

# DATA SHEET

## Three Phase Induction Motor - Squirrel Cage



Customer :			
Product line	: NEMA Premium Efficiency Three-Phase	Product code :	12636472
		Catalog # :	02018OT3E256T-S
Frame	: 254/6T	Cooling method	: IC01 - ODP
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>	: 213 lb
Design	: B	Moment of inertia (J)	: 2.23 sq.ft.lb
Output [HP]	20	20	20
Poles	4	4	4
Frequency [Hz]	60	50	50
Rated voltage [V]	230/460	190-220/380	415
Rated current [A]	50.0/25.0	59.8-51.6/29.9	28.1
L. R. Amperes [A]	315/158	311-269/155	174
LRC [A]	6.3x(Code G)	5.2x(Code F)	6.2x(Code G)
No load current [A]	22.9/11.4	22.4-19.4/11.2	13.5
Rated speed [RPM]	1770	1460	1465
Slip [%]	1.67	2.67	2.33
Rated torque [ft.lb]	59.3	71.9	71.7
Locked rotor torque [%]	240	180	220
Breakdown torque [%]	290	220	270
Service factor	1.15	1.15	1.15
Temperature rise	80 K	80 K	80 K
Locked rotor time	27s (cold) 15s (hot)	0s (cold) 0s (hot)	0s (cold) 0s (hot)
Noise level <sup>2</sup>	64.0 dB(A)	62.0 dB(A)	62.0 dB(A)
Efficiency (%)	25%		
	50%	92.4	91.8
	75%	92.4	91.2
	100%	93.0	89.7
Power Factor	25%		
	50%	0.63	0.72
	75%	0.74	0.82
	100%	0.81	0.85
Bearing type	: <u>Drive end</u> 6309 Z C3 <u>Non drive end</u> 6208 Z C3	Foundation loads	
Sealing	: Without Without Bearing Seal Bearing Seal	Max. traction	: 822 lb
Lubrication interval	: 20000 h 20000 h	Max. compression	: 1035 lb
Lubricant amount	: 13 g 8 g		
Lubricant type	: Mobil Polyrex EM		
Notes USABLE @208V 55.3A SF 1.00 SFA 55.3A			
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



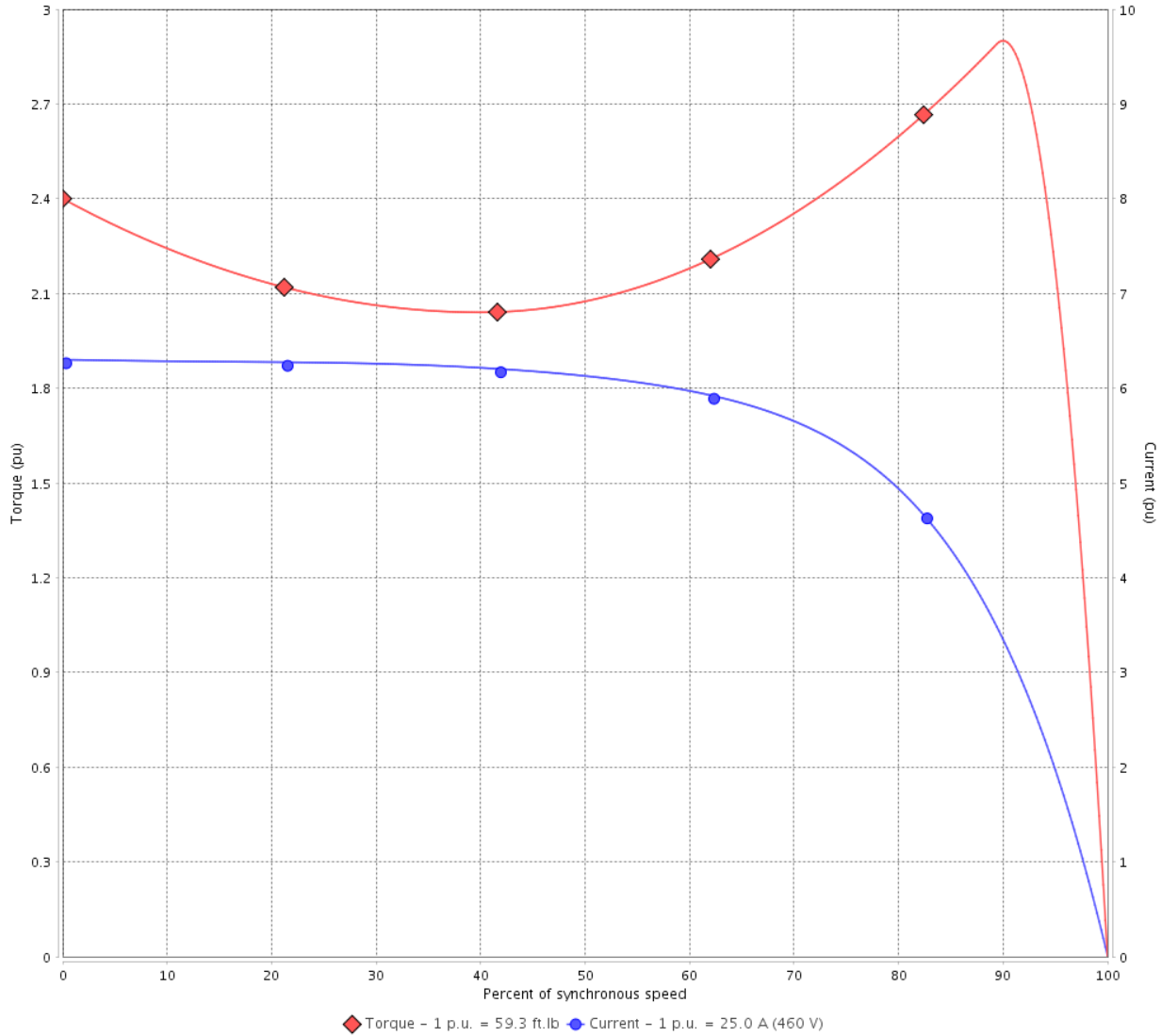
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12636472

Catalog # : 02018OT3E256T-S

TORQUE AND CURRENT VS SPEED CURVE



Performance : 230/460 V 60 Hz 4P

Rated current	: 50.0/25.0 A	Moment of inertia (J)	: 2.23 sq.ft.lb
LRC	: 6.3	Duty cycle	: Cont.(S1)
Rated torque	: 59.3 ft.lb	Insulation class	: F
Locked rotor torque	: 240 %	Service factor	: 1.15
Breakdown torque	: 290 %	Temperature rise	: 80 K
Rated speed	: 1770 rpm	Design	: B

Locked rotor time : 27s (cold) 15s (hot)

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# TORQUE AND CURRENT VS SPEED CURVE



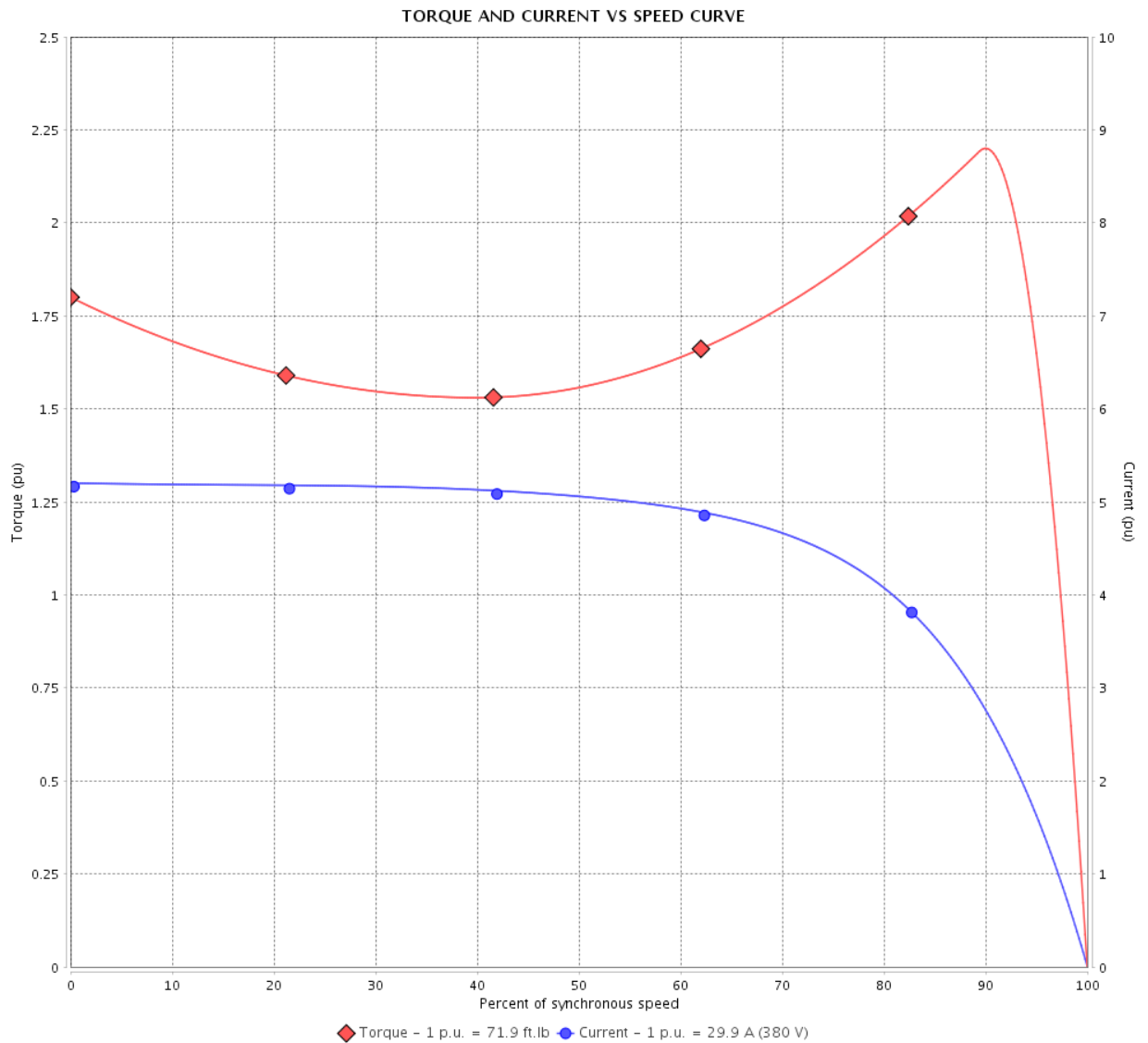
## Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12636472

Catalog # : 02018OT3E256T-S



Performance : 190-220/380 V 50 Hz 4P

Rated current	: 59.8-51.6/29.9 A	Moment of inertia (J)	: 2.23 sq.ft.lb
LRC	: 5.2	Duty cycle	: Cont.(S1)
Rated torque	: 71.9 ft.lb	Insulation class	: F
Locked rotor torque	: 180 %	Service factor	: 1.15
Breakdown torque	: 220 %	Temperature rise	: 80 K
Rated speed	: 1460 rpm	Design	: B

Locked rotor time : 0s (cold) 0s (hot)

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# TORQUE AND CURRENT VS SPEED CURVE

Three Phase Induction Motor - Squirrel Cage



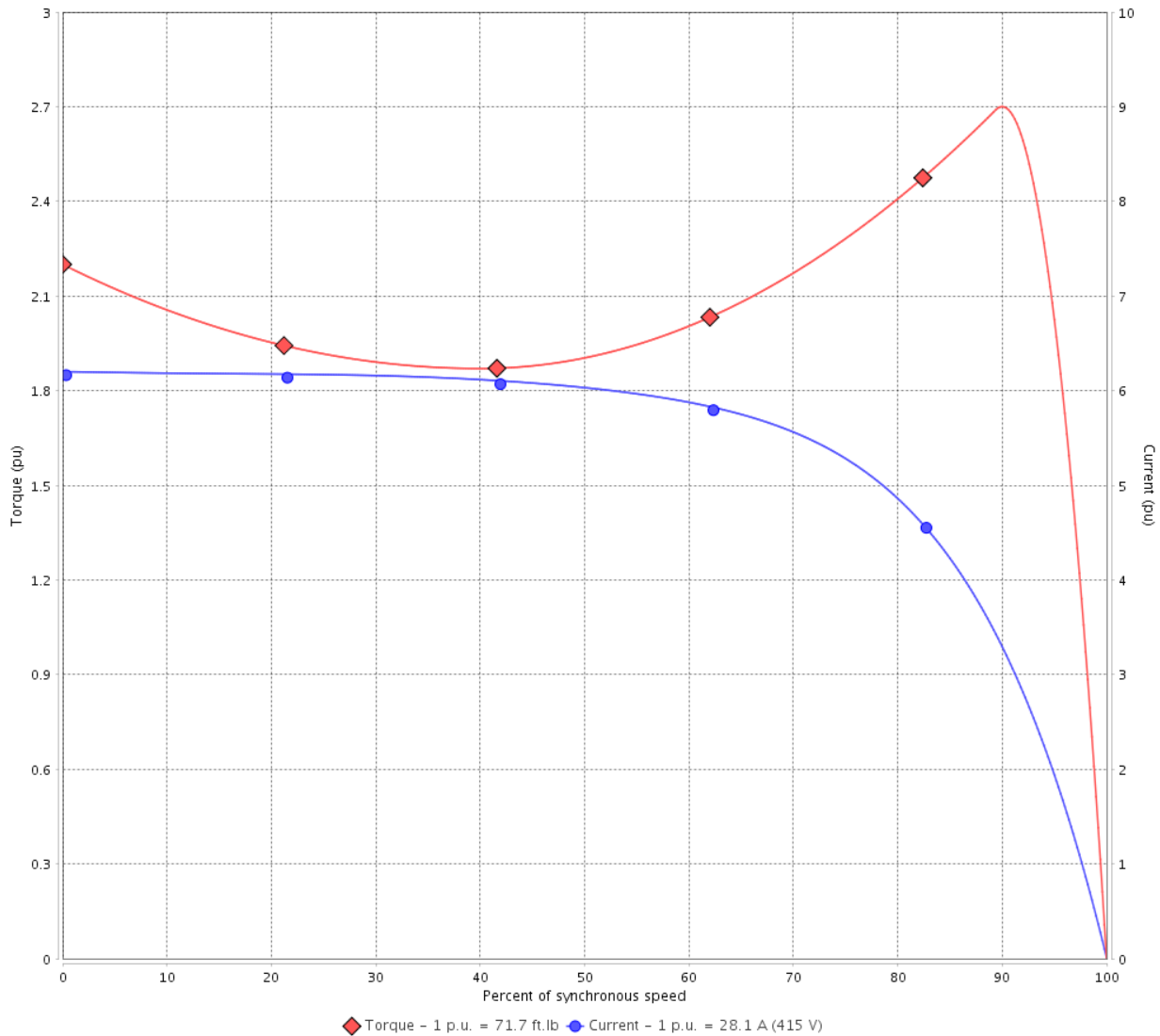
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12636472

Catalog # : 02018OT3E256T-S

TORQUE AND CURRENT VS SPEED CURVE



Performance : 415 V 50 Hz 4P

Rated current	: 28.1 A	Moment of inertia (J)	: 2.23 sq.ft.lb
LRC	: 6.2	Duty cycle	: Cont.(S1)
Rated torque	: 71.7 ft.lb	Insulation class	: F
Locked rotor torque	: 220 %	Service factor	: 1.15
Breakdown torque	: 270 %	Temperature rise	: 80 K
Rated speed	: 1465 rpm	Design	: B

Locked rotor time : 0s (cold) 0s (hot)

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# LOAD PERFORMANCE CURVE

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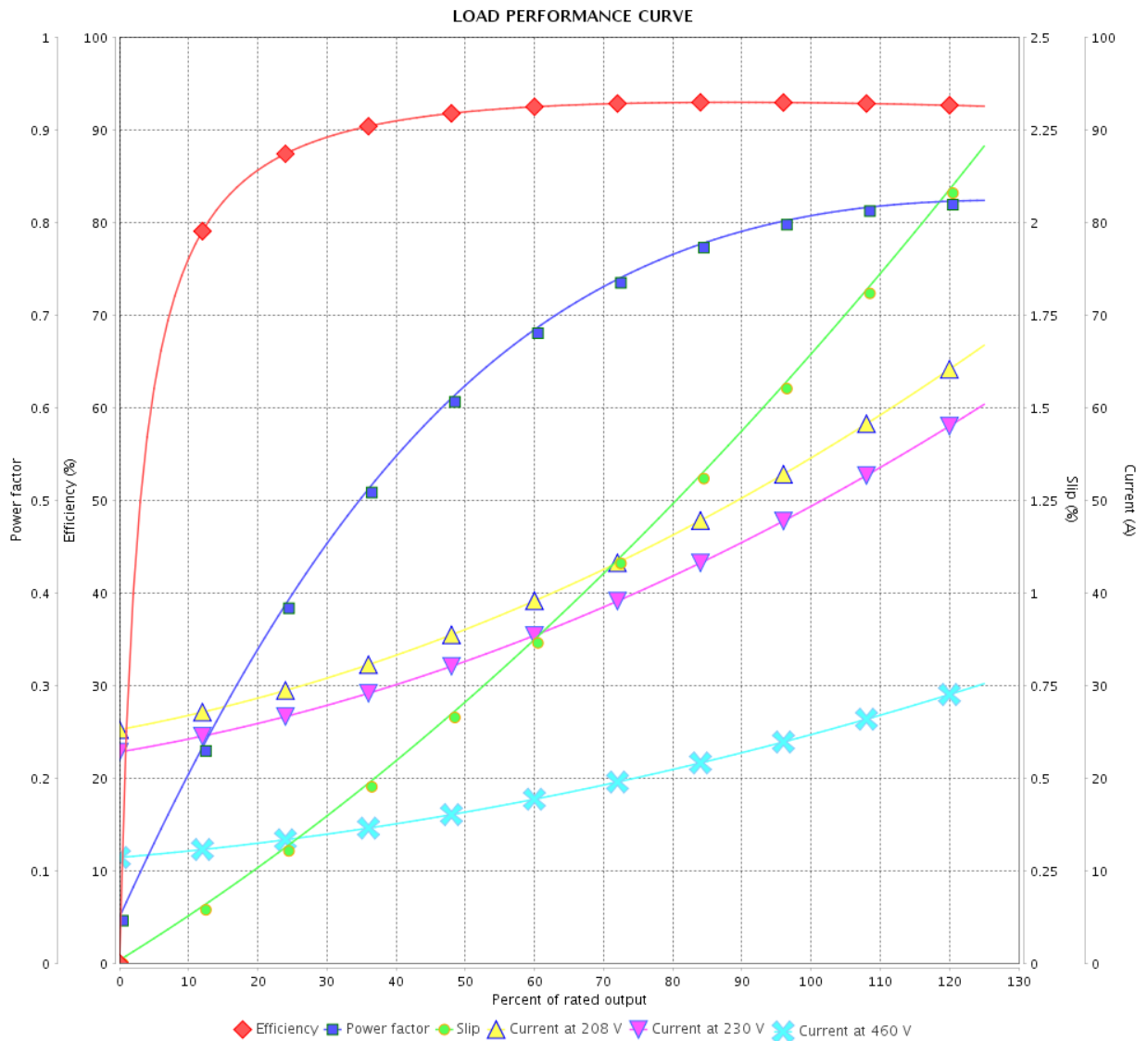


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Performance : 230/460 V 60 Hz 4P

Rated current : 50.0/25.0 A  
 LRC : 6.3  
 Rated torque : 59.3 ft.lb  
 Locked rotor torque : 240 %  
 Breakdown torque : 290 %  
 Rated speed : 1770 rpm

Moment of inertia (J) : 2.23 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

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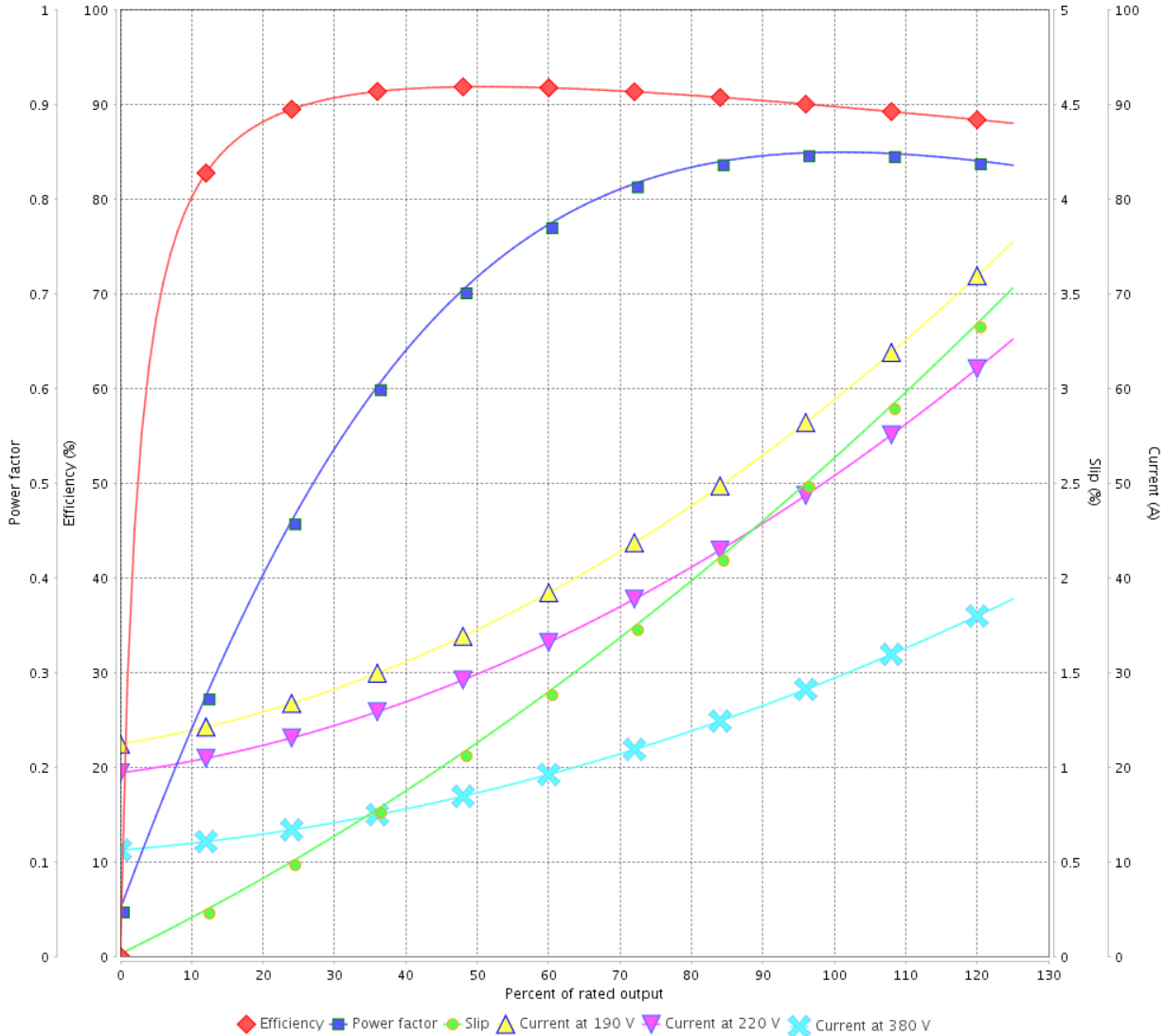
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LOAD PERFORMANCE CURVE



Performance : 190-220/380 V 50 Hz 4P

Rated current : 59.8-51.6/29.9 A  
 LRC : 5.2  
 Rated torque : 71.9 ft.lb  
 Locked rotor torque : 180 %  
 Breakdown torque : 220 %  
 Rated speed : 1460 rpm

Moment of inertia (J) : 2.23 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.15  
 Temperature rise : 80 K  
 Design : B

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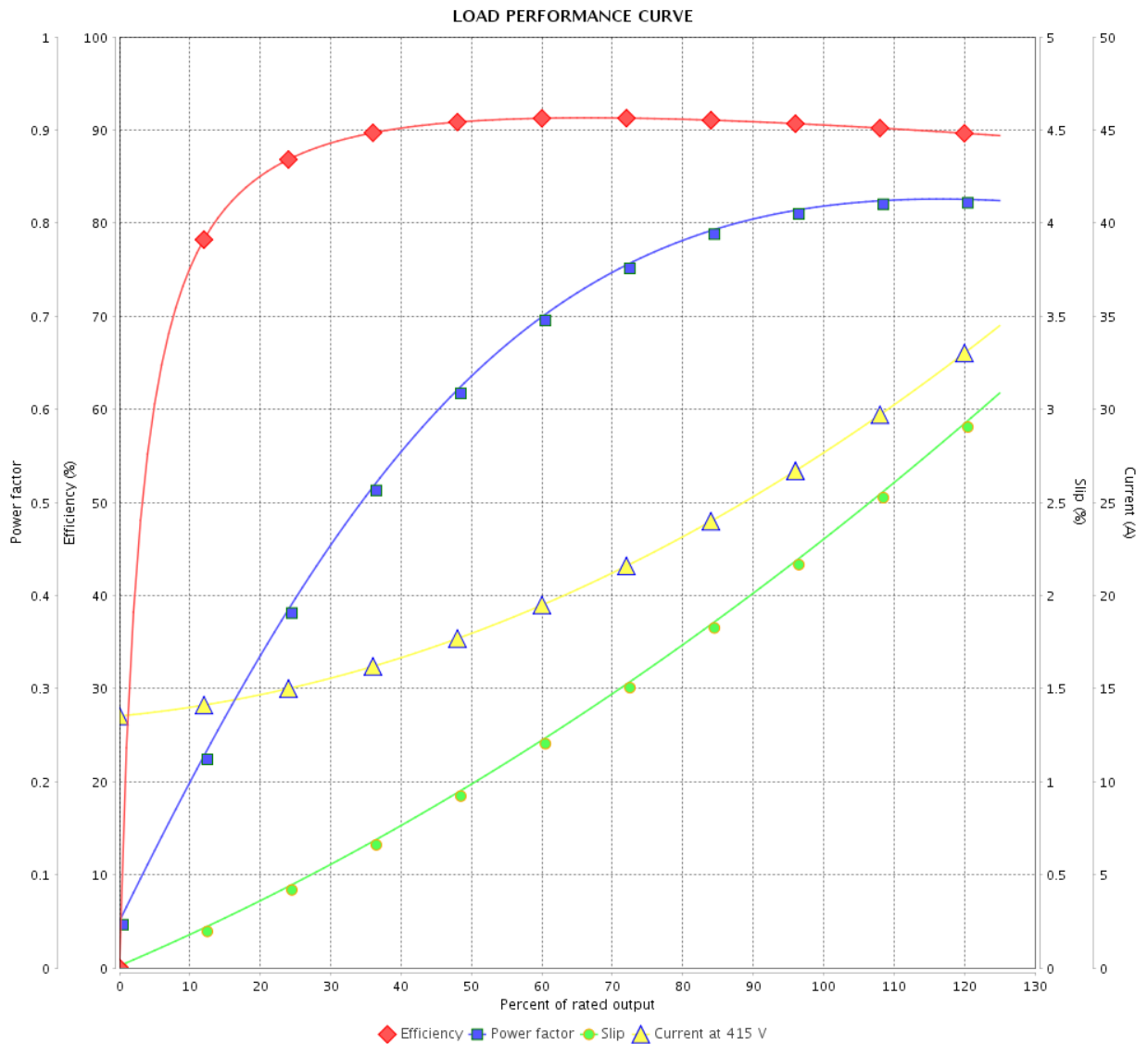


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Product code : 12636472

Catalog # : 02018OT3E256T-S



Performance : 415 V 50 Hz 4P

Rated current : 28.1 A  
 LRC : 6.2  
 Rated torque : 71.7 ft.lb  
 Locked rotor torque : 220 %  
 Breakdown torque : 270 %  
 Rated speed : 1465 rpm

Moment of inertia (J) : 2.23 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.15  
 Temperature rise : 80 K  
 Design : B

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# THERMAL LIMIT CURVE



## Three Phase Induction Motor - Squirrel Cage

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Rated current	: 50.0/25.0 A	Moment of inertia (J)	: 2.23 sq.ft.lb
LRC	: 6.3	Duty cycle	: Cont.(S1)
Rated torque	: 59.3 ft.lb	Insulation class	: F
Locked rotor torque	: 240 %	Service factor	: 1.15
Breakdown torque	: 290 %	Temperature rise	: 80 K
Rated speed	: 1770 rpm	Design	: B

Heating constant

Cooling constant

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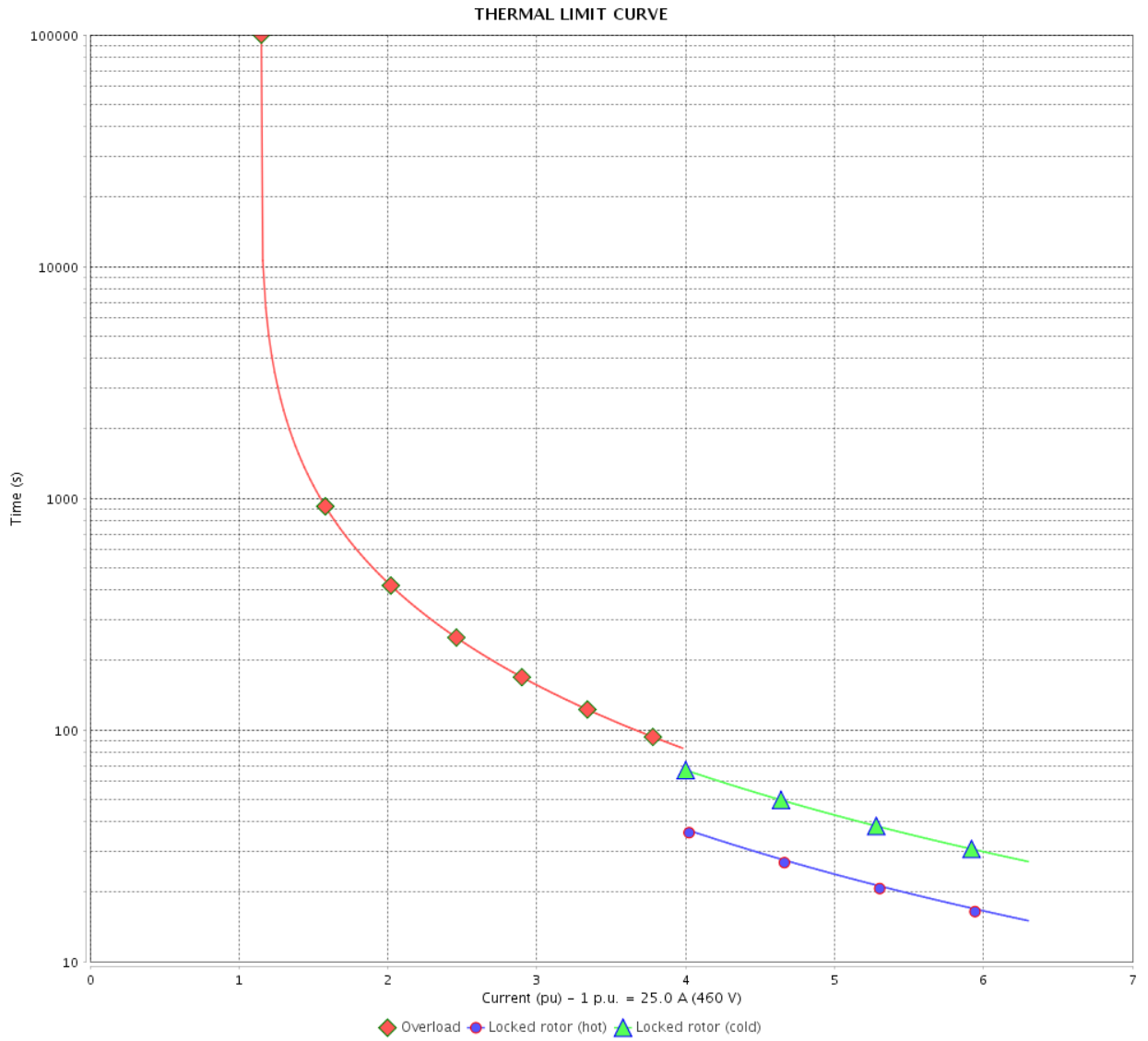


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Three Phase Induction Motor - Squirrel Cage



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Performance : 190-220/380 V 50 Hz 4P

Rated current	: 59.8-51.6/29.9 A	Moment of inertia (J)	: 2.23 sq.ft.lb
LRC	: 5.2	Duty cycle	: Cont.(S1)
Rated torque	: 71.9 ft.lb	Insulation class	: F
Locked rotor torque	: 180 %	Service factor	: 1.15
Breakdown torque	: 220 %	Temperature rise	: 80 K
Rated speed	: 1460 rpm	Design	: B

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Cooling constant

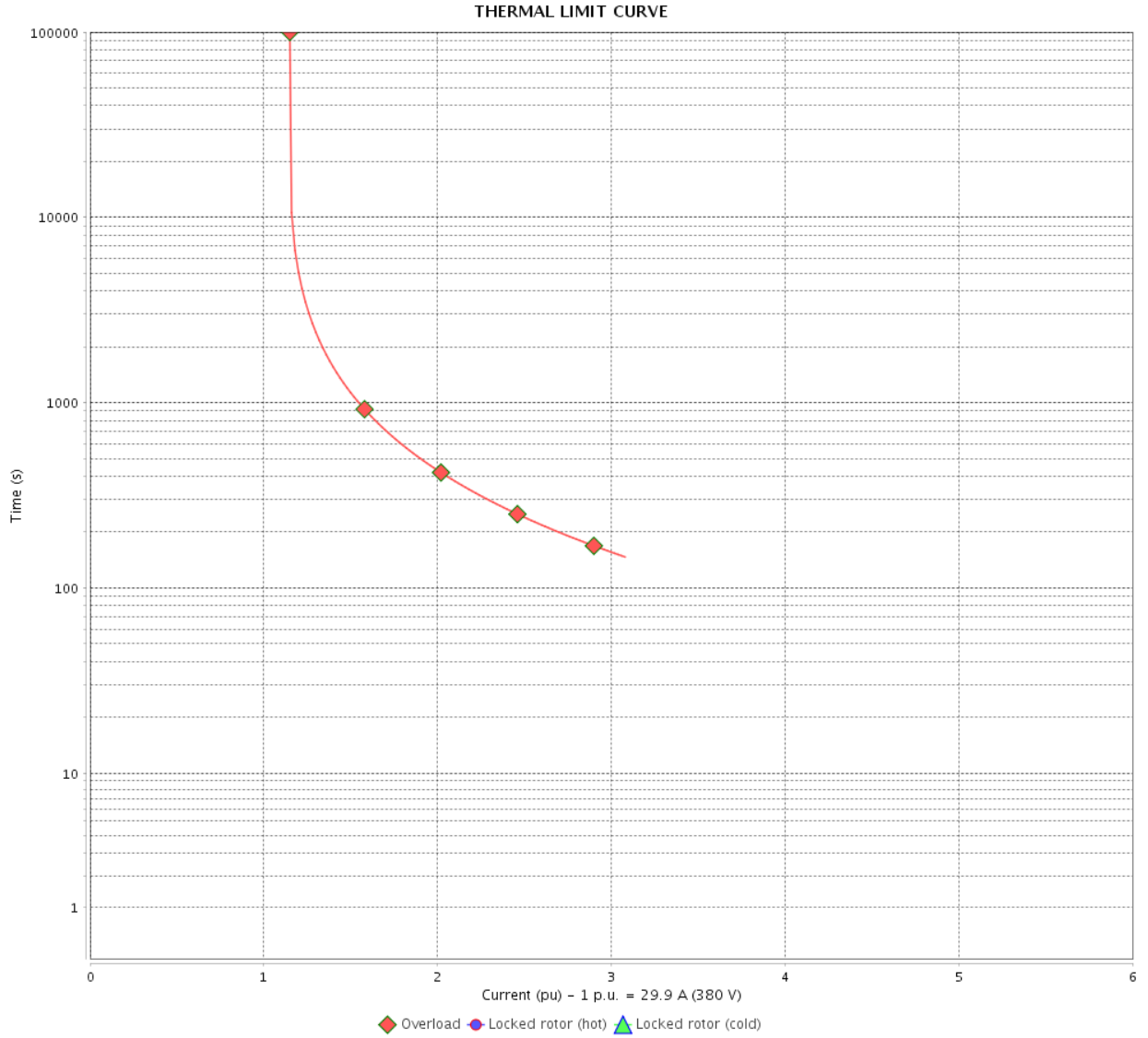
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Cooling constant

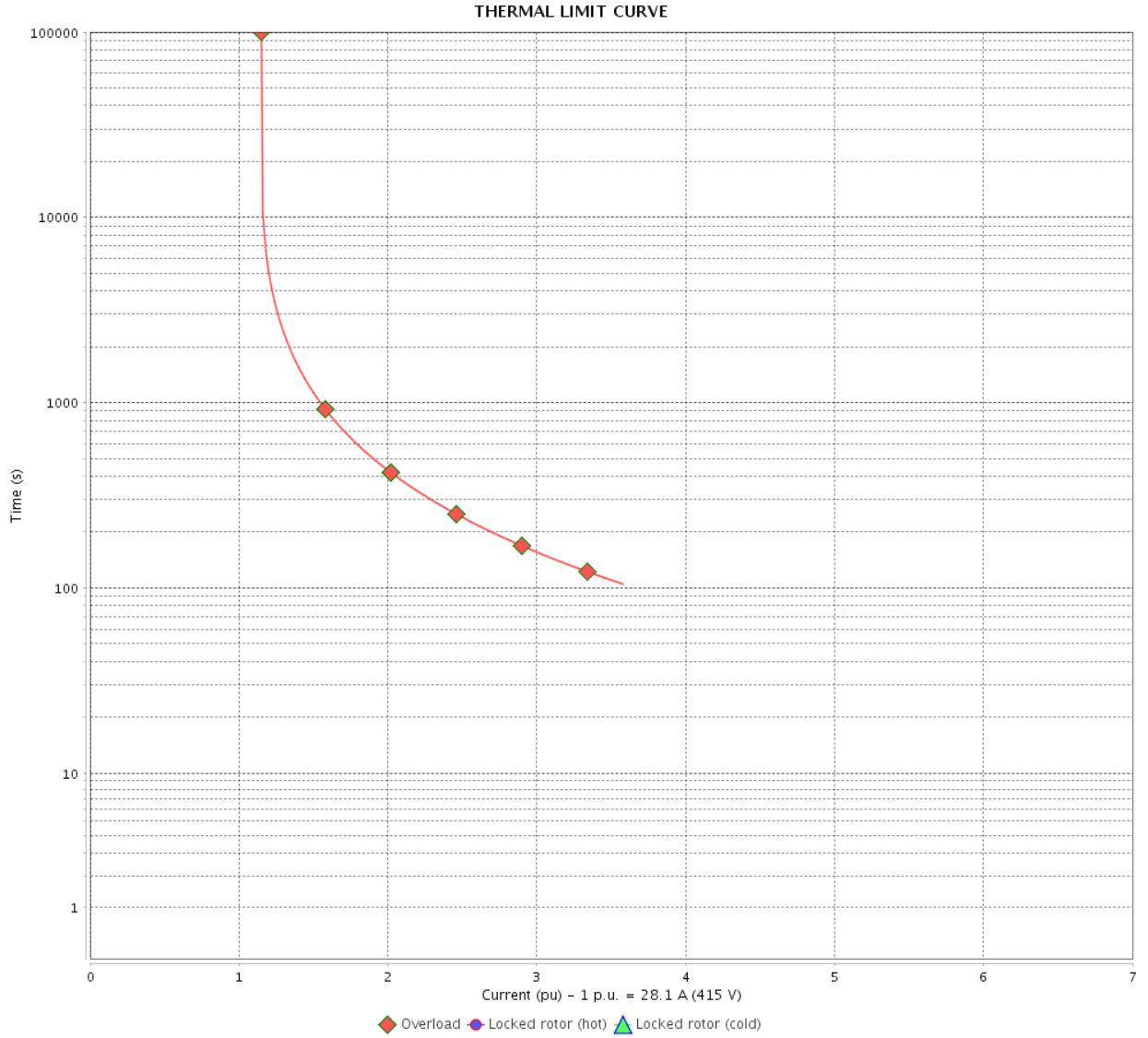
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# VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage

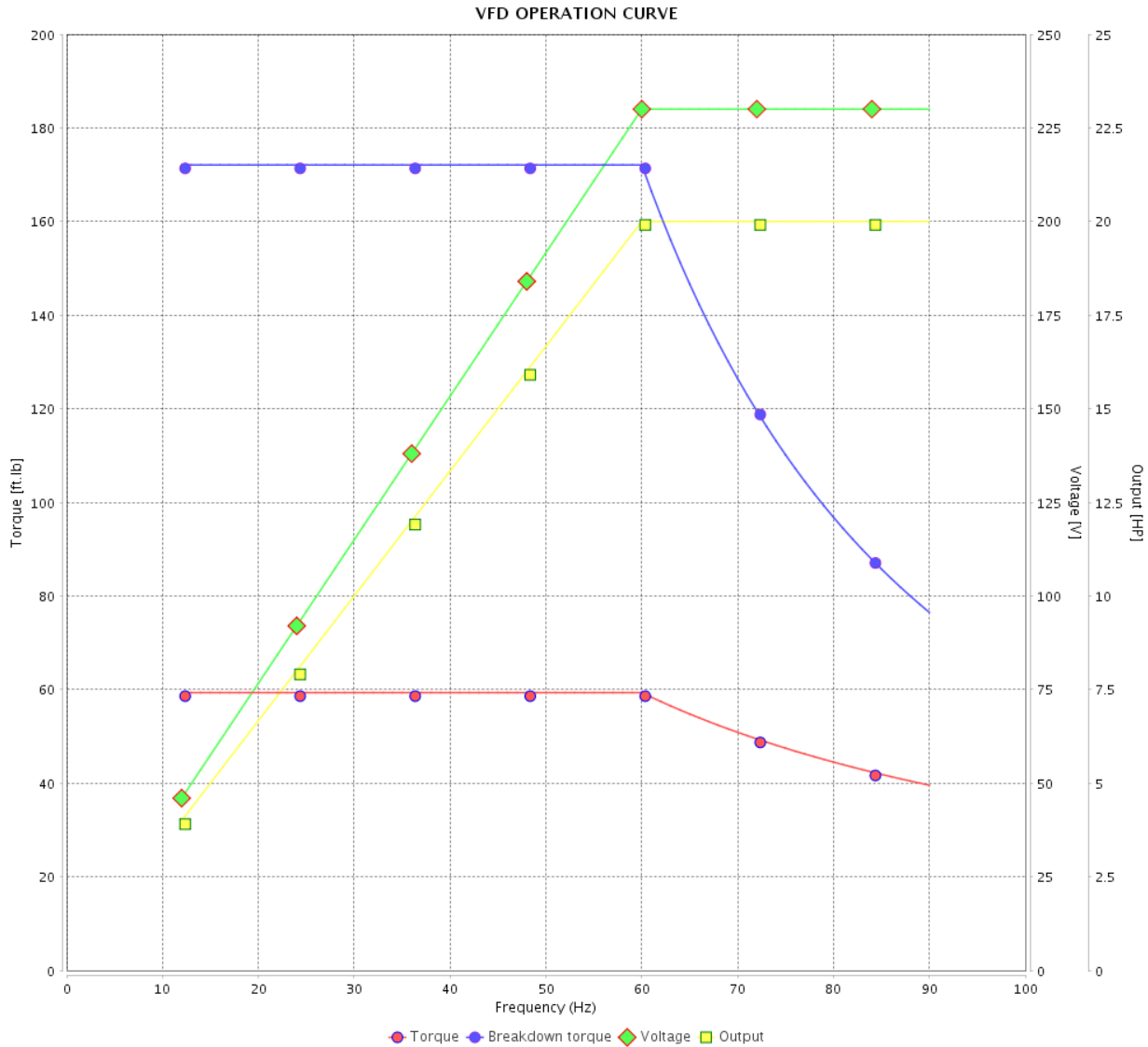


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Performance : 230/460 V 60 Hz 4P

Rated current : 50.0/25.0 A  
 LRC : 6.3  
 Rated torque : 59.3 ft.lb  
 Locked rotor torque : 240 %  
 Breakdown torque : 290 %  
 Rated speed : 1770 rpm

Moment of inertia (J) : 2.23 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

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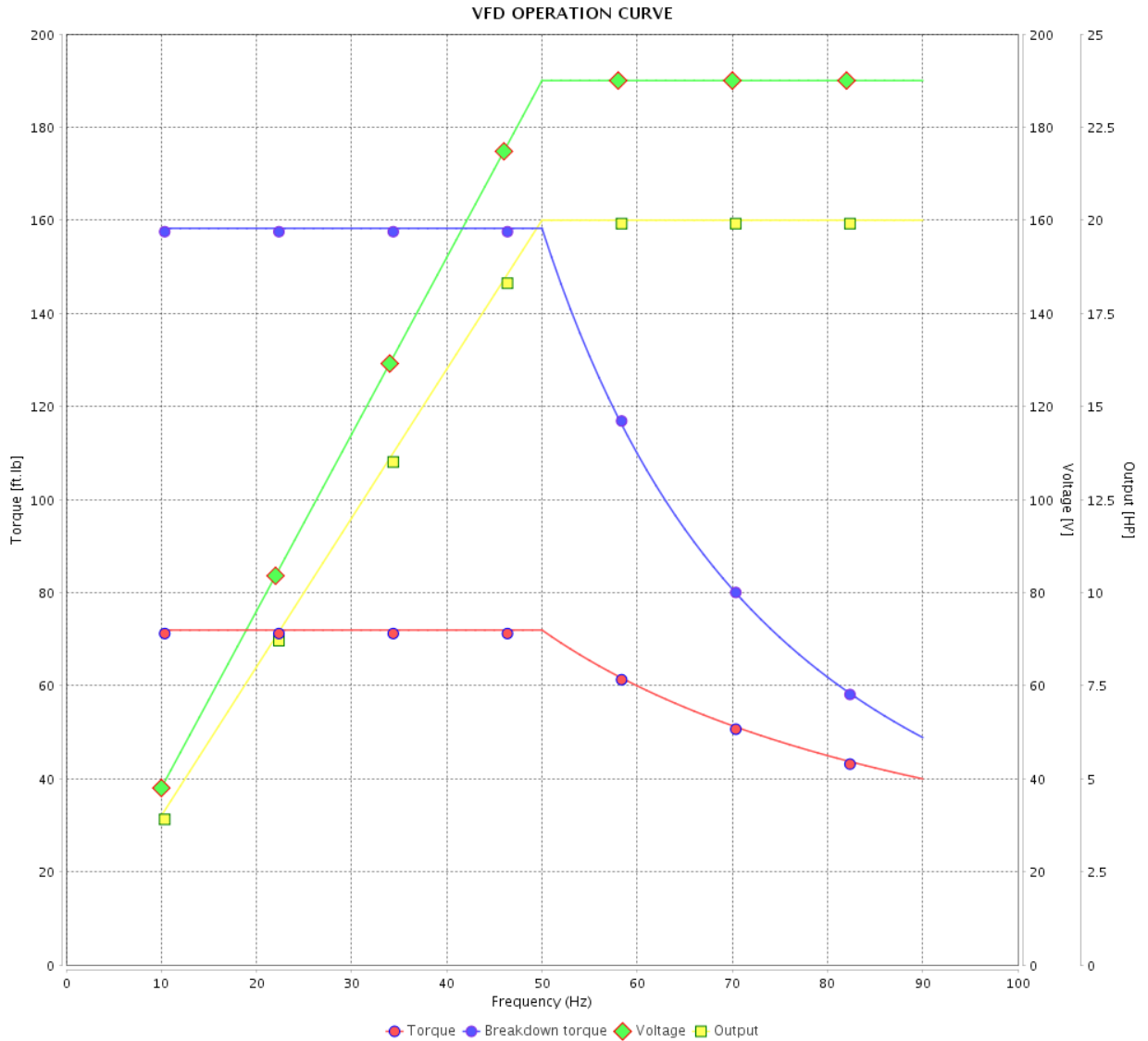


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 Insulation class : F  
 Service factor : 1.15  
 Temperature rise : 80 K  
 Design : B

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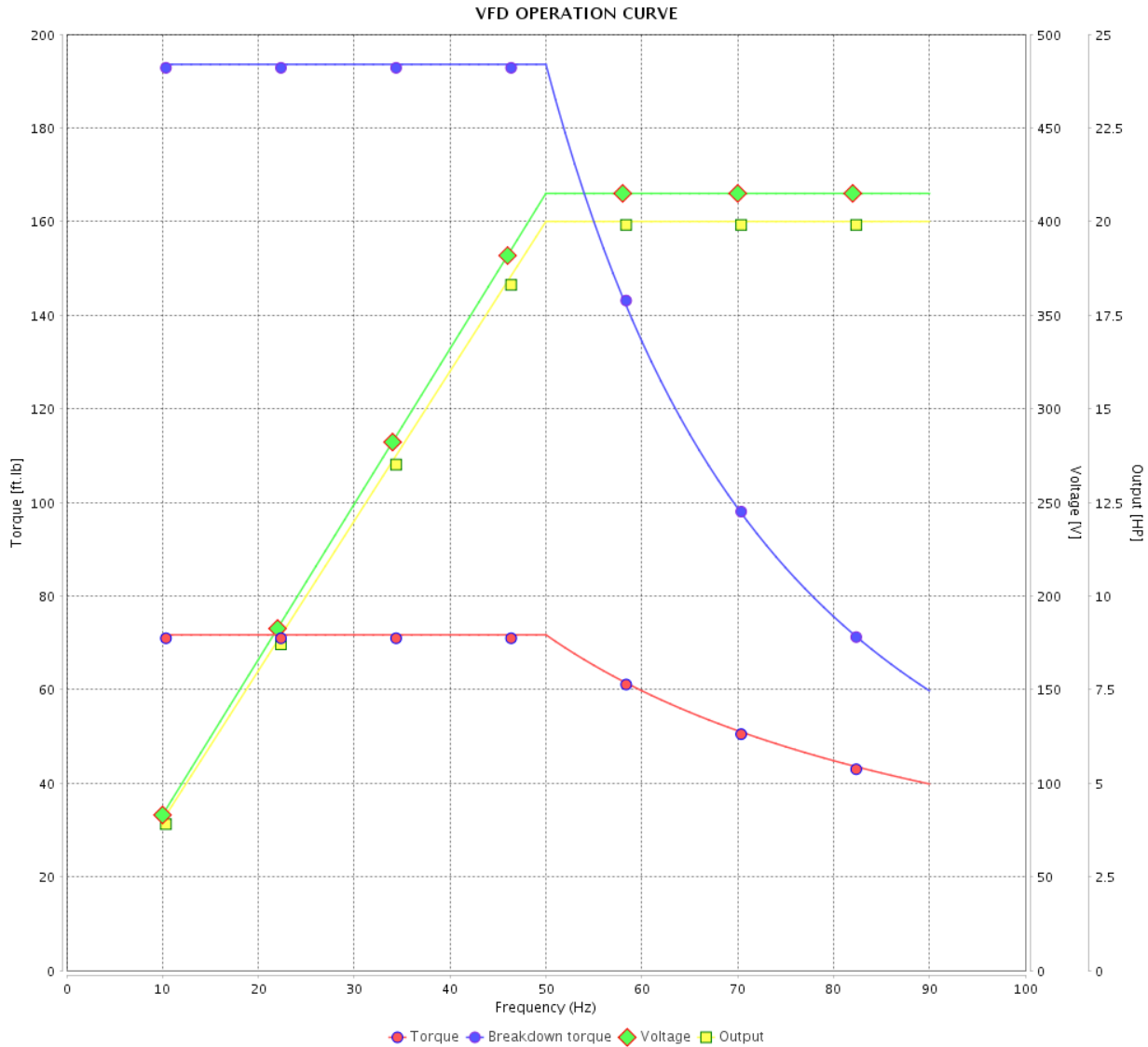


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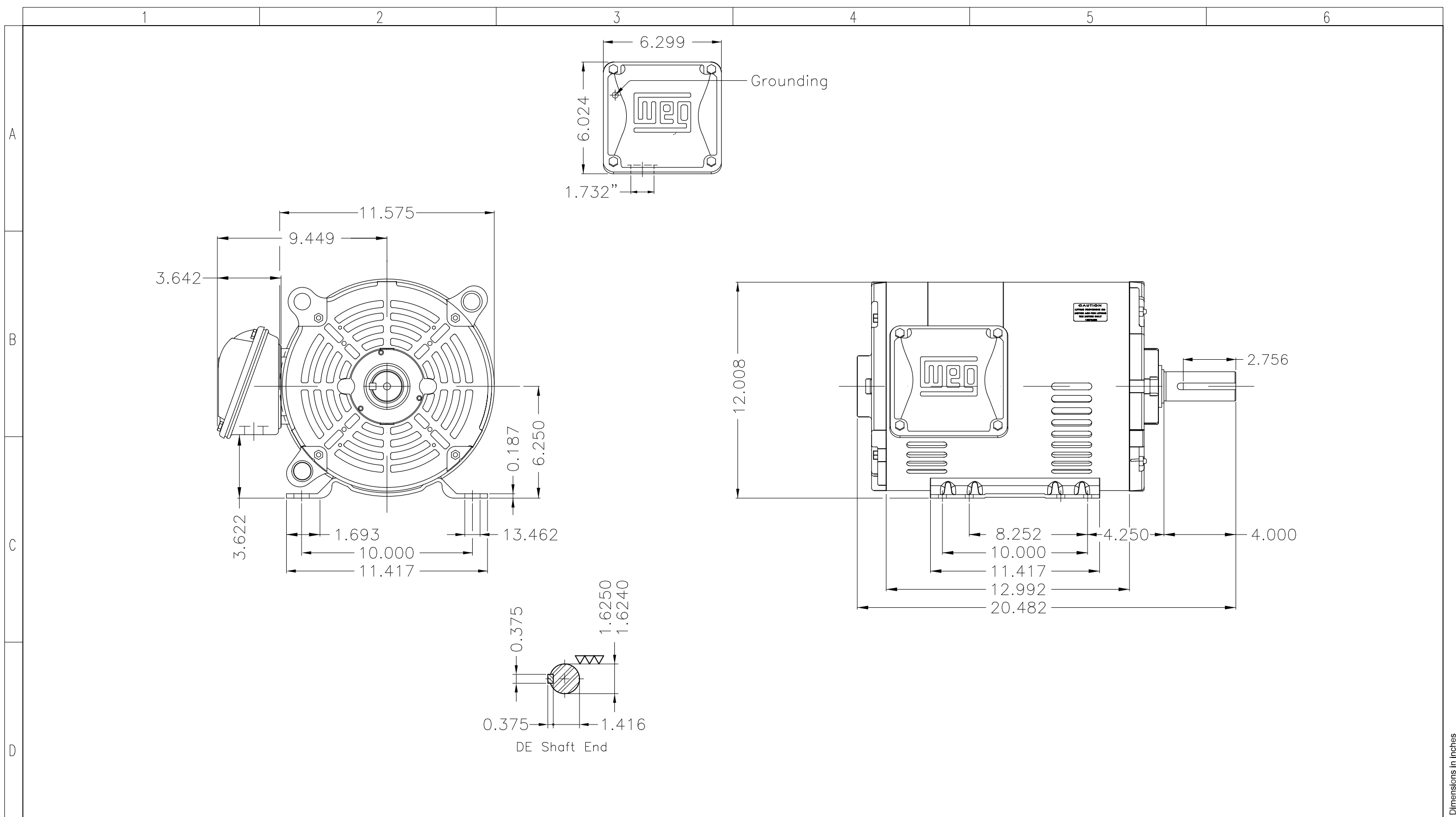
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Dimensions in inches

Color Munsell N 1 matte black										
Painting plan 207N										
Mounting F-1/B3R(D)										
ECM	LOC	SUMMARY OF MODIFICATIONS				EXECUTED	CHECKED	RELEASED	DATE	VER
EXECUTED	PIRWBUSER	THREE PH. MOTOR ROLLED STEEL PREM. EFF.					<b>PREVIEW</b> WDD			
CHECKED		FRAME 254/6T IP21 ODP								
RELEASED										
REL DT.	WMO	Jaragua do Sul	Product Engineering			SHEET	1 / 1			

20 HP 04 Poles 60 Hz

A

**NEMA  
Premium**

3PT9



Energy Verified

MADE IN MEXICO

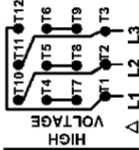
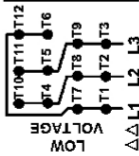
**MAT: 12636472 CC029A**  
**W01.T00IC0X0N**  
**MODEL 020180T3E256T-S**  
**22APR2022 S/N:**

PH 3	Hz 60	HP 20
FR 254/6T		KW 15
DUTY CONT.		V 230/460
ALT 1000 m.a.s.l.		A 50.0/25.0
INS CL F AT 80K		SFA 57.5/28.7
AMB 40°C	DES B	SF 1.15
ENCL ODP	CODE G	PF 0.81
USABLE @ 208V 55.3A		RPM 1770
SF1.00		NEMA NOM. EFF 93.0%

**ALTERNATE RATING: 20HP 50Hz 190-220/380-415V SF1.15**  
**59.8-53.0/29.9-28.1A 1460RPM EFF 89.7% (IE1) IEC 60034-1**

Inverter duty motor For 80Hz use on VPWM 1000:1 VT, 5:1 CT

DE 6309-Z-C3	ODE 6208-Z-C3	MOBIL POLYREX EM	20000h
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T1-BLU T2-WHT  
 T3-ORG T4-YEL  
 T5-BLK T6-GRY  
 T7-PNK T8-RED  
 T9-BRK RED  
 T10-CURRY  
 T11-GRN T12-VLT

INTERCHANGE ANY TWO LINE WIRES TO REVERSE THE ROTATION



**WARNING:** Motor must be grounded in accordance with local and national electrical codes to prevent serious electrical shocks. Disconnect power source before servicing unit.



**AVERTISSEMENT:** Le moteur doit être mis à la terre

conformément aux codes électriques locaux et nationaux afin d'éviter tout choc électrique grave. Déconnectez l'alimentation avant l'entretien de la machine.

