

# DATA SHEET

## Three Phase Induction Motor - Squirrel Cage



Customer					
Product line		: NEMA Premium Efficiency Three-Phase	Product code :		14407014
			Catalog # :		03018XT3E286TC
Frame		: 286TC	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>		: 524 lb
Protection degree		: IP55	Moment of inertia (J)		: 5.16 sq.ft.lb
Design		: B			
Output [HP]	30	30	30	30	
Poles	4	4	4	4	
Frequency [Hz]	60	50	50	50	
Rated voltage [V]	230/460	380	400	415	
Rated current [A]	72.0/36.0	43.4	41.4	40.4	
L. R. Amperes [A]	569/284	278	298	311	
LRC [A]	7.9x(Code G)	6.4x(Code F)	7.2x(Code G)	7.7x(Code G)	
No load current [A]	29.0/14.5	14.5	15.5	16.5	
Rated speed [RPM]	1770	1460	1465	1470	
Slip [%]	1.67	2.67	2.33	2.00	
Rated torque [ft.lb]	89.0	108	108	108	
Locked rotor torque [%]	310	229	260	290	
Breakdown torque [%]	310	229	260	290	
Service factor	1.15	1.00	1.00	1.00	
Temperature rise	80 K	80 K	80 K	80 K	
Locked rotor time	30s (cold) 17s (hot)	36s (cold) 20s (hot)	36s (cold) 20s (hot)	36s (cold) 20s (hot)	
Noise level <sup>2</sup>	68.0 dB(A)	64.0 dB(A)	64.0 dB(A)	64.0 dB(A)	
Efficiency (%)	25%	92.8	93.5	93.4	92.7
	50%	93.0	93.0	93.0	92.4
	75%	93.6	92.4	93.0	93.0
	100%	93.6	91.7	92.4	92.4
Power Factor	25%	0.42	0.47	0.44	0.42
	50%	0.66	0.71	0.68	0.66
	75%	0.77	0.80	0.78	0.77
	100%	0.82	0.84	0.83	0.82
Bearing type		Drive end : 6311 C3	Non drive end : 6211 C3	Foundation loads	
Sealing		: Oil Seal	: Lip Seal	Max. traction : 1094 lb	
Lubrication interval		: 20000 h	: 20000 h	Max. compression : 1617 lb	
Lubricant amount		: 18 g	: 11 g		
Lubricant type		: Mobil Polyrex EM			
Notes					
USABLE @208V 79.6A SF 1.00 SFA 79.6A					
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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Customer : \_\_\_\_\_

### Thermal protection

ID	Application	Type	Quantity	Sensing Temperature
1	Winding	Thermostat - 2 wires	1 x Phase	155 °C

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# TORQUE AND CURRENT VS SPEED CURVE



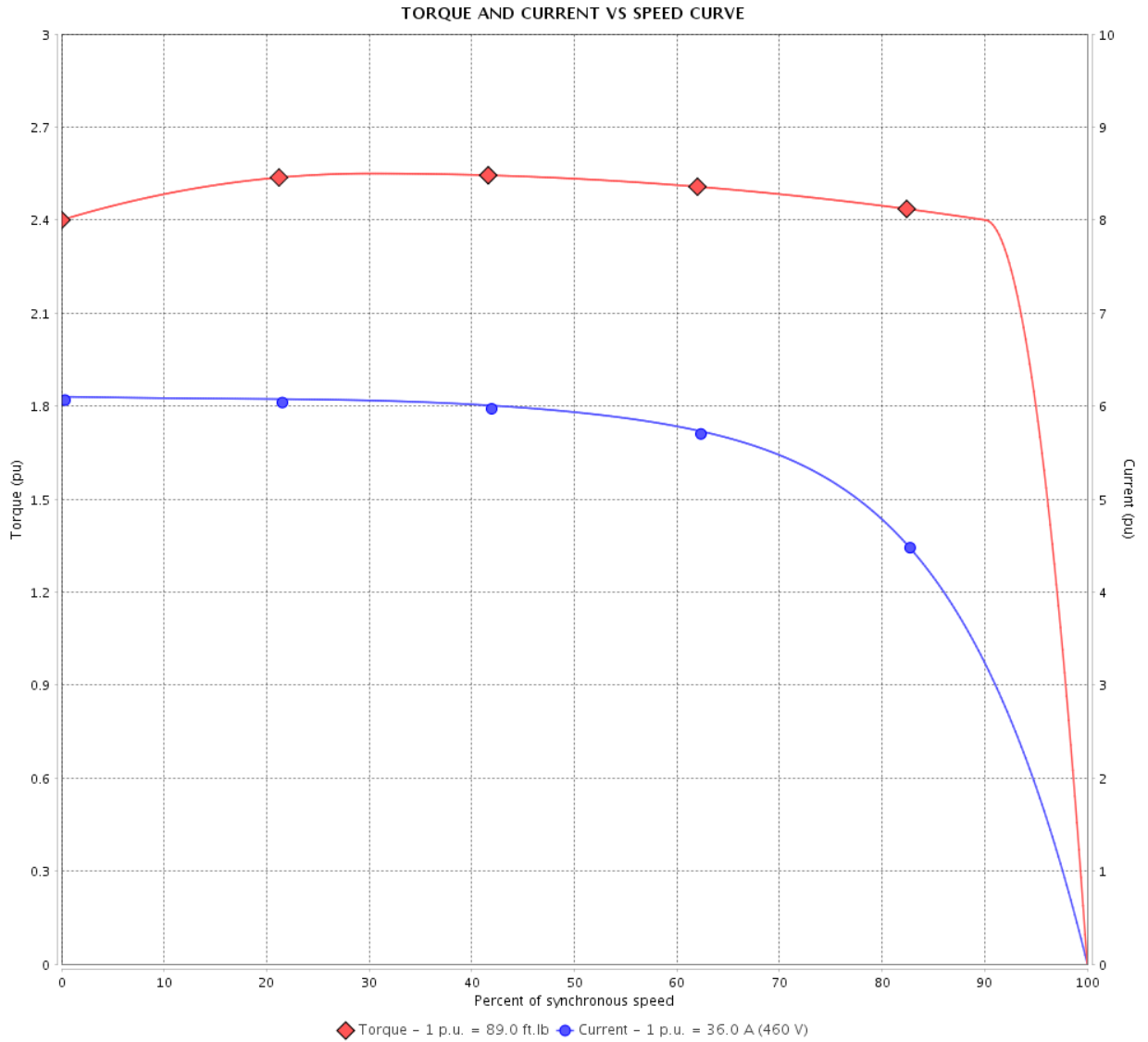
## Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 14407014

Catalog # : 03018XT3E286TC



Performance : 230/460 V 60 Hz 4P

Rated current : 72.0/36.0 A  
 LRC : 7.9  
 Rated torque : 89.0 ft.lb  
 Locked rotor torque : 310 %  
 Breakdown torque : 310 %  
 Rated speed : 1770 rpm

Moment of inertia (J) : 5.16 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.15  
 Temperature rise : 80 K  
 Design : B

Locked rotor time : 30s (cold) 17s (hot)

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# TORQUE AND CURRENT VS SPEED CURVE

Three Phase Induction Motor - Squirrel Cage



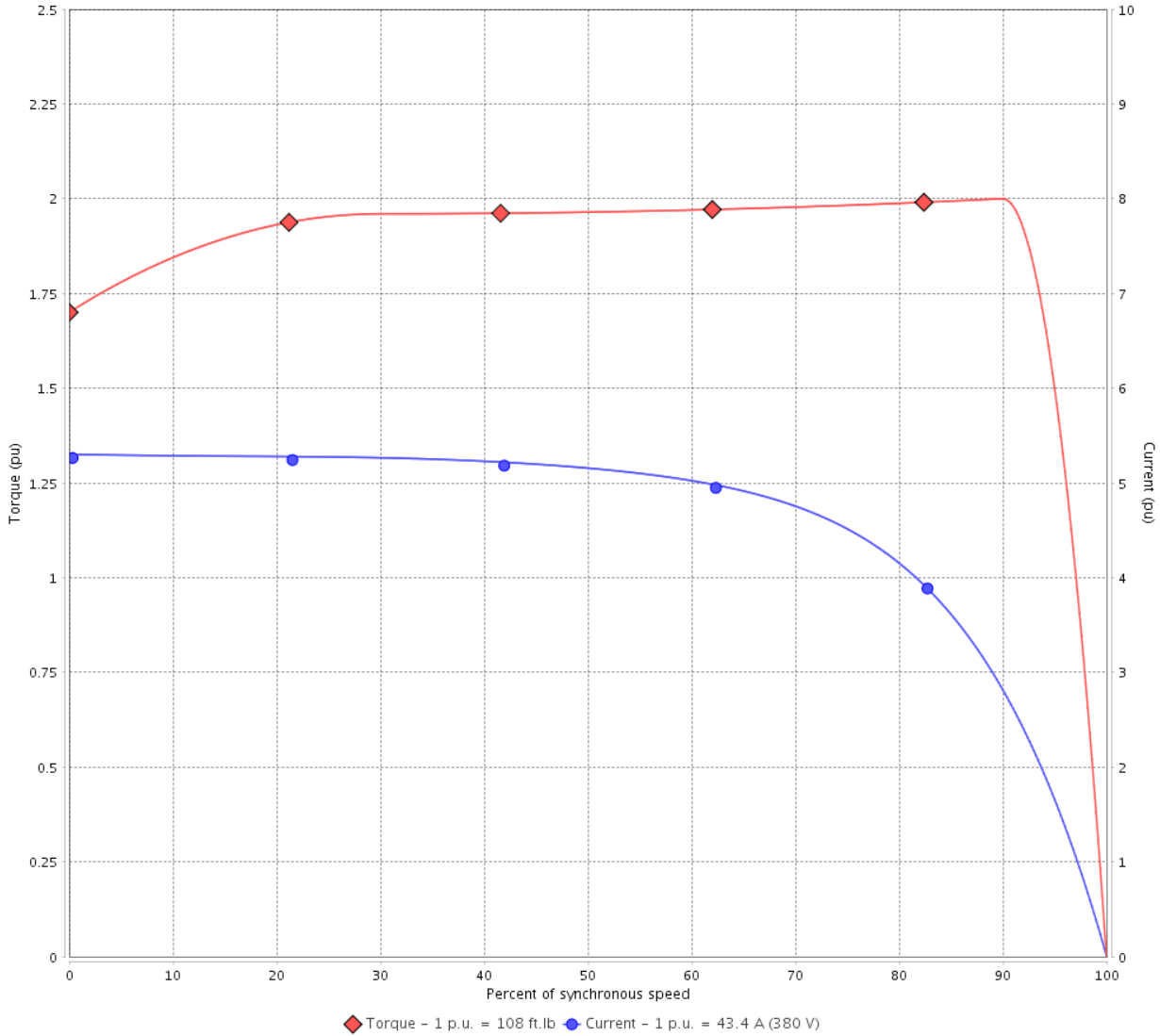
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 14407014

Catalog # : 03018XT3E286TC

TORQUE AND CURRENT VS SPEED CURVE



Performance : 380 V 50 Hz 4P IE2

Rated current	: 43.4 A	Moment of inertia (J)	: 5.16 sq.ft.lb
LRC	: 6.4	Duty cycle	: Cont.(S1)
Rated torque	: 108 ft.lb	Insulation class	: F
Locked rotor torque	: 229 %	Service factor	: 1.00
Breakdown torque	: 229 %	Temperature rise	: 80 K
Rated speed	: 1460 rpm	Design	: B

Locked rotor time : 36s (cold) 20s (hot)

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# TORQUE AND CURRENT VS SPEED CURVE



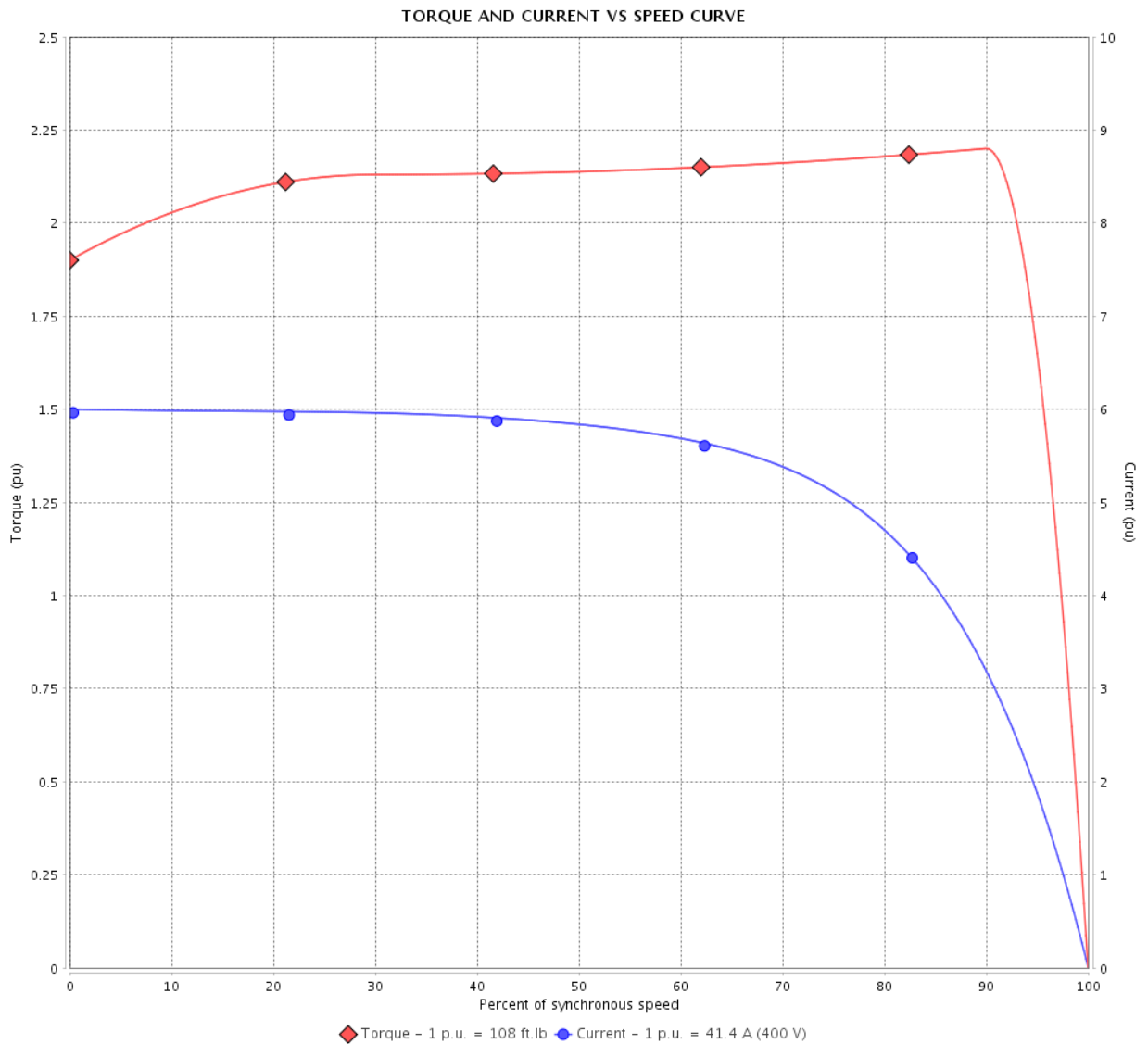
## Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 14407014

Catalog # : 03018XT3E286TC



Performance : 400 V 50 Hz 4P IE2

Rated current	: 41.4 A	Moment of inertia (J)	: 5.16 sq.ft.lb
LRC	: 7.2	Duty cycle	: Cont.(S1)
Rated torque	: 108 ft.lb	Insulation class	: F
Locked rotor torque	: 260 %	Service factor	: 1.00
Breakdown torque	: 260 %	Temperature rise	: 80 K
Rated speed	: 1465 rpm	Design	: B

Locked rotor time : 36s (cold) 20s (hot)

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# TORQUE AND CURRENT VS SPEED CURVE

Three Phase Induction Motor - Squirrel Cage



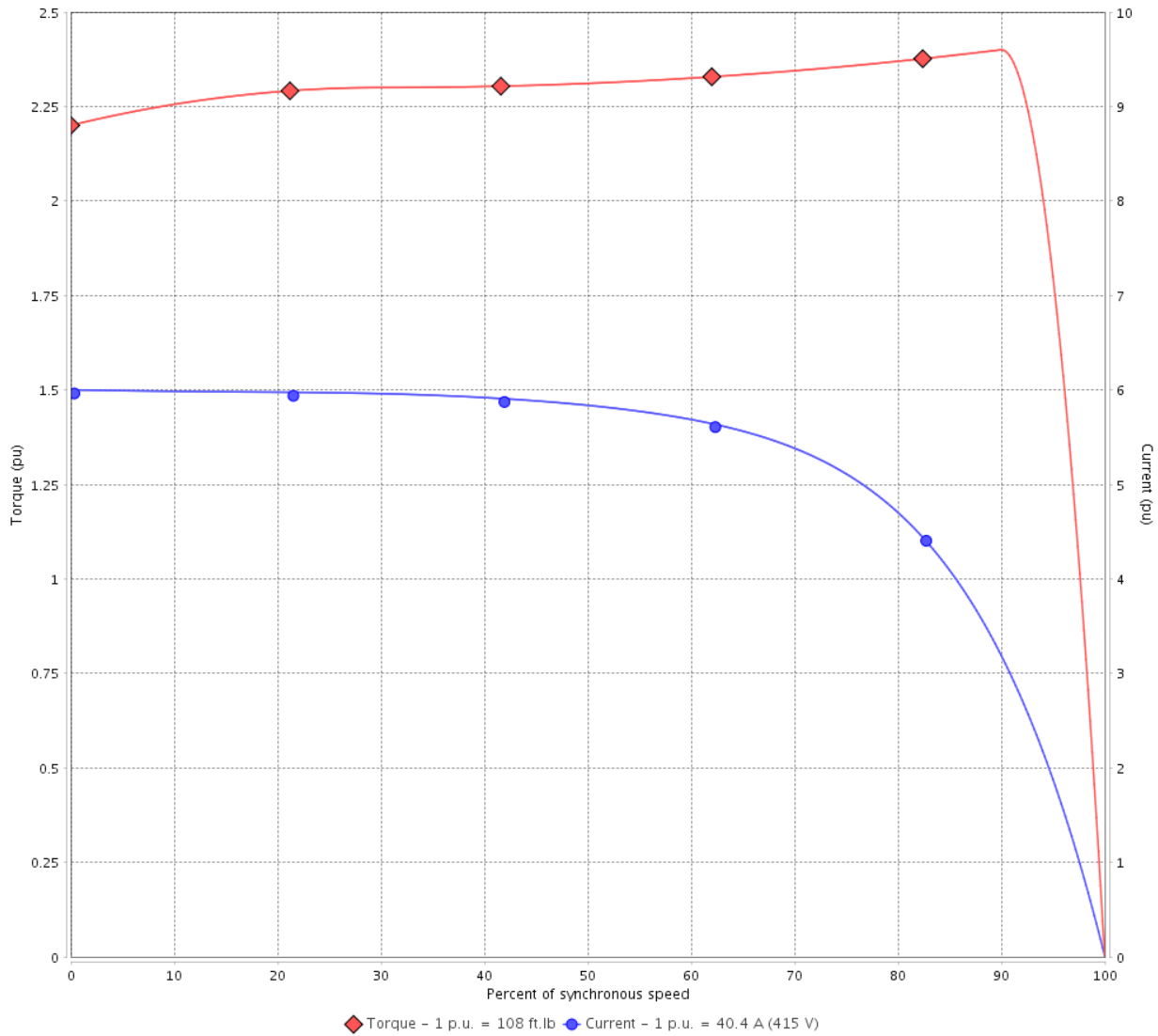
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 14407014

Catalog # : 03018XT3E286TC

TORQUE AND CURRENT VS SPEED CURVE



Performance : 415 V 50 Hz 4P IE2

Rated current	: 40.4 A	Moment of inertia (J)	: 5.16 sq.ft.lb
LRC	: 7.7	Duty cycle	: Cont.(S1)
Rated torque	: 108 ft.lb	Insulation class	: F
Locked rotor torque	: 290 %	Service factor	: 1.00
Breakdown torque	: 290 %	Temperature rise	: 80 K
Rated speed	: 1470 rpm	Design	: B

Locked rotor time : 36s (cold) 20s (hot)

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# LOAD PERFORMANCE CURVE

## Three Phase Induction Motor - Squirrel Cage

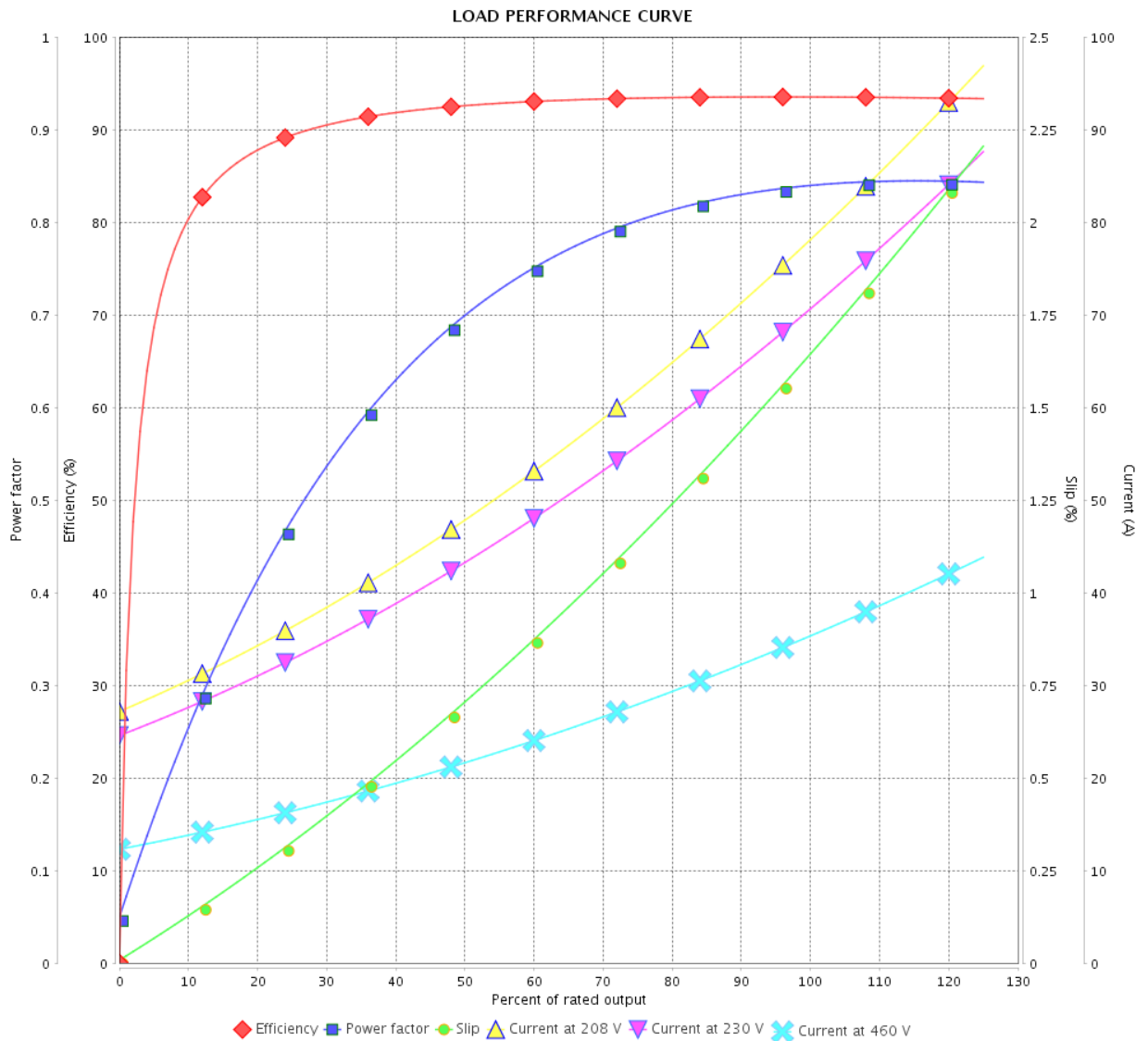


Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 14407014

Catalog # : 03018XT3E286TC



Performance : 230/460 V 60 Hz 4P

Rated current : 72.0/36.0 A  
 LRC : 7.9  
 Rated torque : 89.0 ft.lb  
 Locked rotor torque : 310 %  
 Breakdown torque : 310 %  
 Rated speed : 1770 rpm

Moment of inertia (J) : 5.16 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

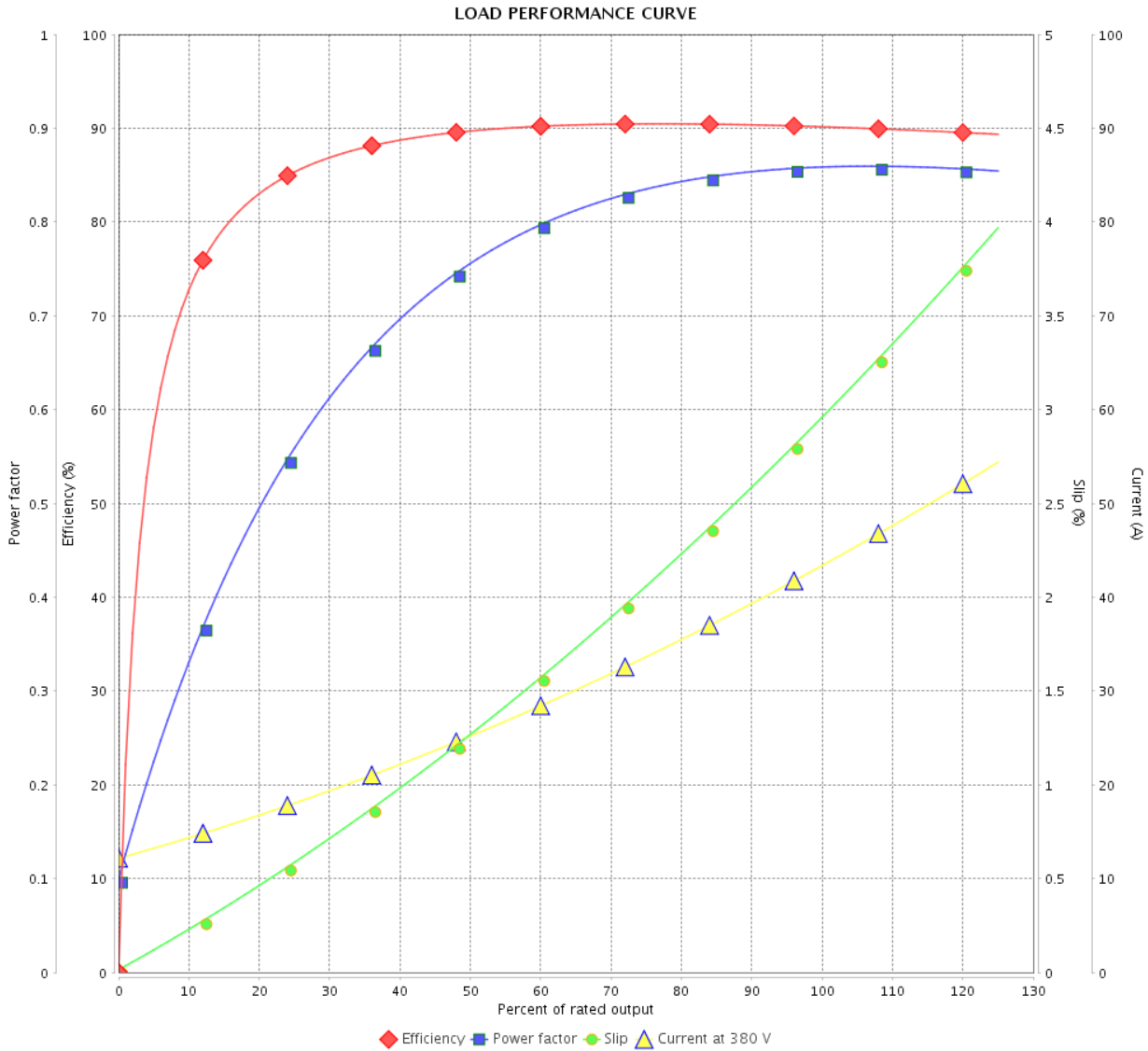


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Product code : 14407014

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Performance : 380 V 50 Hz 4P IE2

Rated current	: 43.4 A	Moment of inertia (J)	: 5.16 sq.ft.lb
LRC	: 6.4	Duty cycle	: Cont.(S1)
Rated torque	: 108 ft.lb	Insulation class	: F
Locked rotor torque	: 229 %	Service factor	: 1.00
Breakdown torque	: 229 %	Temperature rise	: 80 K
Rated speed	: 1460 rpm	Design	: B

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# LOAD PERFORMANCE CURVE

## Three Phase Induction Motor - Squirrel Cage

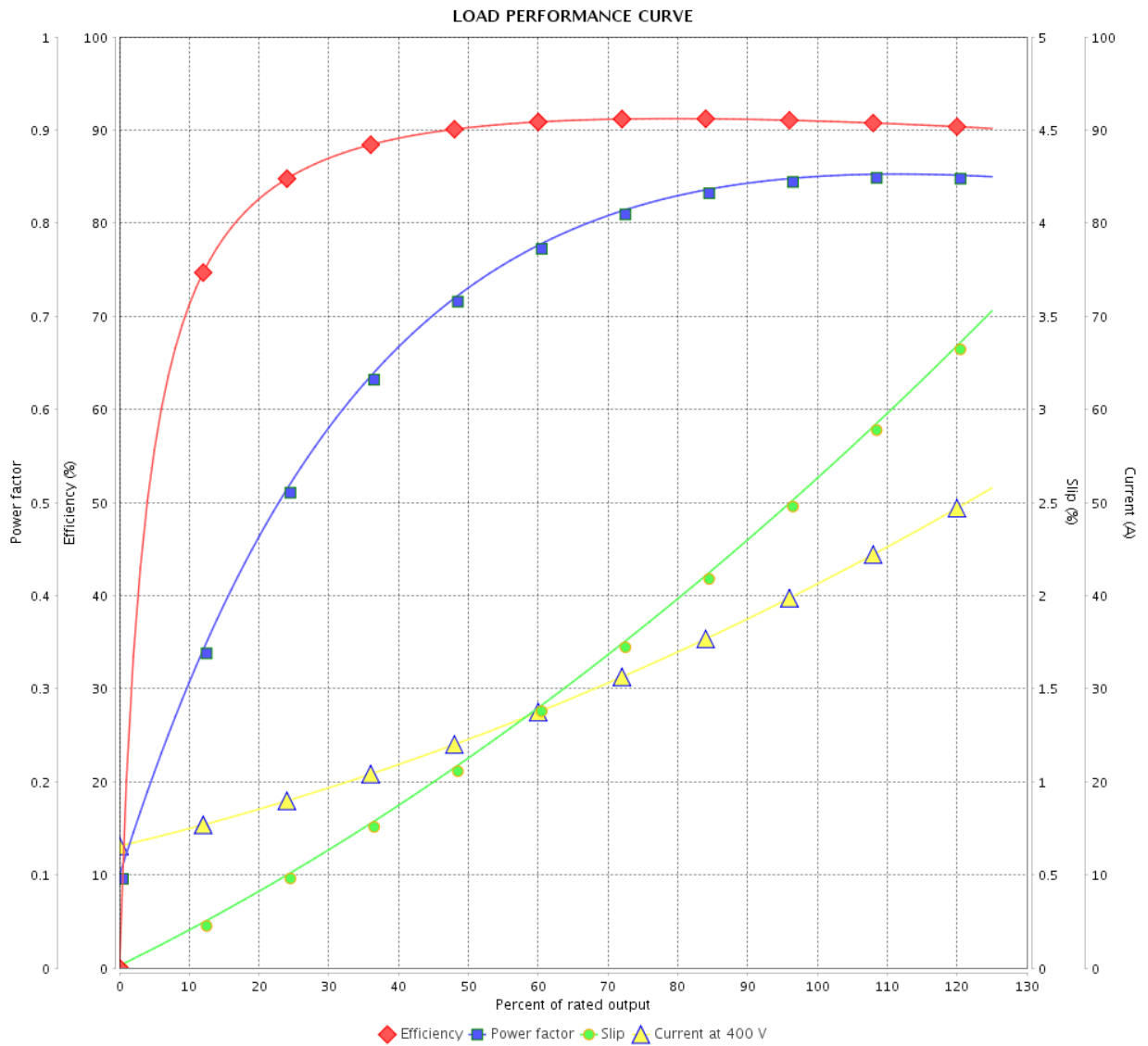


Customer : \_\_\_\_\_

Product line : NEMA Premium Efficiency Three-Phase

Product code : 14407014

Catalog # : 03018XT3E286TC



Performance : 400 V 50 Hz 4P IE2

Rated current : 41.4 A  
 LRC : 7.2  
 Rated torque : 108 ft.lb  
 Locked rotor torque : 260 %  
 Breakdown torque : 260 %  
 Rated speed : 1465 rpm

Moment of inertia (J) : 5.16 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 80 K  
 Design : B

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# LOAD PERFORMANCE CURVE

Three Phase Induction Motor - Squirrel Cage

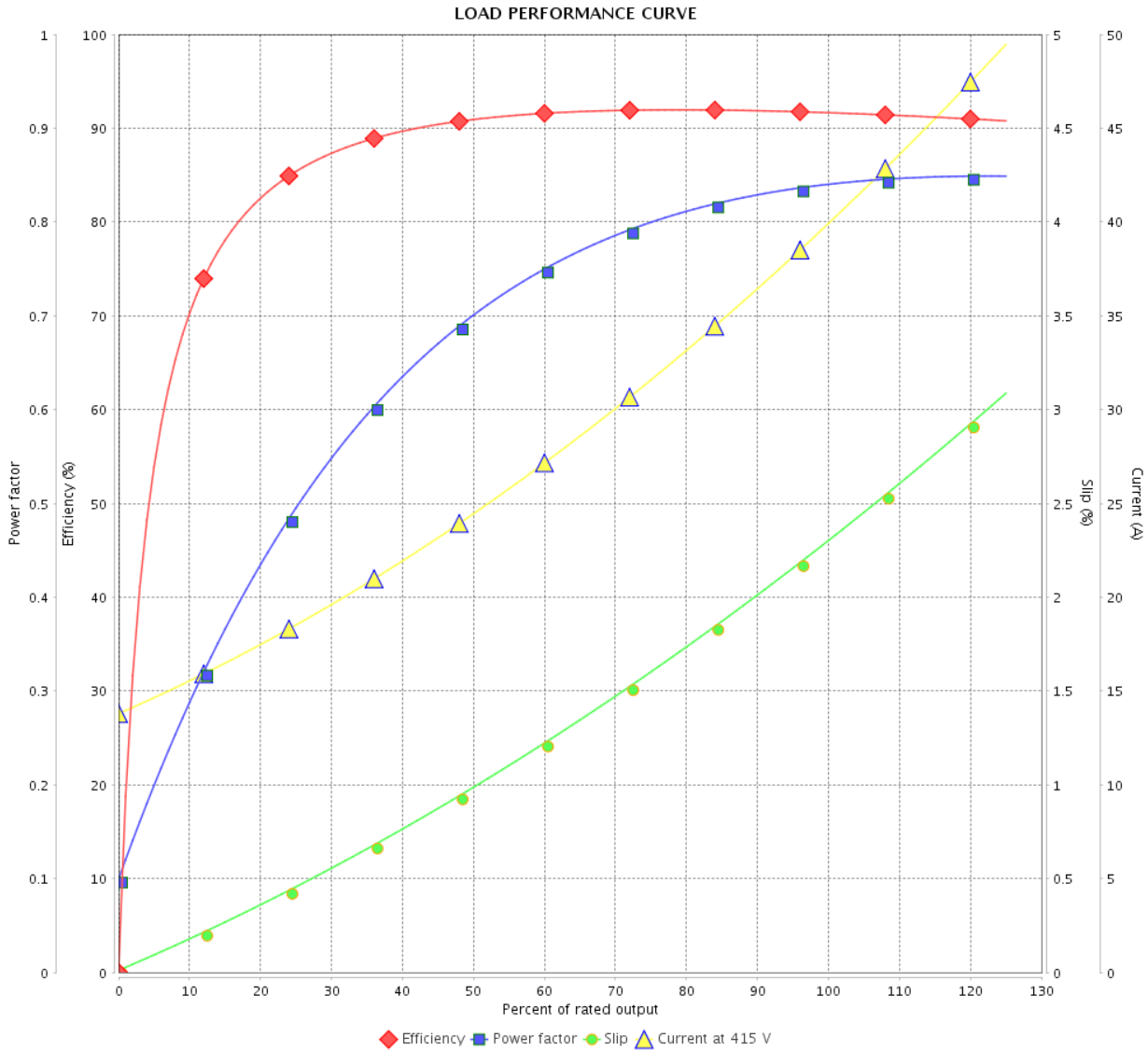


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 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 80 K  
 Design : B

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# THERMAL LIMIT CURVE



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 Design : B

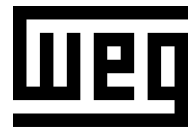
Heating constant

Cooling constant

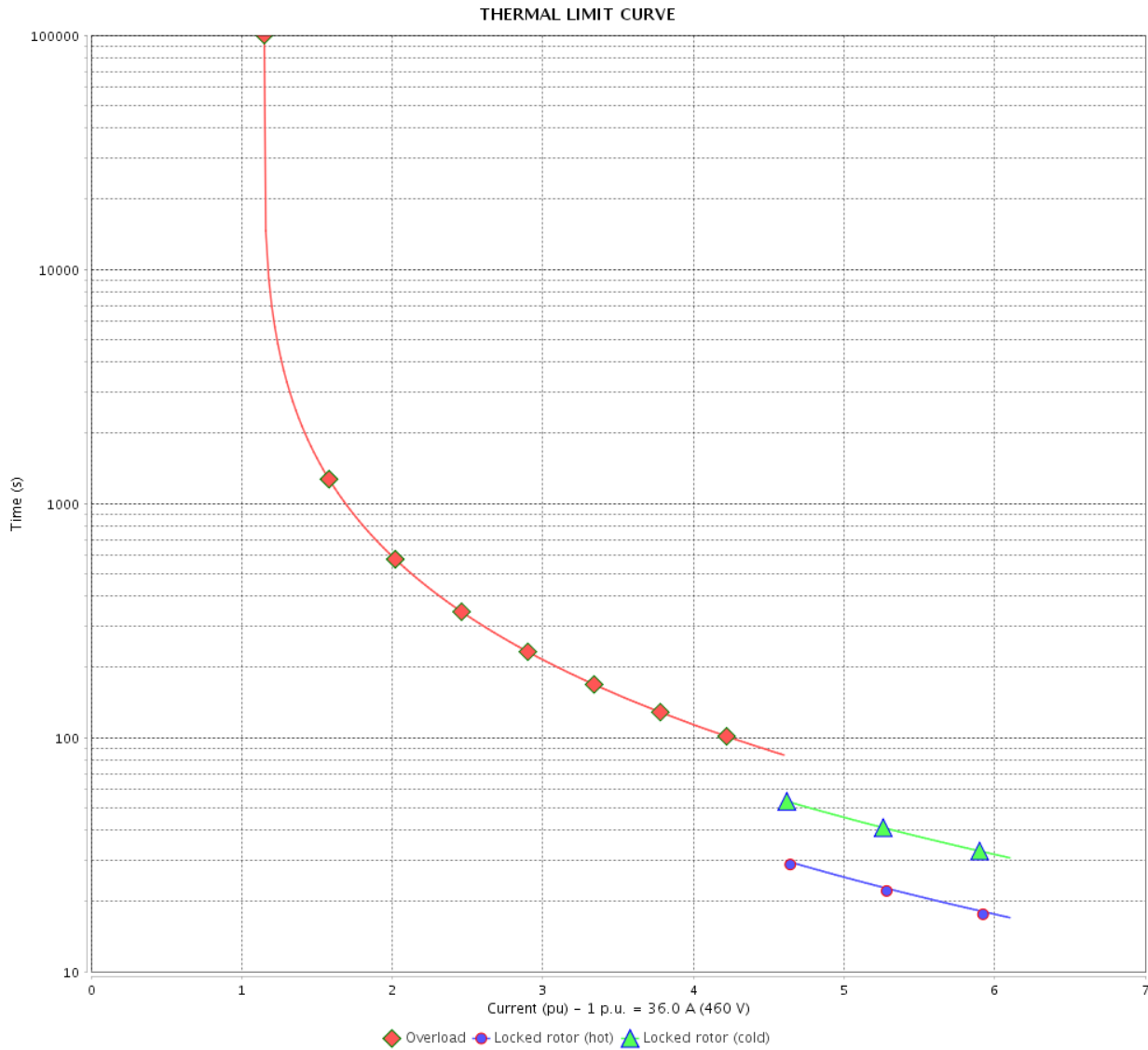
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# THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



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



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Performance : 380 V 50 Hz 4P IE2

Rated current : 43.4 A	Moment of inertia (J) : 5.16 sq.ft.lb
LRC : 6.4	Duty cycle : Cont.(S1)
Rated torque : 108 ft.lb	Insulation class : F
Locked rotor torque : 229 %	Service factor : 1.00
Breakdown torque : 229 %	Temperature rise : 80 K
Rated speed : 1460 rpm	Design : B

Heating constant

Cooling constant

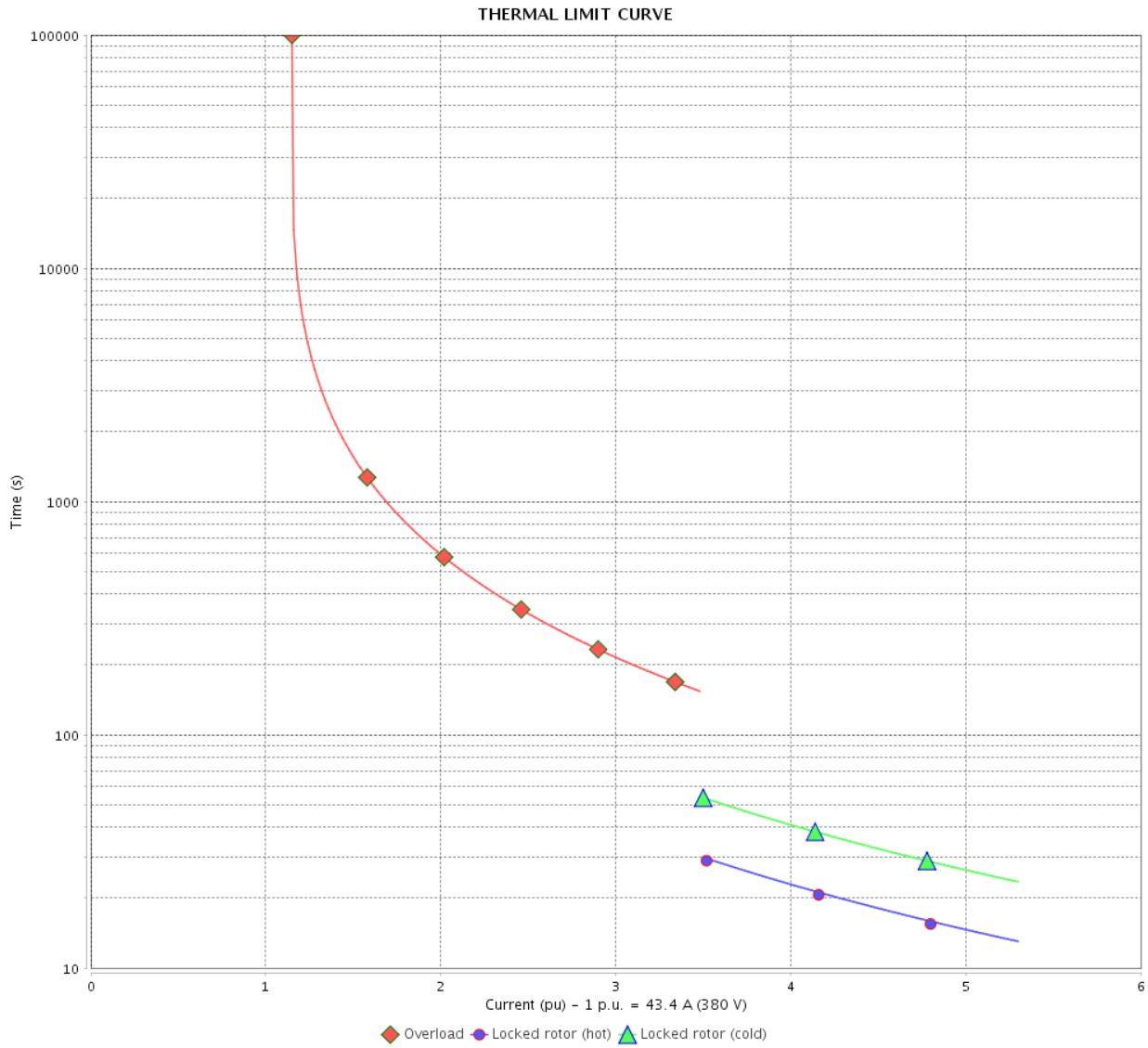
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Performance : 400 V 50 Hz 4P IE2

Rated current : 41.4 A  
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 Locked rotor torque : 260 %  
 Breakdown torque : 260 %  
 Rated speed : 1465 rpm

Moment of inertia (J) : 5.16 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 80 K  
 Design : B

Heating constant

Cooling constant

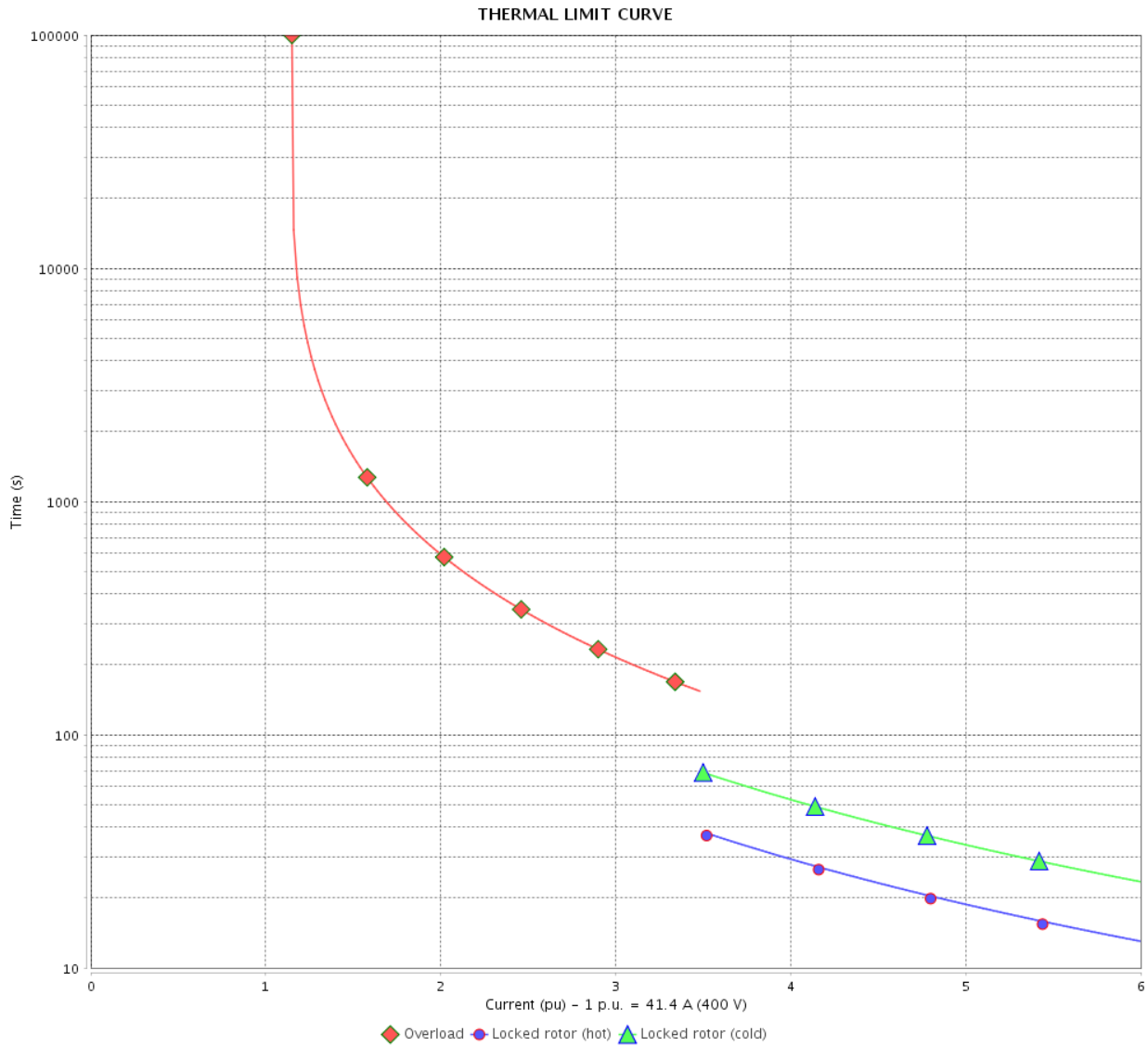
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Three Phase Induction Motor - Squirrel Cage



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# THERMAL LIMIT CURVE



## Three Phase Induction Motor - Squirrel Cage

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Catalog # : 03018XT3E286TC

Performance : 415 V 50 Hz 4P IE2

Rated current : 40.4 A  
 LRC : 7.7  
 Rated torque : 108 ft.lb  
 Locked rotor torque : 290 %  
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 Rated speed : 1470 rpm

Moment of inertia (J) : 5.16 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
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Heating constant

Cooling constant

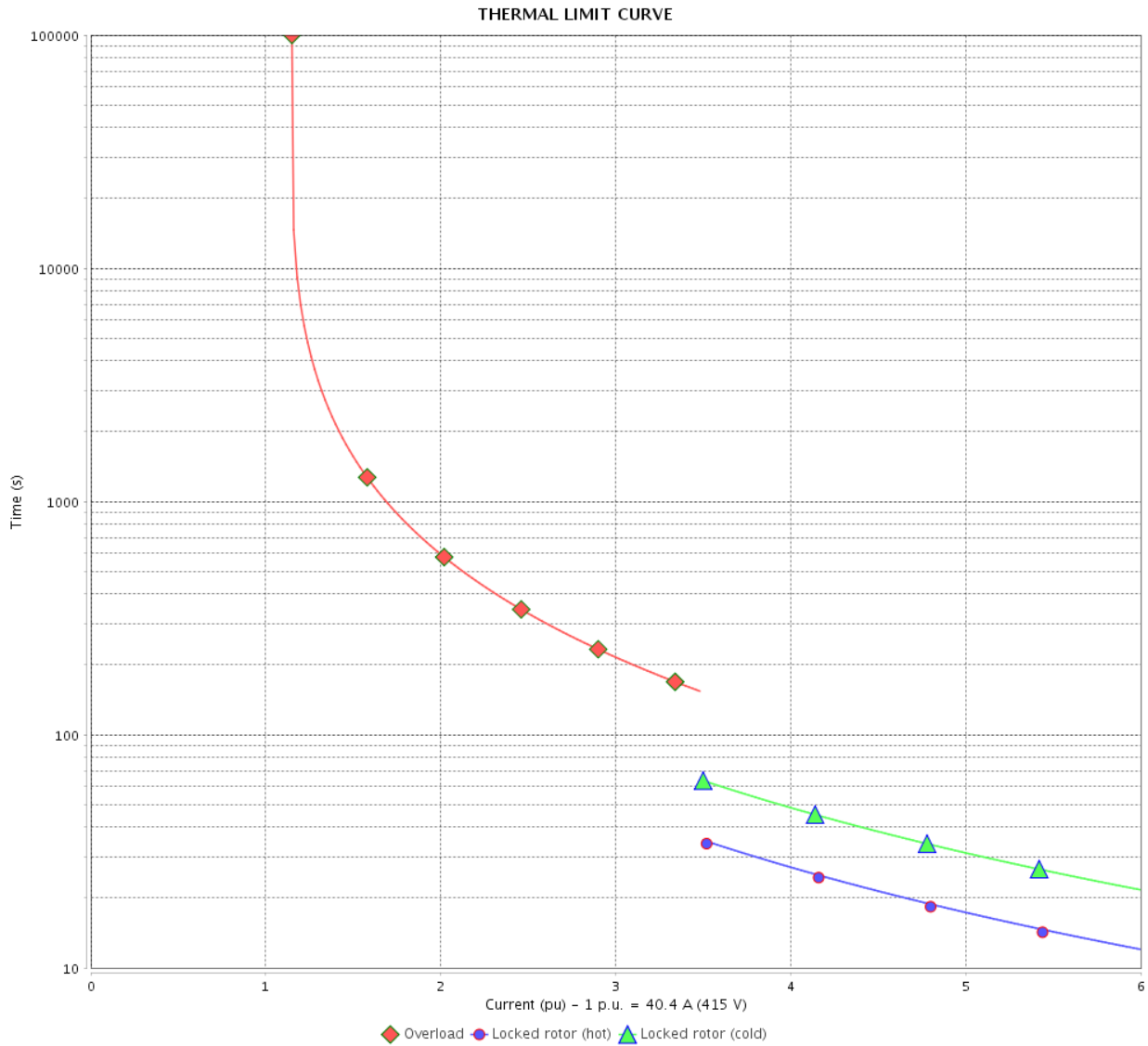
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# THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



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Date				

# VFD OPERATION CURVE

## Three Phase Induction Motor - Squirrel Cage

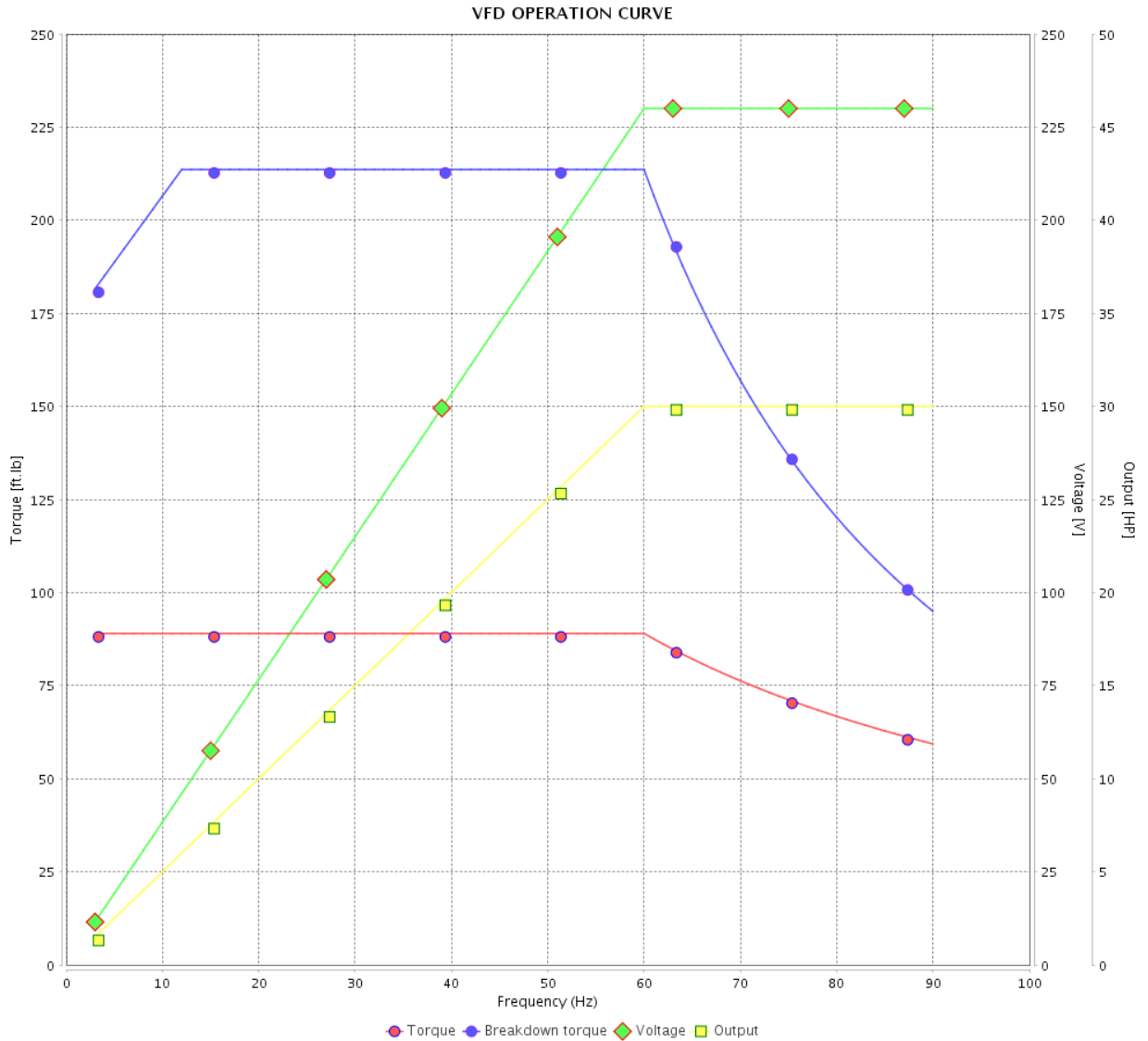


Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 14407014

Catalog # : 03018XT3E286TC



Performance : 230/460 V 60 Hz 4P

Rated current : 72.0/36.0 A  
 LRC : 7.9  
 Rated torque : 89.0 ft.lb  
 Locked rotor torque : 310 %  
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 Rated speed : 1770 rpm

Moment of inertia (J) : 5.16 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



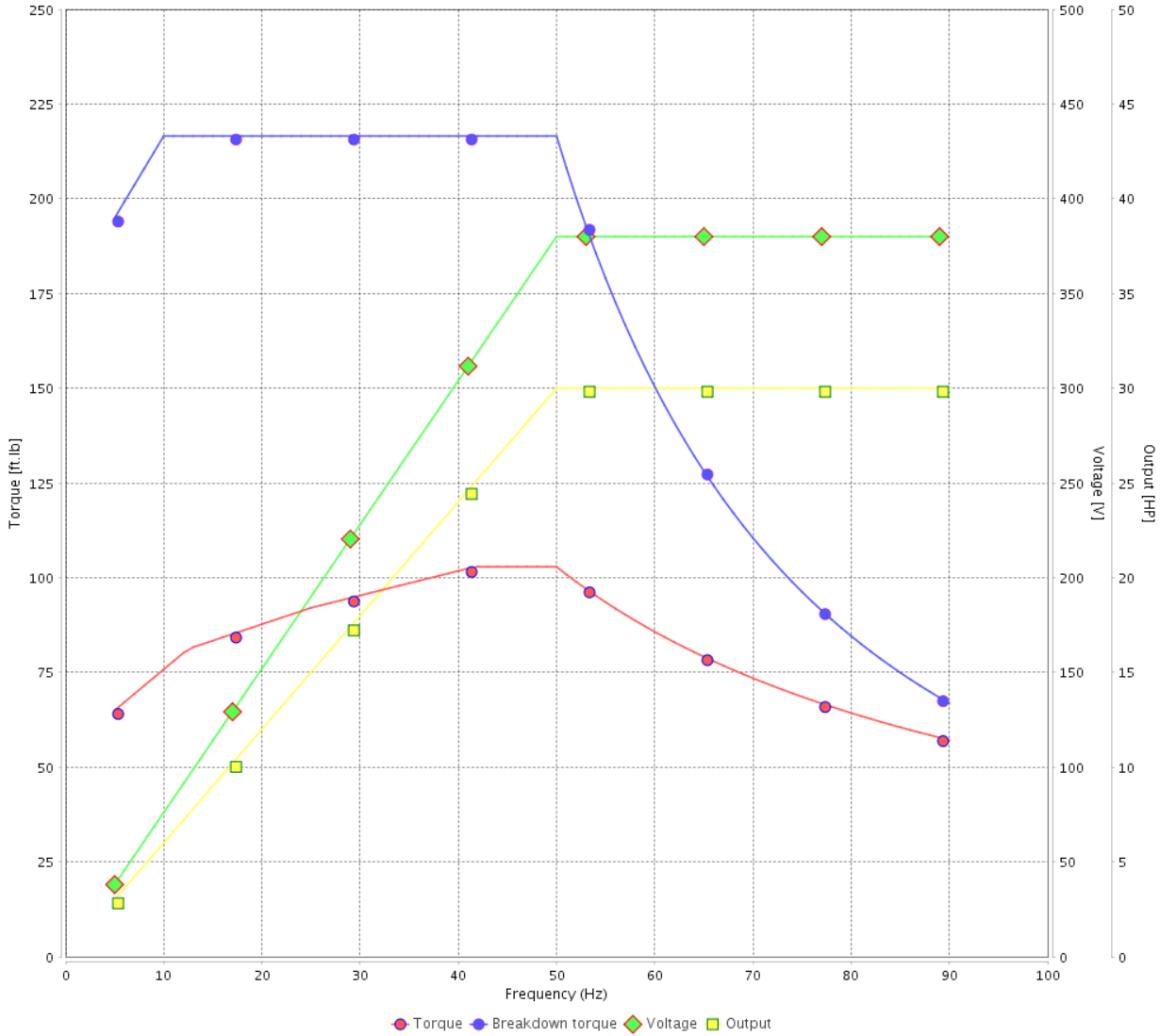
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VFD OPERATION CURVE



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Moment of inertia (J) : 5.16 sq.ft.lb  
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# VFD OPERATION CURVE

## Three Phase Induction Motor - Squirrel Cage

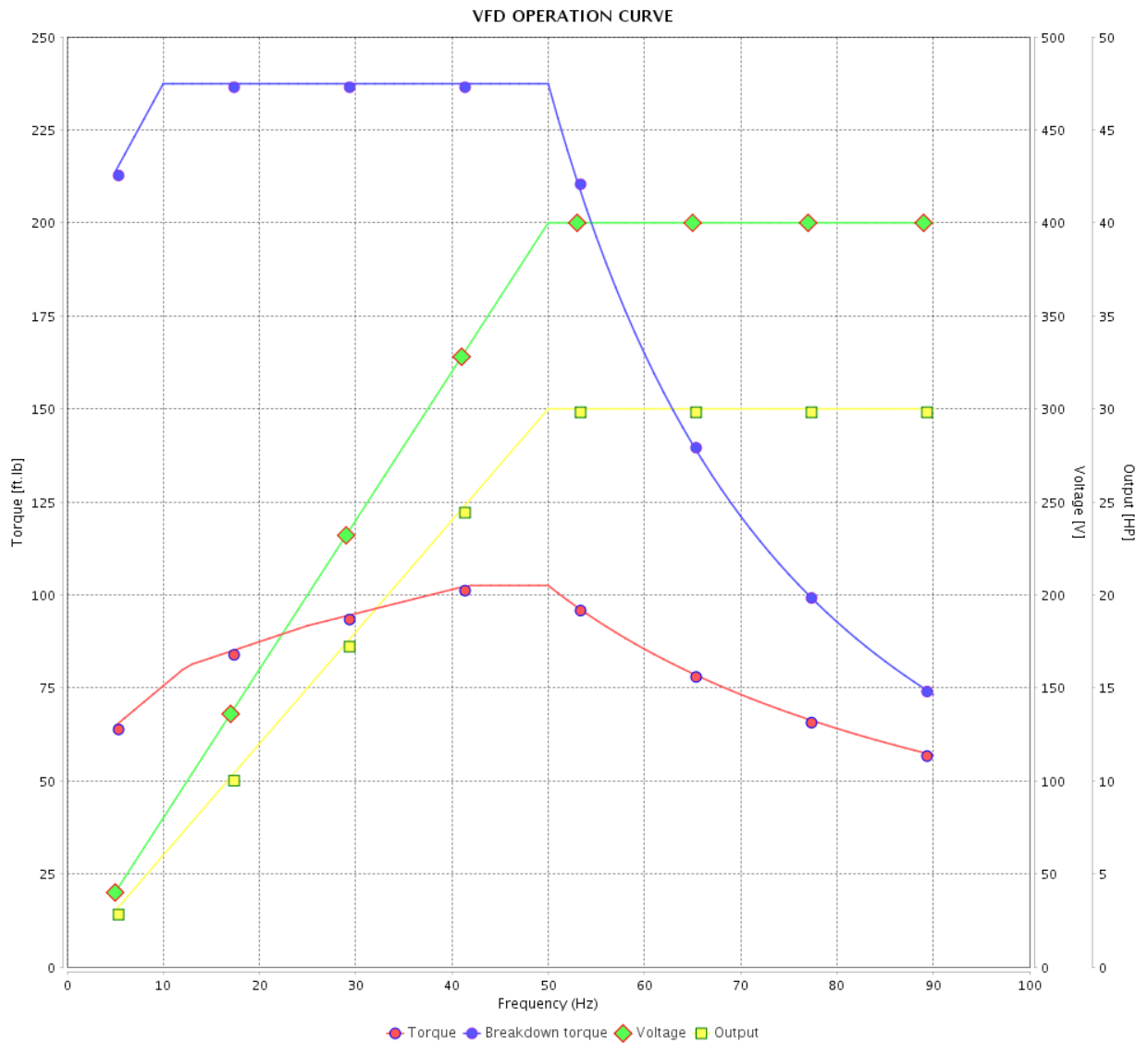


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# VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage



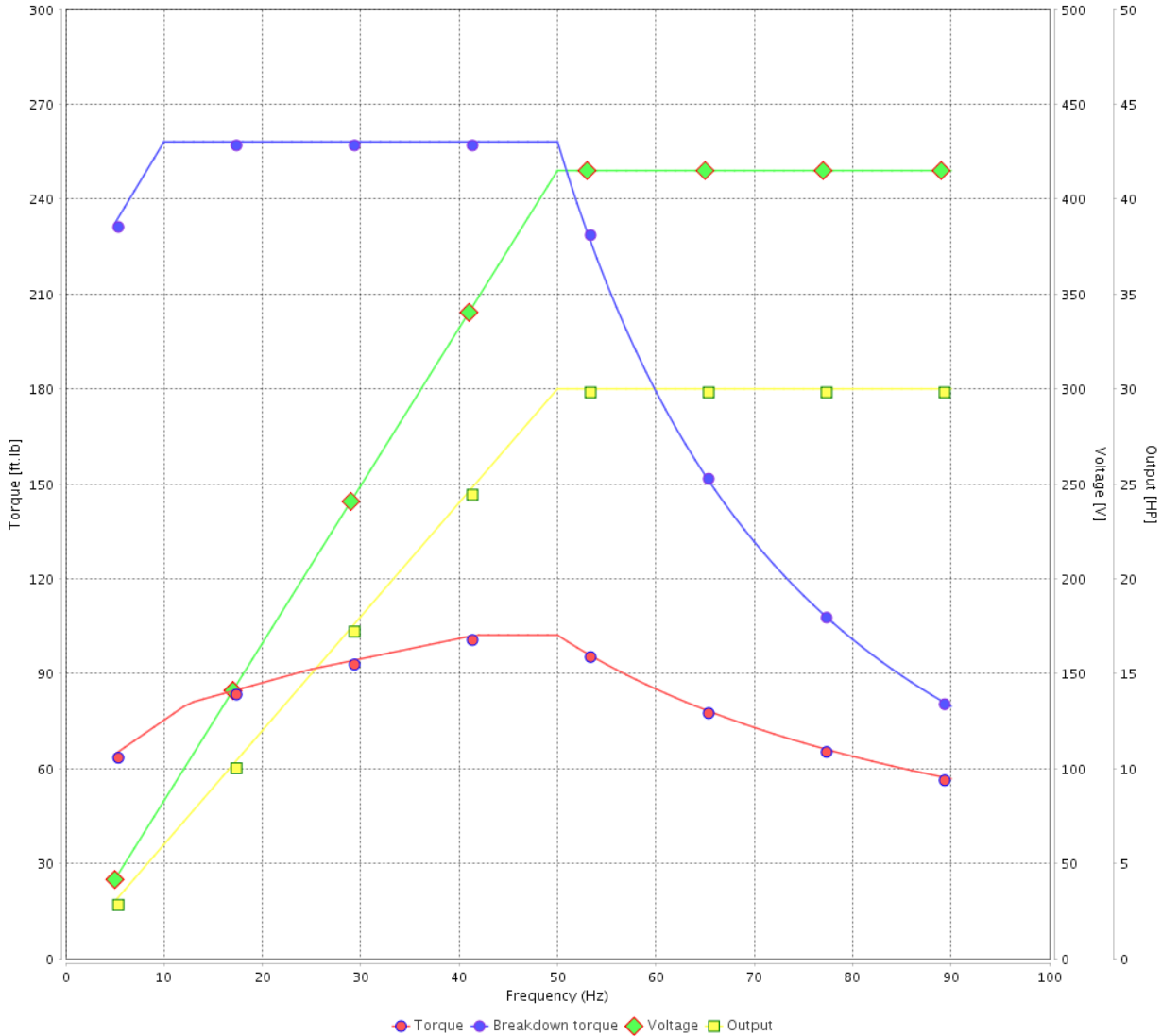
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VFD OPERATION CURVE



Performance : 415 V 50 Hz 4P IE2

Rated current	: 40.4 A	Moment of inertia (J)	: 5.16 sq.ft.lb
LRC	: 7.7	Duty cycle	: Cont.(S1)
Rated torque	: 108 ft.lb	Insulation class	: F
Locked rotor torque	: 290 %	Service factor	: 1.00
Breakdown torque	: 290 %	Temperature rise	: 80 K
Rated speed	: 1470 rpm	Design	: B

Rev.	Changes Summary	Performed	Checked	Date
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1 2 3 4 5 6

A

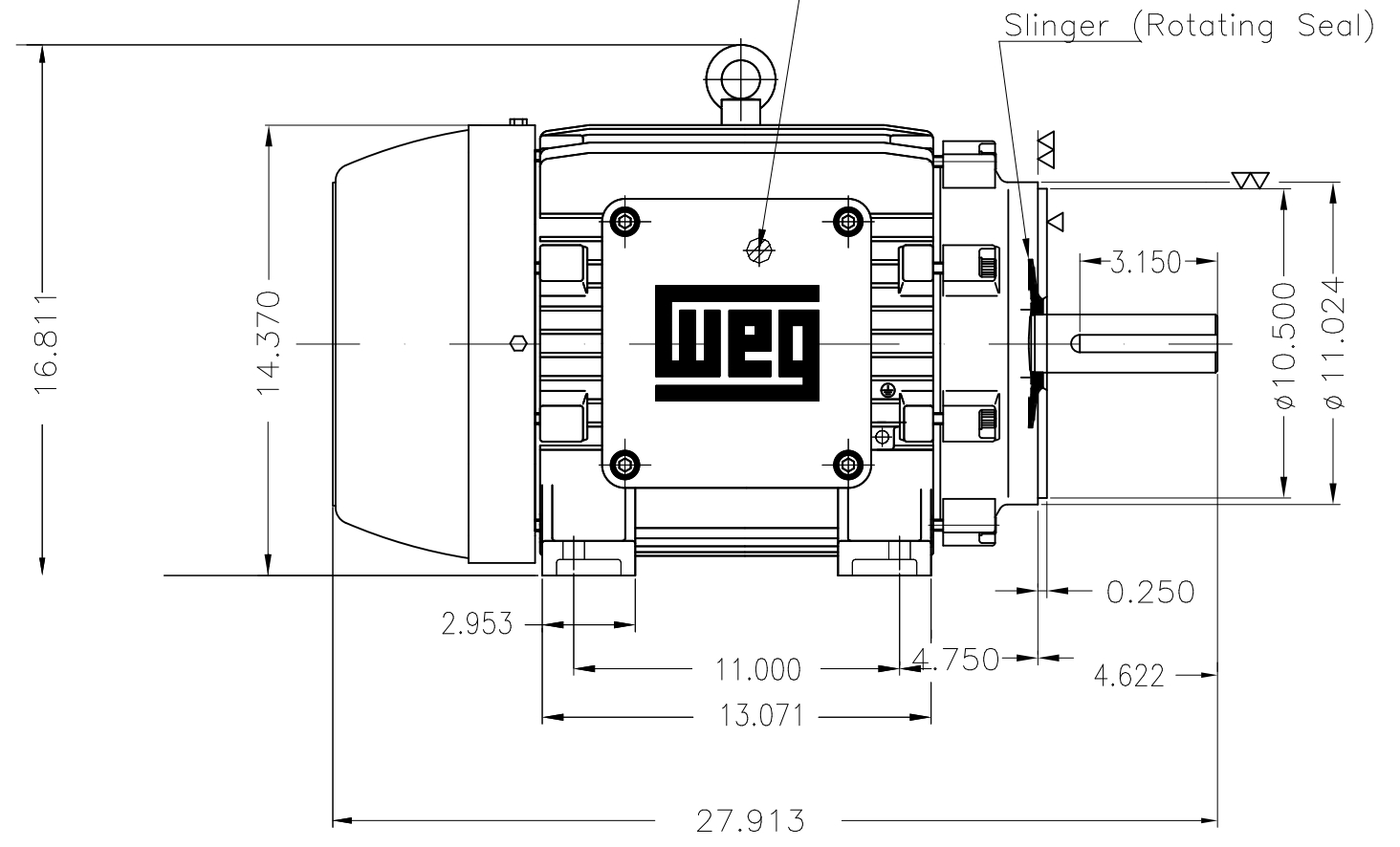
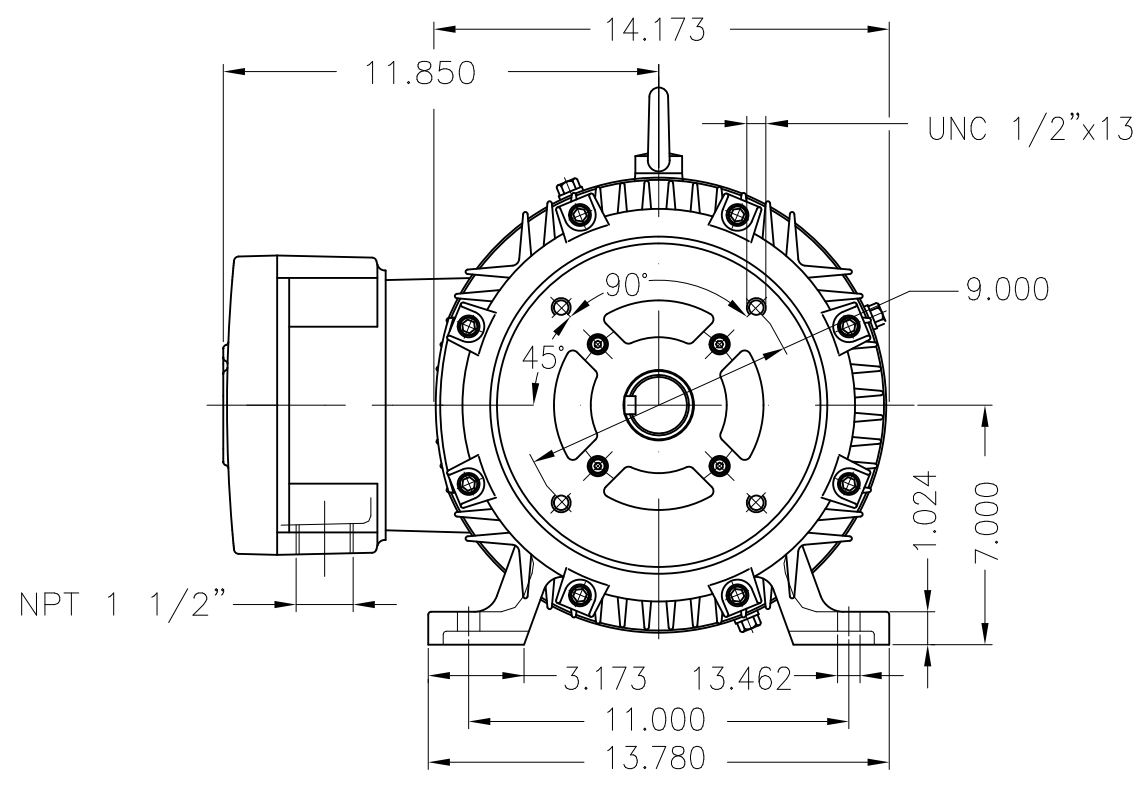
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C

D

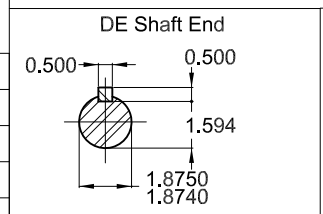
E

Grounding for leads 5.2–25 mm<sup>2</sup> / 10–4 AWG



30 HP 04 Poles 60 Hz A

- With grease fitting
- Color RAL 5009
- Painting plan 202P
- Mounting NEMA F-1
- Mounting B34R(D)



ECM	LOC	SUMMARY OF MODIFICATIONS	EXECUTED	CHECKED	RELEASED	DATE	VER
EXECUTED	PIRWBUSER	THREE PH. MOTOR EXPLOSION PROOF PREM. EFF.					
CHECKED		FRAME 286TC IP55 TEFC					
RELEASED							
REL DT.	WMO	Jaragua do Sul	Product Engineering	PREVIEW	WDD		



MADE IN BRAZIL

**W21X NEMA**  
**Premium**

14407014



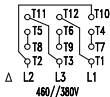
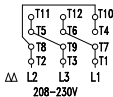
LISTED

CC029A

*Inverter Duty Motor*  
*Severe Duty*

MODEL 03018XT3E286TC

PH 3	FR 286TC		
HP(kW) 30.0(22.0)		HZ 60	IP55
V 230/460		A 70.2/35.1	
RPM 1770		NEMA NOM EFF 93.6%	
PF 0.84		SFA 80.7/40.4	DES B
INS CL F	$\Delta T$ 80 K	SF 1.15	ENCL TEFC
DUTY CONT.		CODE G	ALT 1000 m.a.s.l.
AMB 40°C	USABLE @208V	79.6 A	SF 1.00
AMB 55°C	SF1.0		
30HP 22kW 50Hz 380V 43.4A 1455RPM SF1.00 EFF 90.2% (IE1)			



→ 6311-C3 MOBIL POLYREX EM  
→ 6211-C3 18 g 20000 h

505 Lbs



TEMP CODE T3C  
CSA/UL: Class I - Div. 1 - Groups C and D  
CSA: Class II - Div. 1 - Groups F and G  
CSA: Class I - Zone 1 - IIB

EXPLOSION PROOF MOTOR

FOR USE ON VPWM VFD 1000:1VT, 6:1CT, 1.0SF, T3C, AMB 40°C.