

# DATA SHEET

## Three Phase Induction Motor - Squirrel Cage



Customer :		
Product line	: NEMA Premium Efficiency Three-Phase	
Product code :	13163469	
Catalog # :	02036OT3E254TC-SG	
Frame	: 254/6TC	
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>	: 151 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%	90.0
	50%	90.2
	75%	91.0
	100%	91.0
Power Factor	25%	0.49
	50%	0.76
	75%	0.83
	100%	0.87
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 : 288 lb	
	Max. compression : 439 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



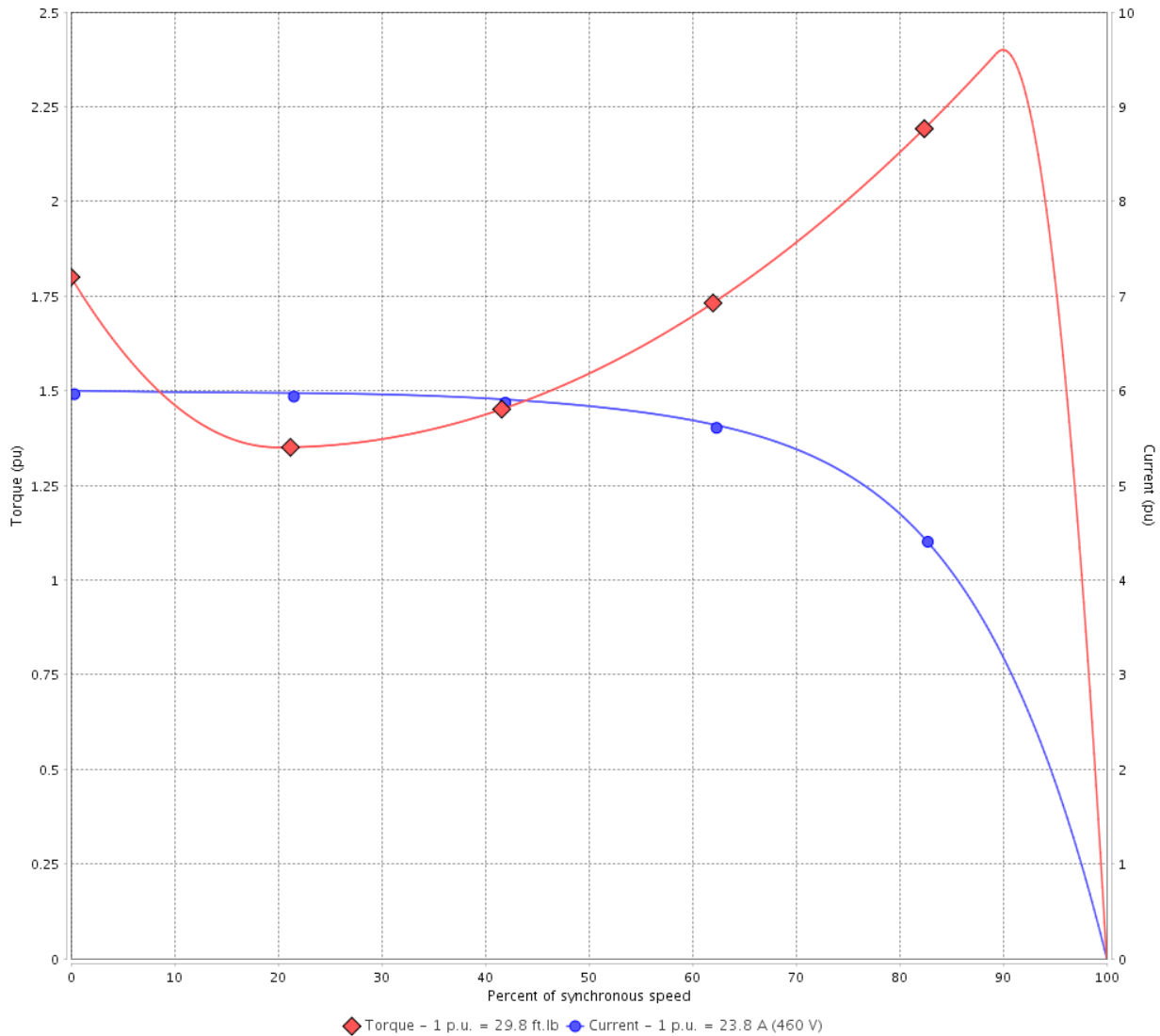
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 13163469

Catalog # : 020360T3E254TC-SG

TORQUE AND CURRENT VS SPEED 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

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

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# TORQUE AND CURRENT VS SPEED CURVE



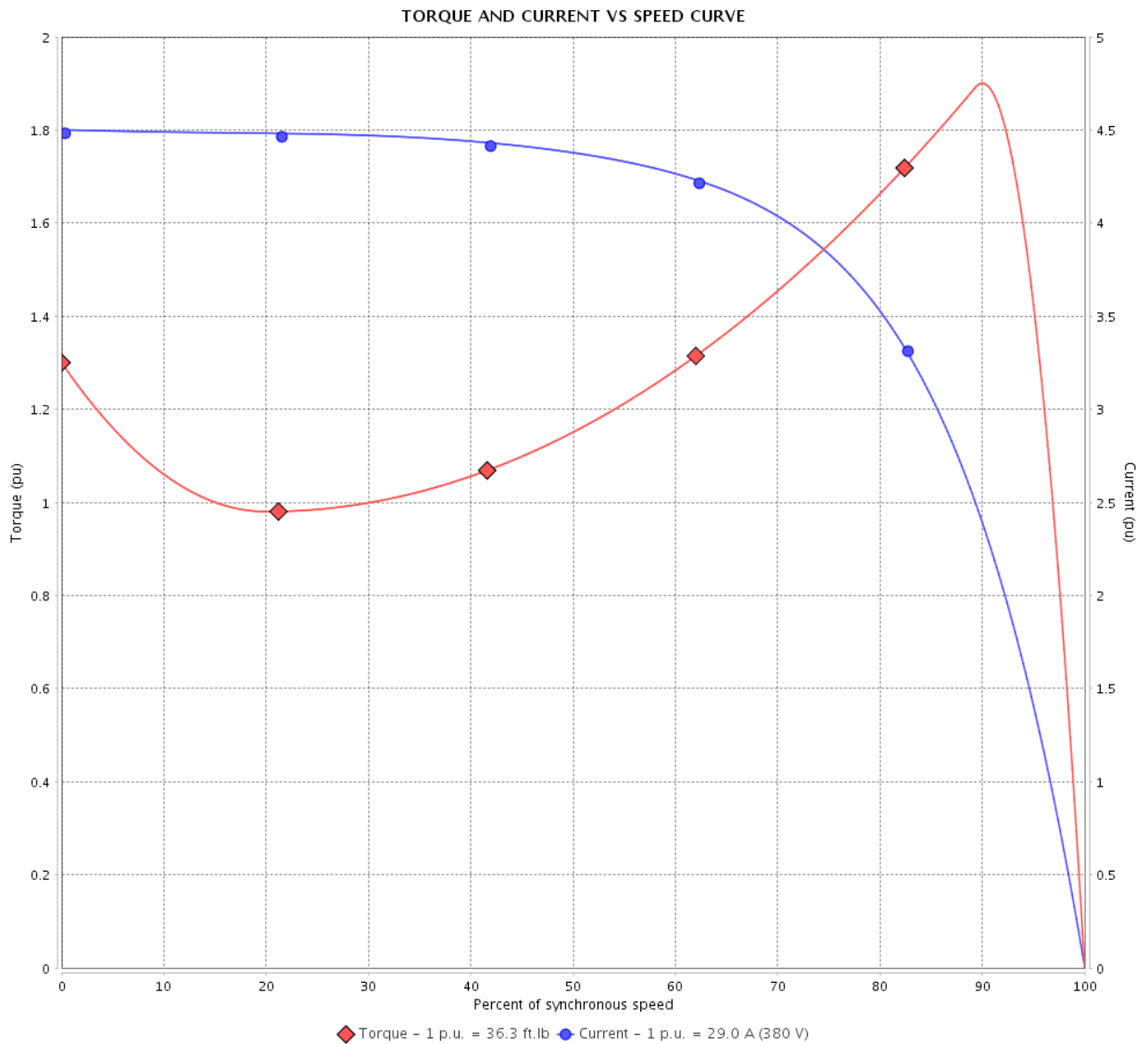
## Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 13163469

Catalog # : 020360T3E254TC-SG



Performance : 190/380 V 50 Hz 2P

Rated current : 58.0/29.0 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

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

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# TORQUE AND CURRENT VS SPEED CURVE

## Three Phase Induction Motor - Squirrel Cage



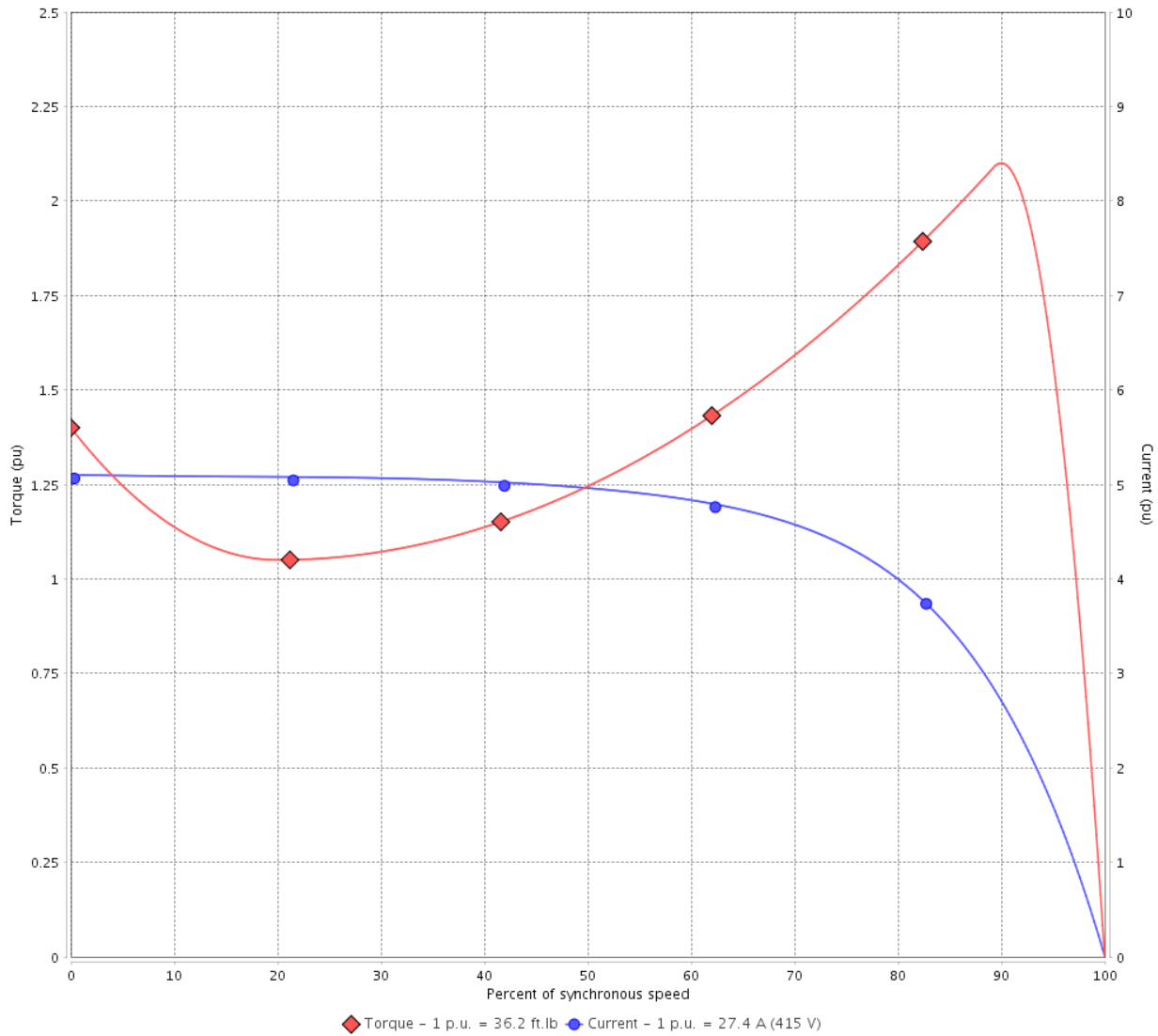
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 13163469

Catalog # : 020360T3E254TC-SG

TORQUE AND CURRENT VS SPEED CURVE



Performance : 220/415 V 50 Hz 2P

Rated current : 51.7/27.4 A  
 LRC : 5.1  
 Rated torque : 36.2 ft.lb  
 Locked rotor torque : 140 %  
 Breakdown torque : 210 %  
 Rated speed : 2905 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

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

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# LOAD PERFORMANCE CURVE

## Three Phase Induction Motor - Squirrel Cage

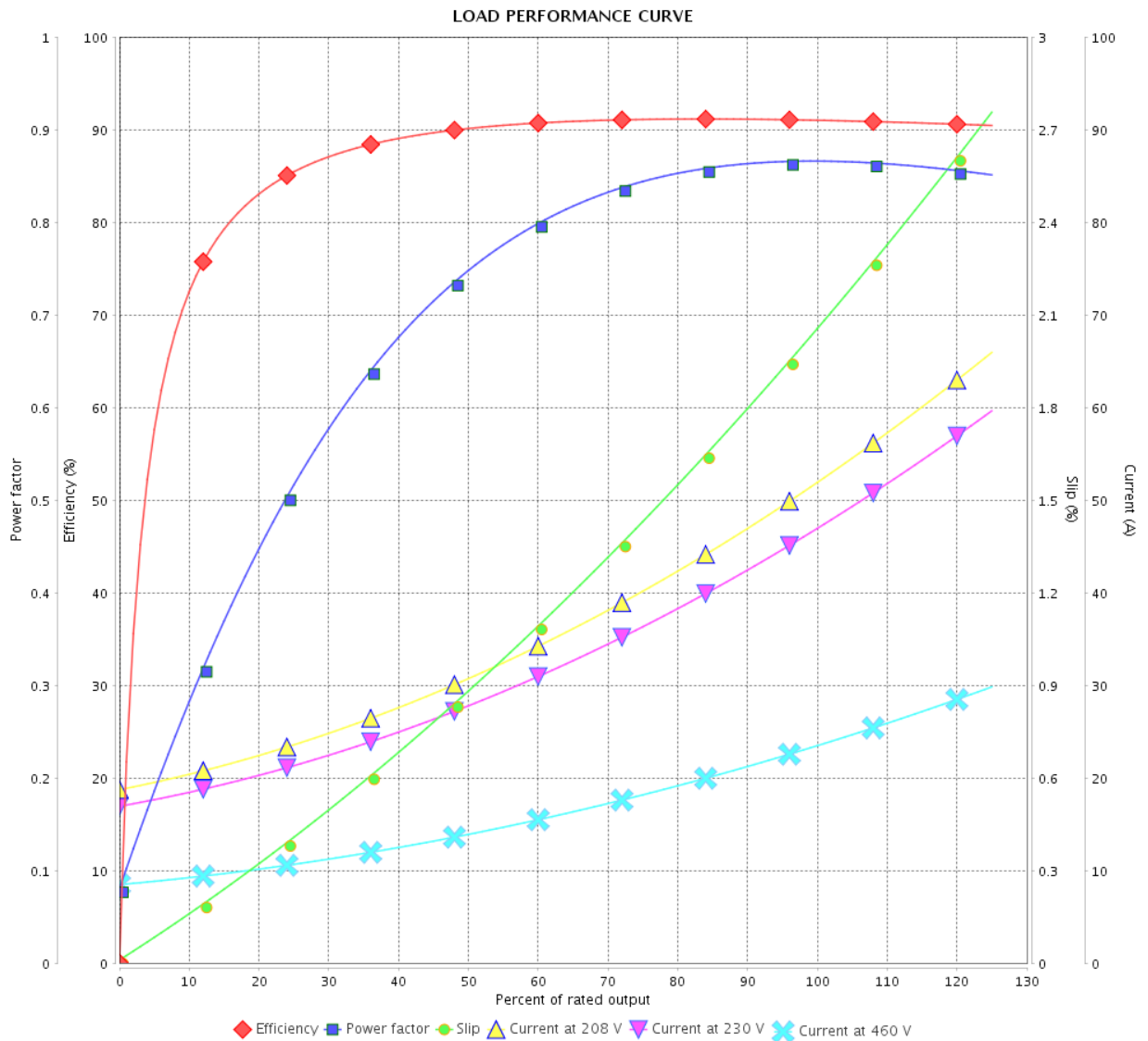


Customer : \_\_\_\_\_

Product line : NEMA Premium Efficiency Three-Phase

Product code : 13163469

Catalog # : 02036OT3E254TC-SG



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

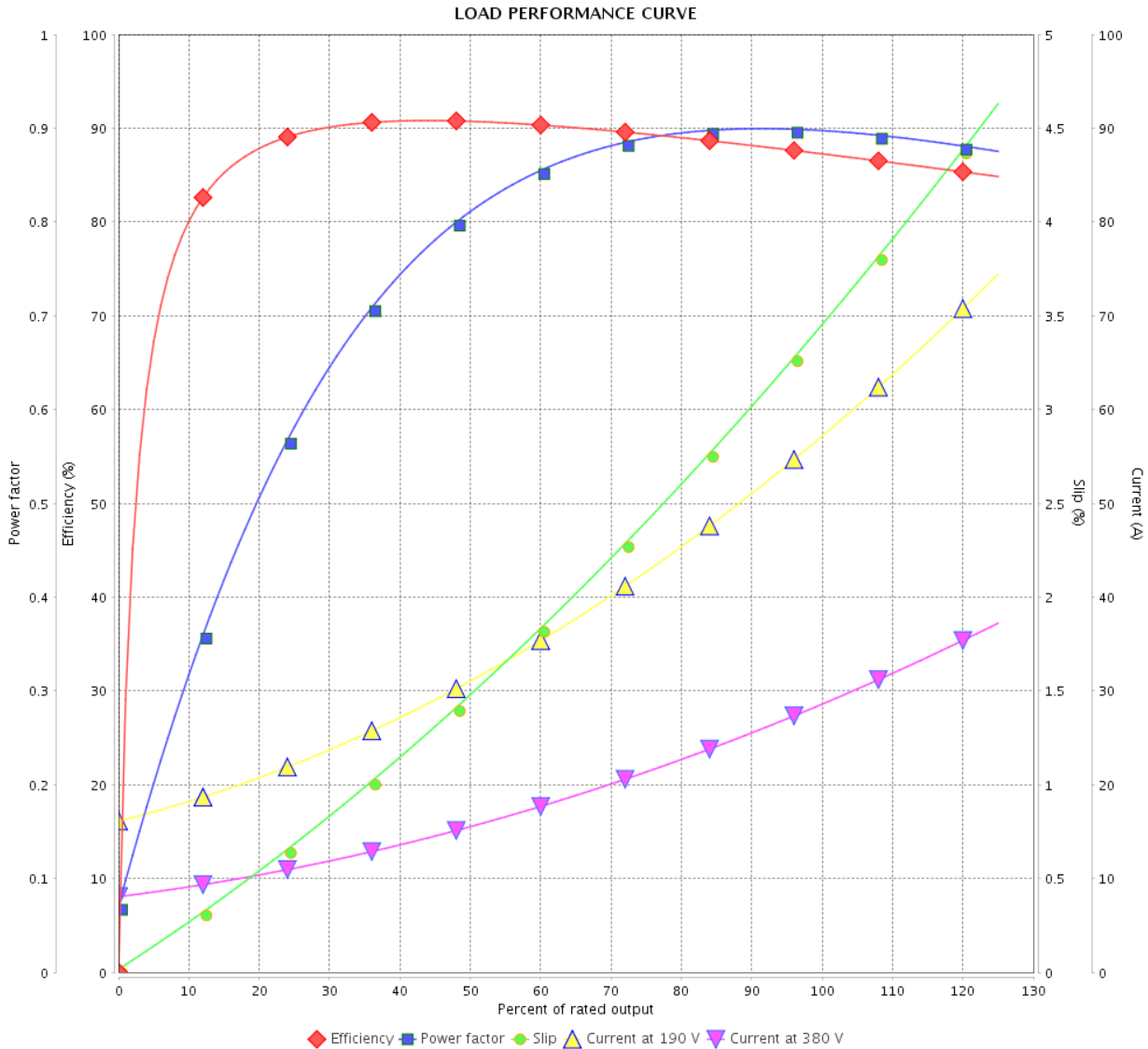


Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 13163469

Catalog # : 020360T3E254TC-SG



Performance : 190/380 V 50 Hz 2P

Rated current : 58.0/29.0 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

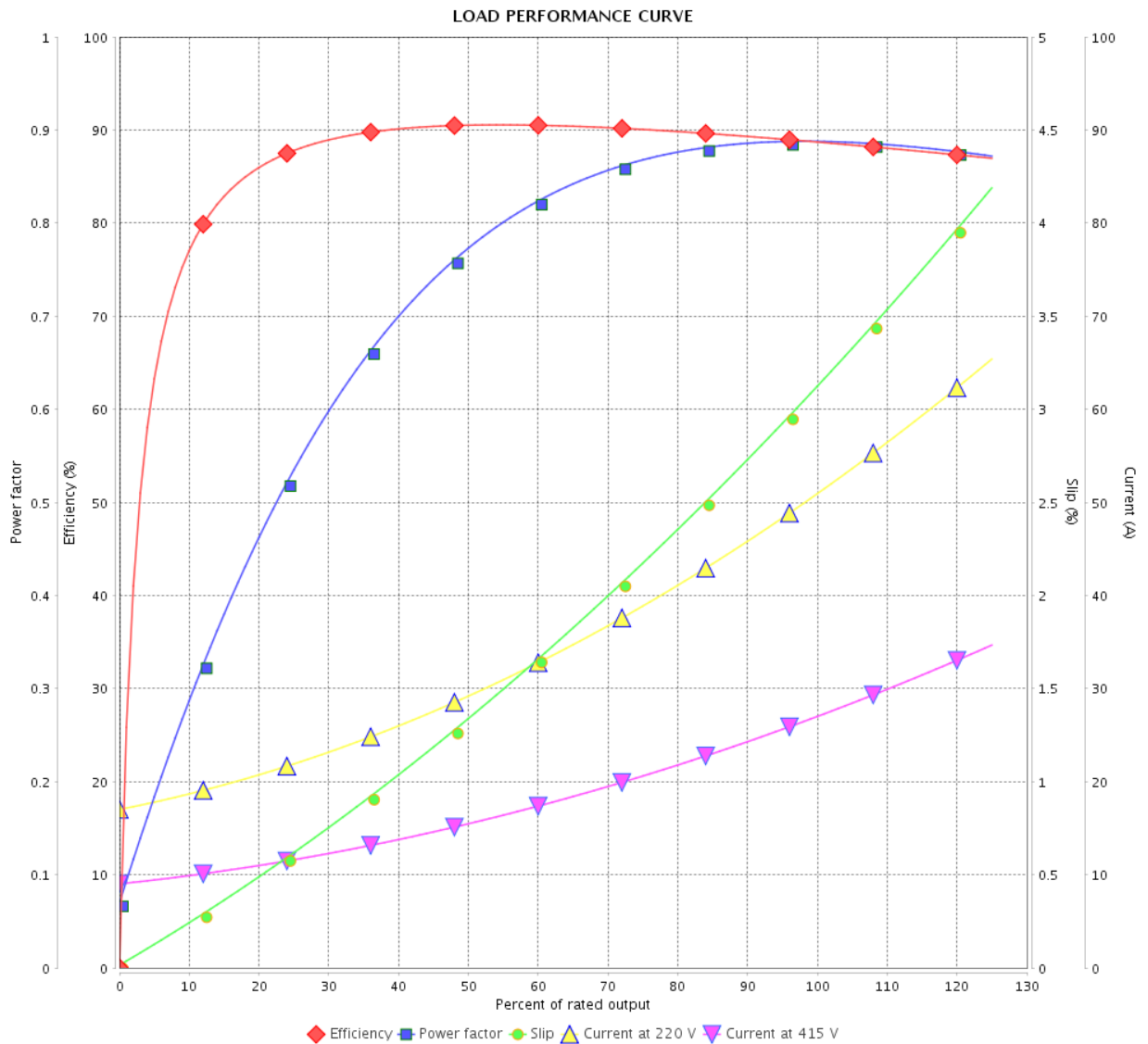


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Product line : NEMA Premium Efficiency Three-Phase

Product code : 13163469

Catalog # : 02036OT3E254TC-SG



Performance : 220/415 V 50 Hz 2P

Rated current : 51.7/27.4 A  
 LRC : 5.1  
 Rated torque : 36.2 ft.lb  
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 Breakdown torque : 210 %  
 Rated speed : 2905 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 : 13163469  
Catalog # : 02036OT3E254TC-SG

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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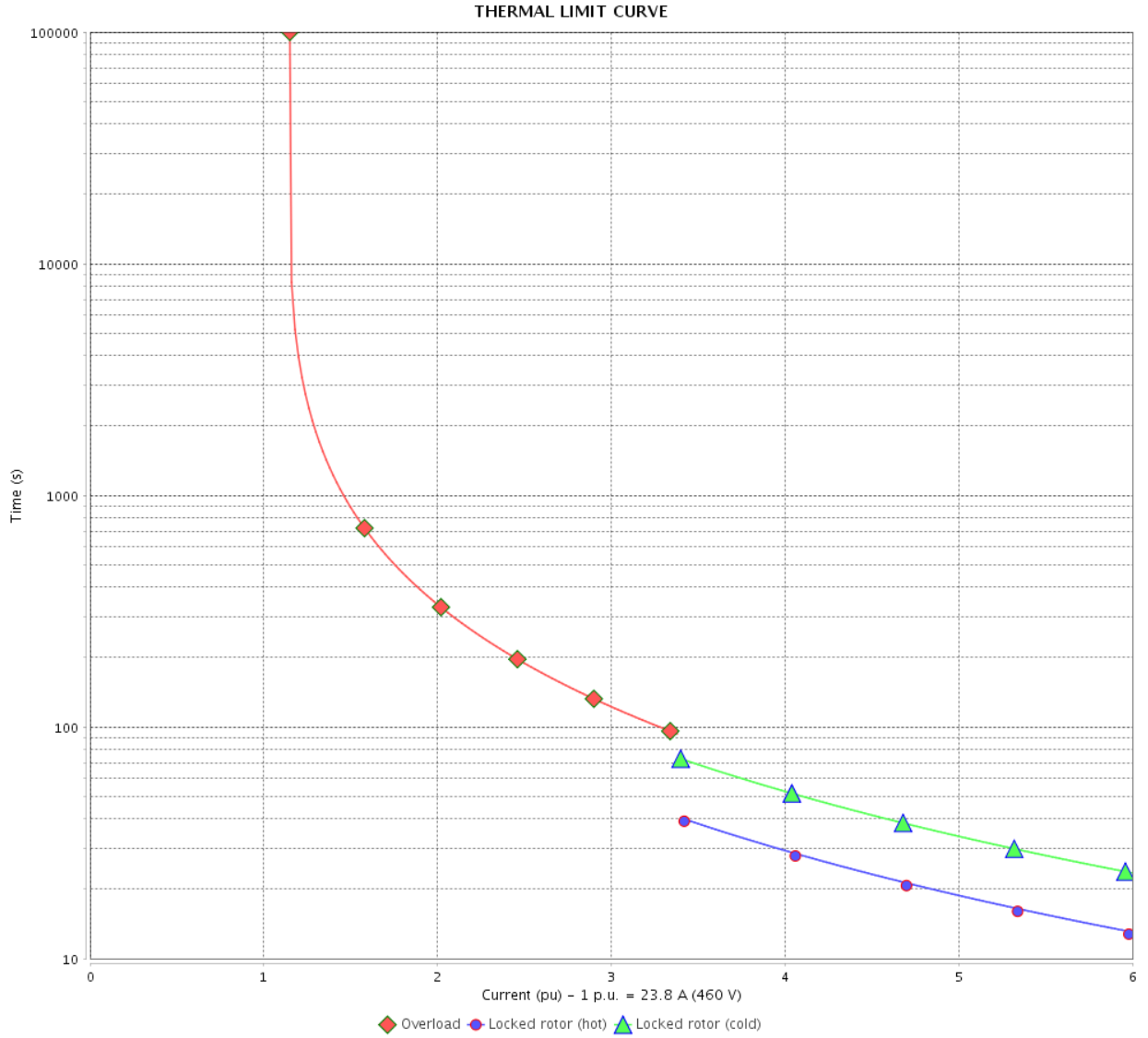


# THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



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



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Performance : 190/380 V 50 Hz 2P

Rated current	: 58.0/29.0 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

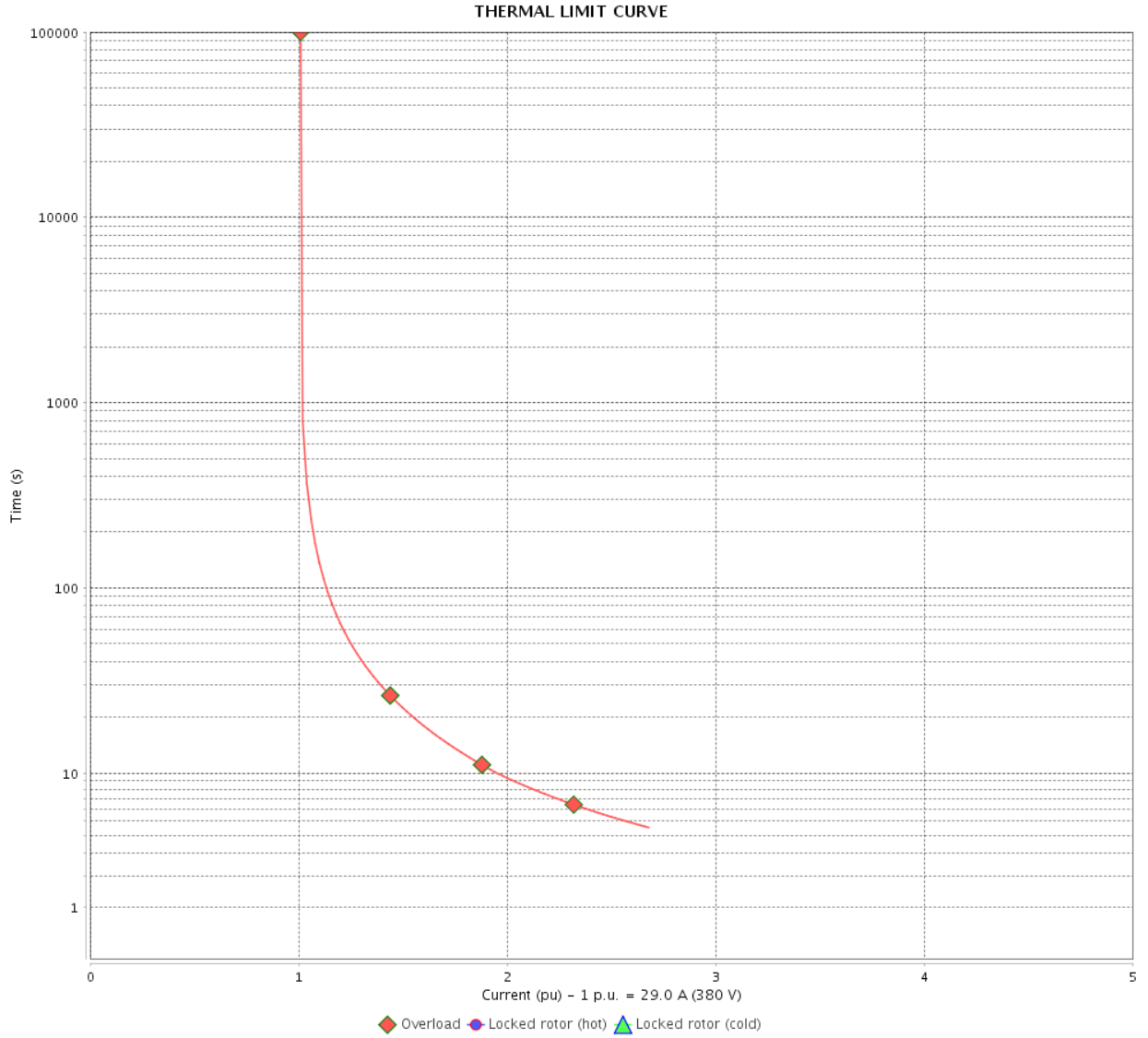
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# THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



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



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Locked rotor torque : 140 %	Service factor : 1.00
Breakdown torque : 210 %	Temperature rise : 80 K
Rated speed : 2905 rpm	Design : B

Heating constant

Cooling constant

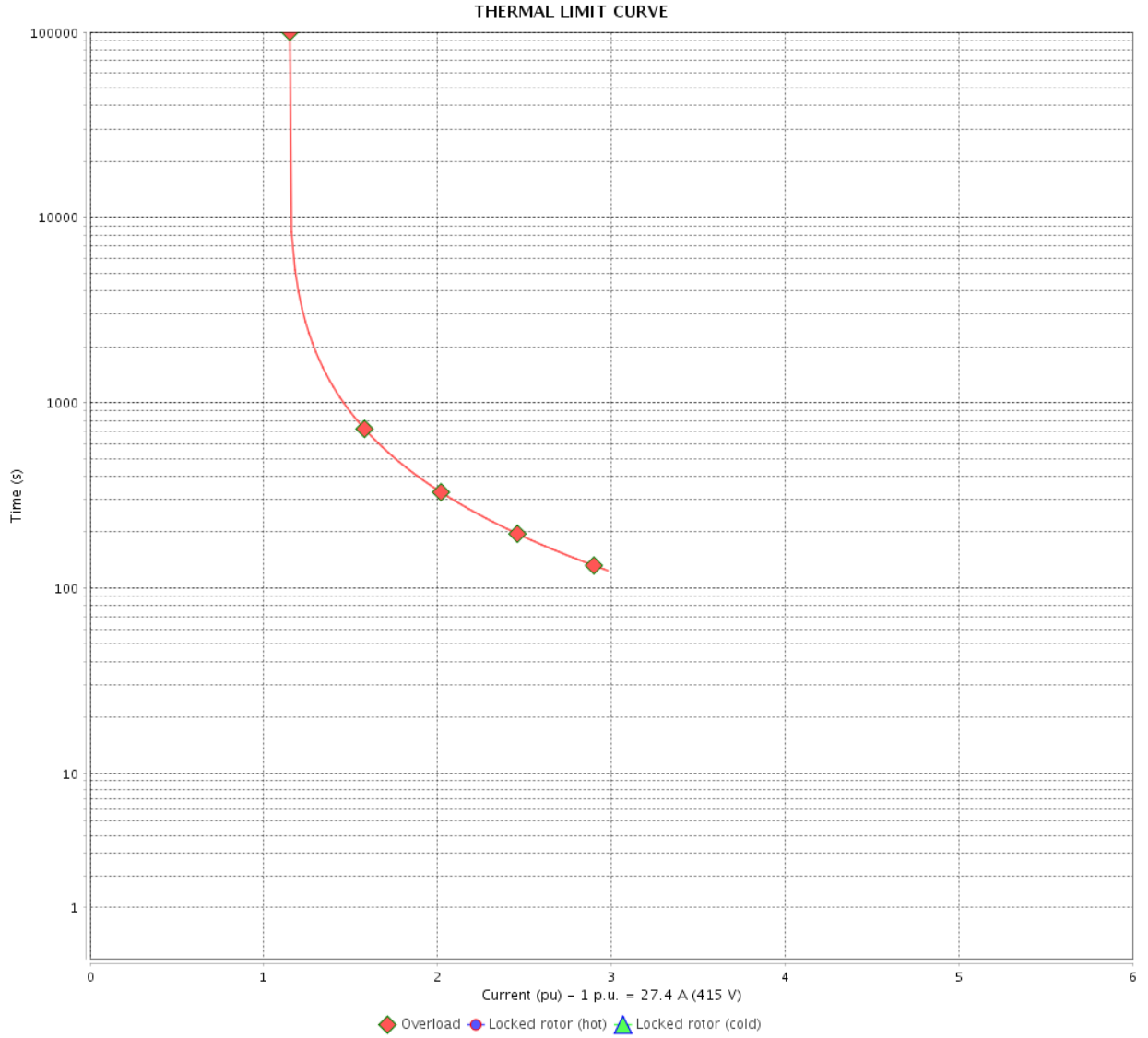
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# THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



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



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# VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage



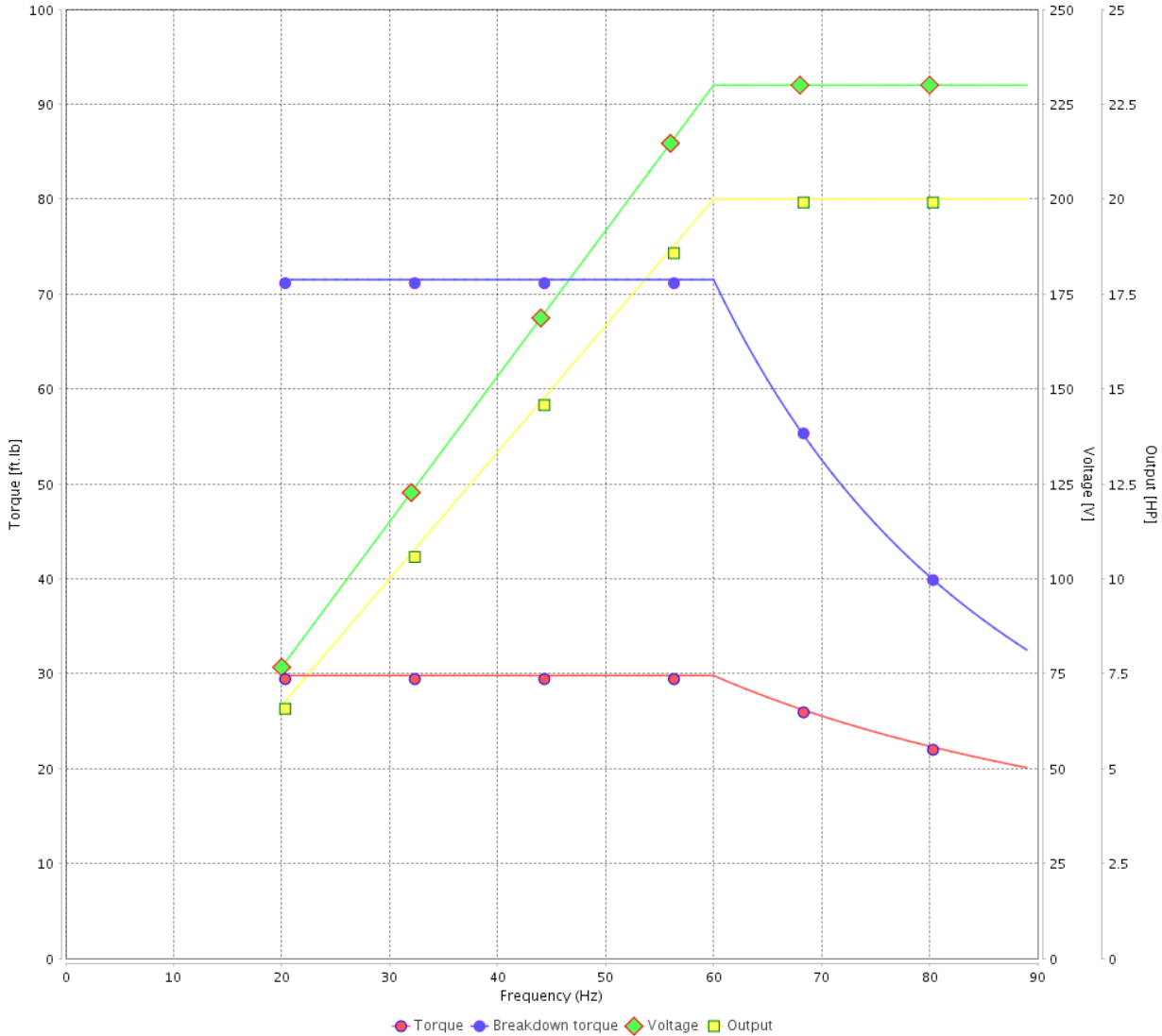
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 13163469

Catalog # : 02036OT3E254TC-SG

VFD OPERATION CURVE

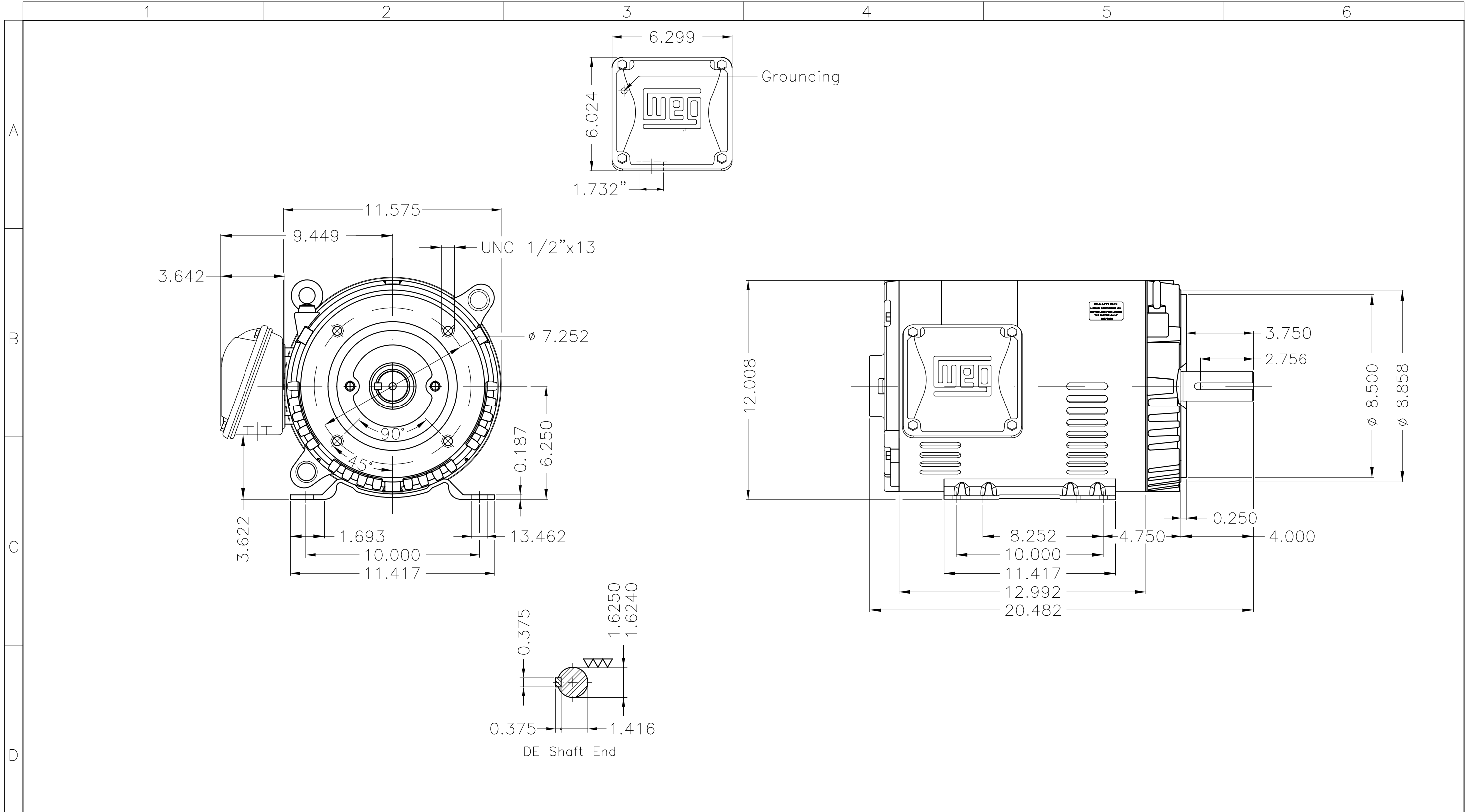


Performance : 230/460 V 60 Hz 2P

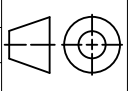
Rated current : 47.6/23.8 A  
 LRC : 6.0  
 Rated torque : 29.8 ft.lb  
 Locked rotor torque : 180 %  
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 Rated speed : 3525 rpm

Moment of inertia (J) : 0.7848 sq.ft.lb  
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 Temperature rise : 80 K  
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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. FRAME 254/6TC IP21 ODP					
CHECKED							
RELEASED							
REL DT.	WMO	Jaragua do Sul	Product Engineering	SHEET 1 / 1			

20 HP 02 Poles 60 Hz

A

PREVIEW

WDD



Dimensions in inches XME A3