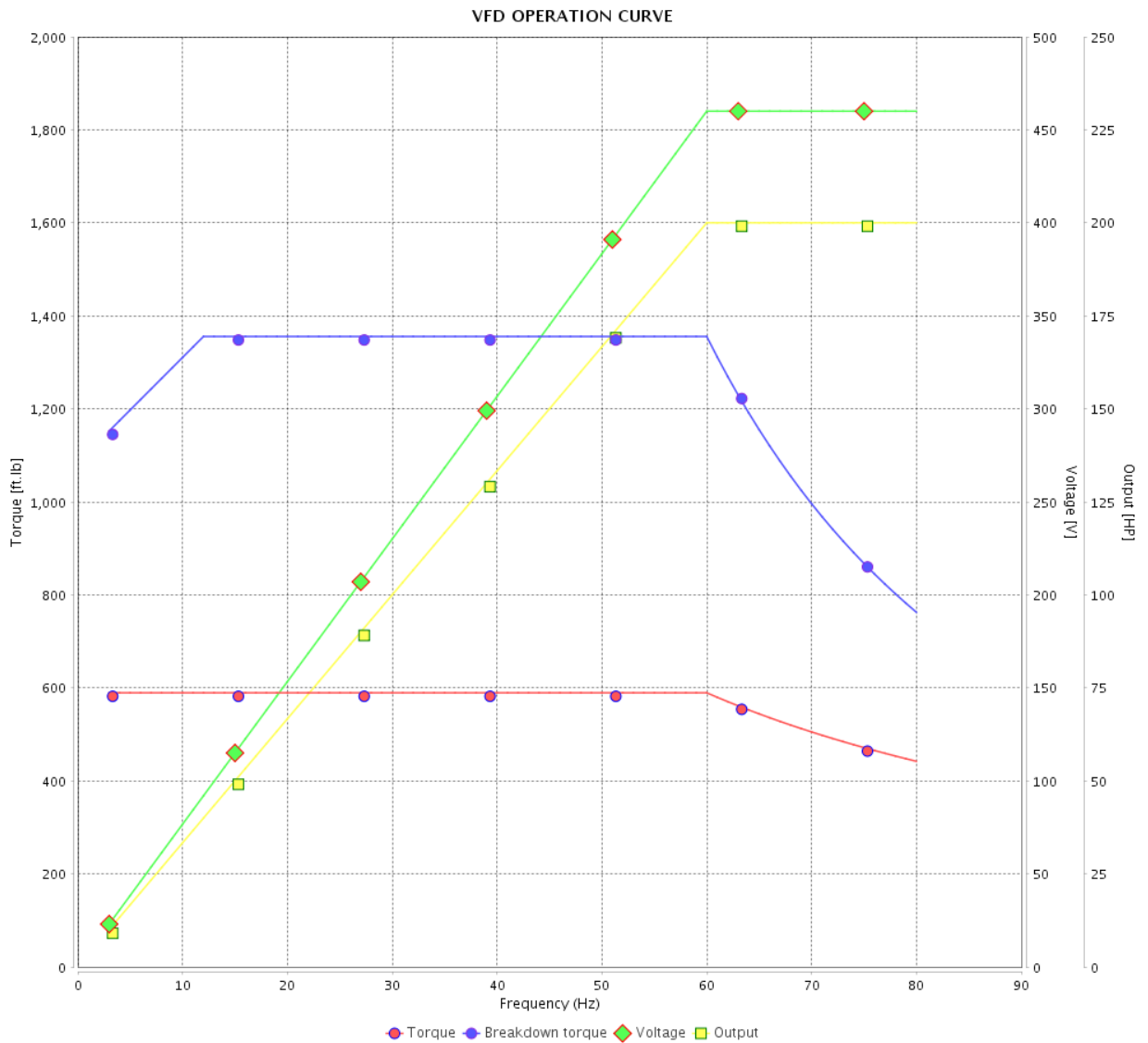


Customer : \_\_\_\_\_

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Performance : 460 V 60 Hz 4P

Rated current : 230 A  
 LRC : 6.9  
 Rated torque : 589 ft.lb  
 Locked rotor torque : 229 %  
 Breakdown torque : 240 %  
 Rated speed : 1780 rpm

Moment of inertia (J) : 76.2 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.15  
 Temperature rise : 80 K  
 Design : B

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# VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage



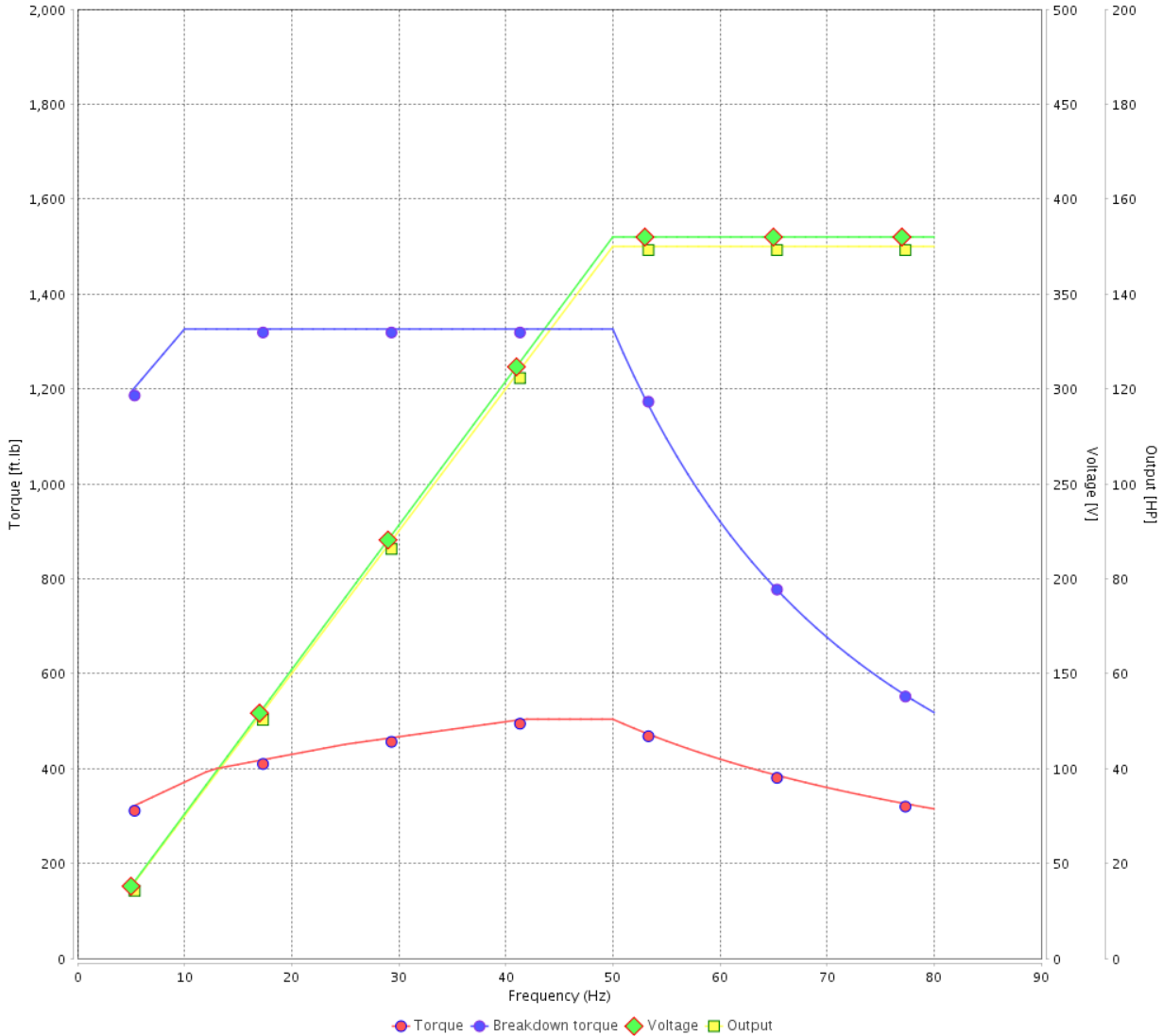
Customer : \_\_\_\_\_

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12408380

Catalog # : 20018XT3G447T

VFD OPERATION CURVE



Performance : 380 V 50 Hz 4P IE3

Rated current : 209 A  
 LRC : 7.3  
 Rated torque : 530 ft.lb  
 Locked rotor torque : 240 %  
 Breakdown torque : 260 %  
 Rated speed : 1480 rpm

Moment of inertia (J) : 76.2 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 80 K  
 Design : B

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# VFD OPERATION CURVE

## Three Phase Induction Motor - Squirrel Cage

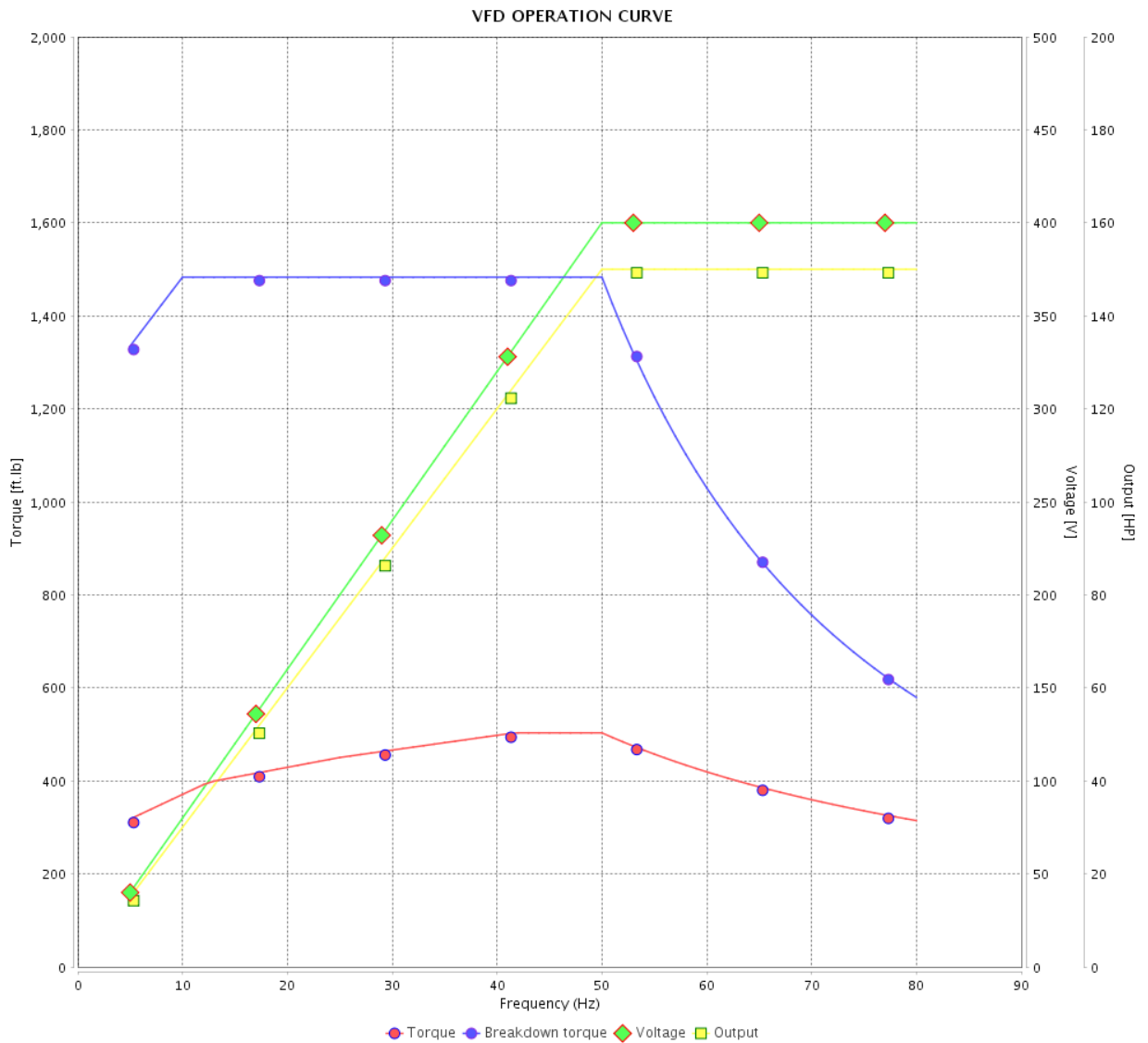


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Product code : 12408380

Catalog # : 20018XT3G447T



Performance : 400 V 50 Hz 4P IE3

Rated current : 202 A  
 LRC : 8.0  
 Rated torque : 530 ft.lb  
 Locked rotor torque : 280 %  
 Breakdown torque : 290 %  
 Rated speed : 1485 rpm

Moment of inertia (J) : 76.2 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 80 K  
 Design : B

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# VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage



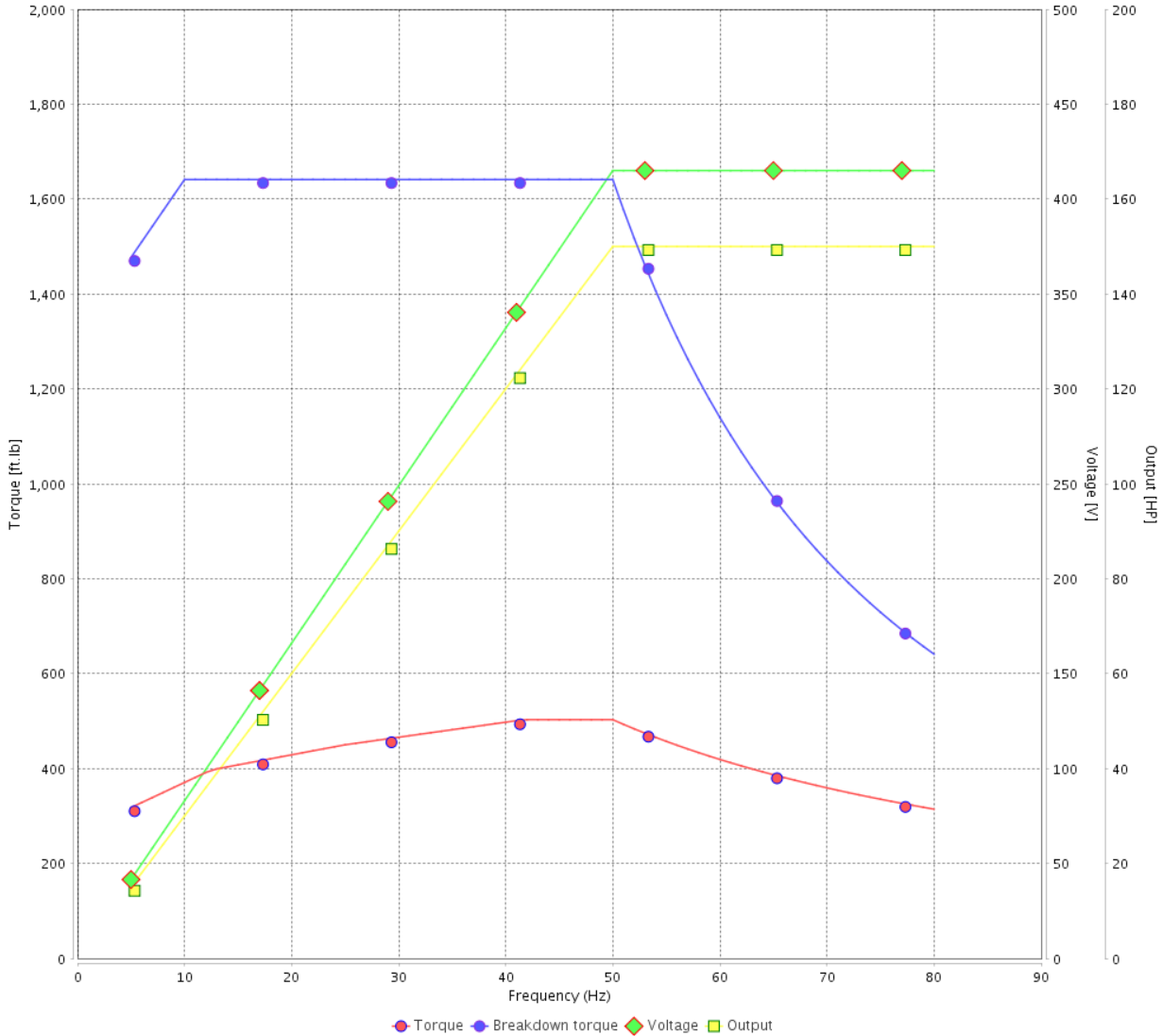
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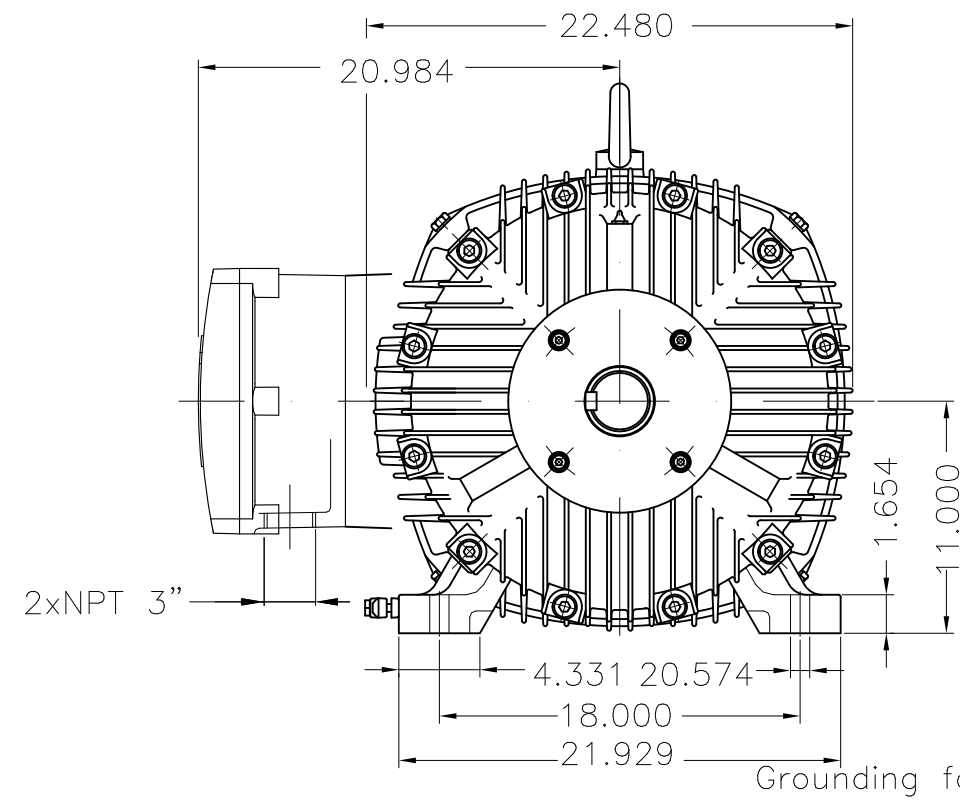
VFD OPERATION CURVE



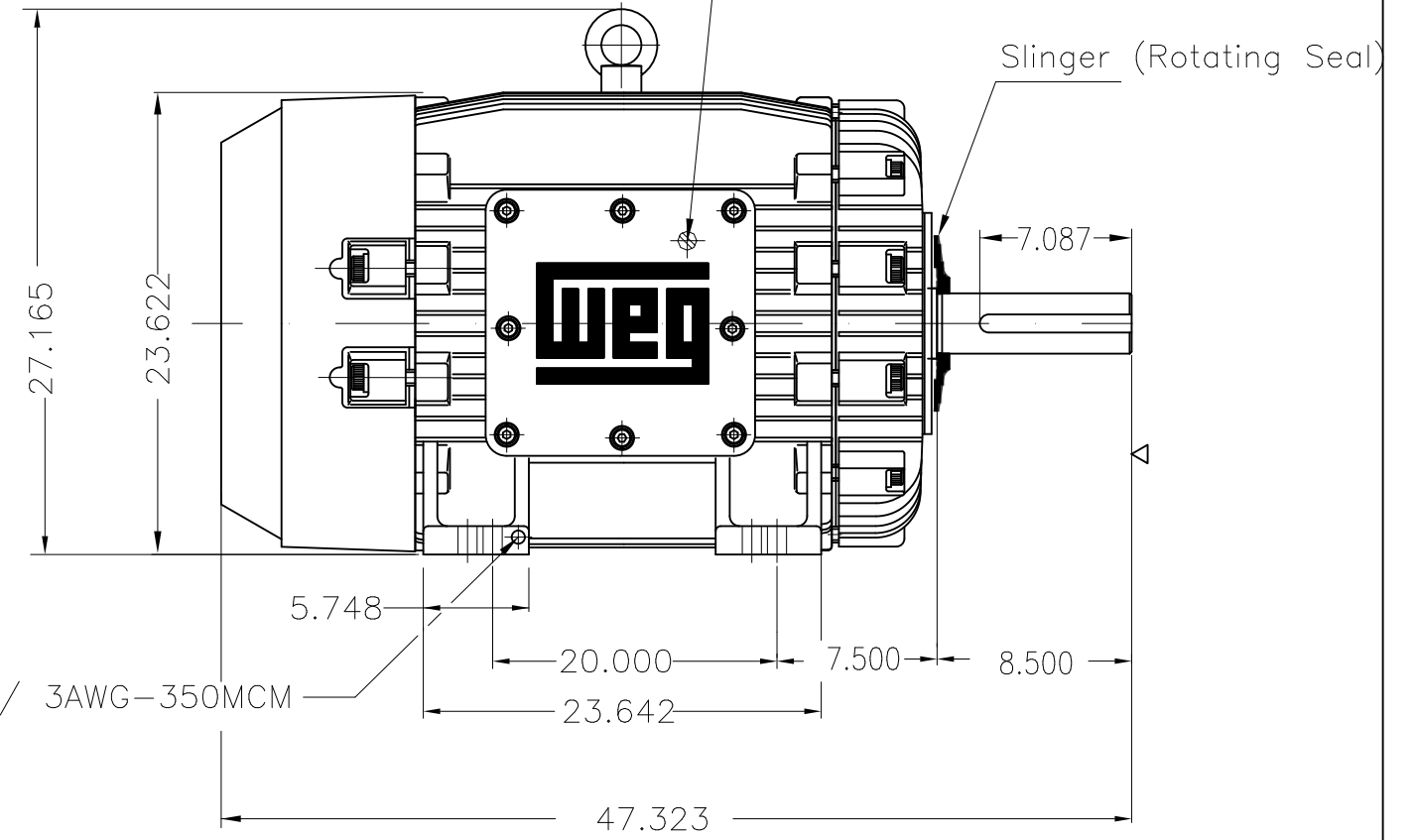
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Rated torque	: 529 ft.lb	Insulation class	: F
Locked rotor torque	: 300 %	Service factor	: 1.00
Breakdown torque	: 320 %	Temperature rise	: 80 K
Rated speed	: 1485 rpm	Design	: B

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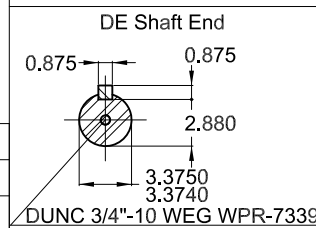
Grounding for leads 35-70 mm<sup>2</sup> / 1-2/0 AWG



Grounding for leads 25-185 mm<sup>2</sup> / 3AWG-350MCM

200 HP 04 Poles 60 Hz

Dimensions in inches



Color RAL 5009  
 Painting plan 202P  
 Mounting B3R(D)

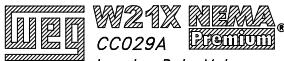
ECM	LOC	SUMMARY OF MODIFICATIONS	EXECUTED	CHECKED	RELEASED	DATE	VER
EXECUTED	PIRWBUSER	THREE PH. MOTOR EXPLOSION PROOF PREM. EFF.					
CHECKED		FRAME 447T IP55 TEFC					
RELEASED							
REL DT.	WMO	Jaragua do Sul	Product Engineering				

**PREVIEW**  
 WDD



SHEET 1 / 1

MODEL 20018XT3G447T  
MADE IN BRAZIL  
12408380



*Inverter Duty Motor  
Severe Duty*




TEMP CODE T3C  
CSA/UL: Class I - Div. 1 - Groups C and D  
CSA: Class II - Div. 1 - Groups F and G  
CSA: Class I - Zone 1 - IIB

**EXPLOSION PROOF MOTOR**

FOR USE ON VPWM VFD 1000:1VT, 2:1CT, 1.0SF, T3C, AMB 40°C.

PH 3	FR 447T	HP(kW) 200(150)	Hz 60
V 460	A 230	RPM 1782	
NEMA NOM. EFF. 96.2%		INS CL F $\Delta$ T 80 K	IP55
PF 0.85	DUTY CONT.		CODE G
ENCL. TEFC	SF 1.15	SFA 265	
AMB 40°C	DES B		

PART-WINDING						WYE-DELTA					
START			RUN			START			RUN		
○T12	○T10	○T11	○T12	○T10	○T11	○T12	○T10	○T11	○T12	○T10	○T11
○T7	○T8	○T9	○T7	○T8	○T9	○T6	○T4	○T5	○T6	○T4	○T5
○T6	○T4	○T5	○T6	○T4	○T5	○T7	○T8	○T9	○T7	○T8	○T9
○T1	○T2	○T3	○T1	○T2	○T3	○T1	○T2	○T3	○T1	○T2	○T3
L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3

 → 6319-C3(45g)      MOBIL POLYREX EM  
 → 6316-C3(34g)      7038 h

ALT 1000 m.a.s.l      2482 Lbs