

# DATA SHEET

## Three Phase Induction Motor - Squirrel Cage



Customer :	
Product line	: NEMA Premium Efficiency Three-Phase
Product code :	12686828
Catalog # :	02036OT3E254T-S
Frame	: 254/6T
Insulation class	: F
Duty cycle	: Cont.(S1)
Ambient temperature	: -20°C to +40°C
Altitude	: 1000 m.a.s.l.
Design	: B
Cooling method	: IC01 - ODP
Mounting	: F-1
Rotation <sup>1</sup>	: Both (CW and CCW)
Starting method	: Direct On Line
Approx. weight <sup>2</sup>	: 164 lb
Moment of inertia (J)	: 0.7848 sq.ft.lb
Output [HP]	20
Poles	2
Frequency [Hz]	60
Rated voltage [V]	230/460
Rated current [A]	47.6/23.8
L. R. Amperes [A]	286/143
LRC [A]	6.0x(Code G)
No load current [A]	17.0/8.50
Rated speed [RPM]	3525
Slip [%]	2.08
Rated torque [ft.lb]	29.8
Locked rotor torque [%]	180
Breakdown torque [%]	240
Service factor	1.15
Temperature rise	80 K
Locked rotor time	23s (cold) 13s (hot)
Noise level <sup>2</sup>	70.0 dB(A)
Efficiency (%)	25%
	50%
	75%
	100%
Power Factor	25%
	50%
	75%
	100%
Bearing type	: <u>Drive end</u> 6309 Z C3 <u>Non drive end</u> 6208 Z C3
Sealing	: Without Without
	: Bearing Seal Bearing Seal
Lubrication interval	: 20000 h 20000 h
Lubricant amount	: 13 g 8 g
Lubricant type	: Mobil Polyrex EM
Foundation loads	
Max. traction	: 316 lb
Max. compression	: 480 lb
Notes USABLE @208V 52.6A SF 1.00 SFA 52.6A	
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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14/04/2022	
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# TORQUE AND CURRENT VS SPEED CURVE

## Three Phase Induction Motor - Squirrel Cage



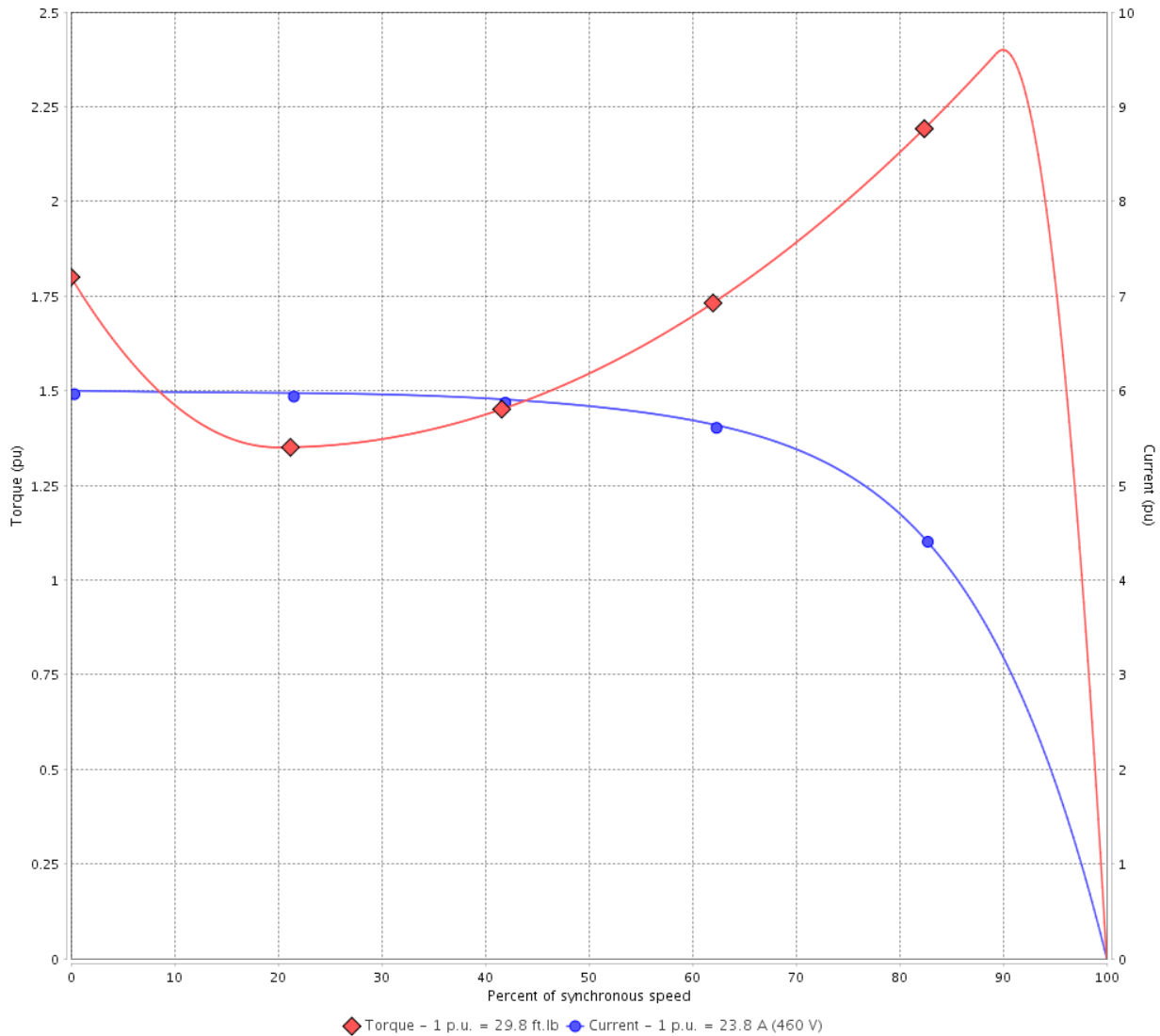
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12686828

Catalog # : 02036OT3E254T-S

TORQUE AND CURRENT VS SPEED CURVE



Performance : 230/460 V 60 Hz 2P

Rated current	: 47.6/23.8 A	Moment of inertia (J)	: 0.7848 sq.ft.lb
LRC	: 6.0	Duty cycle	: Cont.(S1)
Rated torque	: 29.8 ft.lb	Insulation class	: F
Locked rotor torque	: 180 %	Service factor	: 1.15
Breakdown torque	: 240 %	Temperature rise	: 80 K
Rated speed	: 3525 rpm	Design	: B

Locked rotor time : 23s (cold) 13s (hot)

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# TORQUE AND CURRENT VS SPEED CURVE



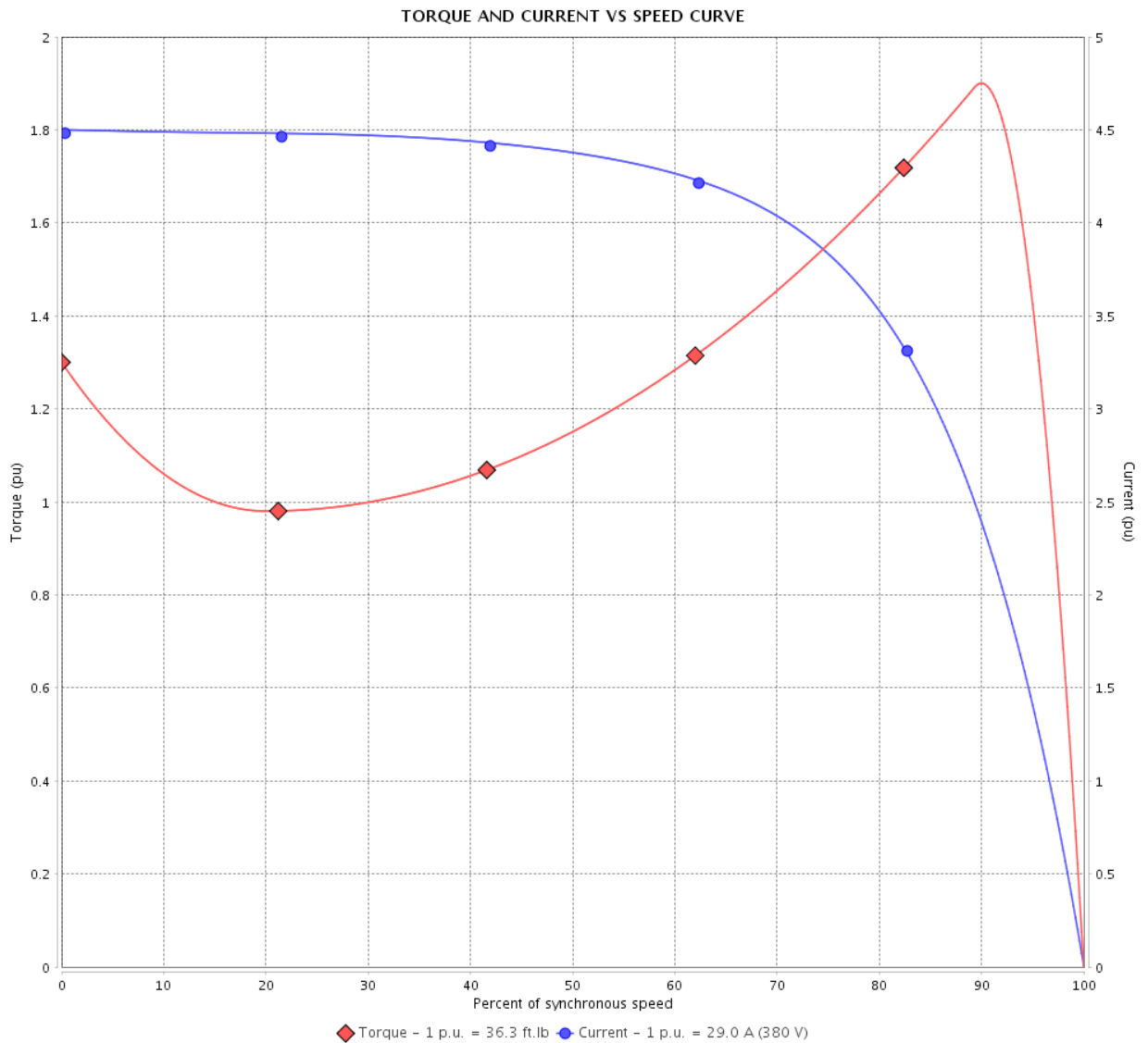
## Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12686828

Catalog # : 02036OT3E254T-S



Performance : 190-220/380 V 50 Hz 2P

Rated current	: 58.0-50.1/29.0 A	Moment of inertia (J)	: 0.7848 sq.ft.lb
LRC	: 4.5	Duty cycle	: Cont.(S1)
Rated torque	: 36.3 ft.lb	Insulation class	: F
Locked rotor torque	: 130 %	Service factor	: 1.00
Breakdown torque	: 190 %	Temperature rise	: 105 K
Rated speed	: 2895 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



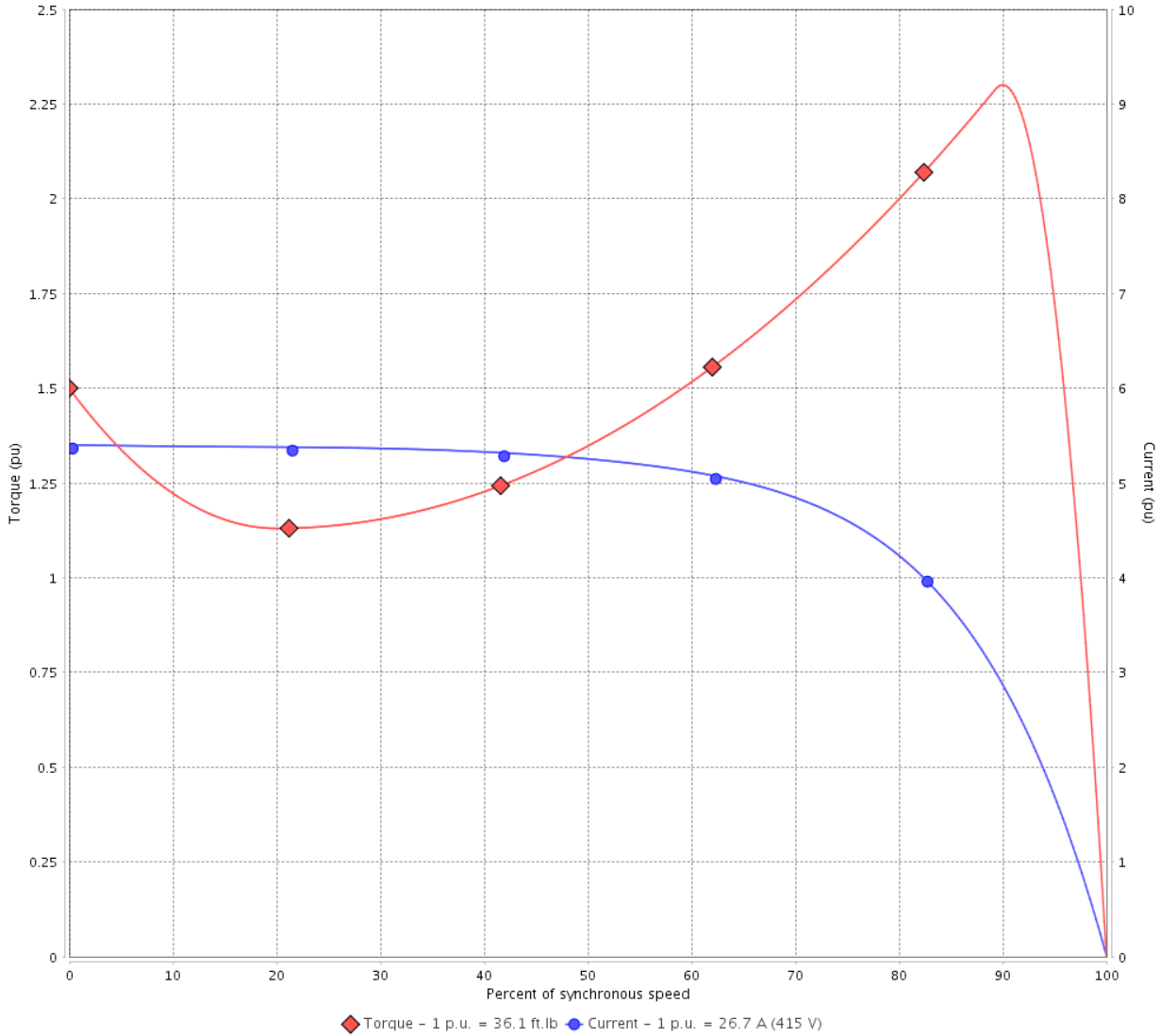
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12686828

Catalog # : 02036OT3E254T-S

TORQUE AND CURRENT VS SPEED CURVE



Performance : 415 V 50 Hz 2P

Rated current	: 26.7 A	Moment of inertia (J)	: 0.7848 sq.ft.lb
LRC	: 5.4	Duty cycle	: Cont.(S1)
Rated torque	: 36.1 ft.lb	Insulation class	: F
Locked rotor torque	: 150 %	Service factor	: 1.00
Breakdown torque	: 229 %	Temperature rise	: 80 K
Rated speed	: 2910 rpm	Design	: B

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

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# LOAD PERFORMANCE CURVE

## Three Phase Induction Motor - Squirrel Cage

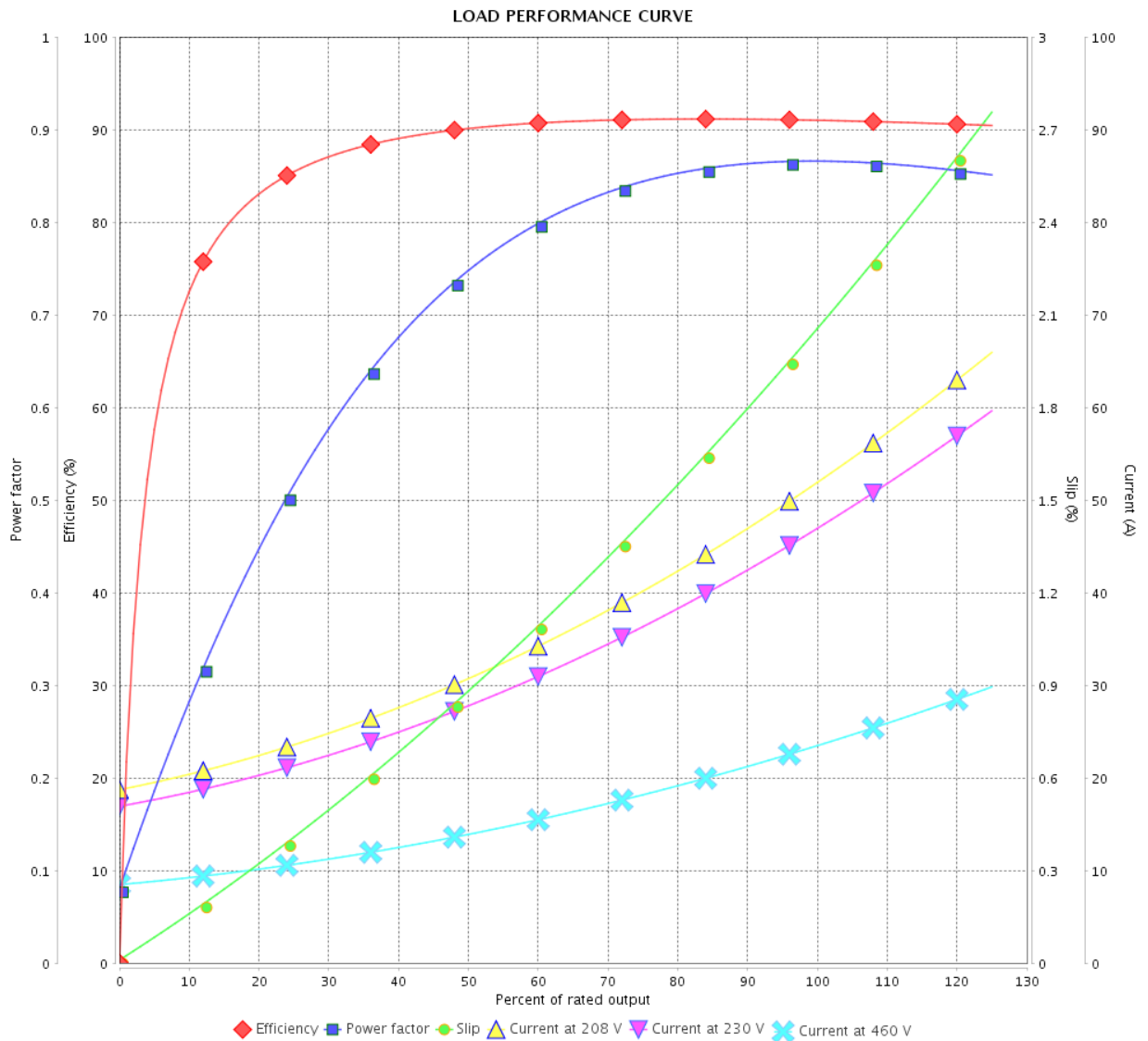


Customer : \_\_\_\_\_

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12686828

Catalog # : 02036OT3E254T-S



Performance : 230/460 V 60 Hz 2P

Rated current : 47.6/23.8 A  
 LRC : 6.0  
 Rated torque : 29.8 ft.lb  
 Locked rotor torque : 180 %  
 Breakdown torque : 240 %  
 Rated speed : 3525 rpm

Moment of inertia (J) : 0.7848 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



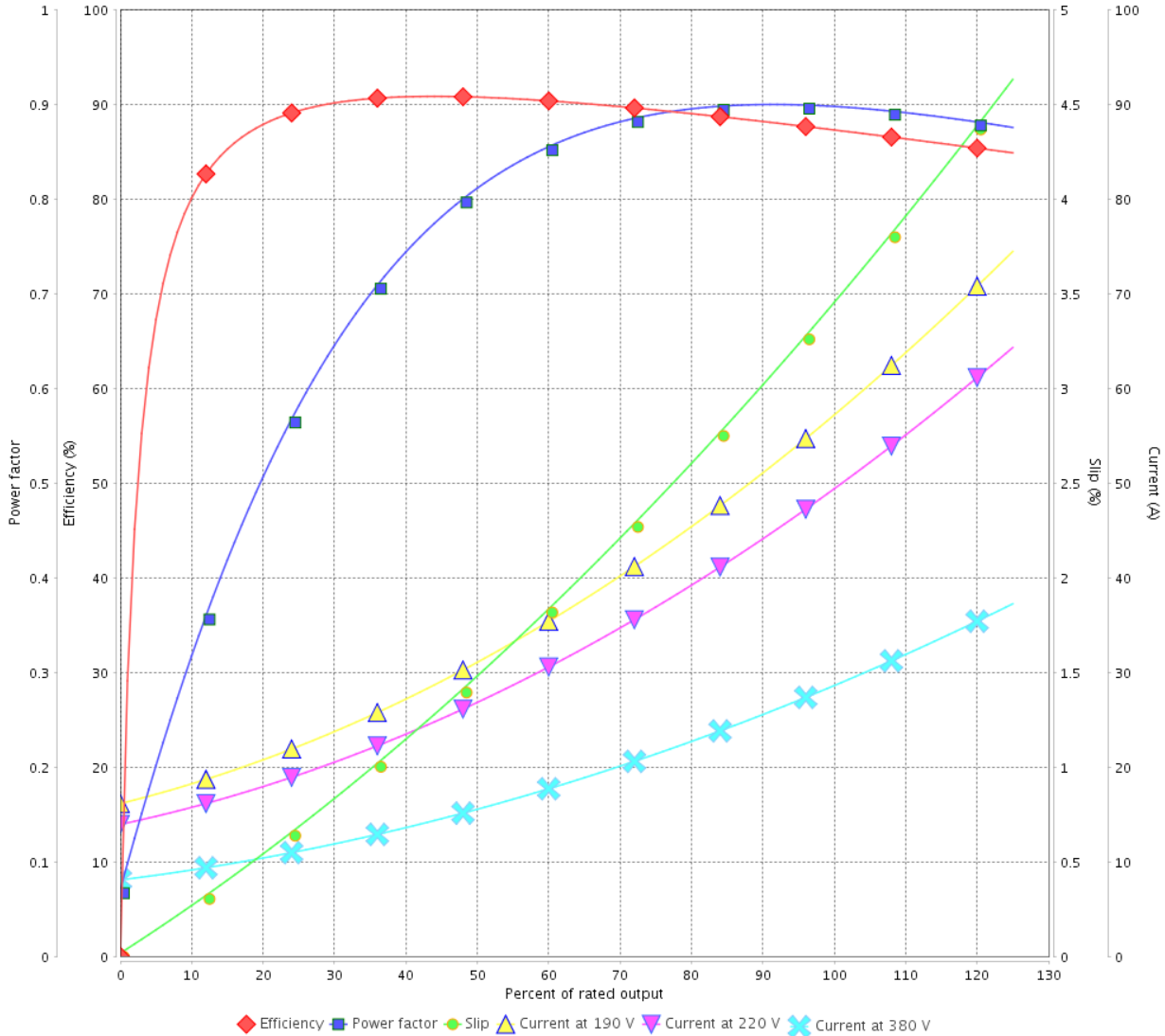
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12686828

Catalog # : 02036OT3E254T-S

LOAD PERFORMANCE CURVE



Performance : 190-220/380 V 50 Hz 2P

Rated current : 58.0-50.1/29.0 A  
 LRC : 4.5  
 Rated torque : 36.3 ft.lb  
 Locked rotor torque : 130 %  
 Breakdown torque : 190 %  
 Rated speed : 2895 rpm

Moment of inertia (J) : 0.7848 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 105 K  
 Design : B

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# LOAD PERFORMANCE CURVE

## Three Phase Induction Motor - Squirrel Cage

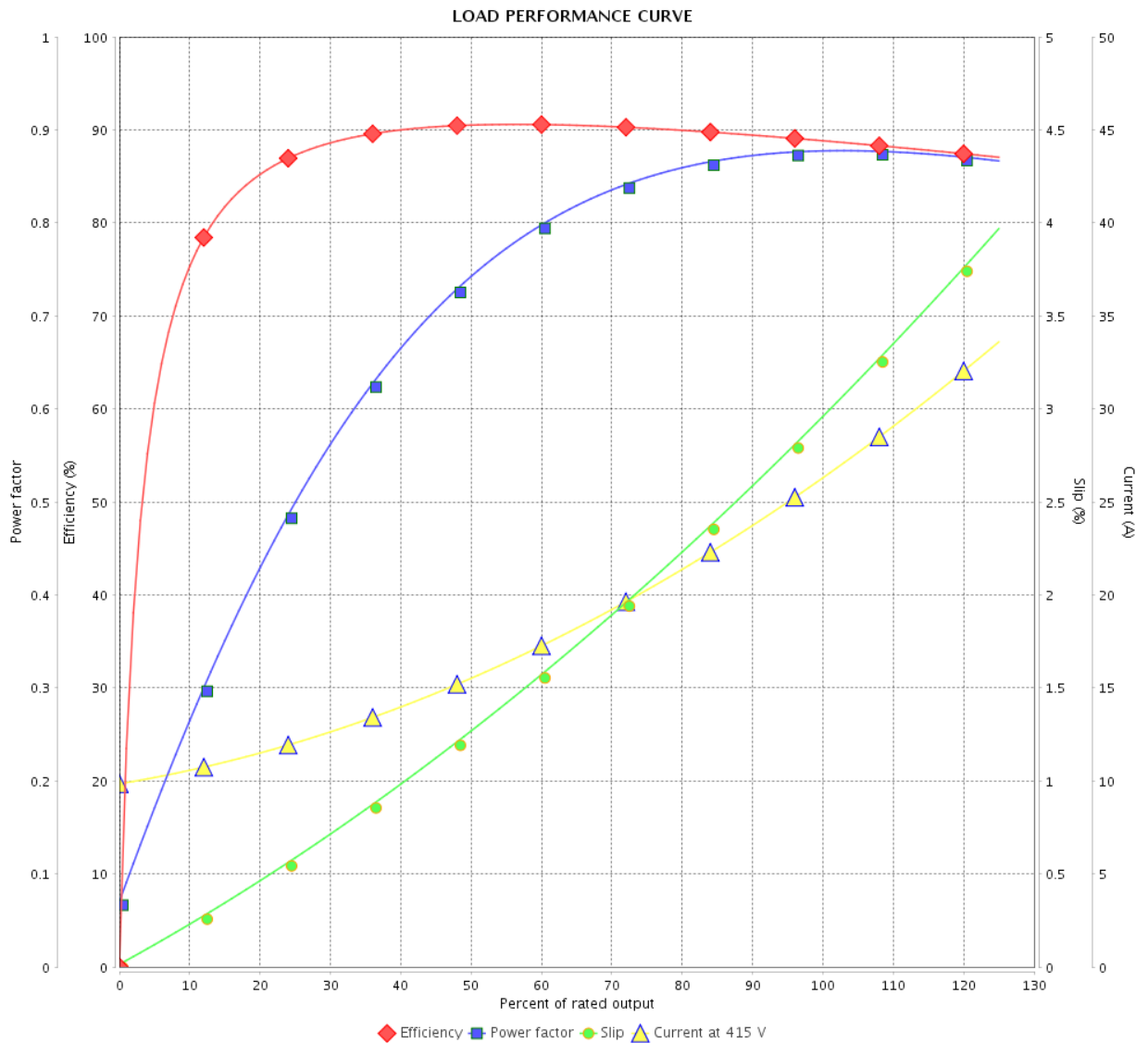


Customer : \_\_\_\_\_

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12686828

Catalog # : 02036OT3E254T-S



Performance : 415 V 50 Hz 2P

Rated current : 26.7 A  
 LRC : 5.4  
 Rated torque : 36.1 ft.lb  
 Locked rotor torque : 150 %  
 Breakdown torque : 229 %  
 Rated speed : 2910 rpm

Moment of inertia (J) : 0.7848 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.00  
 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 : 12686828  
Catalog # : 02036OT3E254T-S

Performance : 230/460 V 60 Hz 2P

Rated current	: 47.6/23.8 A	Moment of inertia (J)	: 0.7848 sq.ft.lb
LRC	: 6.0	Duty cycle	: Cont.(S1)
Rated torque	: 29.8 ft.lb	Insulation class	: F
Locked rotor torque	: 180 %	Service factor	: 1.15
Breakdown torque	: 240 %	Temperature rise	: 80 K
Rated speed	: 3525 rpm	Design	: B

Heating constant

Cooling constant

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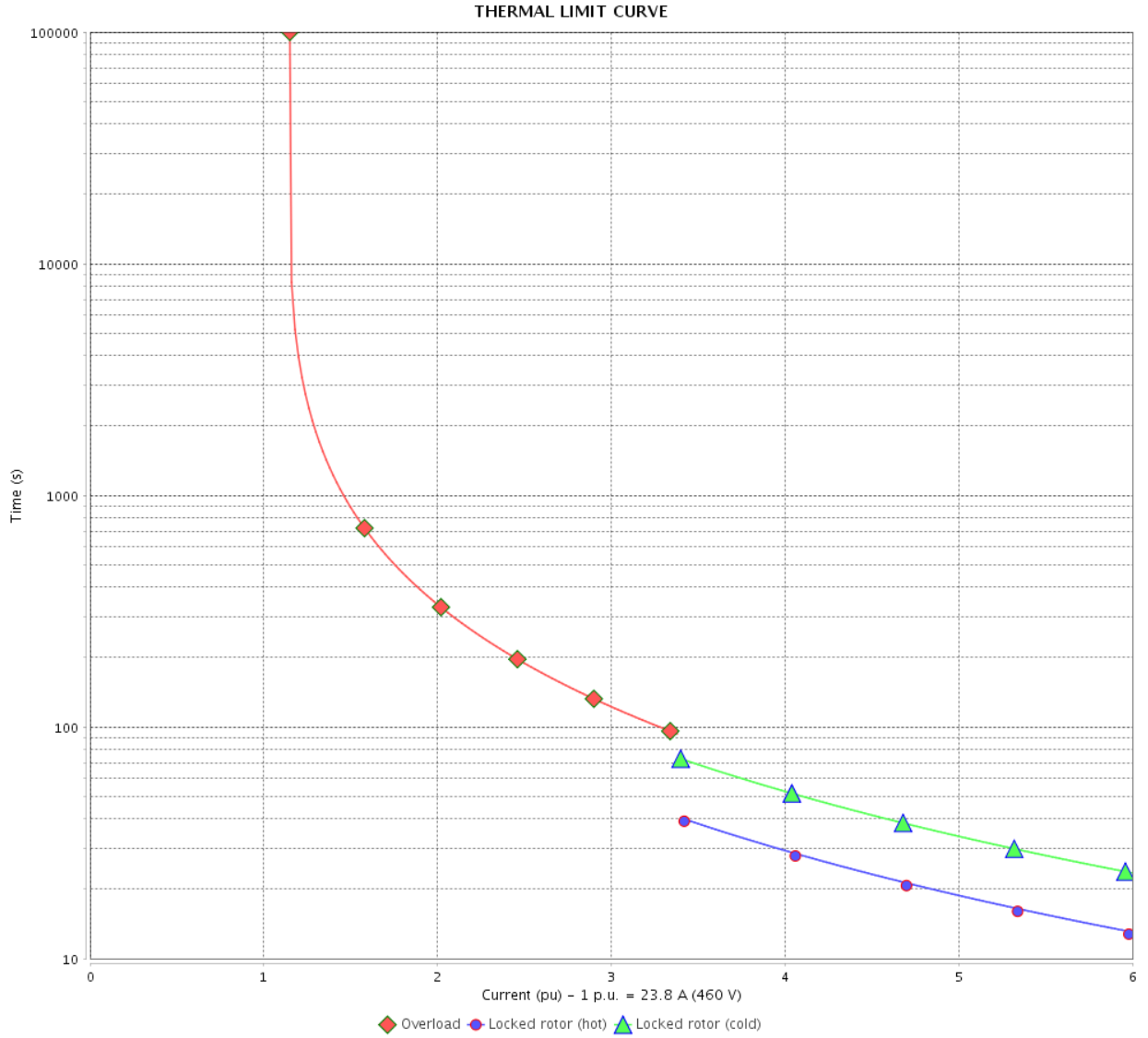


# THERMAL LIMIT CURVE

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 : 12686828  
Catalog # : 02036OT3E254T-S

Performance : 190-220/380 V 50 Hz 2P

Rated current	: 58.0-50.1/29.0 A	Moment of inertia (J)	: 0.7848 sq.ft.lb
LRC	: 4.5	Duty cycle	: Cont.(S1)
Rated torque	: 36.3 ft.lb	Insulation class	: F
Locked rotor torque	: 130 %	Service factor	: 1.00
Breakdown torque	: 190 %	Temperature rise	: 105 K
Rated speed	: 2895 rpm	Design	: B

Heating constant

Cooling constant

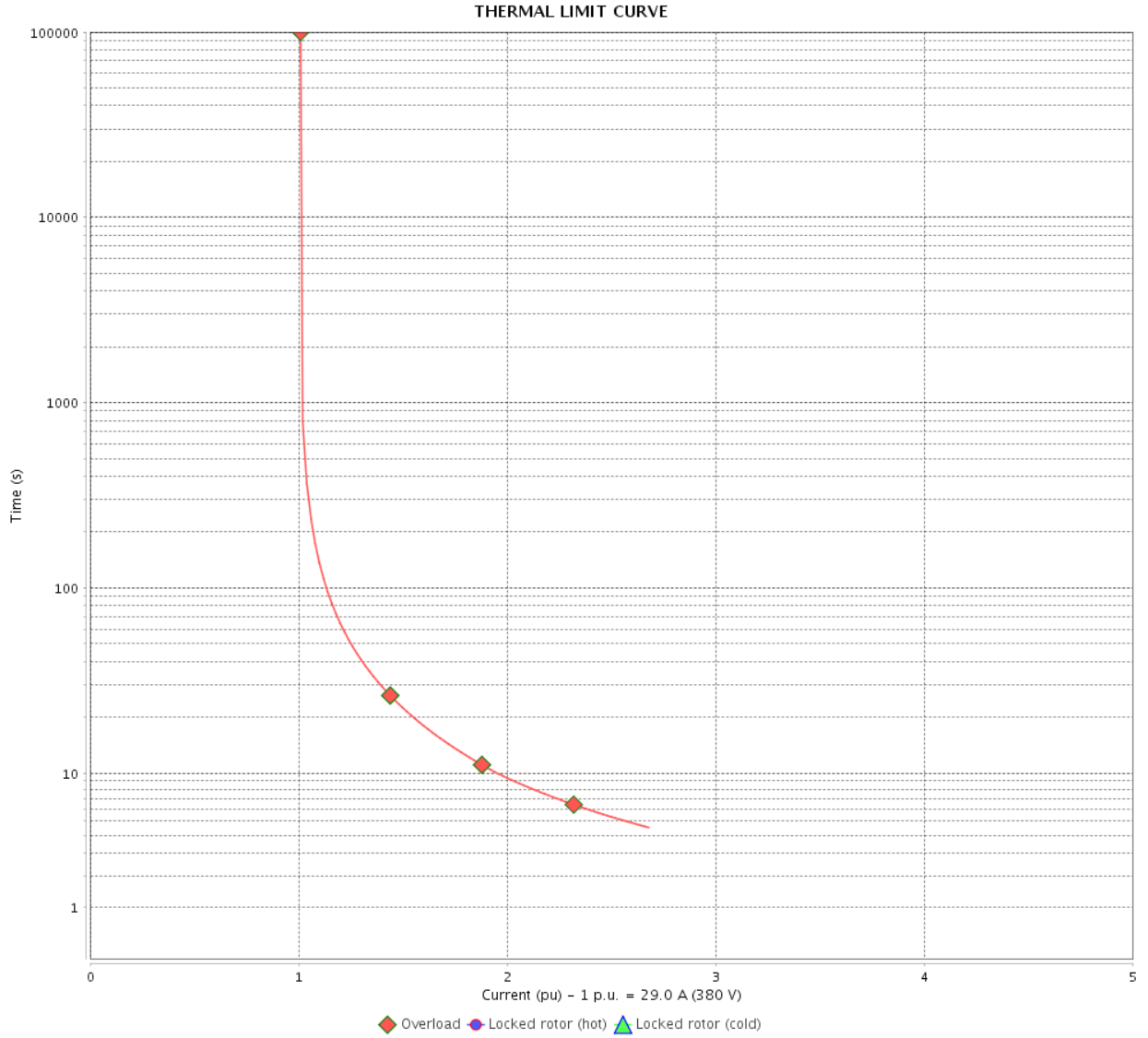
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# THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



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



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Locked rotor torque	: 150 %	Service factor	: 1.00
Breakdown torque	: 229 %	Temperature rise	: 80 K
Rated speed	: 2910 rpm	Design	: B

Heating constant

Cooling constant

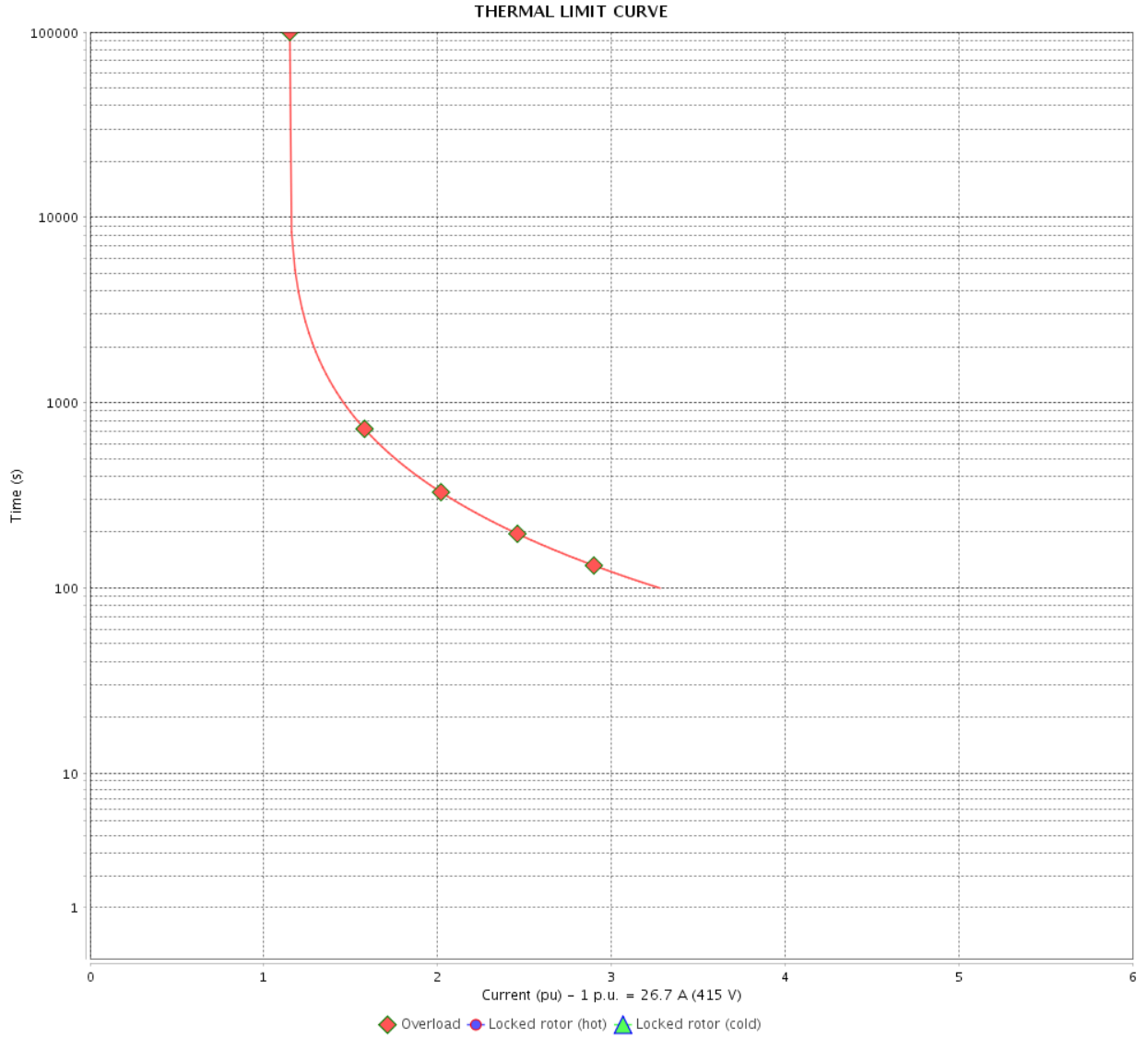
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# THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



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



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# VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage



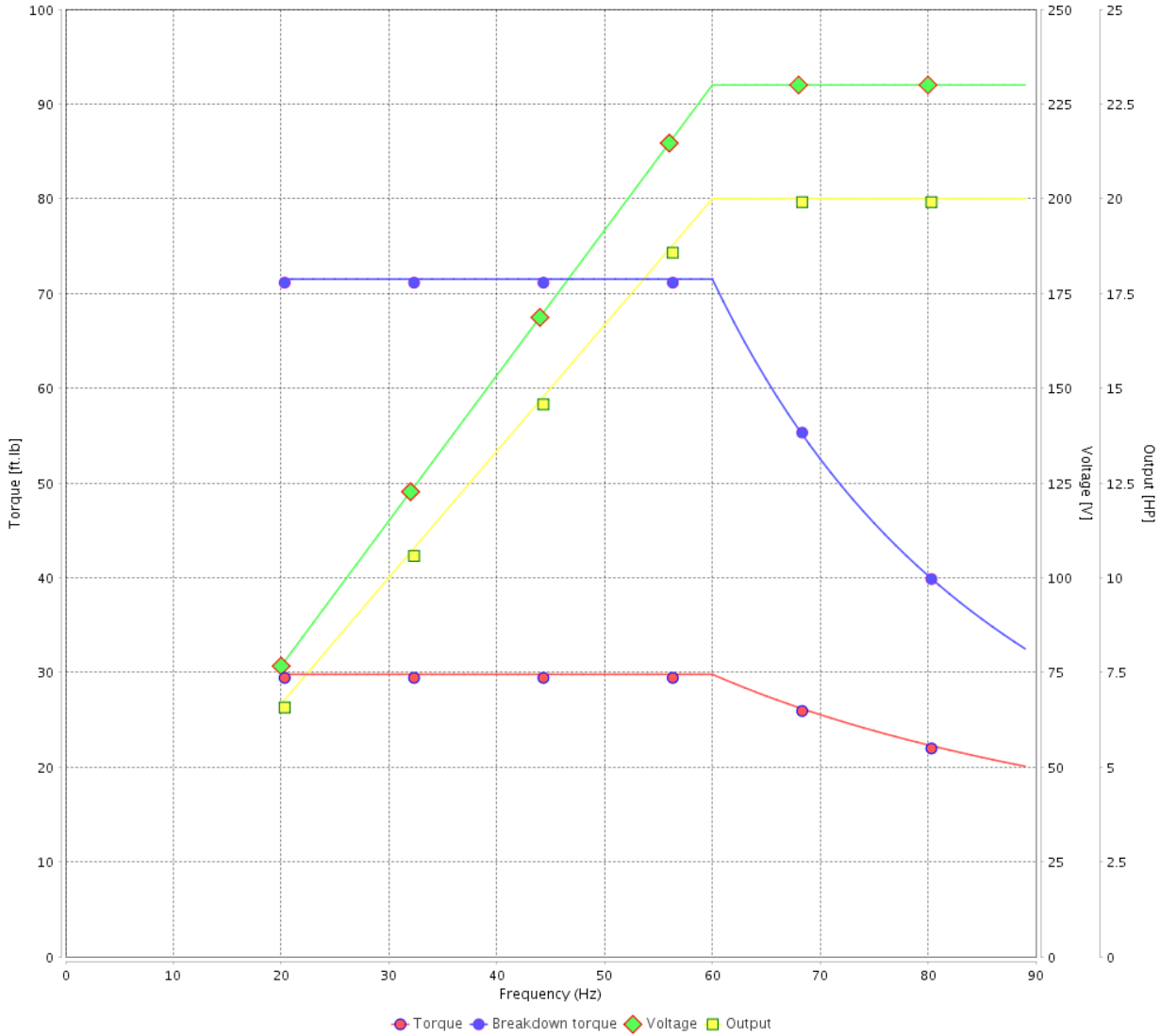
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12686828

Catalog # : 02036OT3E254T-S

VFD OPERATION CURVE



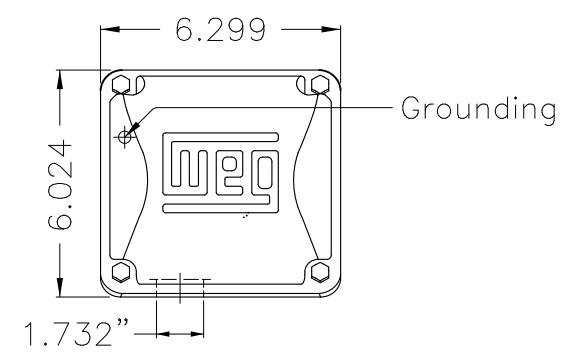
Performance : 230/460 V 60 Hz 2P

Rated current : 47.6/23.8 A  
 LRC : 6.0  
 Rated torque : 29.8 ft.lb  
 Locked rotor torque : 180 %  
 Breakdown torque : 240 %  
 Rated speed : 3525 rpm

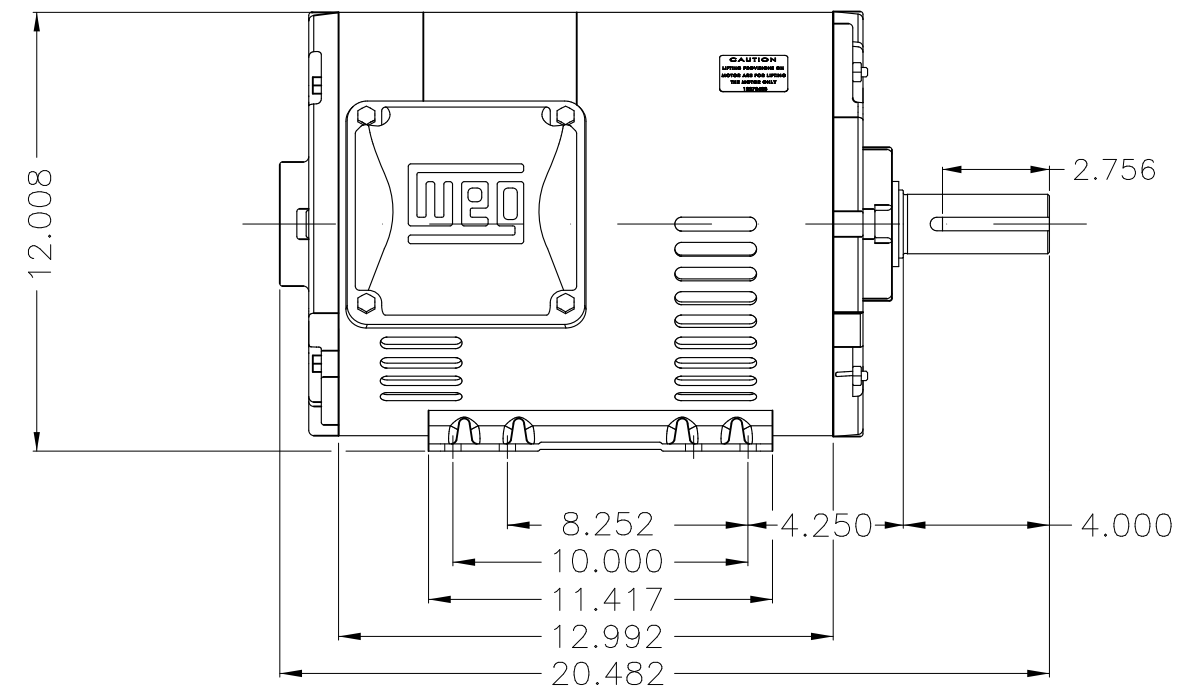
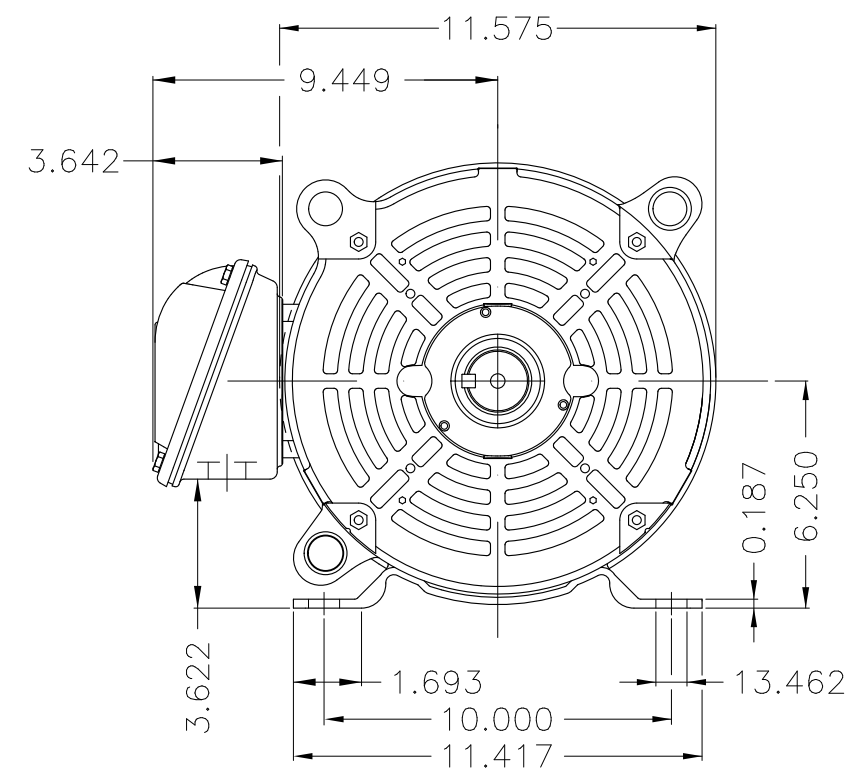
Moment of inertia (J) : 0.7848 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.15  
 Temperature rise : 80 K  
 Design : B

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Date				

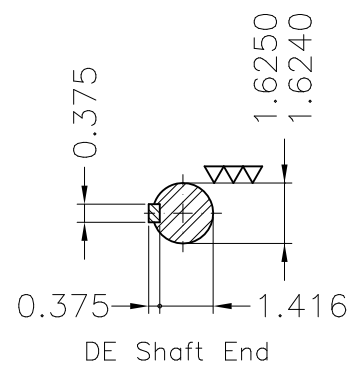
A



B



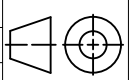
C



D

E

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. FRAME 254/6T IP21 ODP					
CHECKED							
RELEASED							
REL DT.	WMO	Jaragua do Sul	Product Engineering	SHEET		1 / 1	

20 HP 02 Poles 60 Hz

A

PREVIEW  
WDD



**NEMA  
Premium**

MADE IN MEXICO

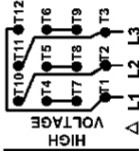
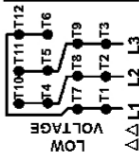
**MAT: 12686828 CC029A**  
**W01.T00IC0X0N**  
**MODEL 020360T3E254T-S**  
**18APR2022 S/N:**

<b>PH 3</b>	<b>Hz 60</b>	<b>HP 20</b>
<b>FR 254/6T</b>		<b>KW 15</b>
<b>DUTY CONT.</b>		<b>V 230/460</b>
<b>ALT 1000 m.a.s.l.</b>		<b>A 47.6/23.8</b>
<b>INS CL F AT 80K</b>		<b>SFA 54.7/27.4</b>
<b>AMB 40°C</b>	<b>DES B</b>	<b>SF 1.15</b>
<b>ENCL ODP</b>	<b>CODE G</b>	<b>PF 0.87</b>
<b>USABLE @ 208V 52.8A</b>		<b>RPM 3525</b>
<b>SF1.00</b>		<b>NEMA NOM. EFF 91.0%</b>

**ALTERNATE RATING: 20HP 50Hz 190-220/380-415V SF1.00**  
**58.0-50.4/29.0-26.7A 2895RPM EFF 87.2% IEC 60034-1**

Inverter duty motor For 80Hz use on VPWM 1000:1 VT, 3:1 CT

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



**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.

