

# DATA SHEET



## Three Phase Induction Motor - Squirrel Cage

Customer :				
Product line	: NEMA Premium Efficiency Three-Phase	Product code :	12898080	
		Catalog # :	02018ET3ER256TC-S	
Frame	: 254/6TC	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>	: 258 lb	
Protection degree	: IP55	Moment of inertia (J)	: 2.64 sq.ft.lb	
Design	: B			
Output [HP]	20	15	15	
Poles	4	4	4	
Frequency [Hz]	60	50	50	
Rated voltage [V]	230/460	190/380	220/415	
Rated current [A]	49.4/24.7	44.4/22.2	41.3/21.9	
L. R. Amperes [A]	331/165	329/164	330/175	
LRC [A]	6.7x(Code H)	7.4x(Code J)	8.0x(Code K)	
No load current [A]	22.2/11.1	21.9/10.9	22.5/11.9	
Rated speed [RPM]	1765	1470	1475	
Slip [%]	1.94	2.00	1.67	
Rated torque [ft.lb]	59.5	53.6	53.4	
Locked rotor torque [%]	270	270	310	
Breakdown torque [%]	300	320	360	
Service factor	1.15	1.15	1.15	
Temperature rise	80 K	80 K	80 K	
Locked rotor time	28s (cold) 16s (hot)	0s (cold) 0s (hot)	0s (cold) 0s (hot)	
Noise level <sup>2</sup>	68.0 dB(A)	65.0 dB(A)	65.0 dB(A)	
Efficiency (%)	25%	91.0	91.1	
	50%	91.7	91.1	
	75%	92.4	92.1	
	100%	93.0	91.9	
Power Factor	25%	0.40	0.34	
	50%	0.66	0.58	
	75%	0.77	0.71	
	100%	0.82	0.79	
Bearing type	: <u>Drive end</u> 6309 Z C3 <u>Non drive end</u> 6208 Z C3	Foundation loads		
Sealing	: V'Ring Without Bearing Seal	Max. traction	: 793 lb	
Lubrication interval	: 14395 h 16660 h	Max. compression	: 1051 lb	
Lubricant amount	: 13 g 8 g			
Lubricant type	: Mobil Polyrex EM			
Notes USABLE @208V 54.6A SF 1.00 SFA 54.6A				
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



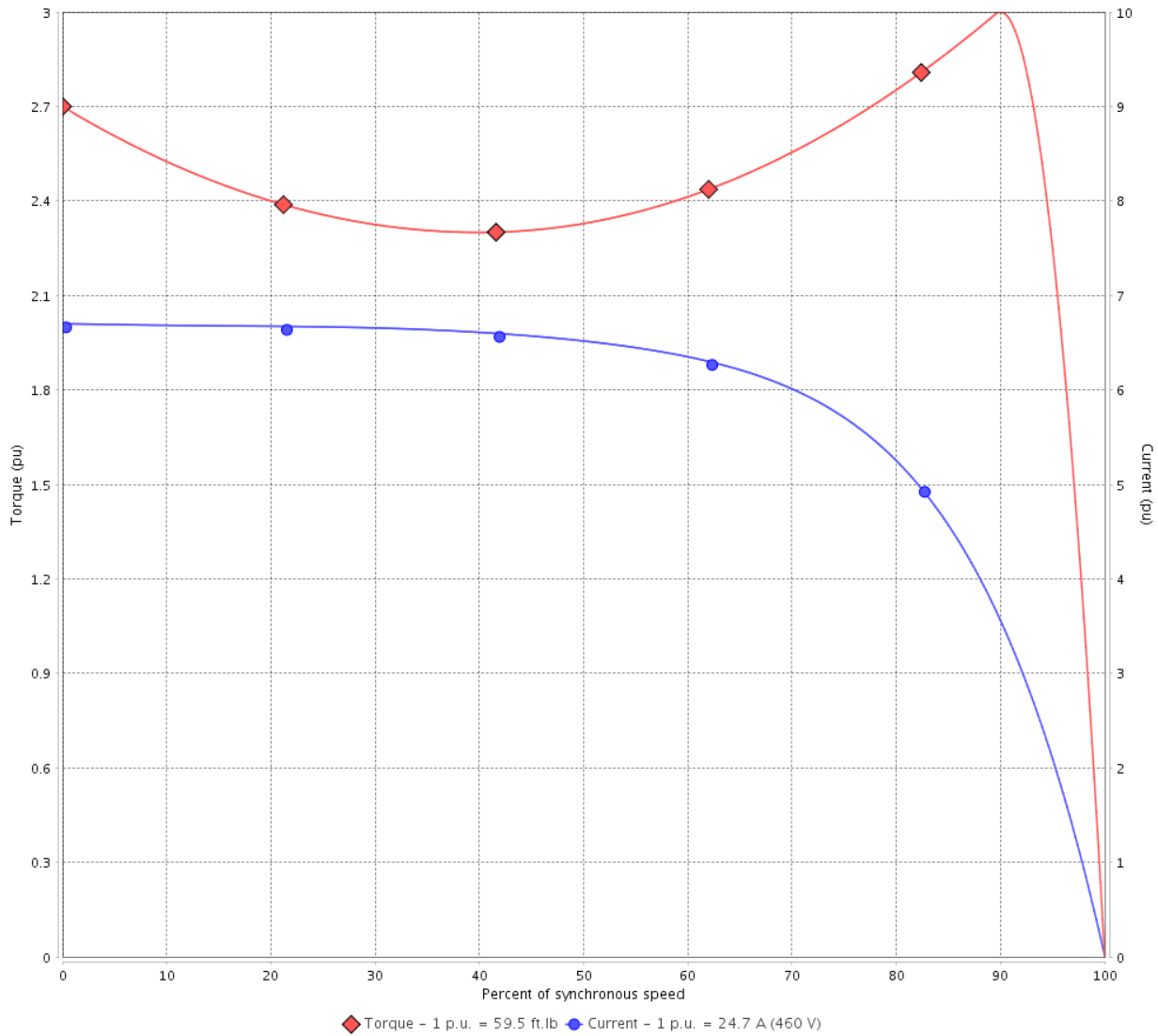
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12898080

Catalog # : 02018ET3ER256TC-S

TORQUE AND CURRENT VS SPEED CURVE



Performance : 230/460 V 60 Hz 4P

Rated current	: 49.4/24.7 A	Moment of inertia (J)	: 2.64 sq.ft.lb
LRC	: 6.7	Duty cycle	: Cont.(S1)
Rated torque	: 59.5 ft.lb	Insulation class	: F
Locked rotor torque	: 270 %	Service factor	: 1.15
Breakdown torque	: 300 %	Temperature rise	: 80 K
Rated speed	: 1765 rpm	Design	: B

Locked rotor time : 28s (cold) 16s (hot)

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# TORQUE AND CURRENT VS SPEED CURVE



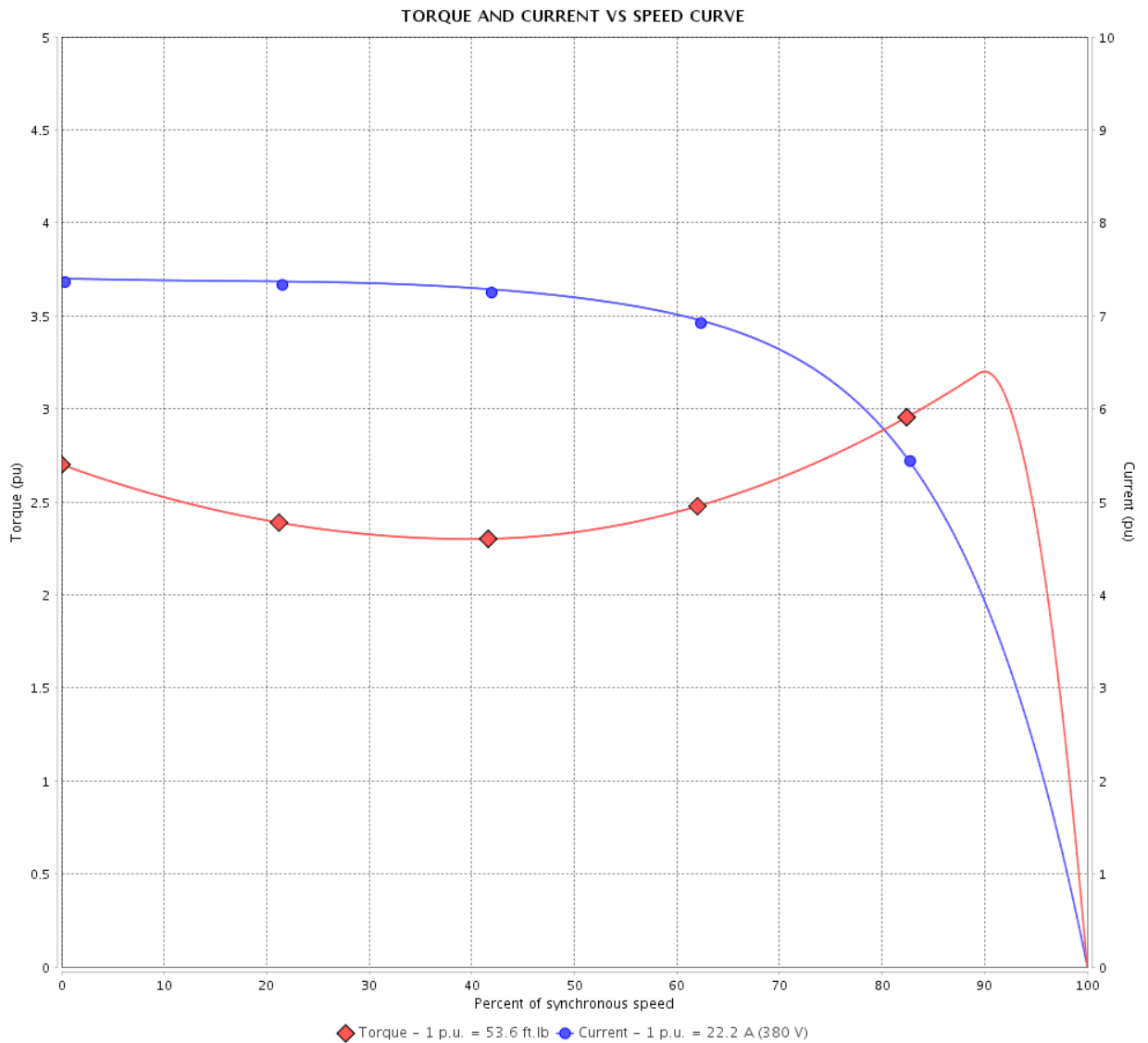
## Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12898080

Catalog # : 02018ET3ER256TC-S



Performance : 190/380 V 50 Hz 4P

Rated current	: 44.4/22.2 A	Moment of inertia (J)	: 2.64 sq.ft.lb
LRC	: 7.4	Duty cycle	: Cont.(S1)
Rated torque	: 53.6 ft.lb	Insulation class	: F
Locked rotor torque	: 270 %	Service factor	: 1.15
Breakdown torque	: 320 %	Temperature rise	: 80 K
Rated speed	: 1470 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



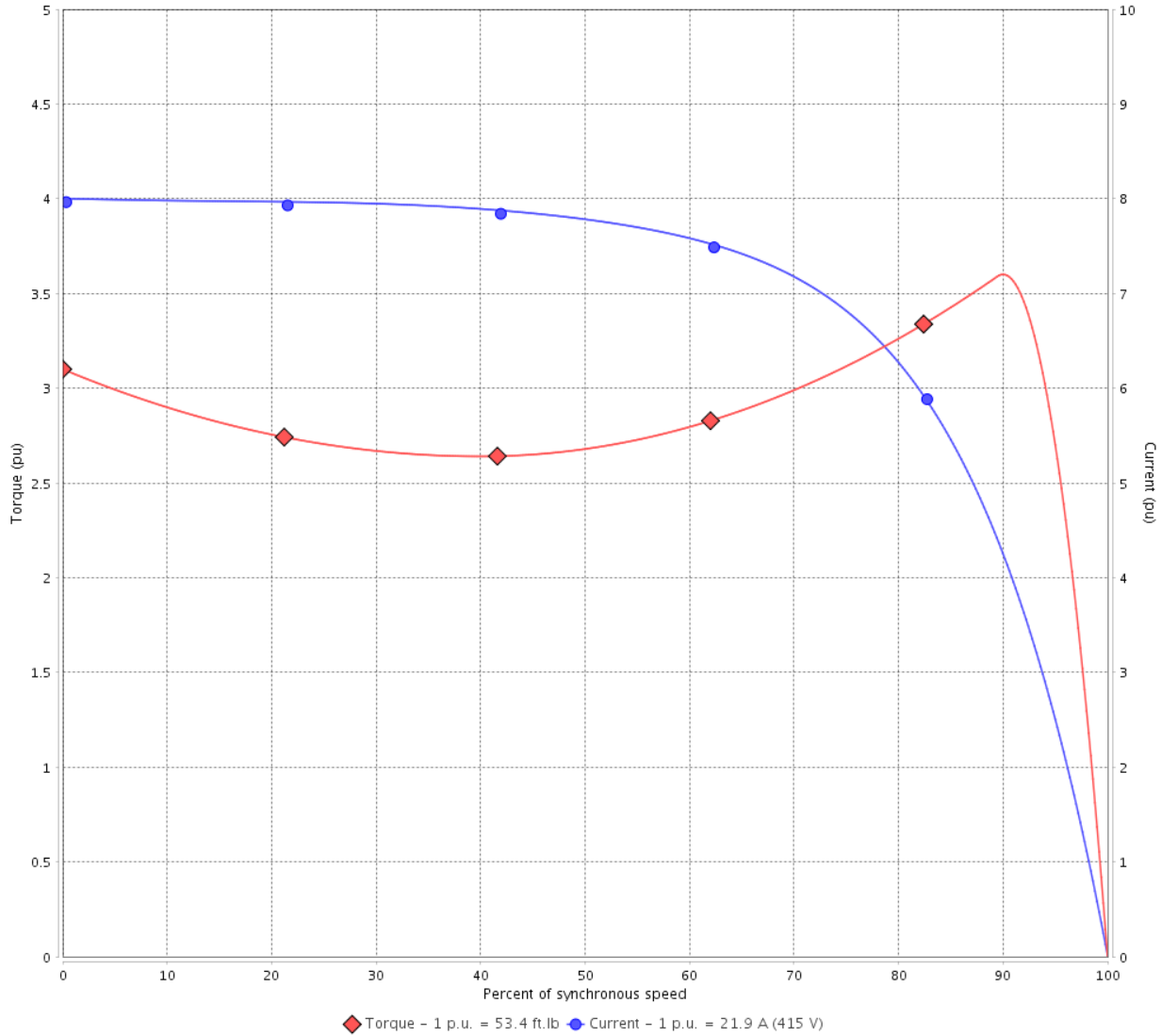
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12898080

Catalog # : 02018ET3ER256TC-S

TORQUE AND CURRENT VS SPEED CURVE



Performance : 220/415 V 50 Hz 4P

Rated current	: 41.3/21.9 A	Moment of inertia (J)	: 2.64 sq.ft.lb
LRC	: 8.0	Duty cycle	: Cont.(S1)
Rated torque	: 53.4 ft.lb	Insulation class	: F
Locked rotor torque	: 310 %	Service factor	: 1.15
Breakdown torque	: 360 %	Temperature rise	: 80 K
Rated speed	: 1475 rpm	Design	: B

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

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# LOAD PERFORMANCE CURVE

## Three Phase Induction Motor - Squirrel Cage

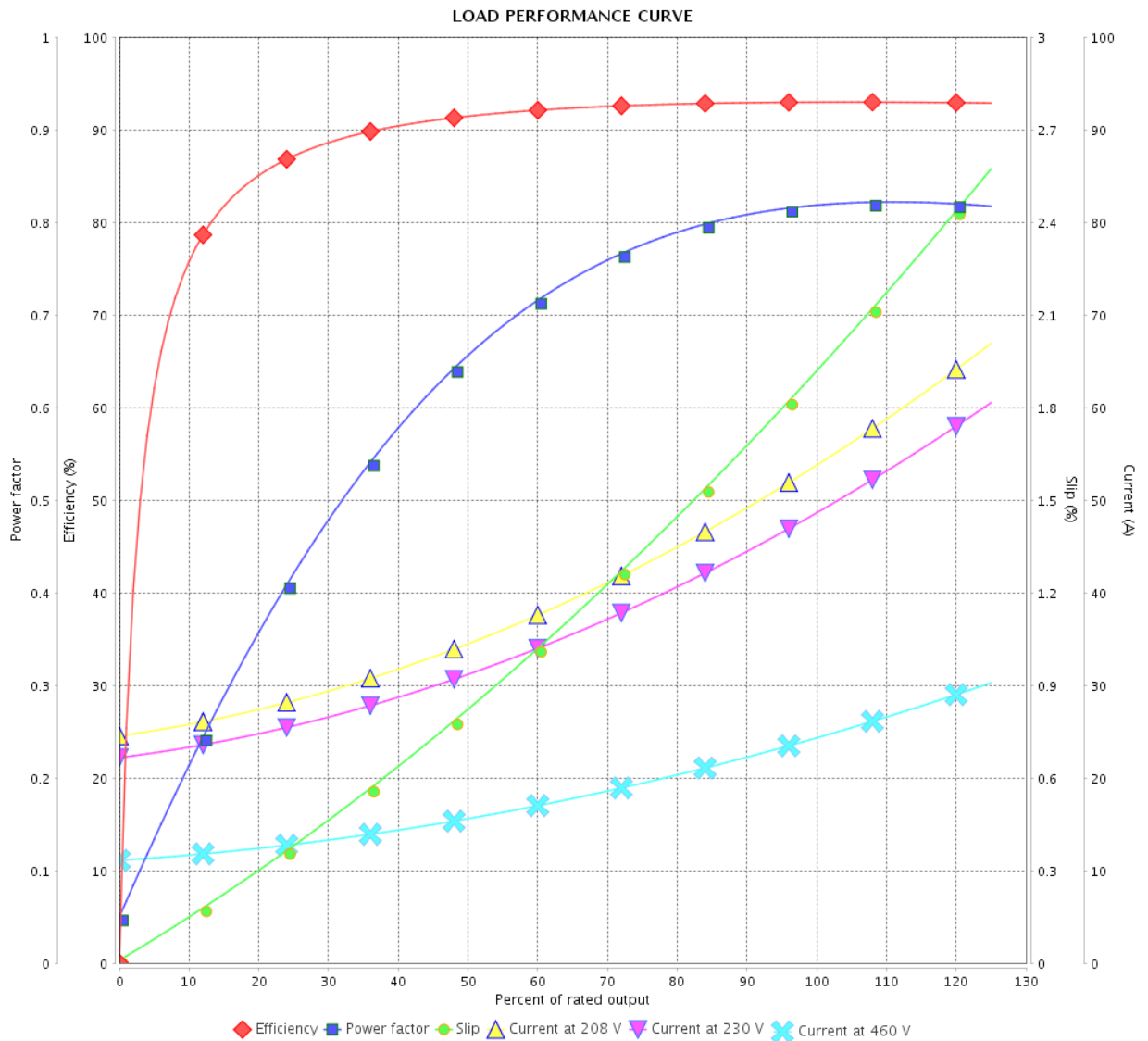


Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12898080

Catalog # : 02018ET3ER256TC-S



Performance : 230/460 V 60 Hz 4P

Rated current : 49.4/24.7 A  
 LRC : 6.7  
 Rated torque : 59.5 ft.lb  
 Locked rotor torque : 270 %  
 Breakdown torque : 300 %  
 Rated speed : 1765 rpm

Moment of inertia (J) : 2.64 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



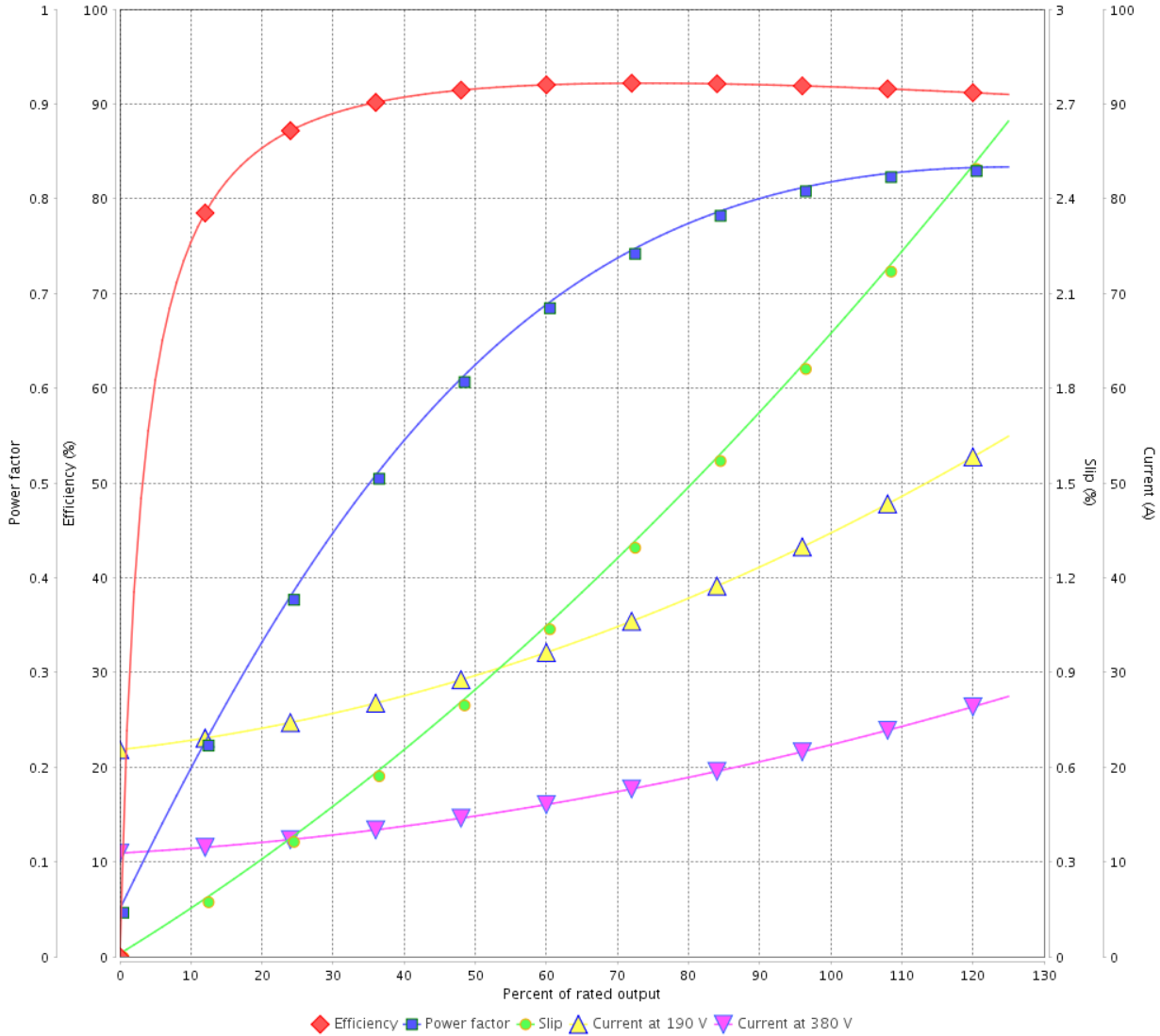
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12898080

Catalog # : 02018ET3ER256TC-S

LOAD PERFORMANCE CURVE



Performance : 190/380 V 50 Hz 4P

Rated current : 44.4/22.2 A  
 LRC : 7.4  
 Rated torque : 53.6 ft.lb  
 Locked rotor torque : 270 %  
 Breakdown torque : 320 %  
 Rated speed : 1470 rpm

Moment of inertia (J) : 2.64 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

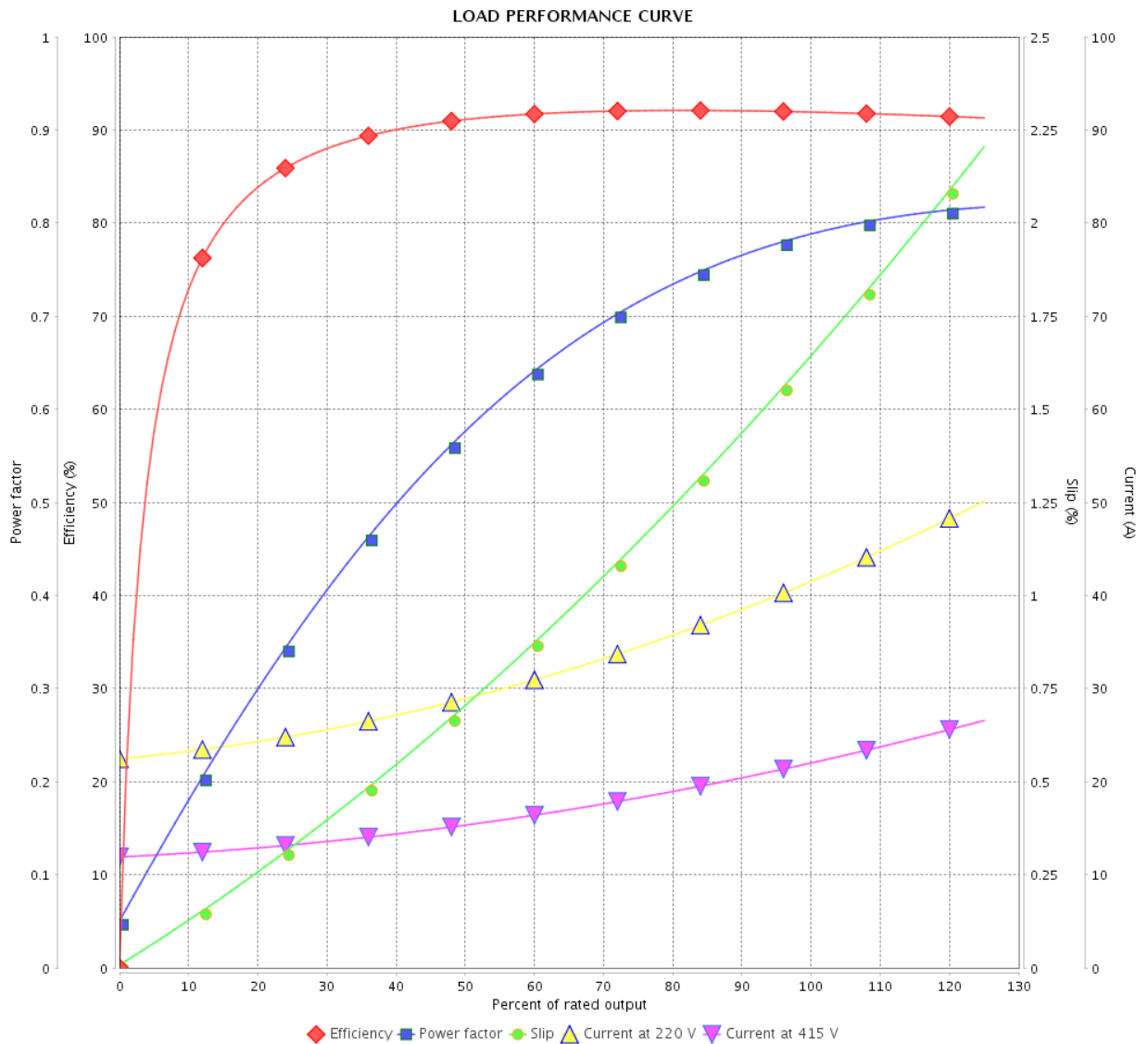


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Catalog # : 02018ET3ER256TC-S



Performance : 220/415 V 50 Hz 4P

Rated current : 41.3/21.9 A  
 LRC : 8.0  
 Rated torque : 53.4 ft.lb  
 Locked rotor torque : 310 %  
 Breakdown torque : 360 %  
 Rated speed : 1475 rpm

Moment of inertia (J) : 2.64 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

Customer :

Product line : NEMA Premium Efficiency Three-Phase  
 Product code : 12898080  
 Catalog # : 02018ET3ER256TC-S

Performance : 230/460 V 60 Hz 4P

Rated current : 49.4/24.7 A	Moment of inertia (J) : 2.64 sq.ft.lb
LRC : 6.7	Duty cycle : Cont.(S1)
Rated torque : 59.5 ft.lb	Insulation class : F
Locked rotor torque : 270 %	Service factor : 1.15
Breakdown torque : 300 %	Temperature rise : 80 K
Rated speed : 1765 rpm	Design : B

Heating constant

Cooling constant

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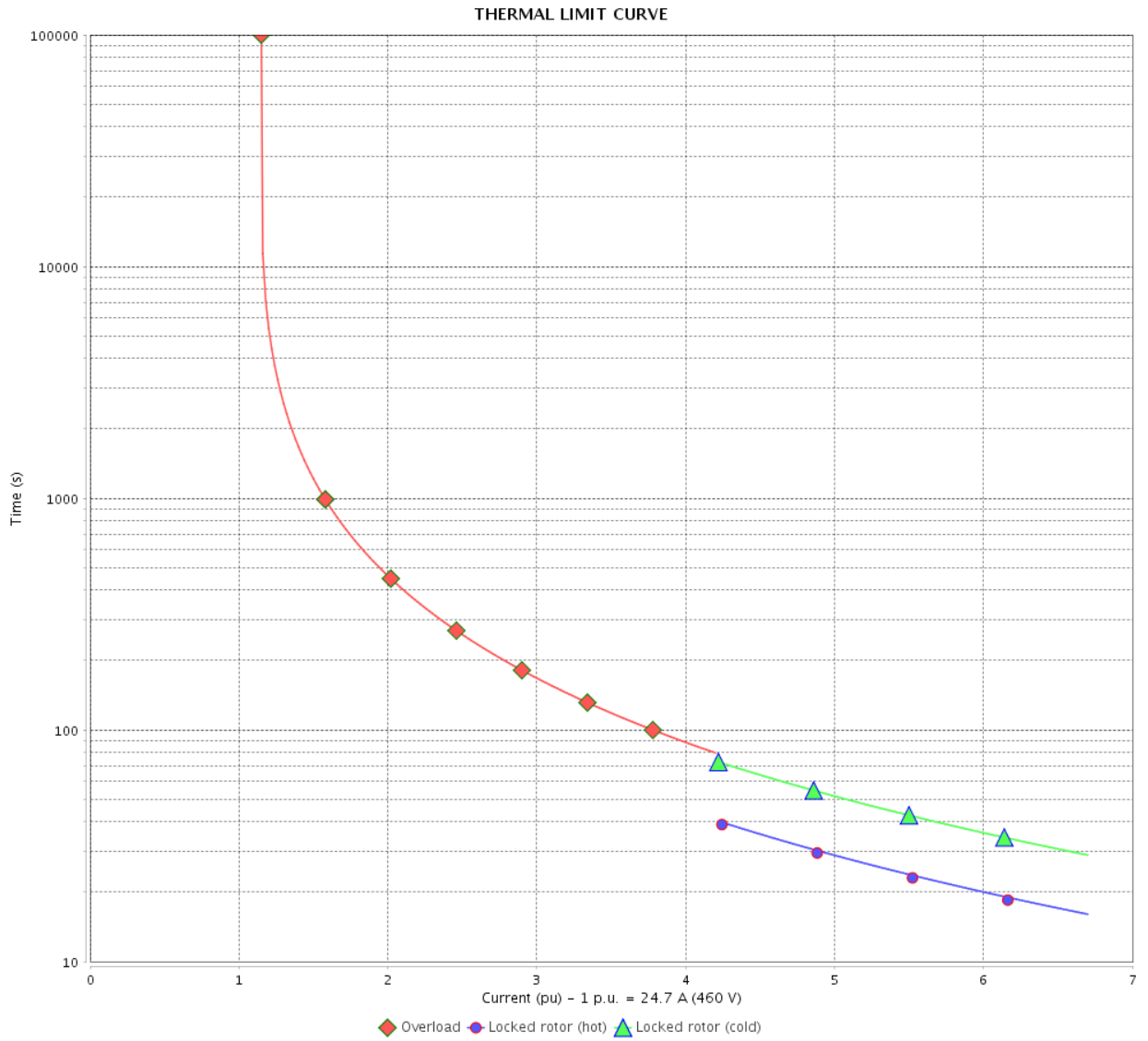


# THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



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



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# THERMAL LIMIT CURVE



## Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : NEMA Premium Efficiency Three-Phase  
Product code : 12898080  
Catalog # : 02018ET3ER256TC-S

Performance : 190/380 V 50 Hz 4P

Rated current	: 44.4/22.2 A	Moment of inertia (J)	: 2.64 sq.ft.lb
LRC	: 7.4	Duty cycle	: Cont.(S1)
Rated torque	: 53.6 ft.lb	Insulation class	: F
Locked rotor torque	: 270 %	Service factor	: 1.15
Breakdown torque	: 320 %	Temperature rise	: 80 K
Rated speed	: 1470 rpm	Design	: B

Heating constant

Cooling constant

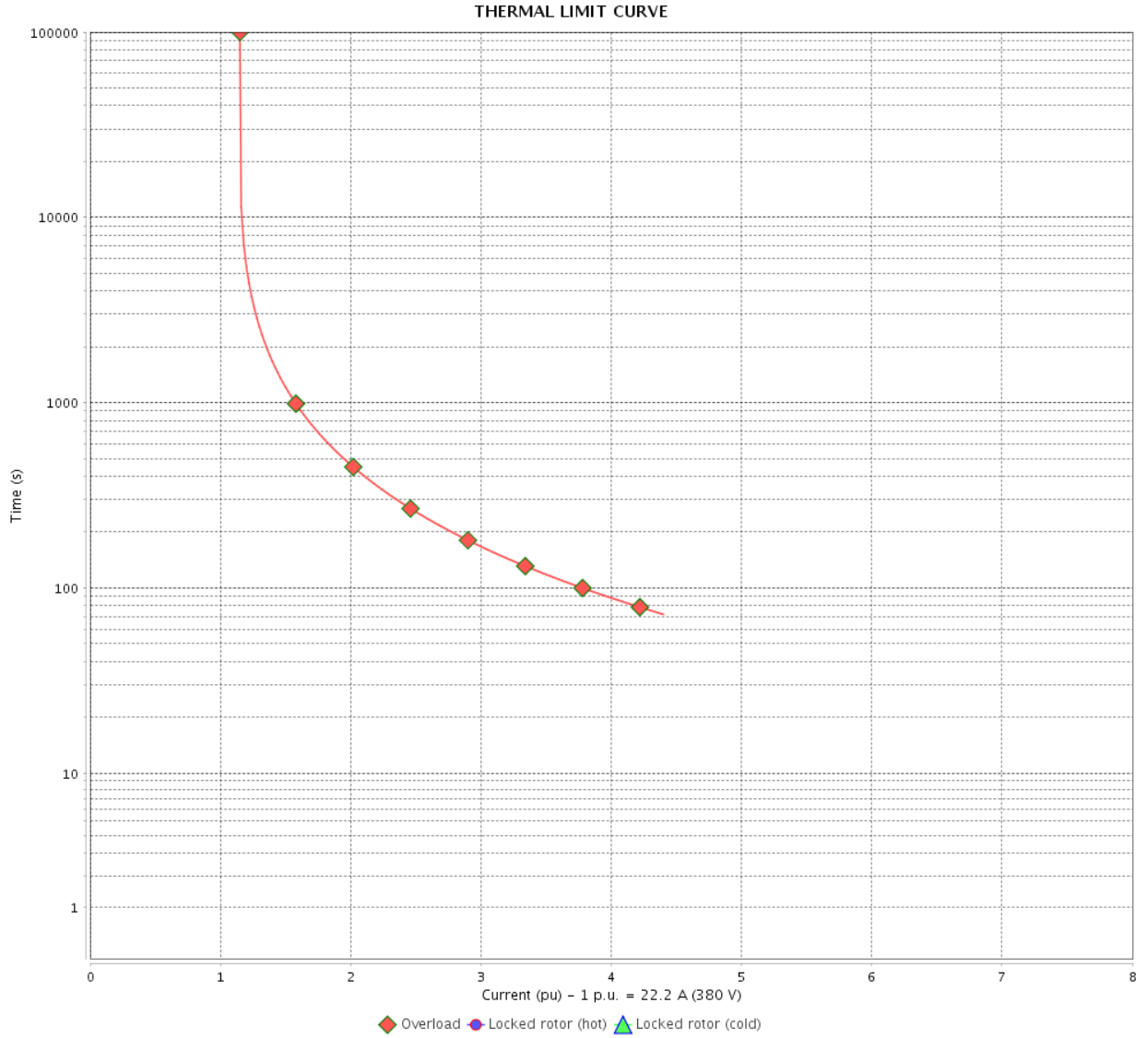
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Customer : \_\_\_\_\_



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## Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : NEMA Premium Efficiency Three-Phase  
 Product code : 12898080  
 Catalog # : 02018ET3ER256TC-S

Performance : 220/415 V 50 Hz 4P

Rated current : 41.3/21.9 A	Moment of inertia (J) : 2.64 sq.ft.lb
LRC : 8.0	Duty cycle : Cont.(S1)
Rated torque : 53.4 ft.lb	Insulation class : F
Locked rotor torque : 310 %	Service factor : 1.15
Breakdown torque : 360 %	Temperature rise : 80 K
Rated speed : 1475 rpm	Design : B

Heating constant

Cooling constant

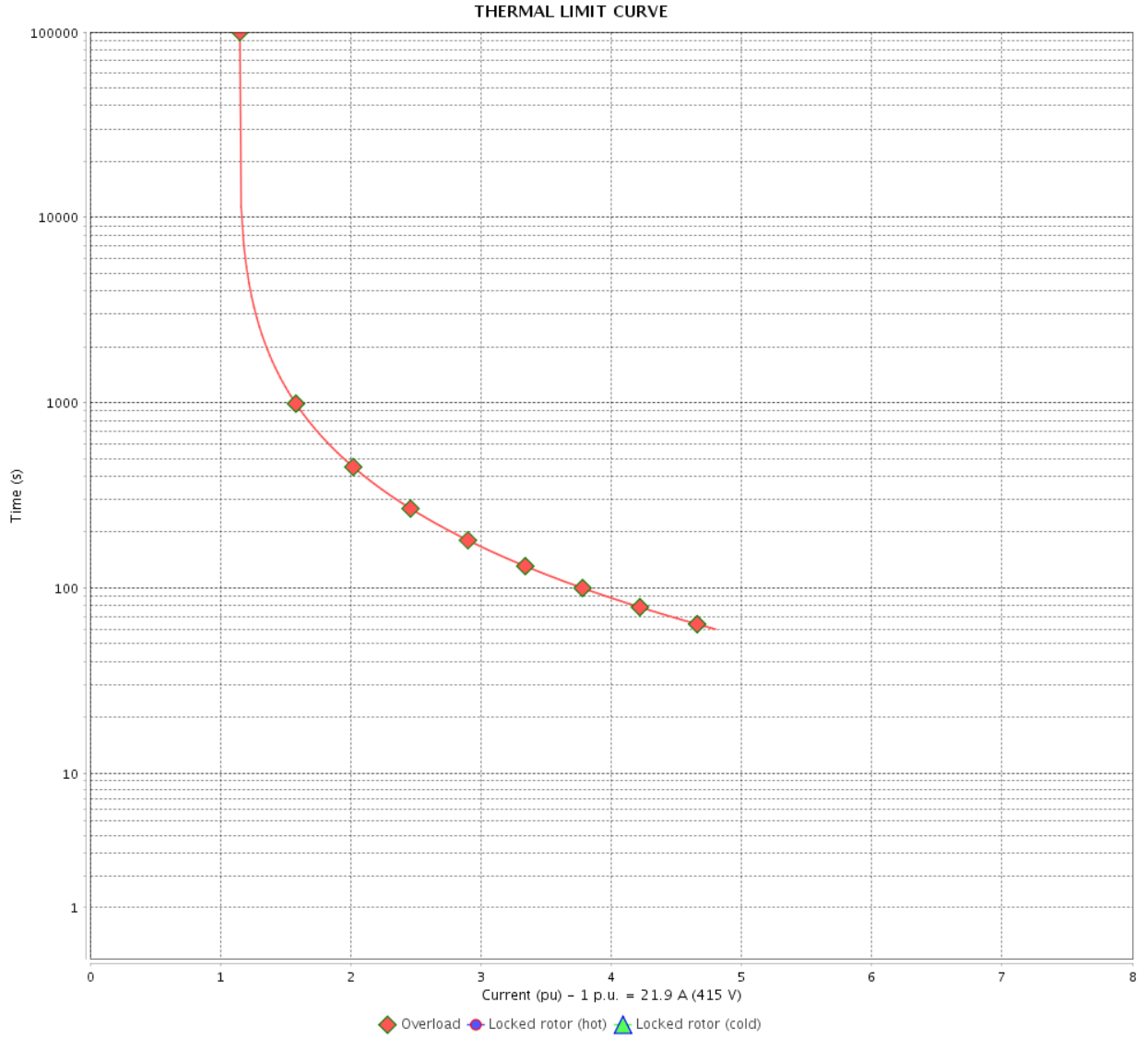
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# VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage

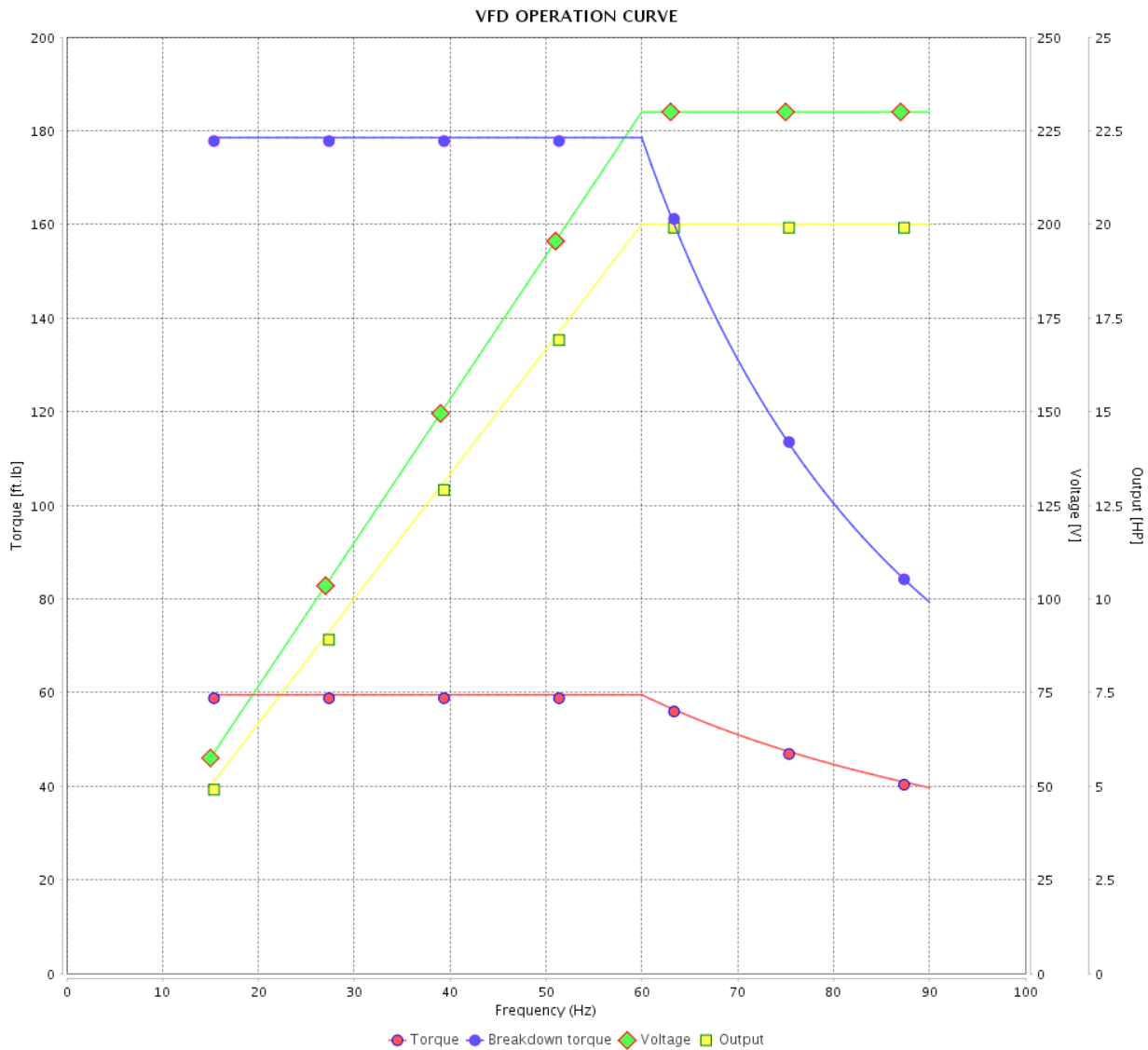


Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12898080

Catalog # : 02018ET3ER256TC-S



Performance : 230/460 V 60 Hz 4P

Rated current : 49.4/24.7 A  
 LRC : 6.7  
 Rated torque : 59.5 ft.lb  
 Locked rotor torque : 270 %  
 Breakdown torque : 300 %  
 Rated speed : 1765 rpm

Moment of inertia (J) : 2.64 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.15  
 Temperature rise : 80 K  
 Design : B

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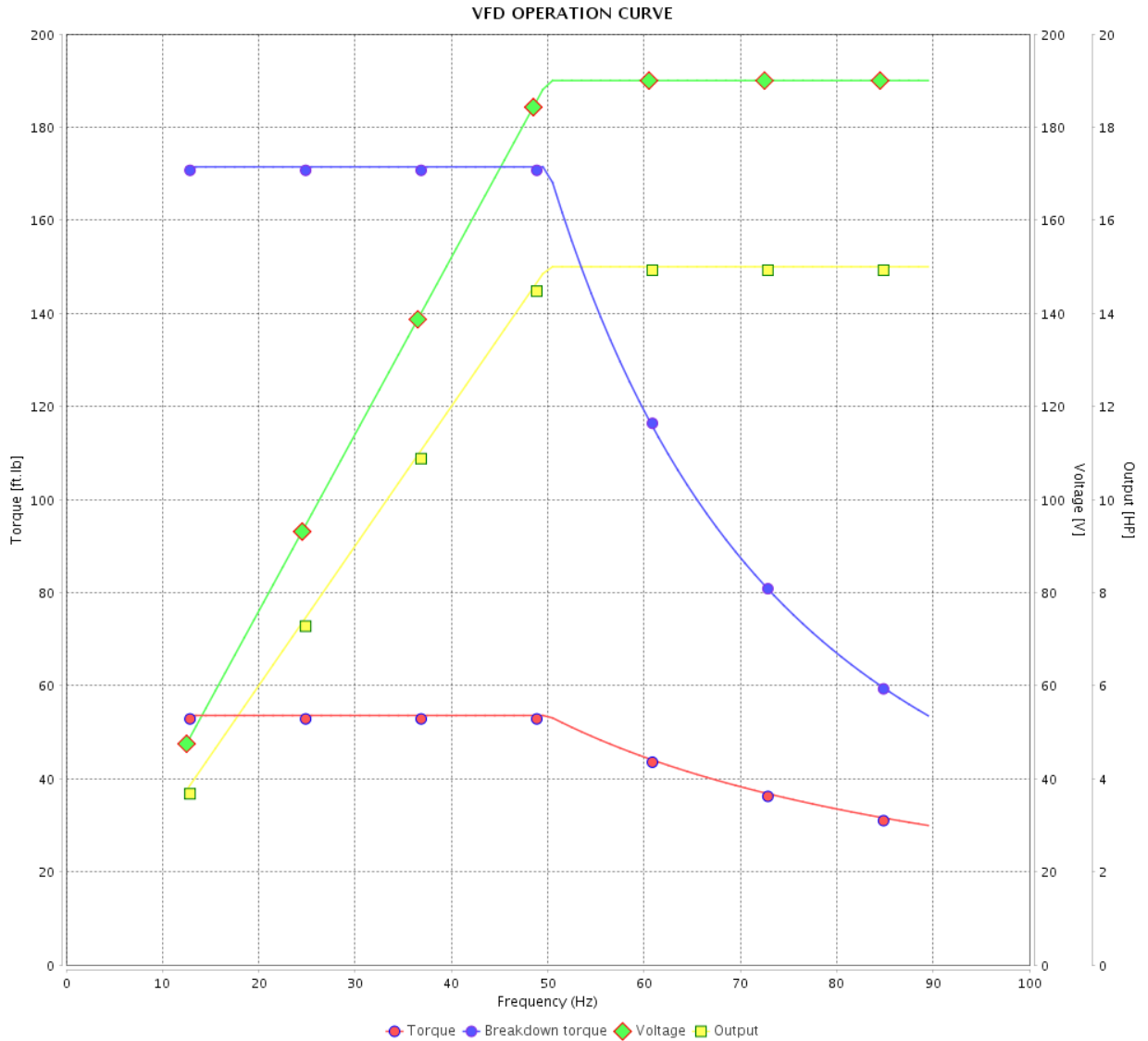
# VFD OPERATION CURVE

## Three Phase Induction Motor - Squirrel Cage



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

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Performance : 190/380 V 50 Hz 4P

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Moment of inertia (J) : 2.64 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.15  
 Temperature rise : 80 K  
 Design : B

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Three Phase Induction Motor - Squirrel Cage

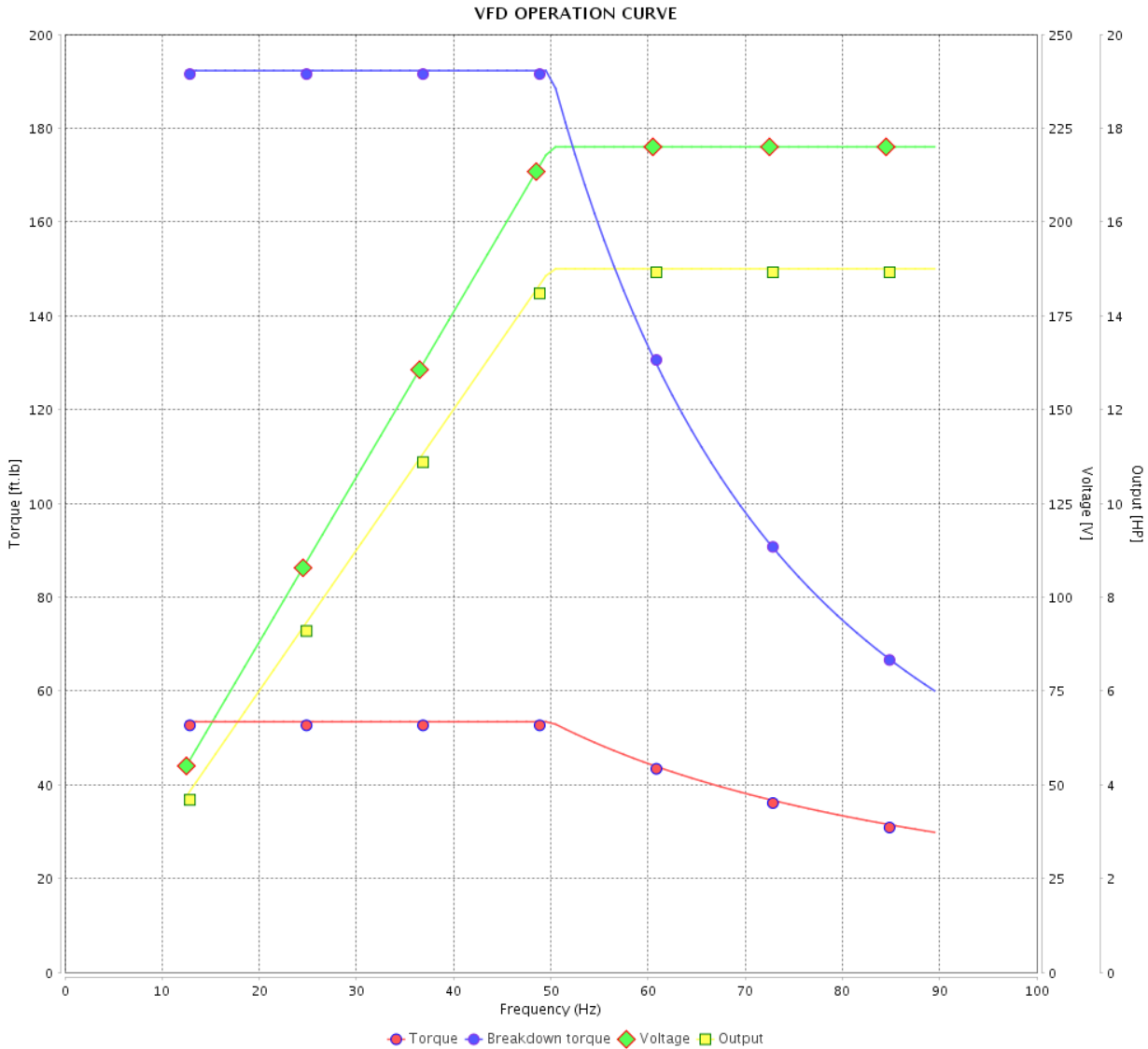


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Performance : 220/415 V 50 Hz 4P

Rated current : 41.3/21.9 A  
 LRC : 8.0  
 Rated torque : 53.4 ft.lb  
 Locked rotor torque : 310 %  
 Breakdown torque : 360 %  
 Rated speed : 1475 rpm

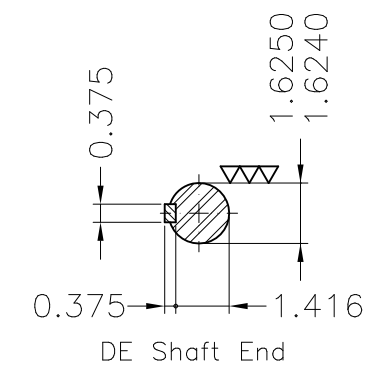
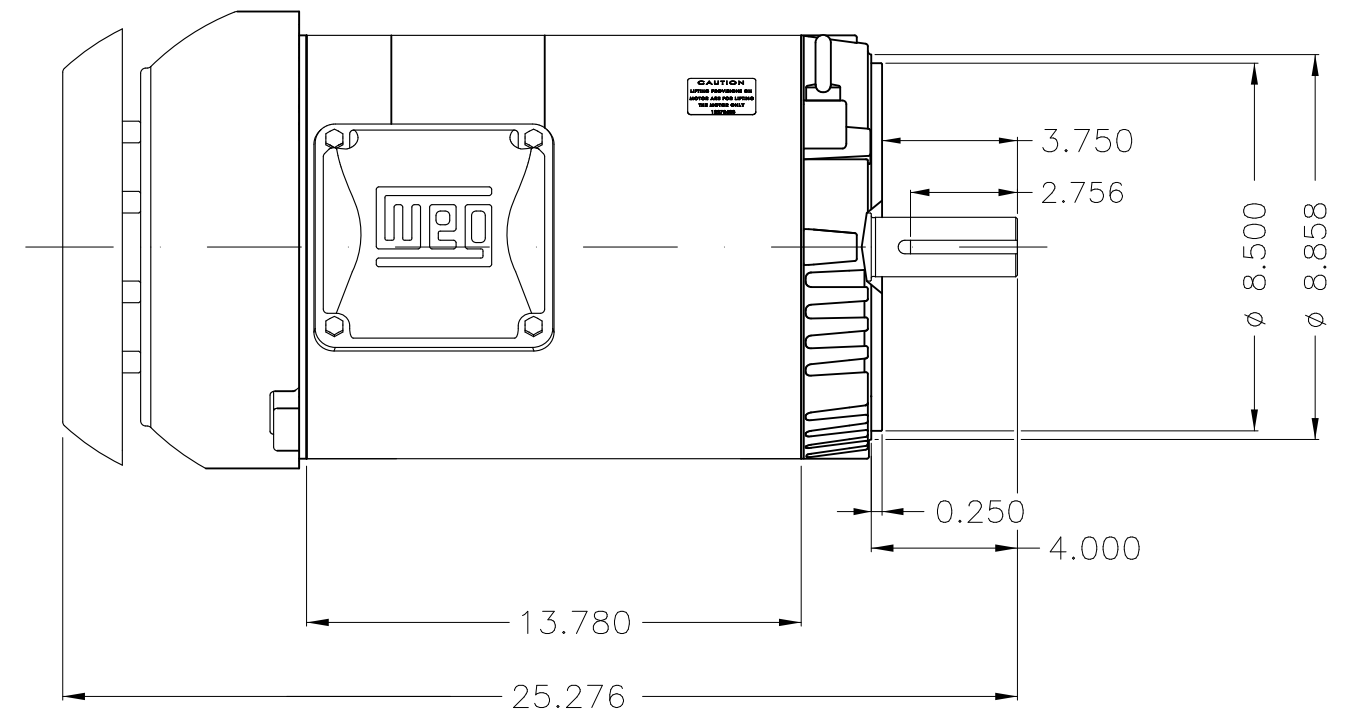
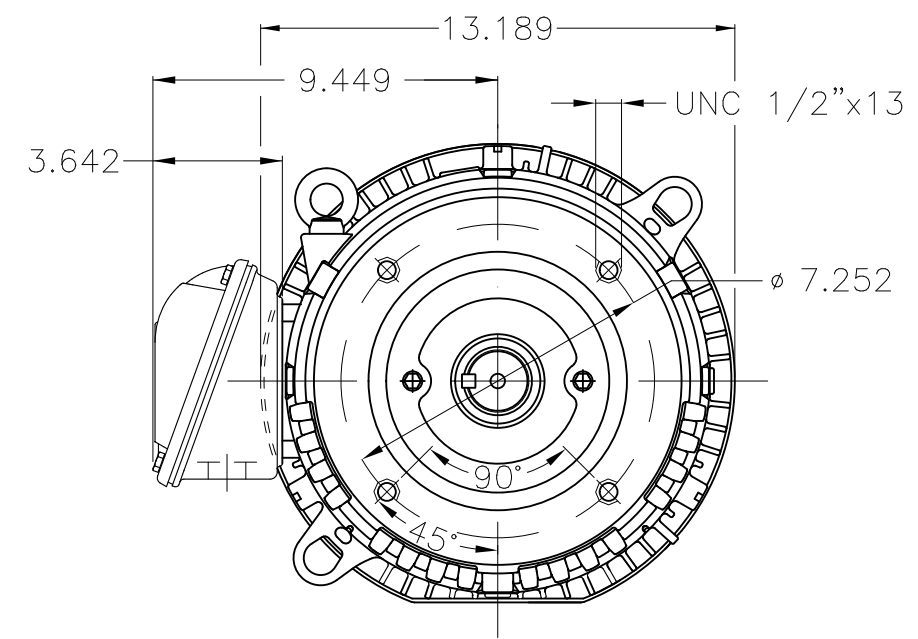
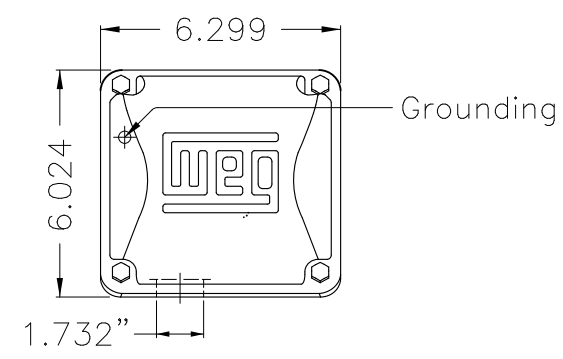
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 Insulation class : F  
 Service factor : 1.15  
 Temperature rise : 80 K  
 Design : B

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1 2 3 4 5 6

A




B

C

D

E

Dimensions in inches

Color Munsell N 1 matte black										
Painting plan 207N										
Mounting W-6/V18R(D)										
ECM	LOC	SUMMARY OF MODIFICATIONS				EXECUTED	CHECKED	RELEASED	DATE	VER
EXECUTED	PIRWBUSER	THREE PH. MOTOR ROLLED STEEL PREM. EFF.				PREVIEW	WDD	SHEET	1 / 1	
CHECKED		FRAME 254/6TC IP55 TEFC								
RELEASED										
REL DT.		WMO	Jaragua do Sul	Product Engineering						

20 HP 04 Poles 60 Hz



**NEMA**  
**Premium**



MADE IN MEXICO

**MAT: 12898080 CC029A**

**W01.TE0IC0X0N**

**MODEL 02018ET3ER256TC-S**

**04FEB2022 S/N:**

**For 60Hz: Class I, Zone 2, IIC  
Class I, Div.2, Gr. A,B,C,D - T3  
Div 2 Inverter Duty (SF1.00)**

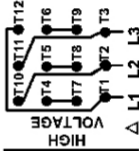
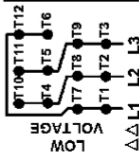
**CT 2:1/VT 1000:1**

PH 3	Hz 60	HP 20
FR 254/6TC		KW 15
DUTY CONT.		V 230/460
ALT 1000 m.a.s.l.		A 49.4/24.7
INS CL F AT 80K	IP55	SFA 56.8/28.4
AMB 40°C	DES B	SF 1.15
ENCL TEFC	CODE H	PF 0.82
USABLE @ 208V 54.8A		RPM 1765
SF1.00		NEMA NOM. EFF 93.0%

ALTERNATE RATING: 15HP	50Hz	190-220/380-415V	SF1.15
44.4-40.7/22.2-21.6A	1470RPM	EFF 91.8% (IE3)	IEC 60034-1

For safe area-inverter duty motor For 60Hz use on VPWM 1000:1 VT, 4:1 CT

DE 6309-Z-C3	ODE 6208-Z-C3	MOBIL POLYREX EM	14395h
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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.

