

# DATA SHEET



## Three Phase Induction Motor - Squirrel Cage

Customer :					
Product line	: NEMA Premium Efficiency Three-Phase	Product code :	14407933		
		Catalog # :	04018XT3ER324TC		
Frame	: 324TC	Cooling method	: IC411 - TEFC		
Insulation class	: F	Mounting	: W-6		
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>	: 653 lb		
Protection degree	: IP55	Moment of inertia (J)	: 8.17 sq.ft.lb		
Design	: B				
Output [HP]	40	40	40	40	
Poles	4	4	4	4	
Frequency [Hz]	60	50	50	50	
Rated voltage [V]	230/460	380	400	415	
Rated current [A]	96.4/48.2	58.7	56.1	54.1	
L. R. Amperes [A]	742/371	364	387	400	
LRC [A]	7.7x(Code J)	6.2x(Code G)	6.9x(Code H)	7.4x(Code J)	
No load current [A]	46.0/23.0	22.8	24.1	25.3	
Rated speed [RPM]	1780	1470	1475	1475	
Slip [%]	1.11	2.00	1.67	1.67	
Rated torque [ft.lb]	118	143	142	142	
Locked rotor torque [%]	270	200	229	250	
Breakdown torque [%]	300	210	240	260	
Service factor	1.15	1.00	1.00	1.00	
Temperature rise	80 K	80 K	80 K	80 K	
Locked rotor time	34s (cold) 19s (hot)	45s (cold) 25s (hot)	45s (cold) 25s (hot)	45s (cold) 25s (hot)	
Noise level <sup>2</sup>	71.0 dB(A)	69.0 dB(A)	69.0 dB(A)	69.0 dB(A)	
Efficiency (%)	25%	92.8	93.4	92.9	92.7
	50%	93.0	93.0	93.0	92.4
	75%	94.1	93.0	93.0	93.6
	100%	94.1	92.4	93.0	93.0
Power Factor	25%	0.39	0.45	0.42	0.39
	50%	0.66	0.72	0.68	0.66
	75%	0.77	0.81	0.79	0.77
	100%	0.83	0.84	0.83	0.83
Bearing type	: <u>Drive end</u> 6312 C3 <u>Non drive end</u> 6212 C3	Foundation loads			
Sealing	: Oil Seal Lip Seal	Max. traction	: 1094 lb		
Lubrication interval	: 11307 h 12541 h	Max. compression	: 1747 lb		
Lubricant amount	: 21 g 13 g				
Lubricant type	: Mobil Polyrex EM				
Notes USABLE @208V 107A SF 1.00 SFA 107A					
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 : \_\_\_\_\_

### 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



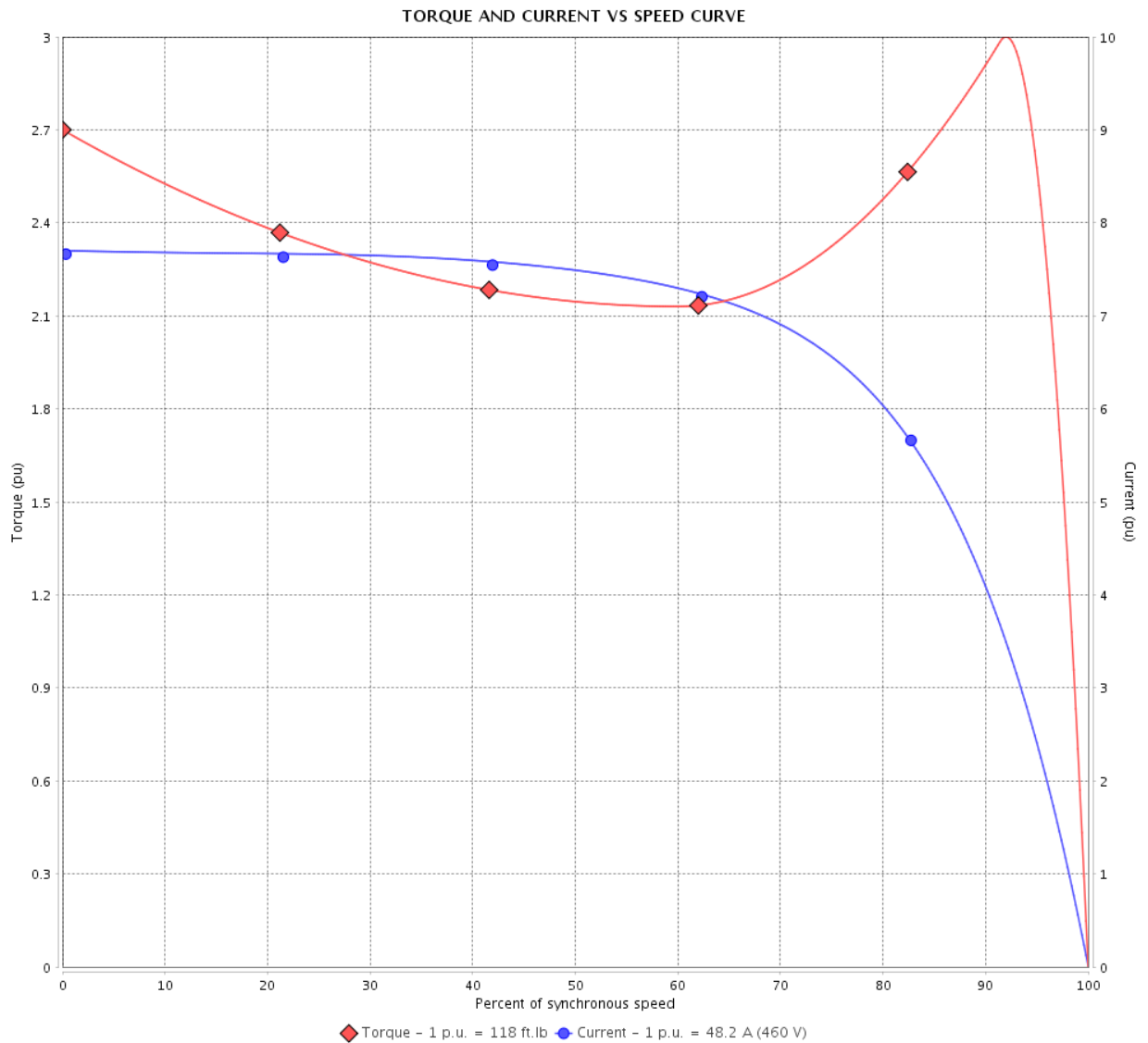
## Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 14407933

Catalog # : 04018XT3ER324TC



Performance : 230/460 V 60 Hz 4P

Rated current : 96.4/48.2 A  
 LRC : 7.7  
 Rated torque : 118 ft.lb  
 Locked rotor torque : 270 %  
 Breakdown torque : 300 %  
 Rated speed : 1780 rpm

Moment of inertia (J) : 8.17 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.15  
 Temperature rise : 80 K  
 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



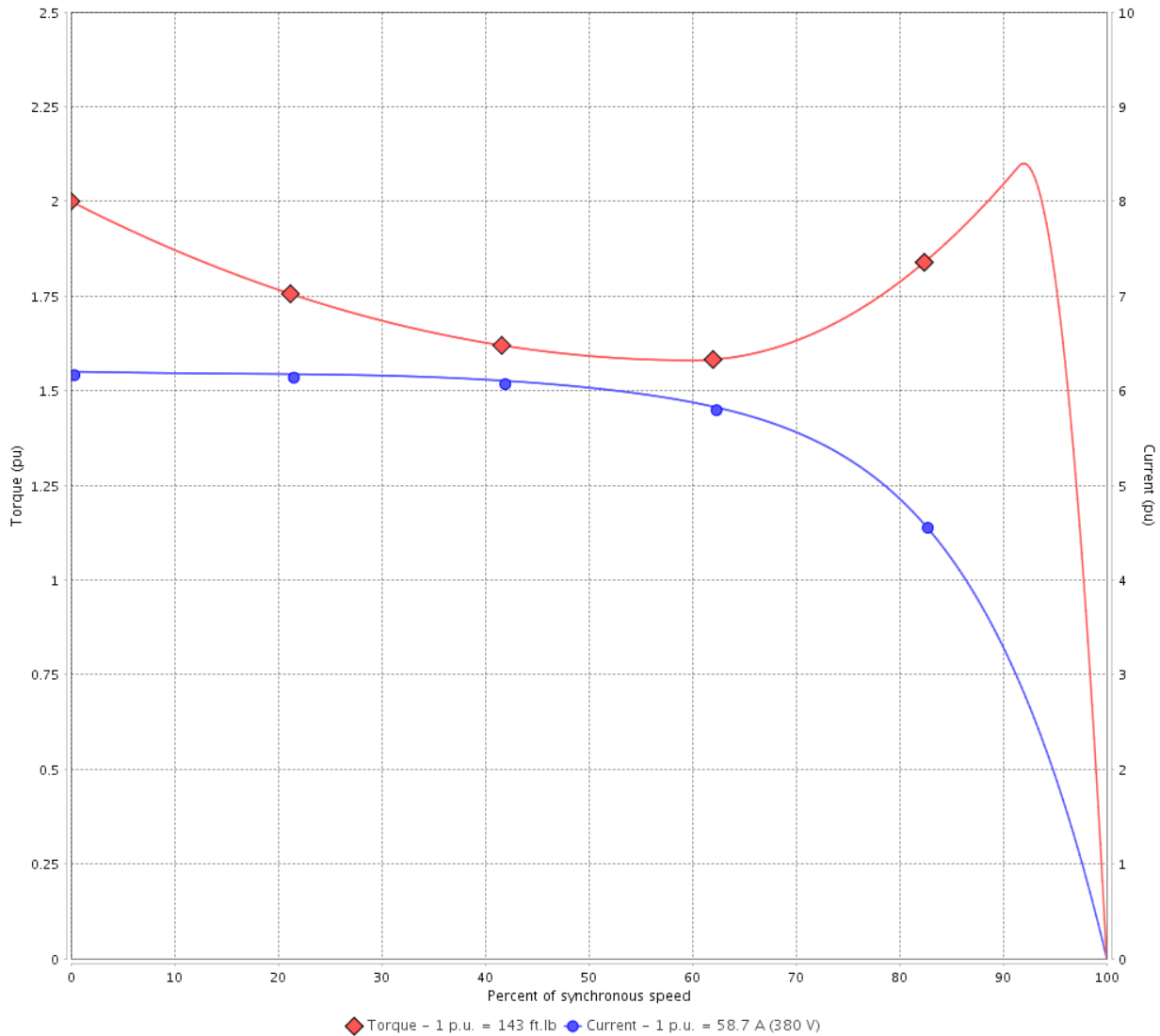
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 14407933

Catalog # : 04018XT3ER324TC

TORQUE AND CURRENT VS SPEED CURVE



Performance : 380 V 50 Hz 4P IE2

Rated current	: 58.7 A	Moment of inertia (J)	: 8.17 sq.ft.lb
LRC	: 6.2	Duty cycle	: Cont.(S1)
Rated torque	: 143 ft.lb	Insulation class	: F
Locked rotor torque	: 200 %	Service factor	: 1.00
Breakdown torque	: 210 %	Temperature rise	: 80 K
Rated speed	: 1470 rpm	Design	: B

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

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# TORQUE AND CURRENT VS SPEED CURVE



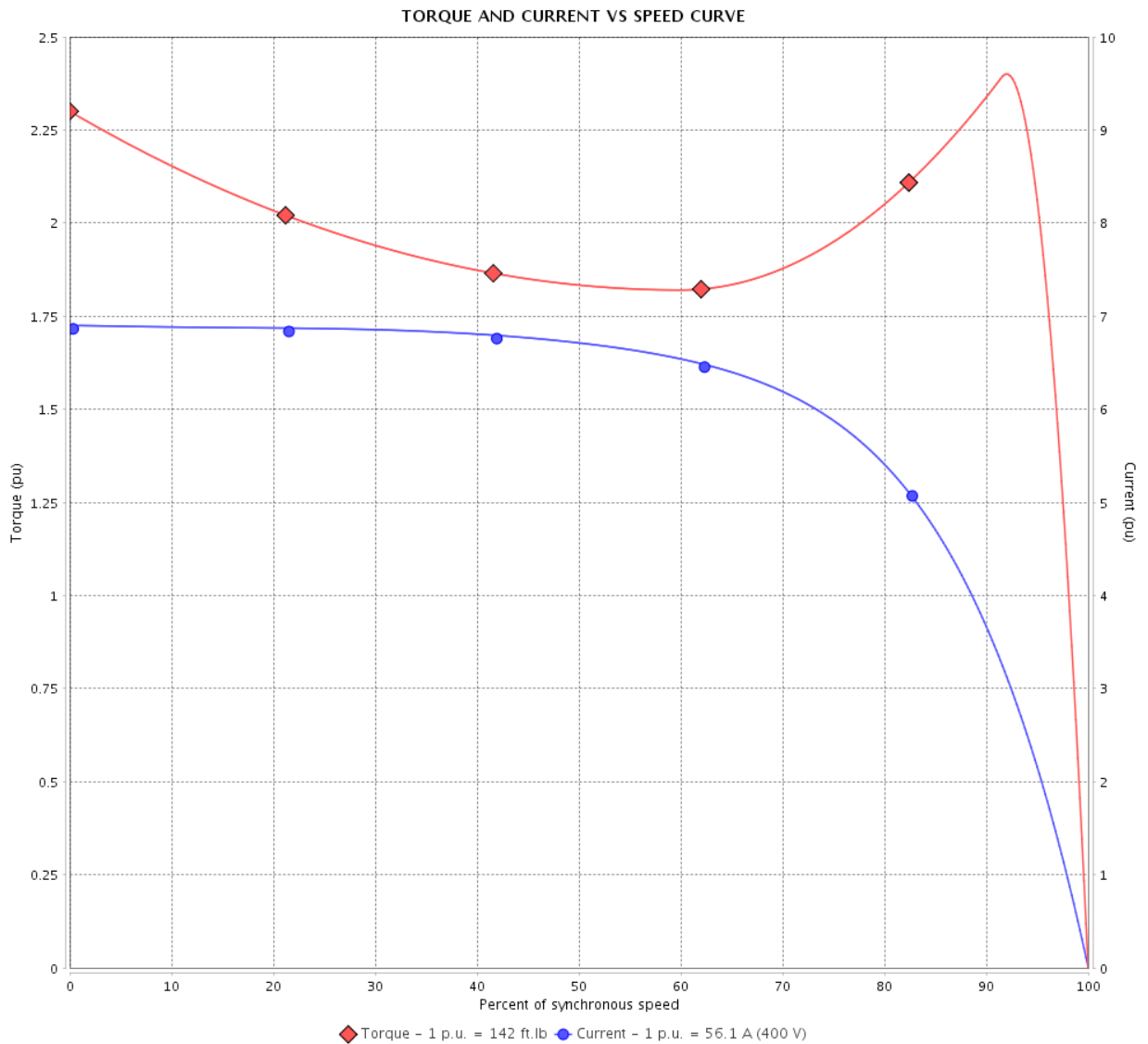
## Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 14407933

Catalog # : 04018XT3ER324TC



Performance : 400 V 50 Hz 4P IE2

Rated current	: 56.1 A	Moment of inertia (J)	: 8.17 sq.ft.lb
LRC	: 6.9	Duty cycle	: Cont.(S1)
Rated torque	: 142 ft.lb	Insulation class	: F
Locked rotor torque	: 229 %	Service factor	: 1.00
Breakdown torque	: 240 %	Temperature rise	: 80 K
Rated speed	: 1475 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



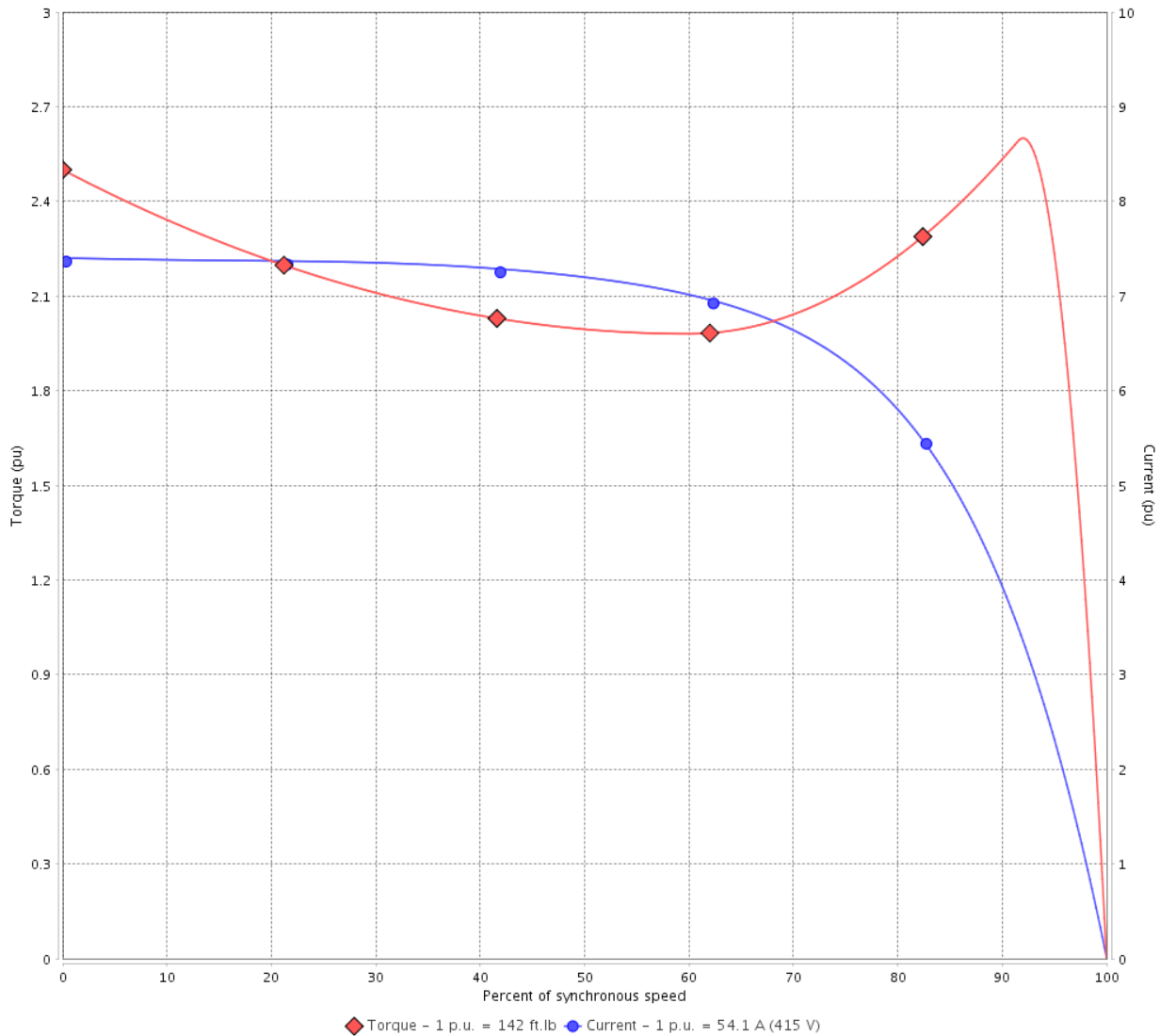
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TORQUE AND CURRENT VS SPEED CURVE



Performance : 415 V 50 Hz 4P IE2

Rated current	: 54.1 A	Moment of inertia (J)	: 8.17 sq.ft.lb
LRC	: 7.4	Duty cycle	: Cont.(S1)
Rated torque	: 142 ft.lb	Insulation class	: F
Locked rotor torque	: 250 %	Service factor	: 1.00
Breakdown torque	: 260 %	Temperature rise	: 80 K
Rated speed	: 1475 rpm	Design	: B

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

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# LOAD PERFORMANCE CURVE

## Three Phase Induction Motor - Squirrel Cage

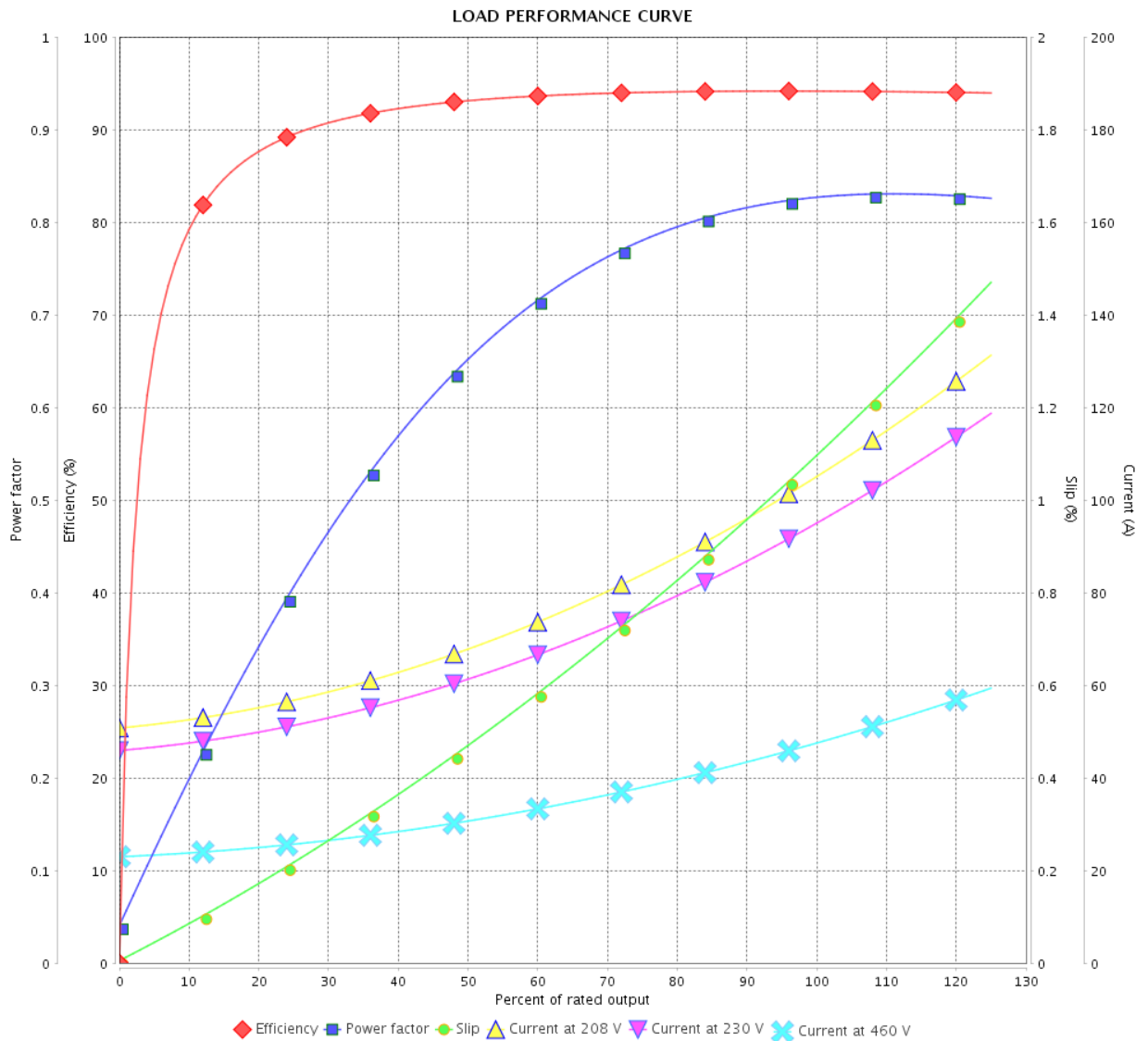


Customer : \_\_\_\_\_

Product line : NEMA Premium Efficiency Three-Phase

Product code : 14407933

Catalog # : 04018XT3ER324TC



Performance : 230/460 V 60 Hz 4P

Rated current : 96.4/48.2 A  
 LRC : 7.7  
 Rated torque : 118 ft.lb  
 Locked rotor torque : 270 %  
 Breakdown torque : 300 %  
 Rated speed : 1780 rpm

Moment of inertia (J) : 8.17 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

Three Phase Induction Motor - Squirrel Cage



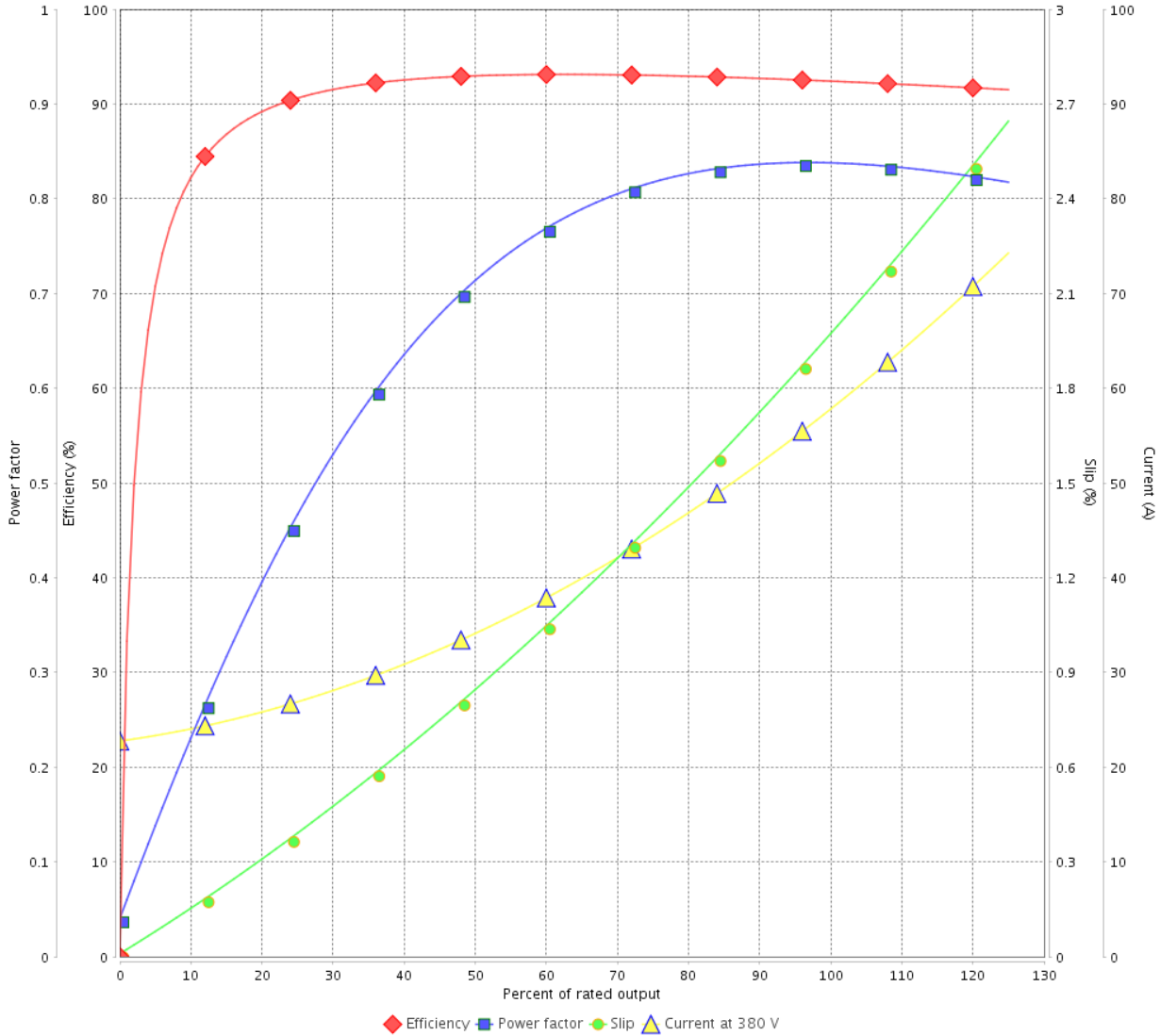
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LOAD PERFORMANCE CURVE



Performance : 380 V 50 Hz 4P IE2

Rated current : 58.7 A  
 LRC : 6.2  
 Rated torque : 143 ft.lb  
 Locked rotor torque : 200 %  
 Breakdown torque : 210 %  
 Rated speed : 1470 rpm

Moment of inertia (J) : 8.17 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 80 K  
 Design : B

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# LOAD PERFORMANCE CURVE

## Three Phase Induction Motor - Squirrel Cage

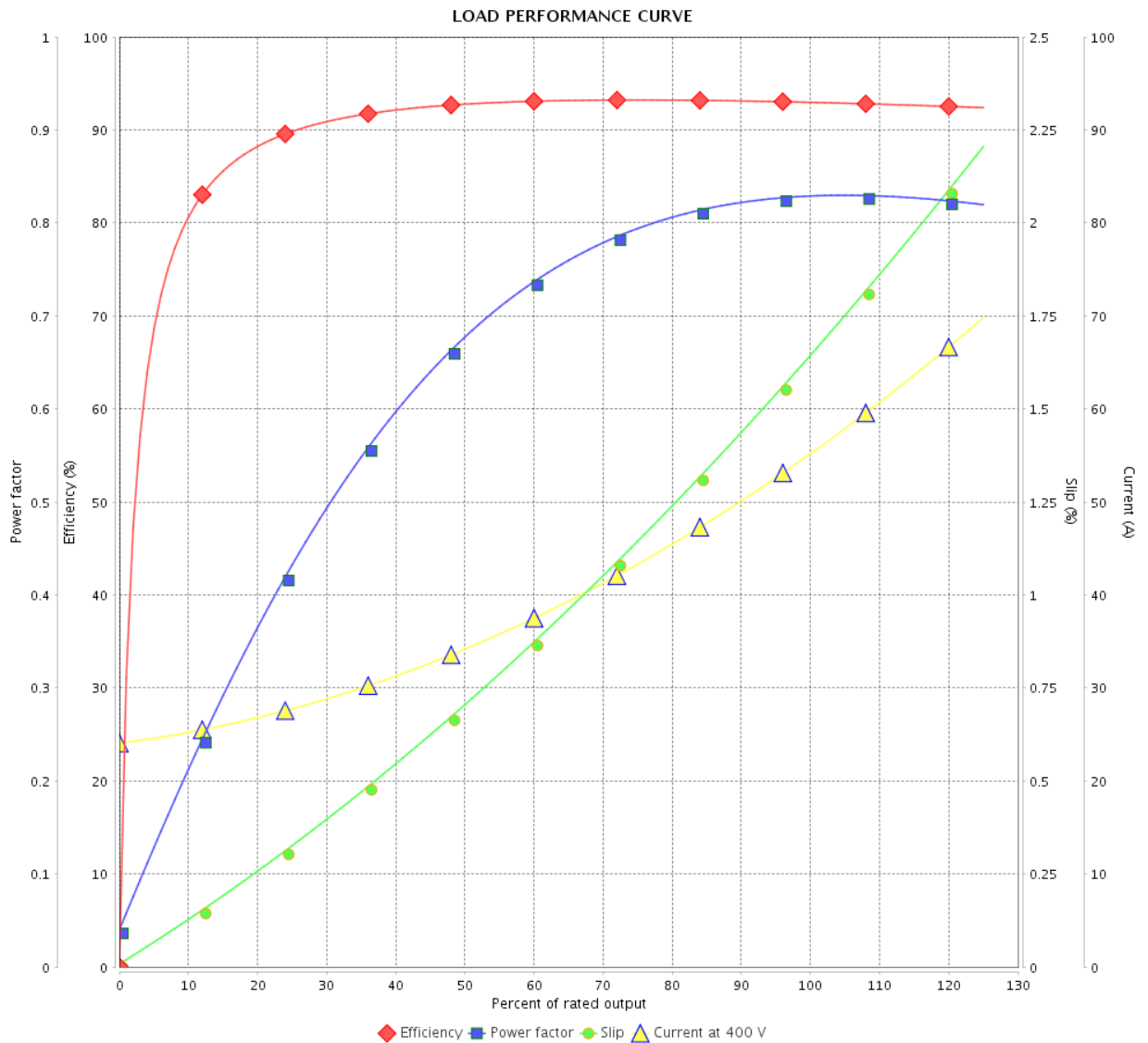


Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 14407933

Catalog # : 04018XT3ER324TC



Performance : 400 V 50 Hz 4P IE2

Rated current : 56.1 A  
 LRC : 6.9  
 Rated torque : 142 ft.lb  
 Locked rotor torque : 229 %  
 Breakdown torque : 240 %  
 Rated speed : 1475 rpm

Moment of inertia (J) : 8.17 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 80 K  
 Design : B

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# LOAD PERFORMANCE CURVE

Three Phase Induction Motor - Squirrel Cage

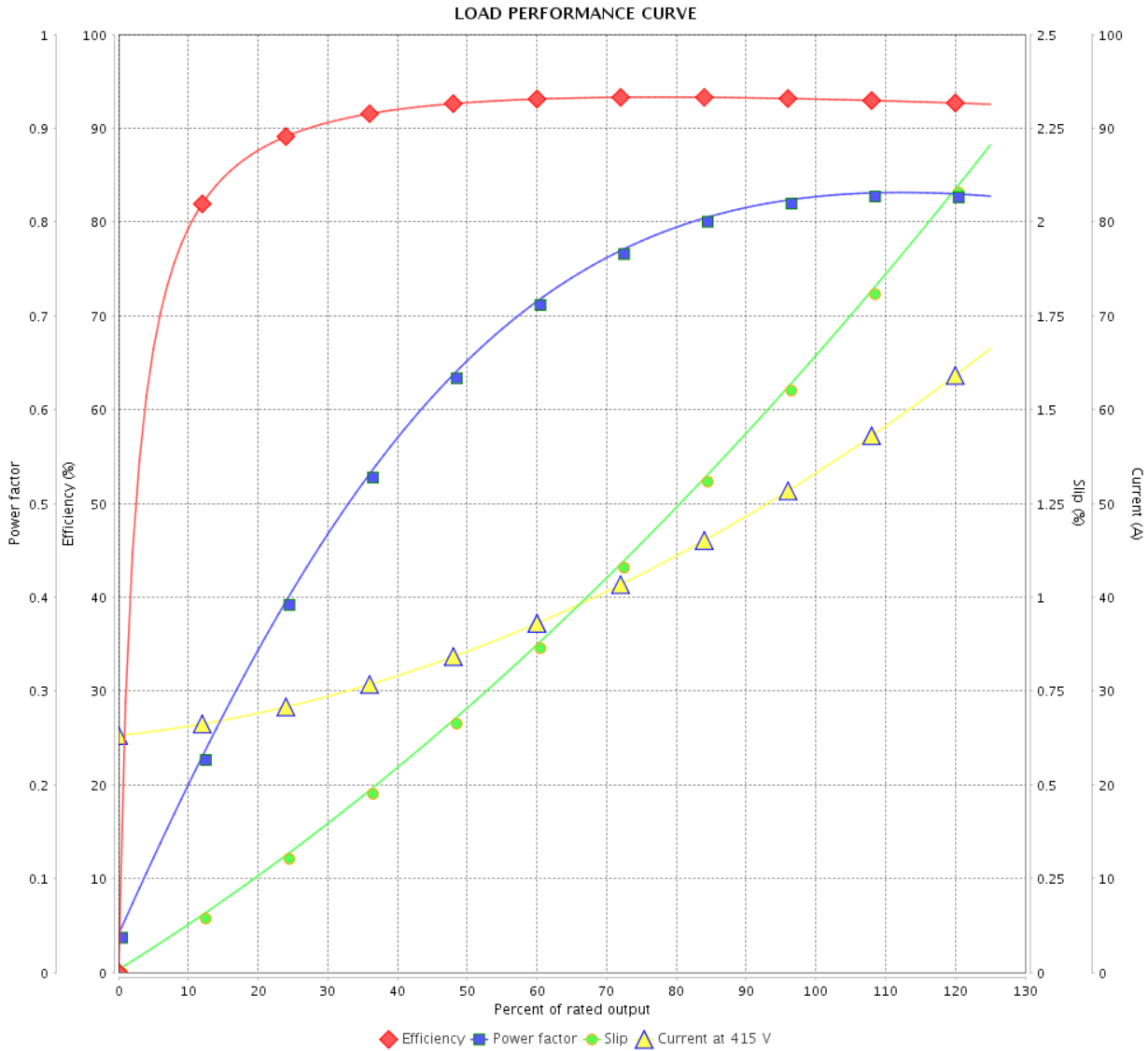


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 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 80 K  
 Design : B

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# THERMAL LIMIT CURVE



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Performance : 230/460 V 60 Hz 4P

Rated current : 96.4/48.2 A	Moment of inertia (J) : 8.17 sq.ft.lb
LRC : 7.7	Duty cycle : Cont.(S1)
Rated torque : 118 ft.lb	Insulation class : F
Locked rotor torque : 270 %	Service factor : 1.15
Breakdown torque : 300 %	Temperature rise : 80 K
Rated speed : 1780 rpm	Design : B

Heating constant

Cooling constant

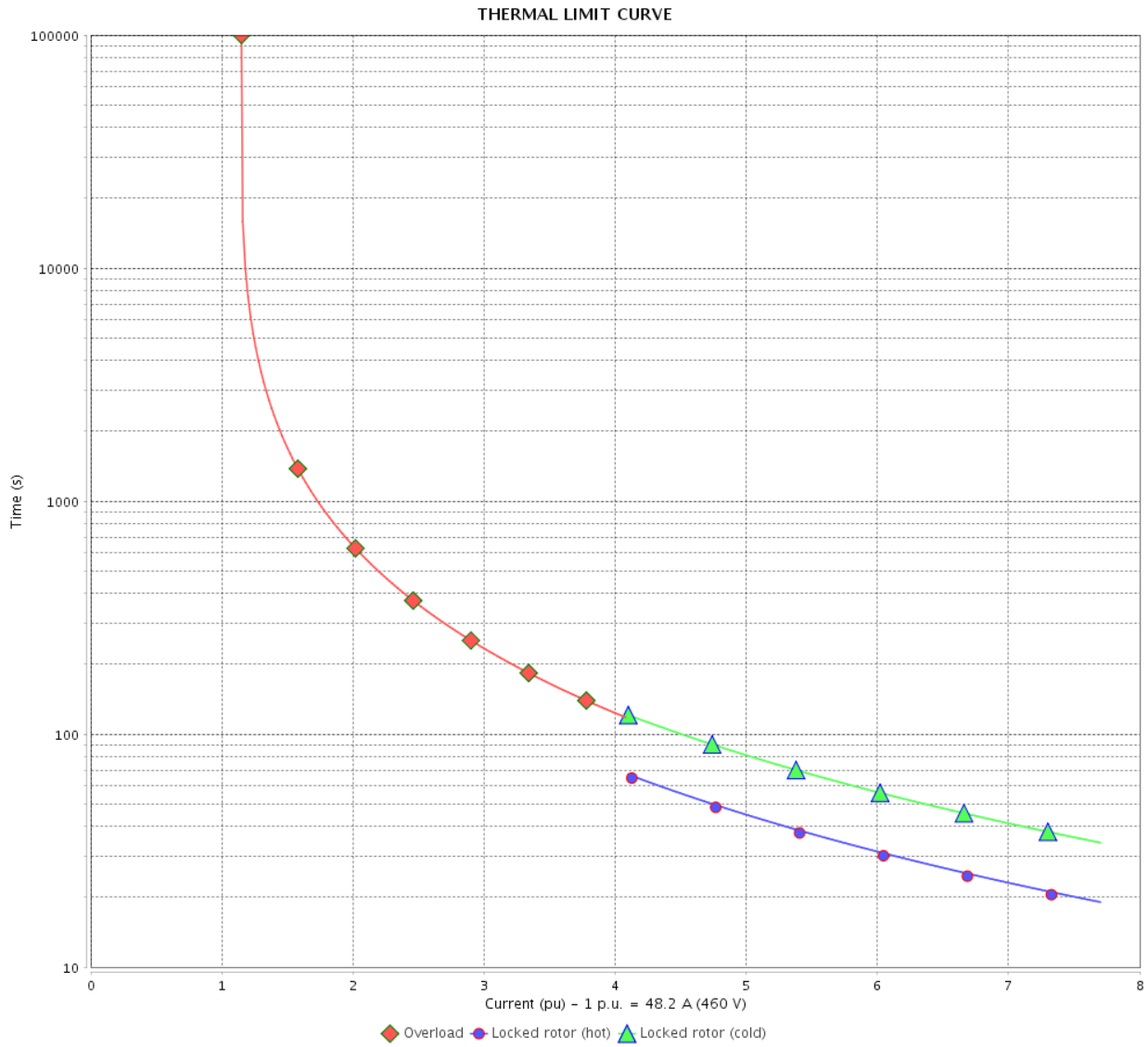
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LRC : 6.2	Duty cycle : Cont.(S1)
Rated torque : 143 ft.lb	Insulation class : F
Locked rotor torque : 200 %	Service factor : 1.00
Breakdown torque : 210 %	Temperature rise : 80 K
Rated speed : 1470 rpm	Design : B

Heating constant

Cooling constant

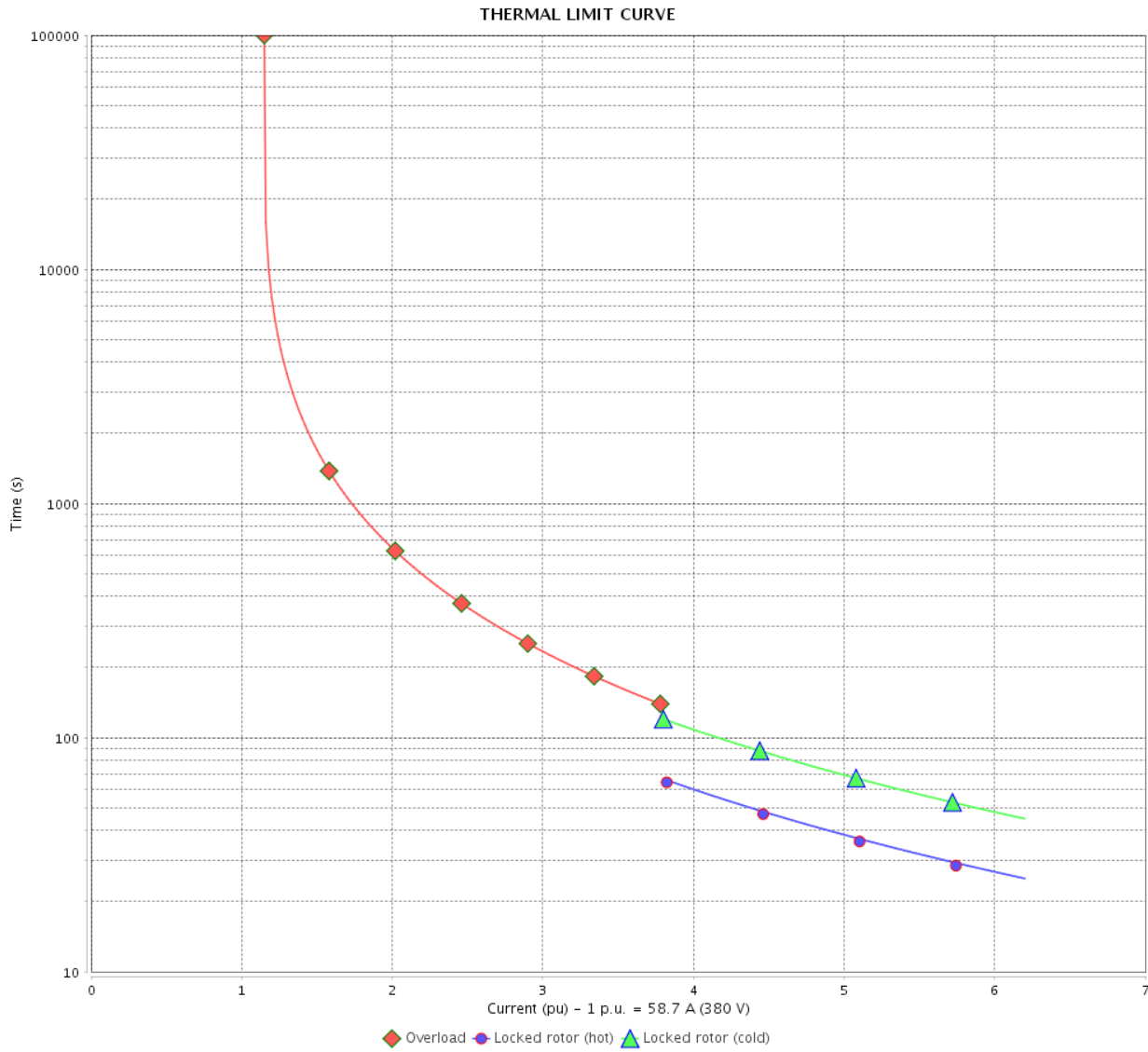
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Performance : 400 V 50 Hz 4P IE2

Rated current : 56.1 A	Moment of inertia (J) : 8.17 sq.ft.lb
LRC : 6.9	Duty cycle : Cont.(S1)
Rated torque : 142 ft.lb	Insulation class : F
Locked rotor torque : 229 %	Service factor : 1.00
Breakdown torque : 240 %	Temperature rise : 80 K
Rated speed : 1475 rpm	Design : B

Heating constant

Cooling constant

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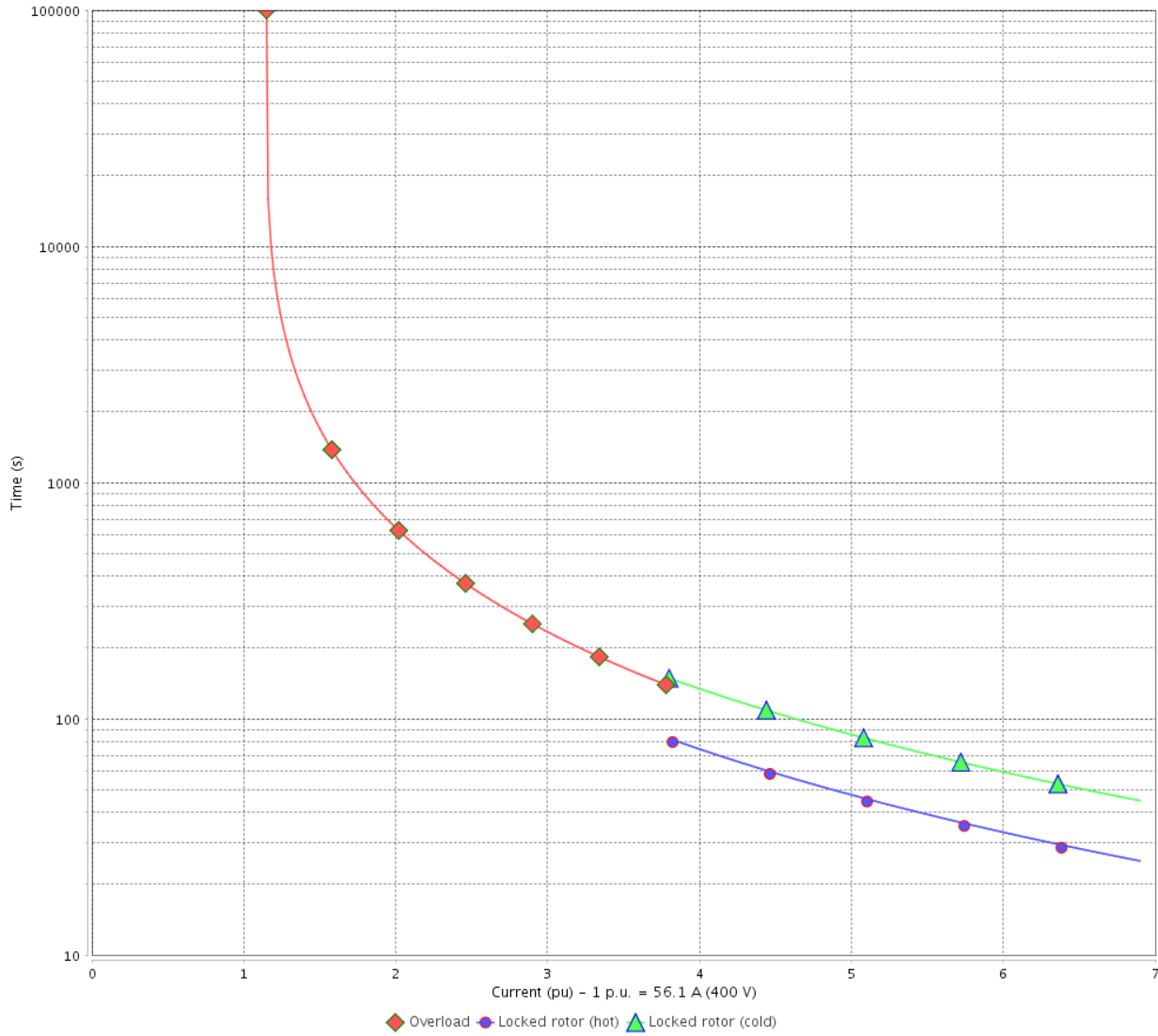
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Three Phase Induction Motor - Squirrel Cage



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THERMAL LIMIT CURVE



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LRC : 7.4	Duty cycle : Cont.(S1)
Rated torque : 142 ft.lb	Insulation class : F
Locked rotor torque : 250 %	Service factor : 1.00
Breakdown torque : 260 %	Temperature rise : 80 K
Rated speed : 1475 rpm	Design : B

Heating constant

Cooling constant

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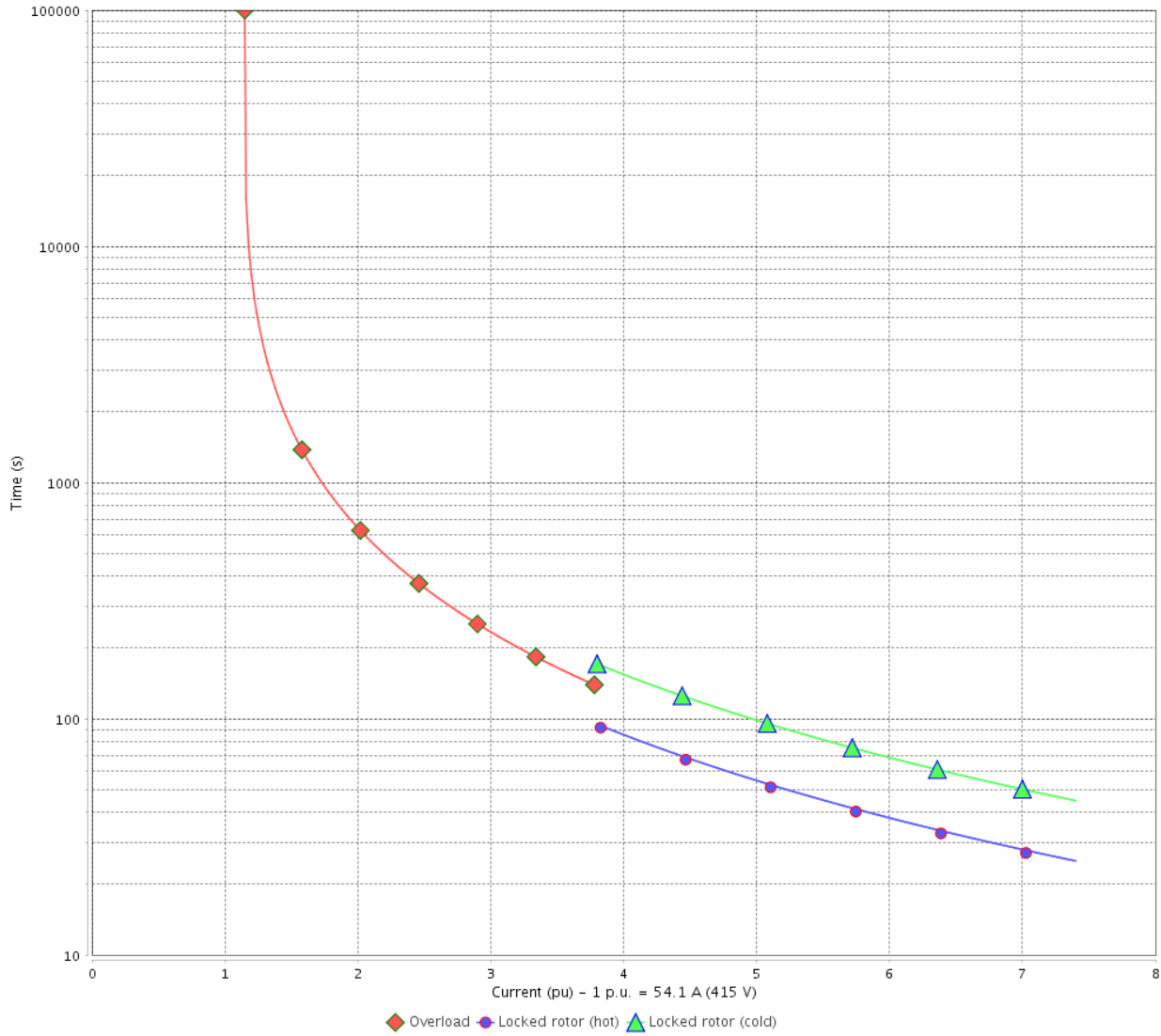
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THERMAL LIMIT CURVE



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# VFD OPERATION CURVE

## Three Phase Induction Motor - Squirrel Cage

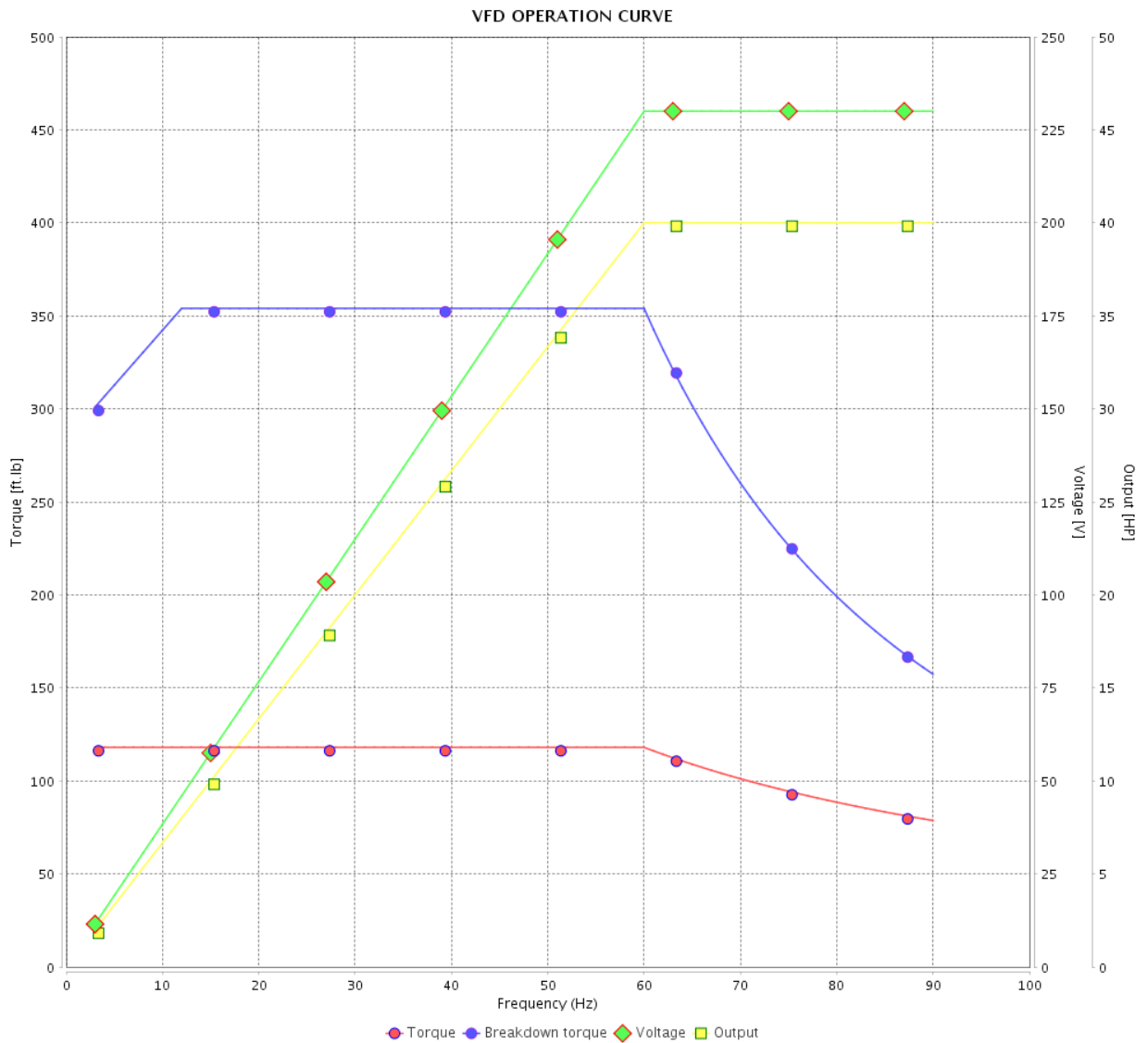


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Performance : 230/460 V 60 Hz 4P

Rated current : 96.4/48.2 A  
 LRC : 7.7  
 Rated torque : 118 ft.lb  
 Locked rotor torque : 270 %  
 Breakdown torque : 300 %  
 Rated speed : 1780 rpm

Moment of inertia (J) : 8.17 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

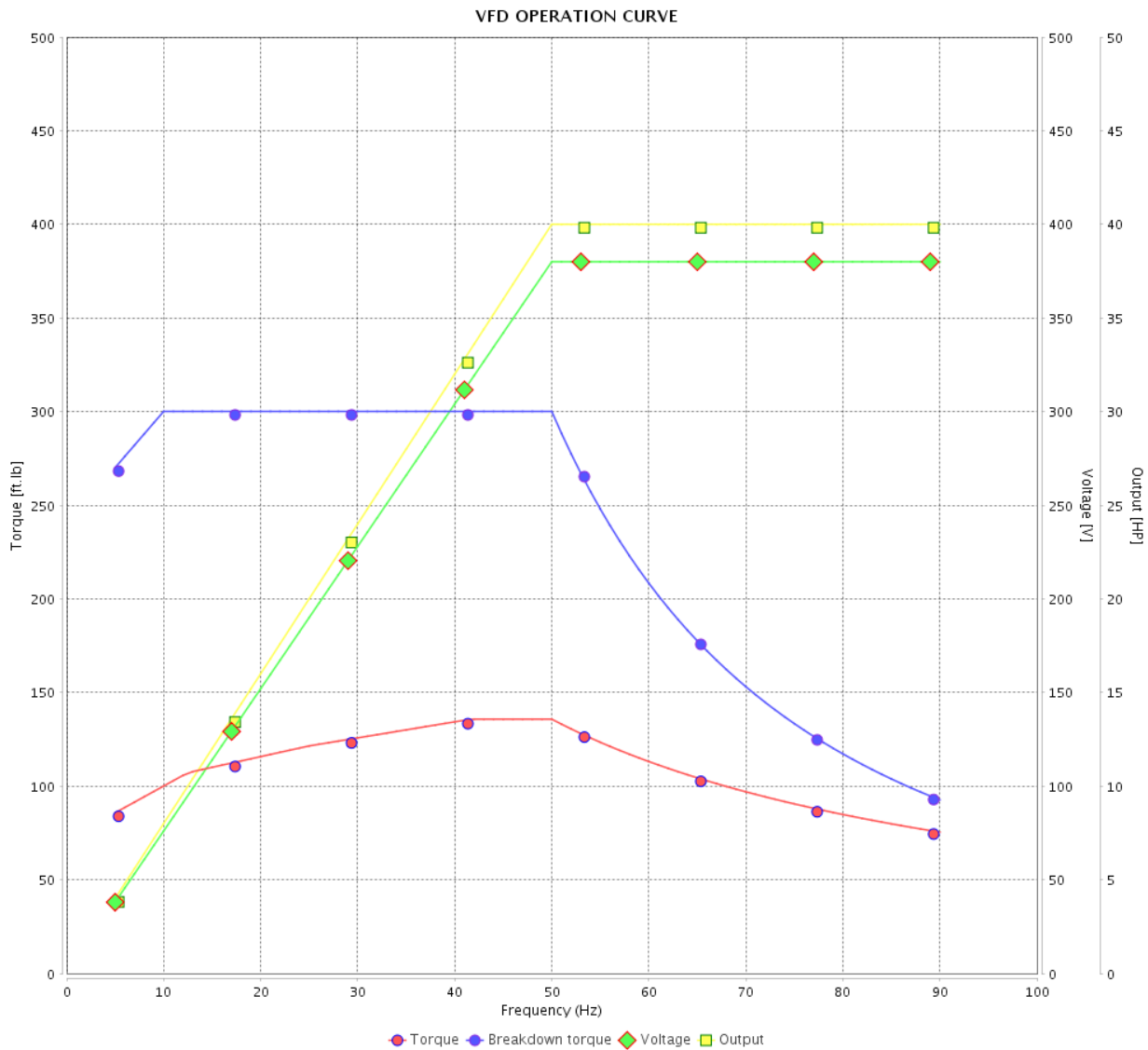


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Performance : 380 V 50 Hz 4P IE2

Rated current : 58.7 A  
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 Breakdown torque : 210 %  
 Rated speed : 1470 rpm

Moment of inertia (J) : 8.17 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 80 K  
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# VFD OPERATION CURVE

## Three Phase Induction Motor - Squirrel Cage

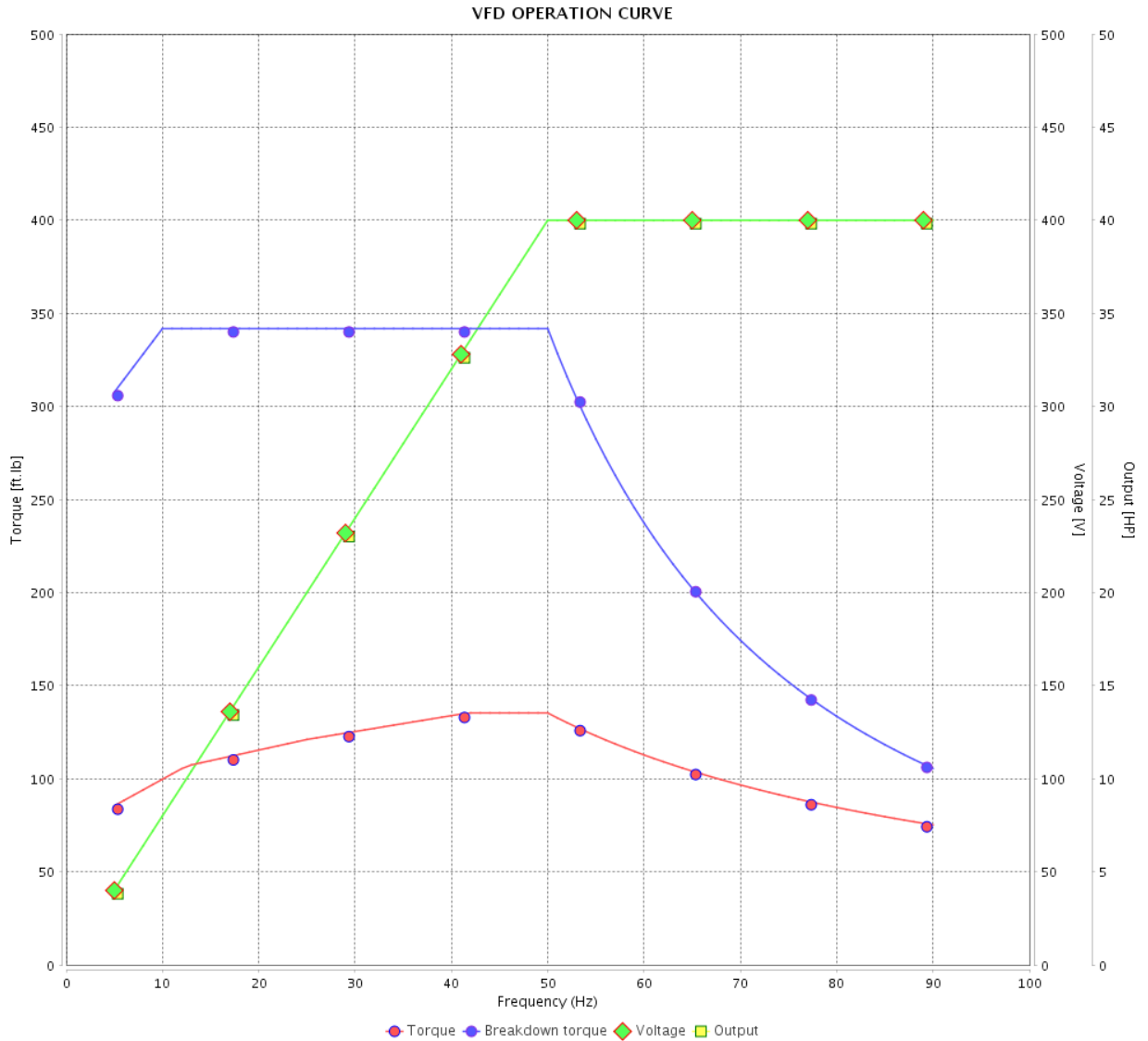


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# VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage



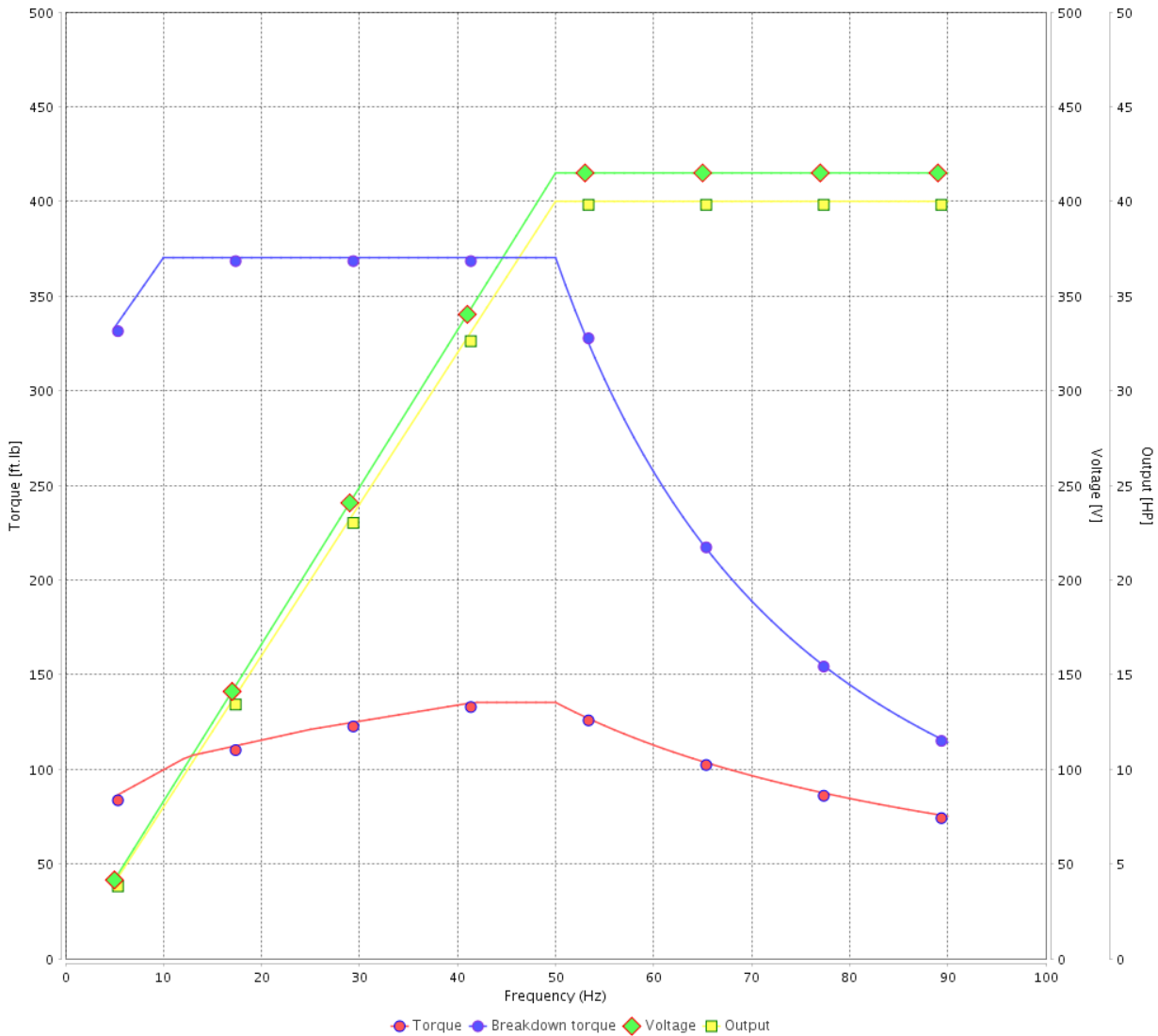
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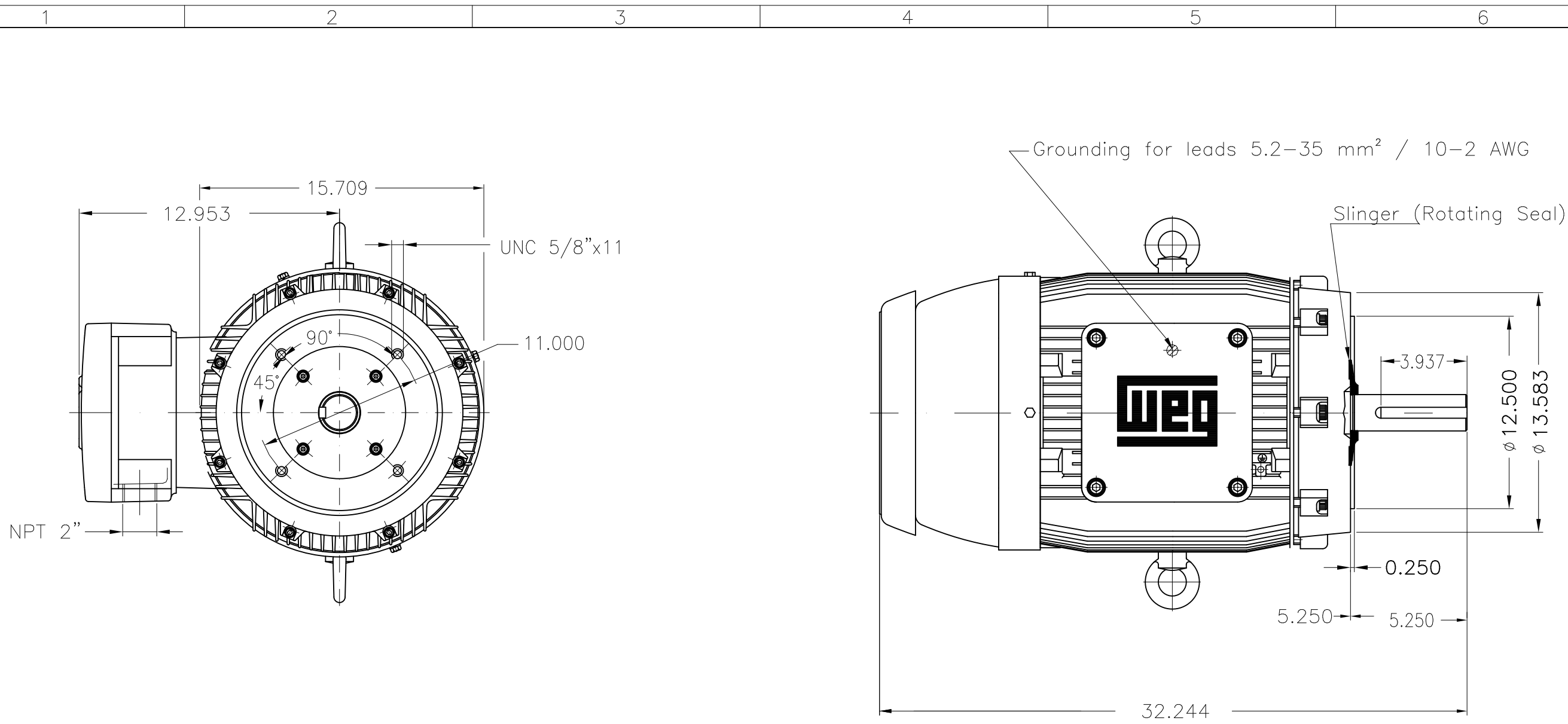
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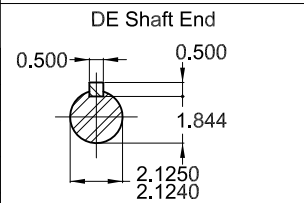
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Rated torque	: 142 ft.lb	Insulation class	: F
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Breakdown torque	: 260 %	Temperature rise	: 80 K
Rated speed	: 1475 rpm	Design	: B

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40 HP 04 Poles 60 Hz A

- With grease fitting
- Color RAL 5009
- Painting plan 202P
- Mounting NEMA W-6
- Mounting V18



ECM	LOC	SUMMARY OF MODIFICATIONS	EXECUTED	CHECKED	RELEASED	DATE	VER
EXECUTED	PIRWBUSER	THREE PH. MOTOR EXPLOSION PROOF PREM. EFF. FRAME 324TC IP55 TEFC					
CHECKED							
RELEASED							
REL DT.	WMO	Jaragua do Sul	Product Engineering	SHEET		1 / 1	

**PREVIEW**  
WDD



MADE IN BRAZIL

**W21X NEMA**  
**Premium**

14407933



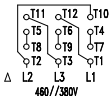
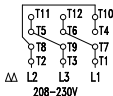
LISTED

CC029A

*Inverter Duty Motor*  
*Severe Duty*

MODEL 04018XT3ER324TC

PH 3	FR 324TC		
HP(kW) 40.0(30.0)		HZ 60	IP55
V 230/460		A 96.4/48.2	
RPM 1780		NEMA NOM EFF 94.1%	
PF 0.83		SFA 111/55.4	DES B
INS CL F $\Delta T$ 80 K		SF 1.15	ENCL TEFC
DUTY CONT.		CODE J	ALT 1000 m.a.s.l.
AMB 40°C	USABLE @208V	107 A	SF 1.00
AMB 55°C SF1.0			
40HP 30kW 50Hz 380V 58.7A 1470RPM SF1.00 EFF 92.4% (IE2)			



→ 6312-C3 MOBIL POLYREX EM  
→ 6212-C3 21 g 11307 h

653 Lbs



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, 6:1CT, 1.0SF, T3C, AMB 40°C.