

# DATA SHEET

## Three Phase Induction Motor - Squirrel Cage



Customer :			
Product line	: NEMA Premium Efficiency Three-Phase	Product code :	13163456
		Catalog # :	02018ET3E256TC-SG
Frame	: 254/6TC	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>	: 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
		Max. compression	: 1051 lb
Lubrication interval	: 20000 h 20000 h		
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



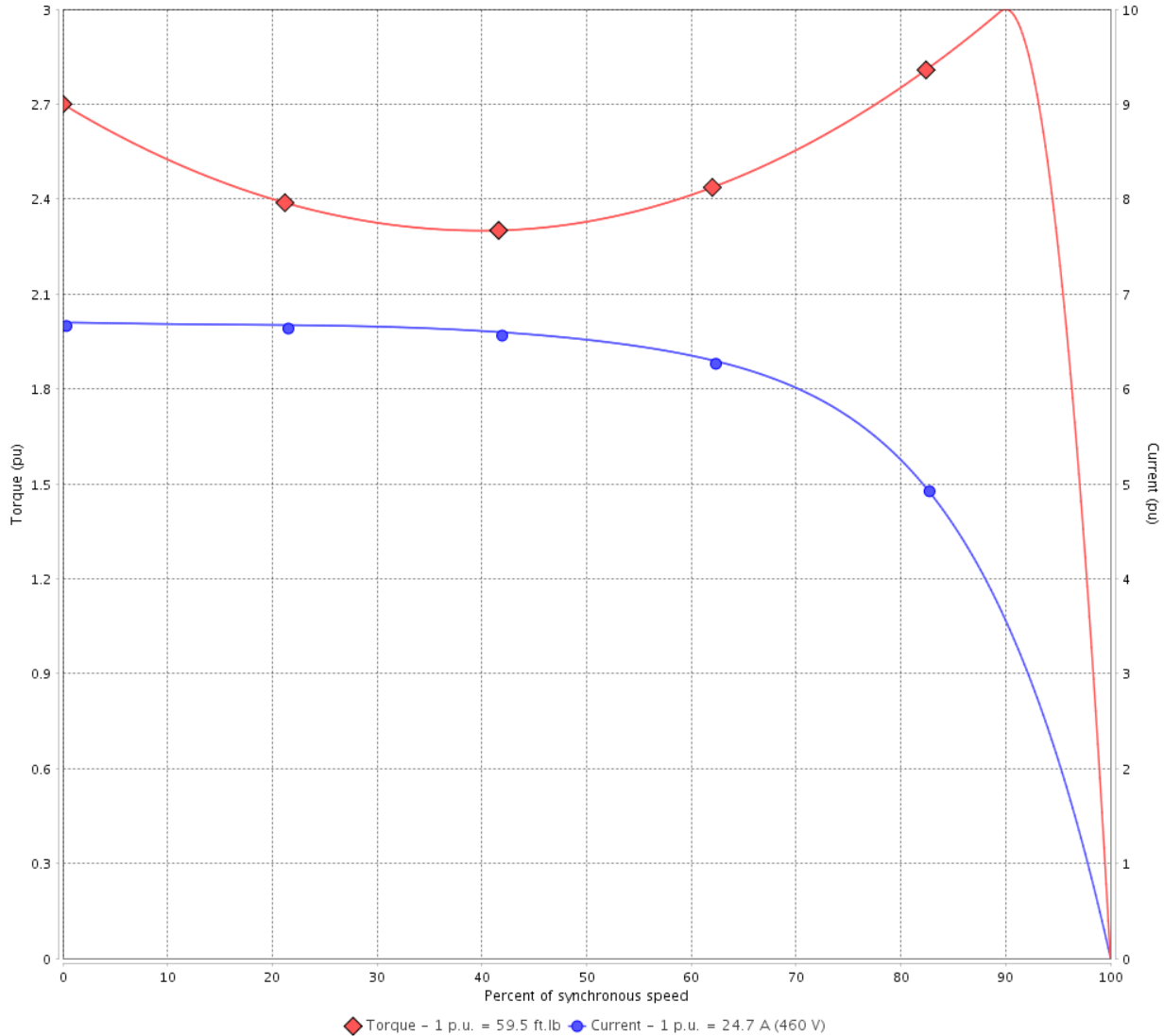
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 13163456

Catalog # : 02018ET3E256TC-SG

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



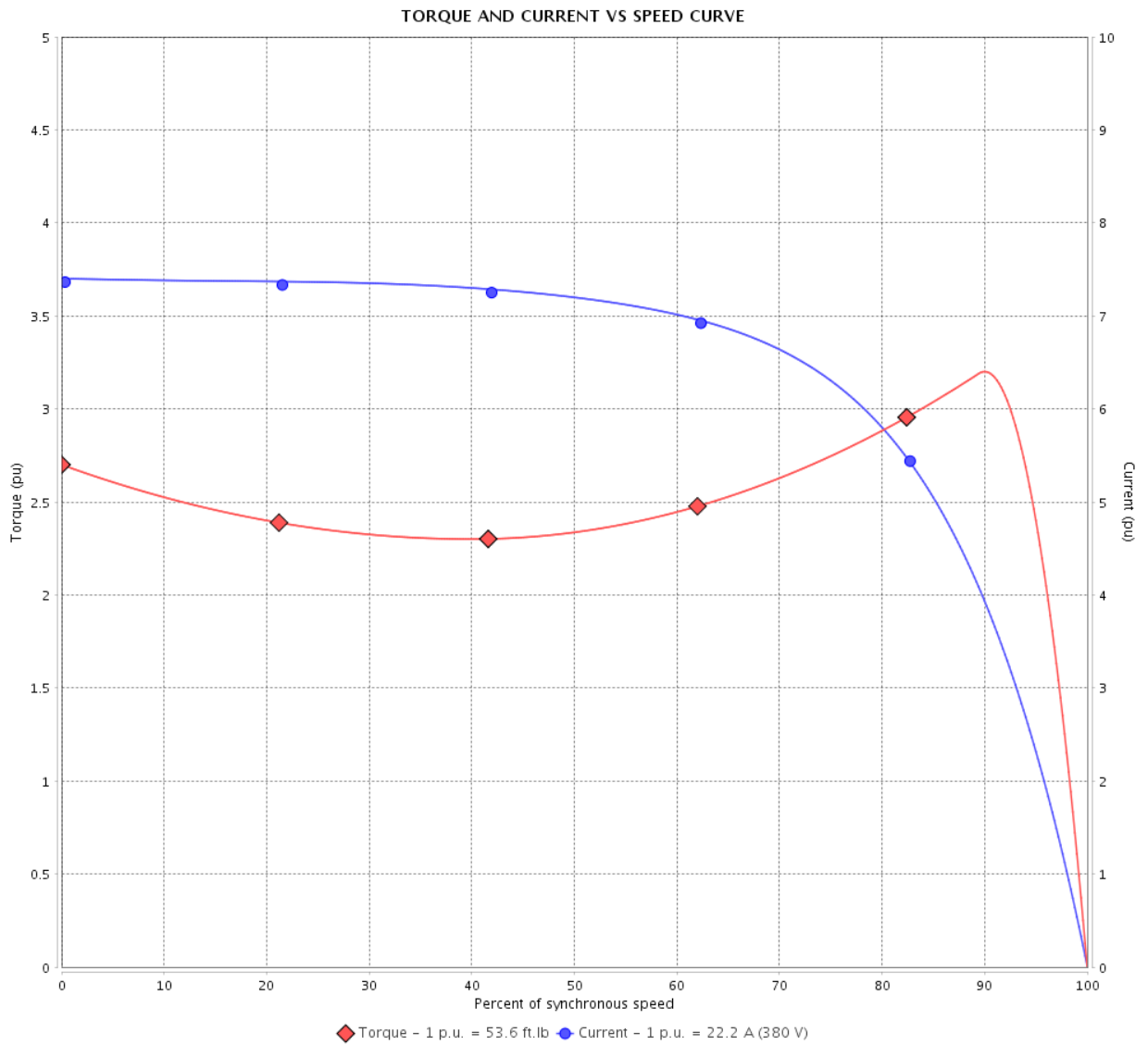
## Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 13163456

Catalog # : 02018ET3E256TC-SG



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

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

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# TORQUE AND CURRENT VS SPEED CURVE

Three Phase Induction Motor - Squirrel Cage



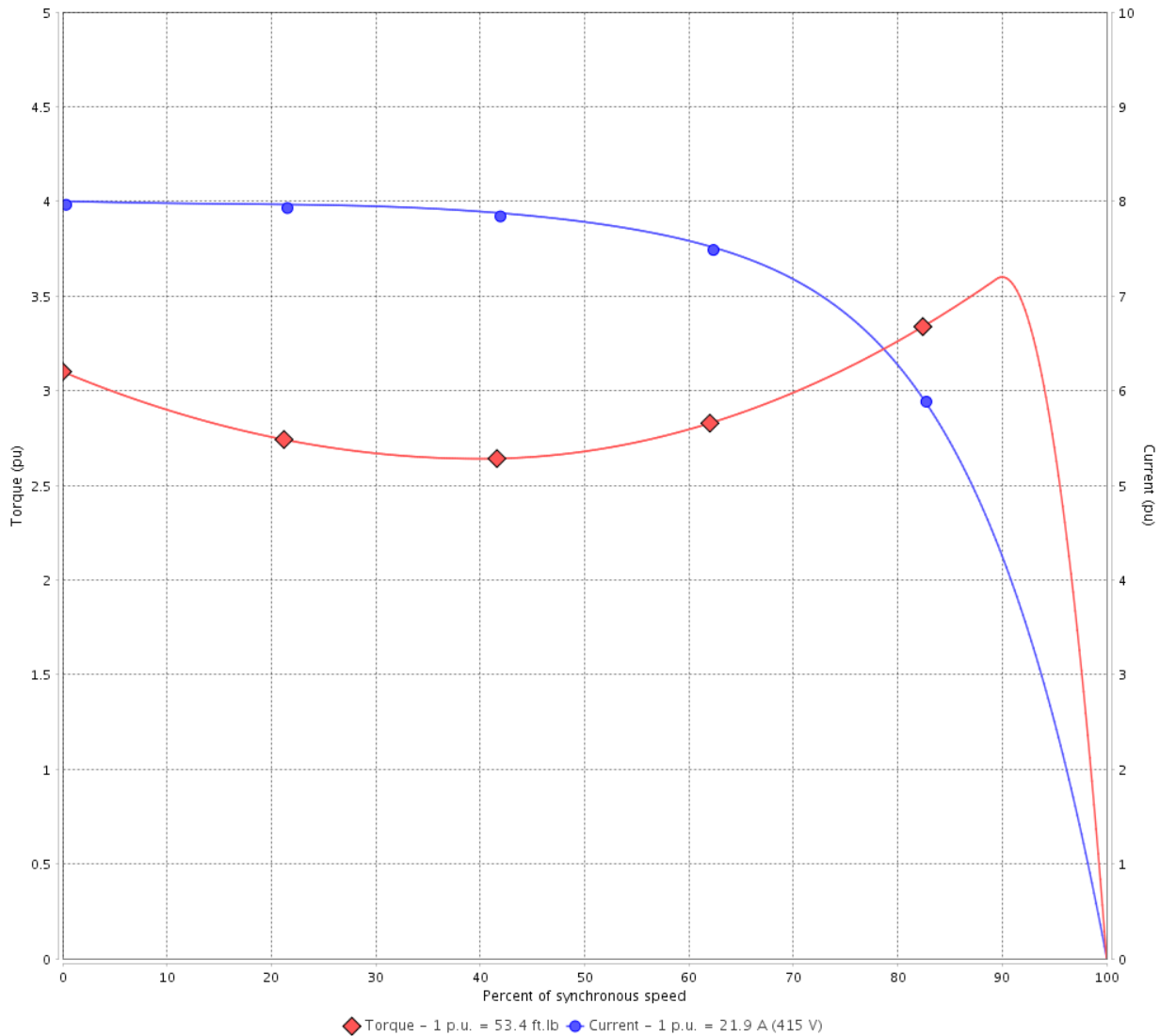
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 13163456

Catalog # : 02018ET3E256TC-SG

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

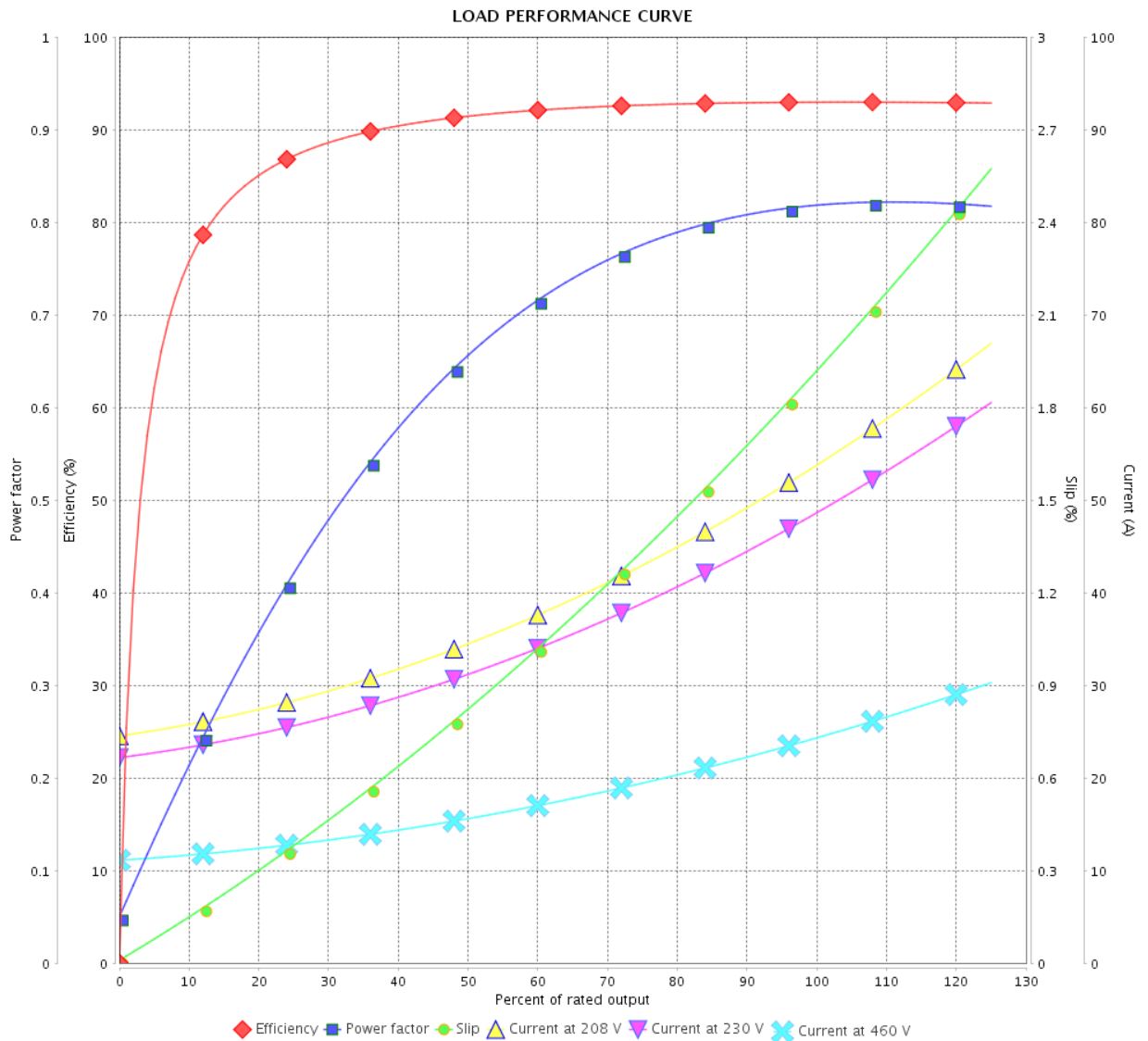


Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 13163456

Catalog # : 02018ET3E256TC-SG



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

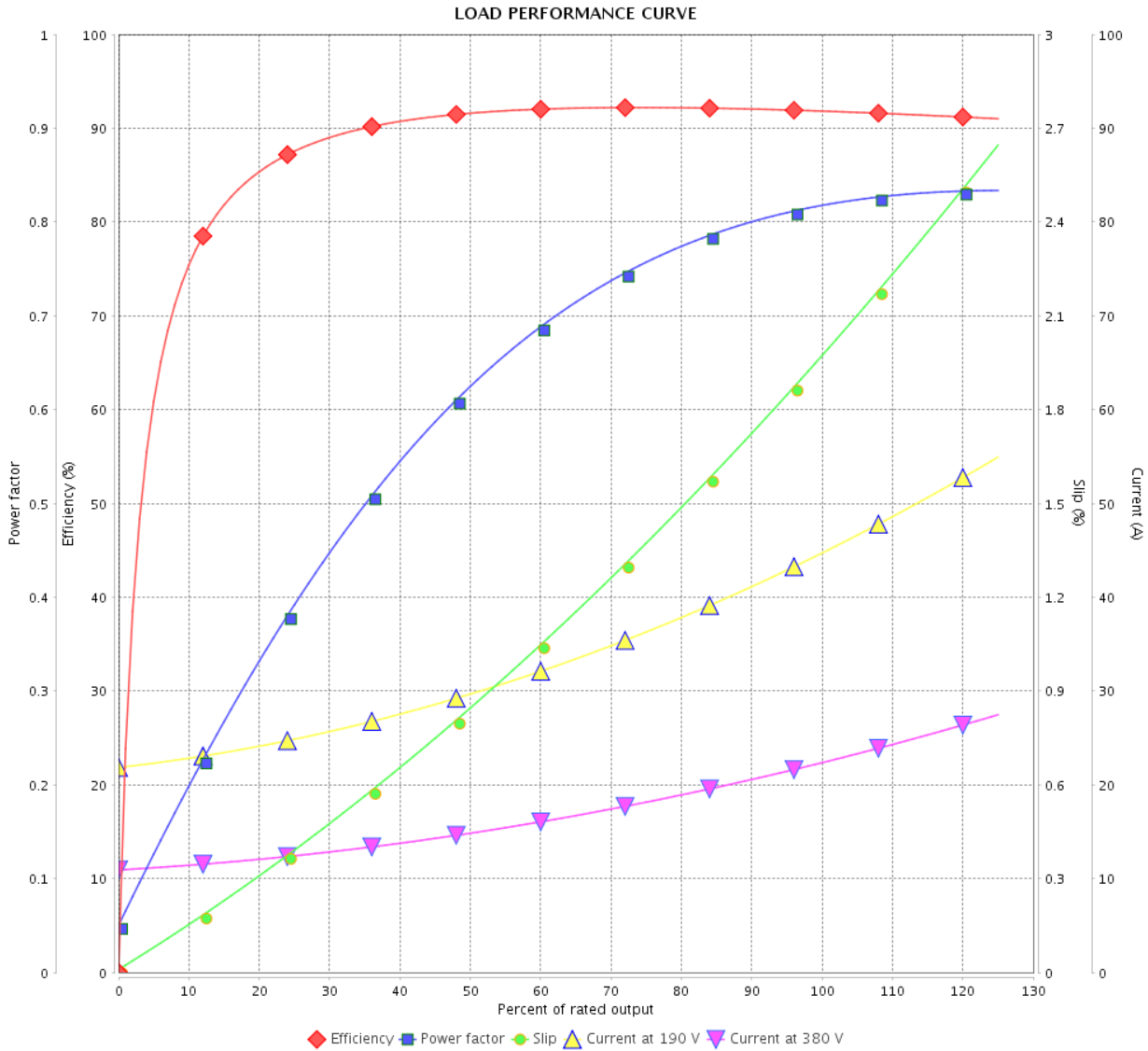


Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 13163456

Catalog # : 02018ET3E256TC-SG



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

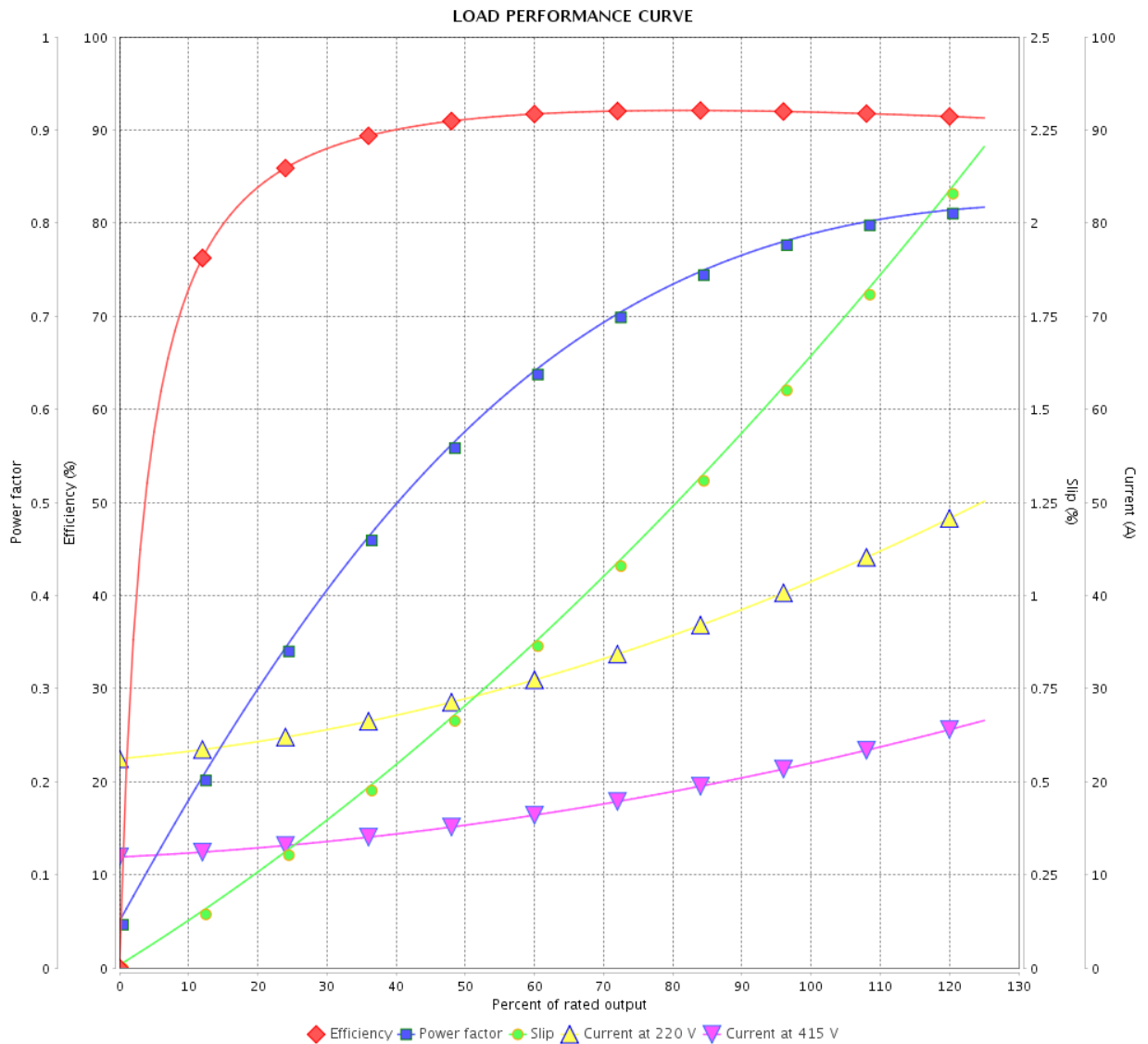


Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 13163456

Catalog # : 02018ET3E256TC-SG



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 : 13163456  
Catalog # : 02018ET3E256TC-SG

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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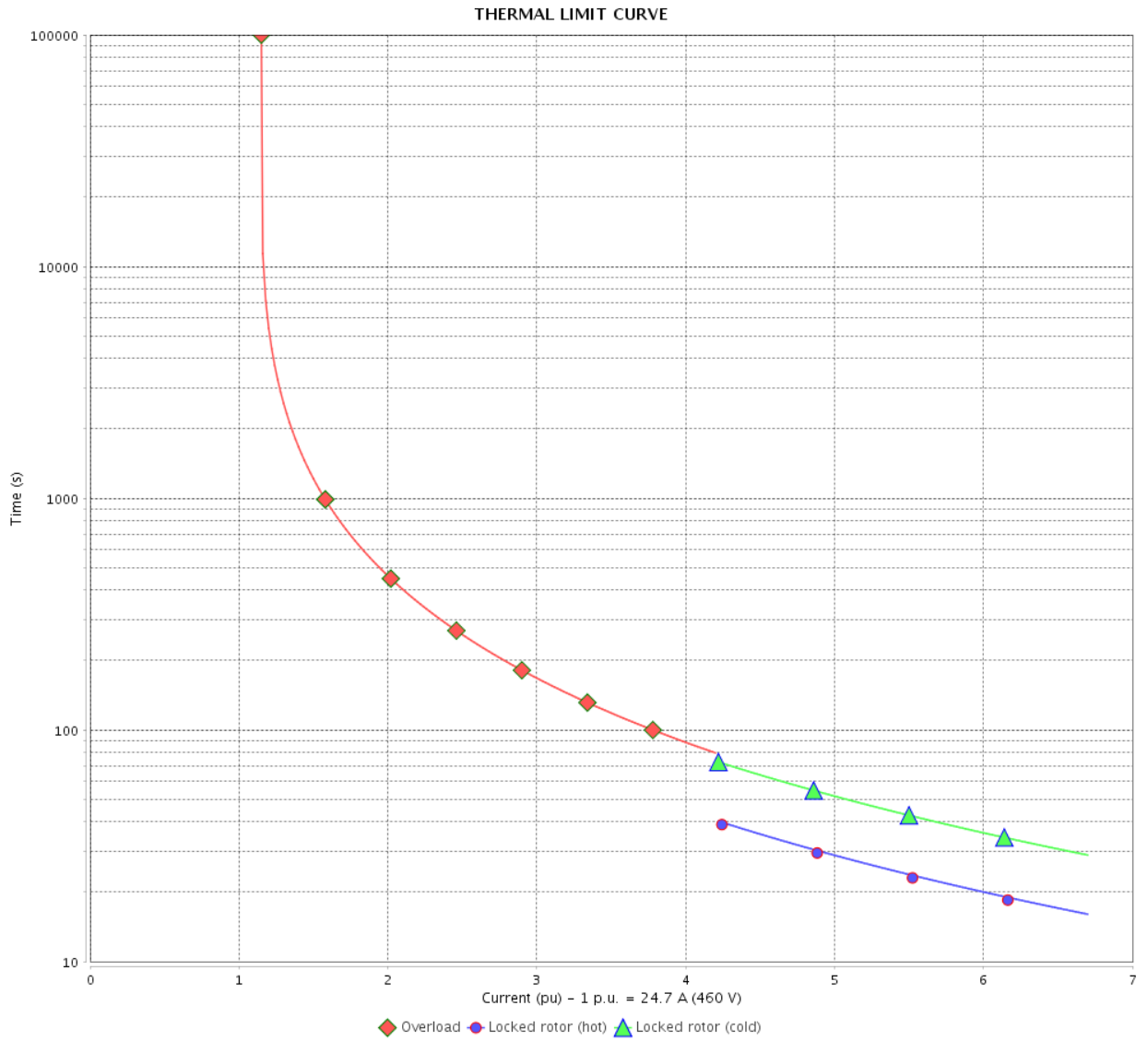


# THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



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



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Date				

# THERMAL LIMIT CURVE



## Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : NEMA Premium Efficiency Three-Phase  
Product code : 13163456  
Catalog # : 02018ET3E256TC-SG

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

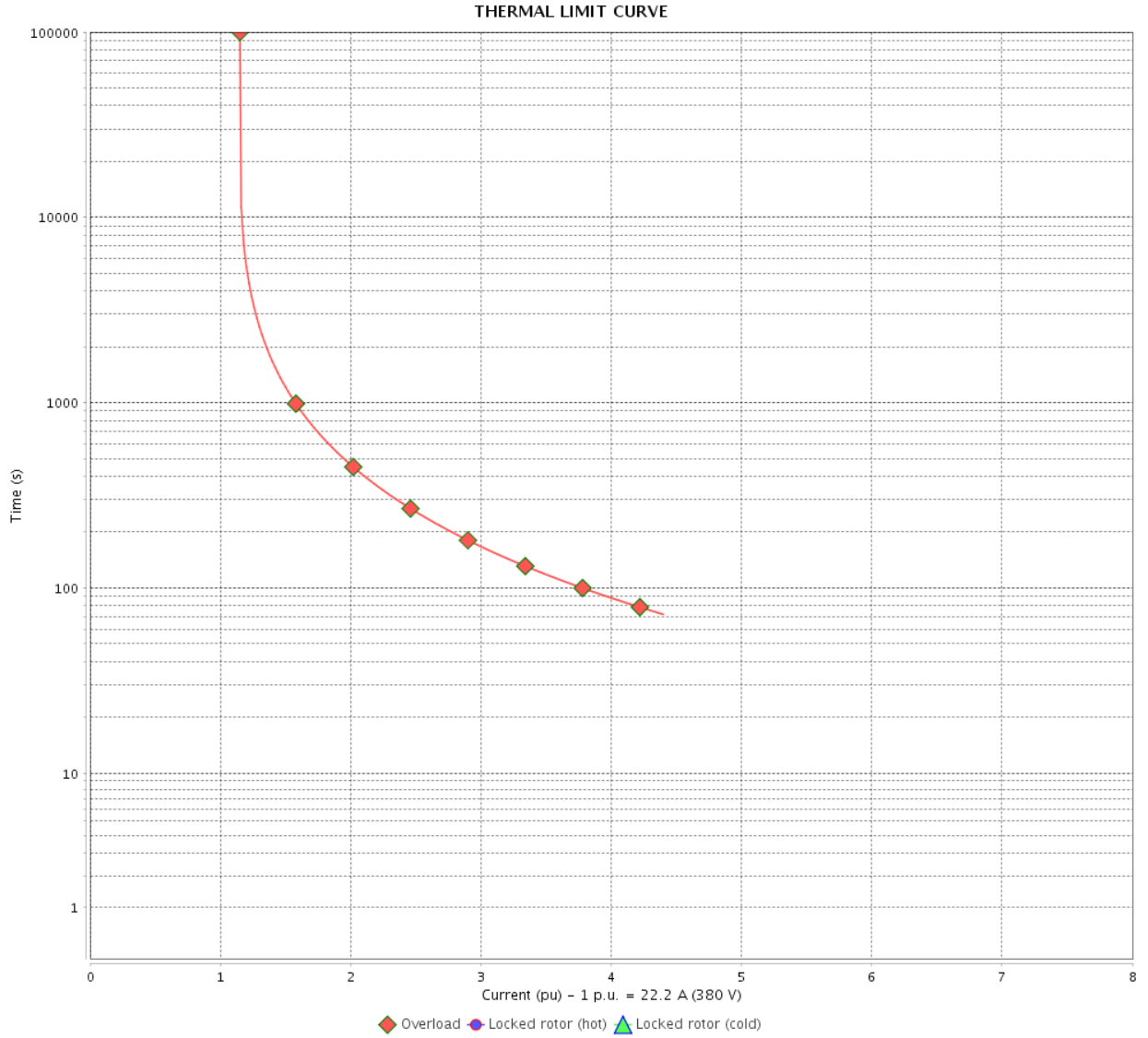
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Locked rotor torque	: 310 %	Service factor	: 1.15
Breakdown torque	: 360 %	Temperature rise	: 80 K
Rated speed	: 1475 rpm	Design	: B

Heating constant

Cooling constant

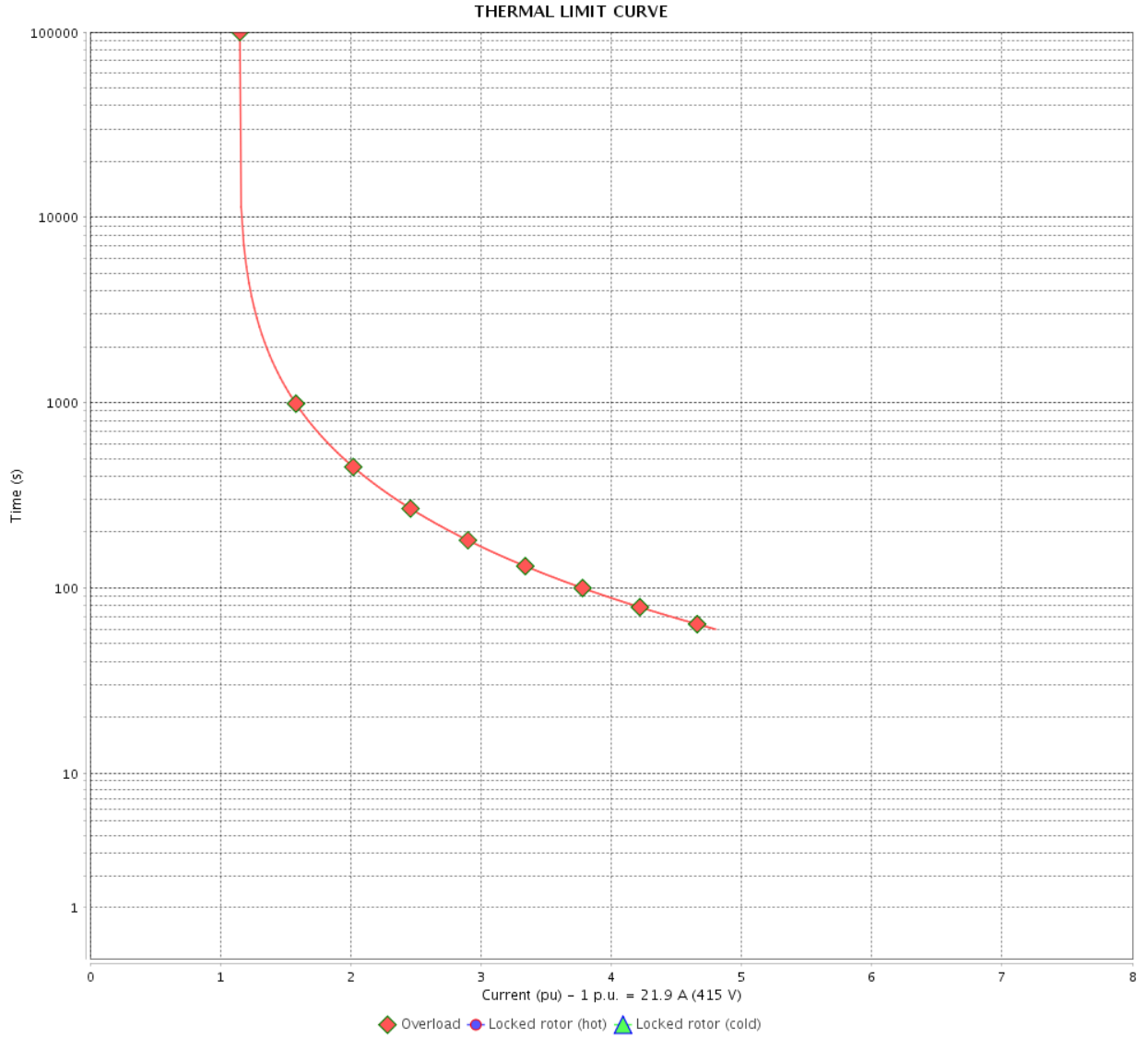
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# THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



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



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# VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage

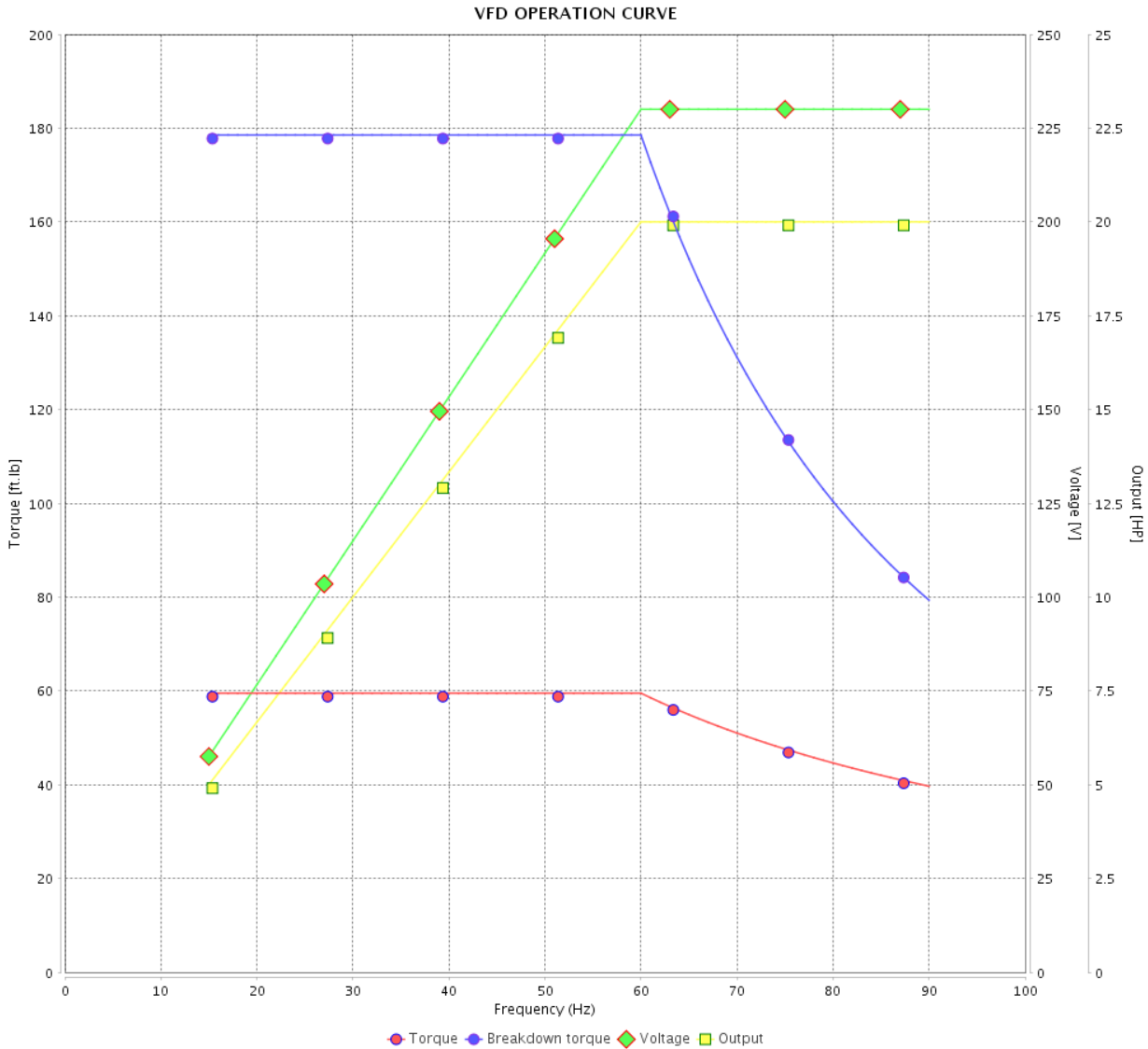


Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 13163456

Catalog # : 02018ET3E256TC-SG



Performance : 230/460 V 60 Hz 4P

Rated current : 49.4/24.7 A  
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 Rated torque : 59.5 ft.lb  
 Locked rotor torque : 270 %  
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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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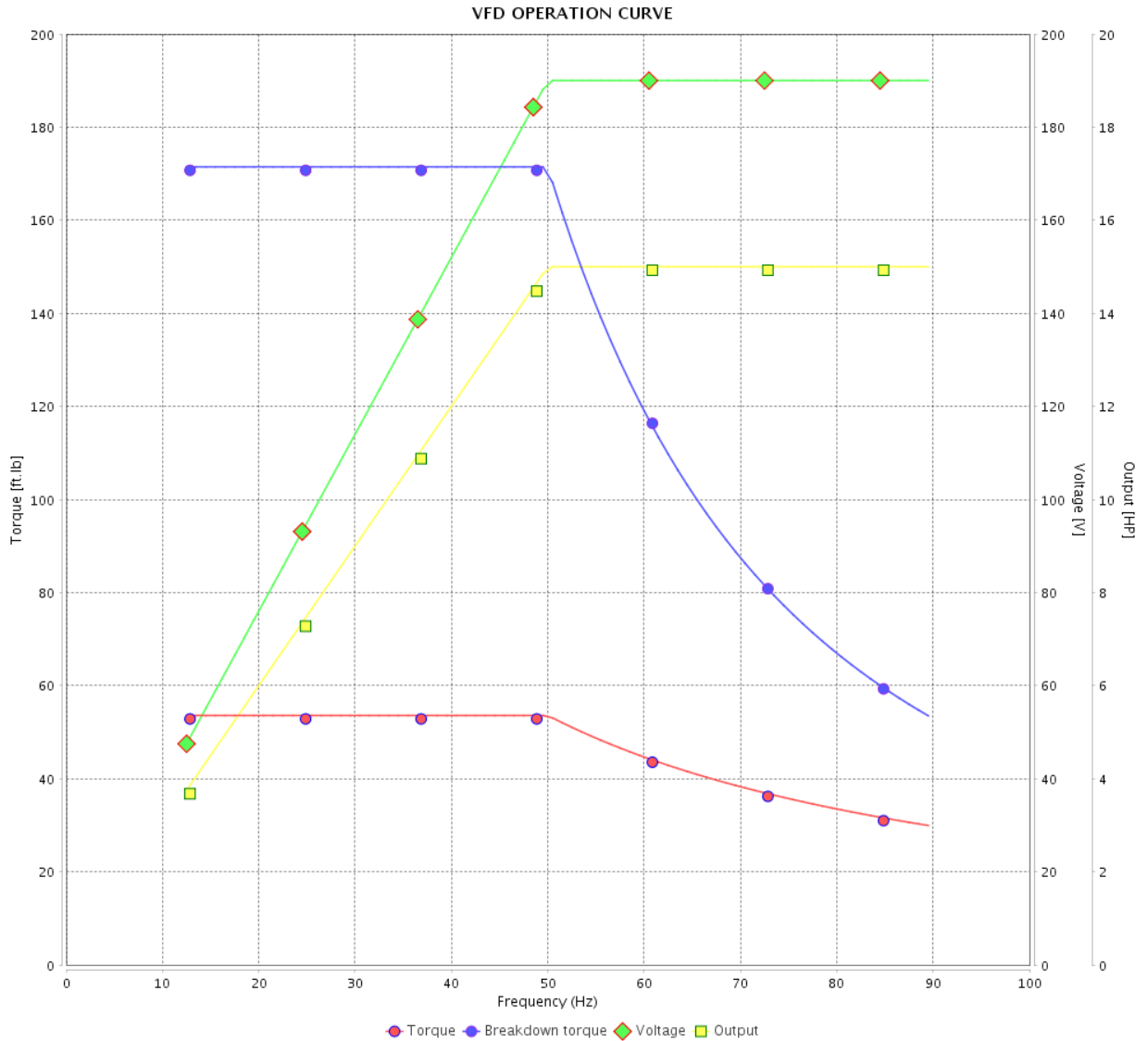
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## Three Phase Induction Motor - Squirrel Cage



Customer :

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 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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# VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage

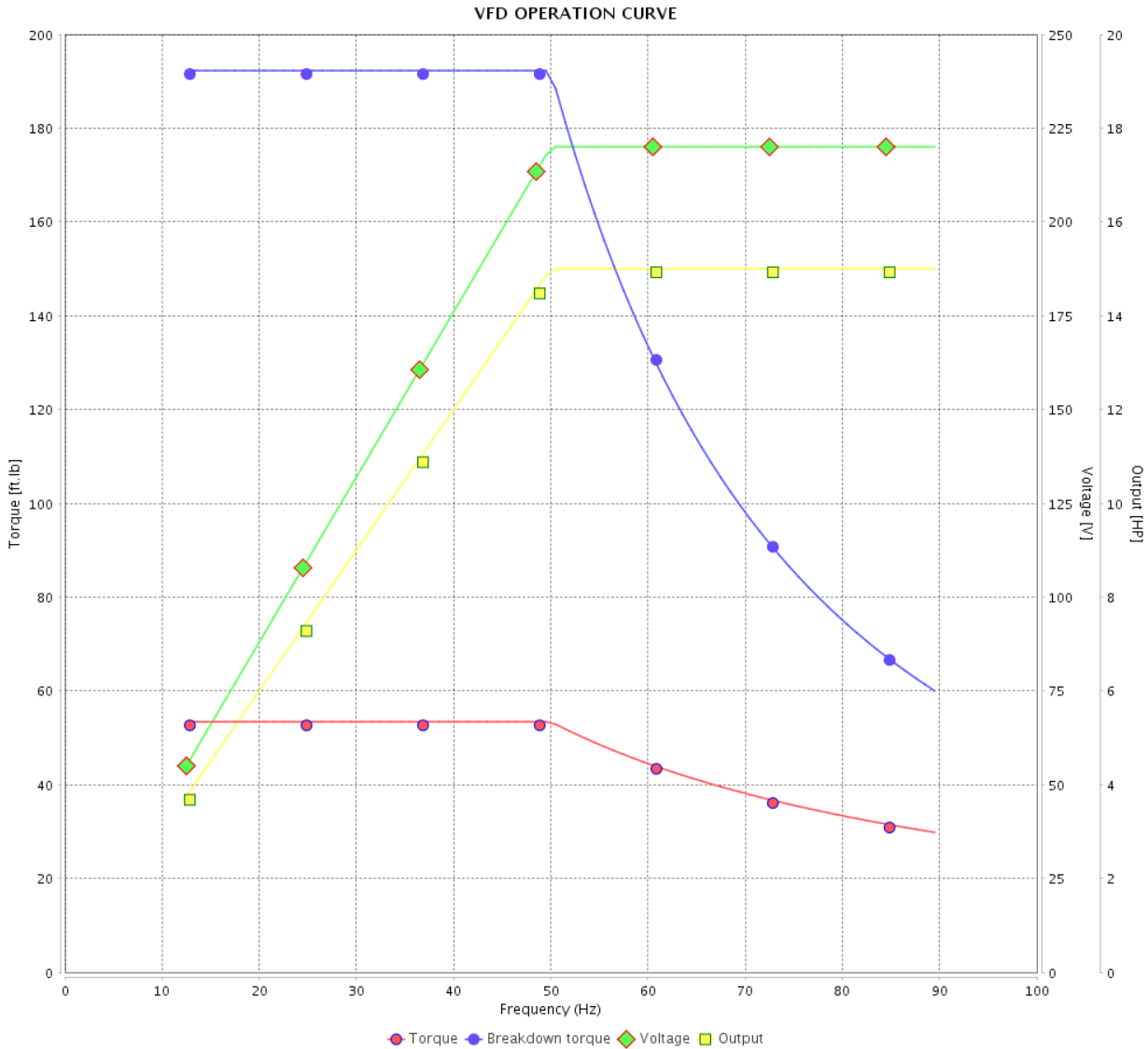


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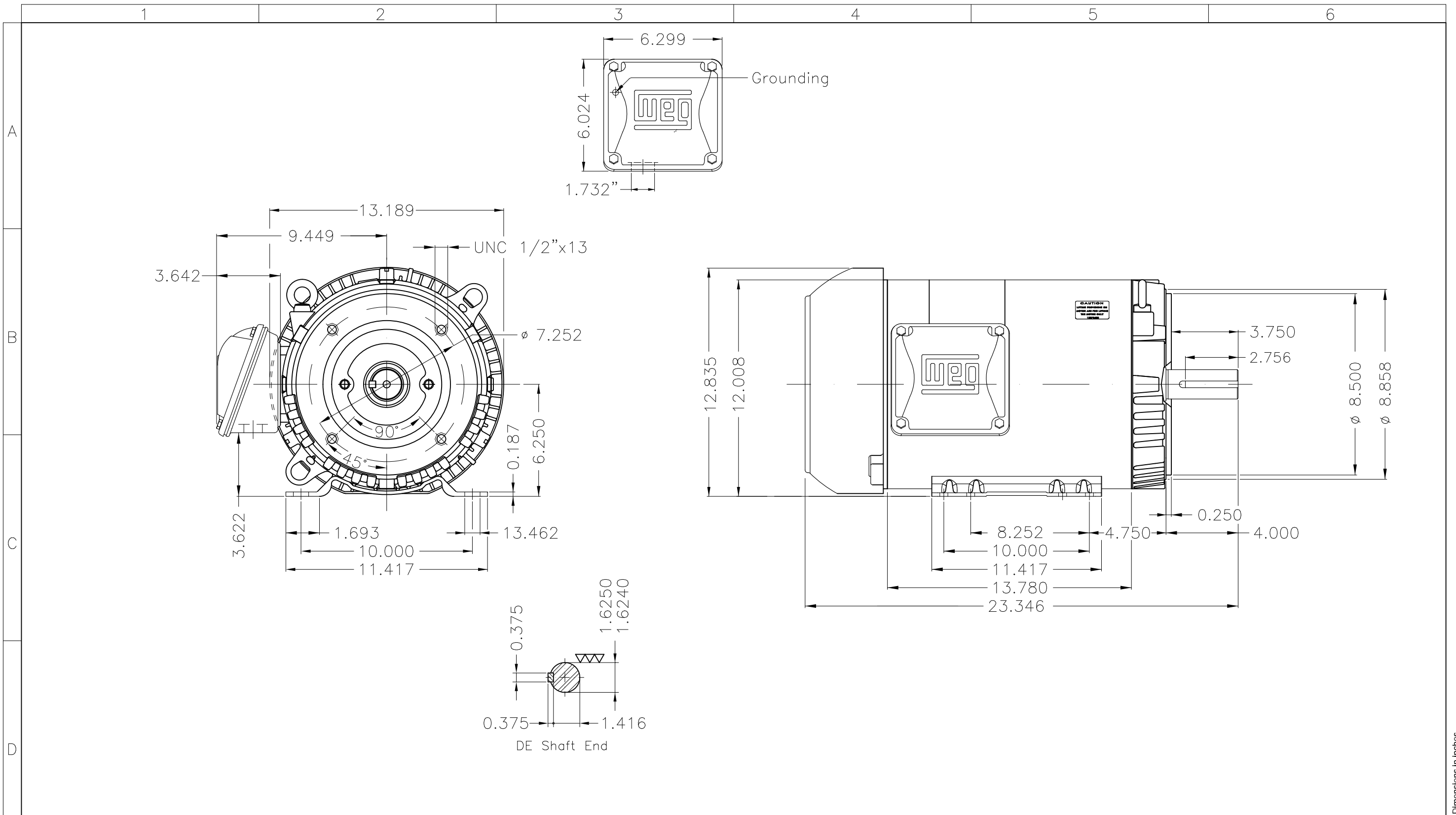
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Internal AEGIS ground ring on the DE											
Color Munsell N 1 matte black											
Painting plan 207N											
Mounting F-1/B34R(D)											
ECM	LOC	SUMMARY OF MODIFICATIONS					EXECUTED	CHECKED	RELEASED	DATE	VER
EXECUTED	PIRWBUSER	THREE 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

**WEG**  
**NEMA**  
**Premium**3PT9  
C US LISTED

MADE IN MEXICO

MAT: 13163456 CC029A

W01.TE0IC0X0N

MODEL 02018ET3E256TC-SG

10JAN2019 S/N:

PH 3 FR 254/6TC HP(KW) 20(15) Hz 60

V 230/460 RPM 1765

A 49.4/24.7 DUTY CONT.

SFA 56.8/28.4 INS CL F AT 80K AMB 40°C CODE H DES B IP55

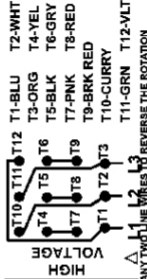
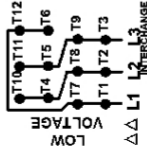
SF 1.15 ENCL TEFC

PF 0.82 NEMA NOM.EFF. 93.0%

ALT 1000 m.a.s.l. USABLE @ 208V 54.6A SF1.00

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



Electric Motor

DE: 6309-Z-C3 ODE: 6208-Z-C3 MOBIL POLYREX EM 20000h

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.

