

# DATA SHEET

## Three Phase Induction Motor - Squirrel Cage



Customer					
Product line		: NEMA Premium Efficiency Three-Phase		Product code : 14407459	
				Catalog # : 01512XT3E284T	
Frame : 284T		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> : 465 lb			
Protection degree : IP55		Moment of inertia (J) : 7.07 sq.ft.lb			
Design : B					
Output [HP]	15	15	15	15	15
Poles	6	6	6	6	6
Frequency [Hz]	60	50	50	50	50
Rated voltage [V]	230/460	380	400	415	415
Rated current [A]	35.0/17.5	21.5	20.2	19.7	19.7
L. R. Amperes [A]	252/126	114	115	122	122
LRC [A]	7.2x(Code H)	5.3x(Code E)	5.7x(Code F)	6.2x(Code G)	6.2x(Code G)
No load current [A]	14.0/7.00	6.95	7.30	7.60	7.60
Rated speed [RPM]	1180	970	970	975	975
Slip [%]	1.67	3.00	3.00	2.50	2.50
Rated torque [ft.lb]	66.8	81.2	81.2	80.8	80.8
Locked rotor torque [%]	250	170	200	220	220
Breakdown torque [%]	260	190	210	229	229
Service factor	1.15	1.00	1.00	1.00	1.00
Temperature rise	80 K	80 K	80 K	80 K	80 K
Locked rotor time	45s (cold) 25s (hot)	50s (cold) 28s (hot)	50s (cold) 28s (hot)	50s (cold) 28s (hot)	50s (cold) 28s (hot)
Noise level <sup>2</sup>	59.0 dB(A)	56.0 dB(A)	56.0 dB(A)	56.0 dB(A)	56.0 dB(A)
Efficiency (%)	25%	90.8	89.8	89.2	89.9
	50%	91.0	89.5	89.5	89.5
	75%	91.7	90.2	90.2	91.0
	100%	91.7	89.5	90.2	90.2
Power Factor	25%	0.47	0.54	0.51	0.48
	50%	0.74	0.80	0.78	0.76
	75%	0.83	0.86	0.85	0.84
	100%	0.86	0.87	0.87	0.86
Bearing type		Drive end : 6311 C3	Non drive end : 6211 C3	Foundation loads	
Sealing		: Oil Seal	: Lip Seal	Max. traction : 578 lb	
Lubrication interval		: 20000 h	: 20000 h	Max. compression : 1043 lb	
Lubricant amount		: 18 g	: 11 g		
Lubricant type		: Mobil Polyrex EM			
Notes					
USABLE @208V 38.7A SF 1.15 SFA 44.5A					
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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# DATA SHEET

## Three Phase Induction Motor - Squirrel Cage



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



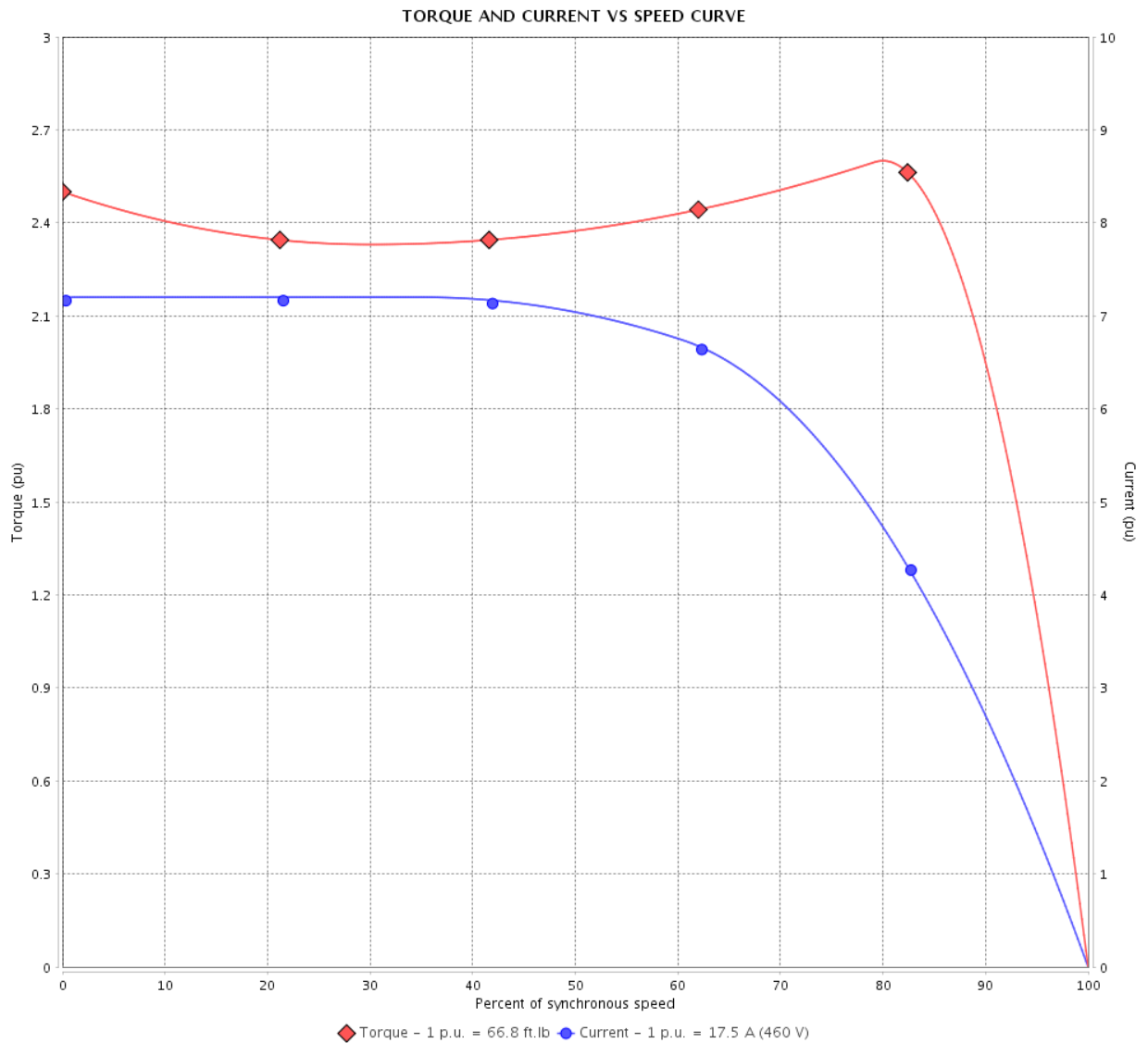
## Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 14407459

Catalog # : 01512XT3E284T



Performance : 230/460 V 60 Hz 6P

Rated current : 35.0/17.5 A  
 LRC : 7.2  
 Rated torque : 66.8 ft.lb  
 Locked rotor torque : 250 %  
 Breakdown torque : 260 %  
 Rated speed : 1180 rpm

Moment of inertia (J) : 7.07 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.15  
 Temperature rise : 80 K  
 Design : B

Locked rotor time : 45s (cold) 25s (hot)

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# TORQUE AND CURRENT VS SPEED CURVE

## Three Phase Induction Motor - Squirrel Cage



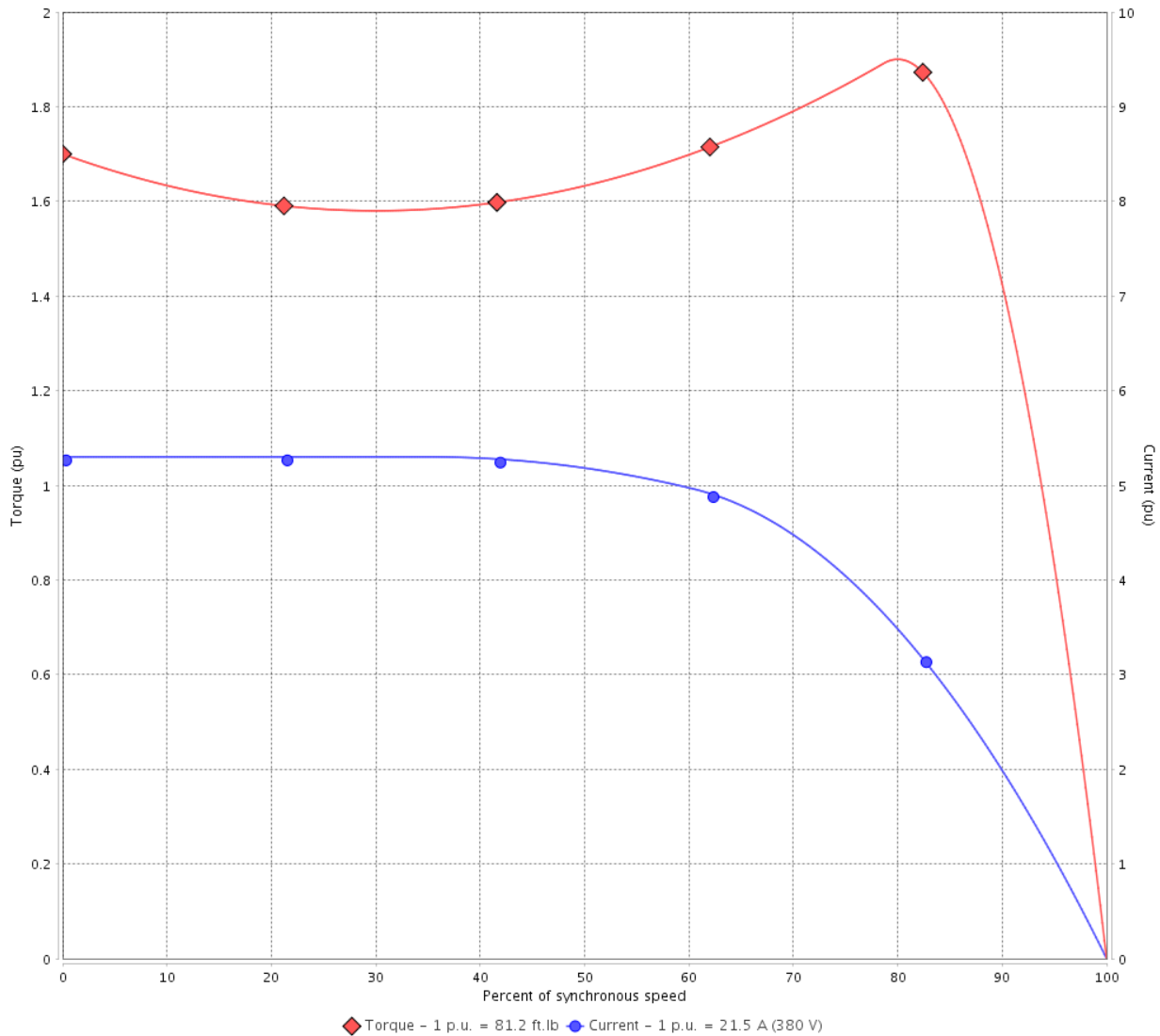
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 14407459

Catalog # : 01512XT3E284T

TORQUE AND CURRENT VS SPEED CURVE



Performance : 380 V 50 Hz 6P IE2

Rated current	: 21.5 A	Moment of inertia (J)	: 7.07 sq.ft.lb
LRC	: 5.3	Duty cycle	: Cont.(S1)
Rated torque	: 81.2 ft.lb	Insulation class	: F
Locked rotor torque	: 170 %	Service factor	: 1.00
Breakdown torque	: 190 %	Temperature rise	: 80 K
Rated speed	: 970 rpm	Design	: B

Locked rotor time : 50s (cold) 28s (hot)

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# TORQUE AND CURRENT VS SPEED CURVE



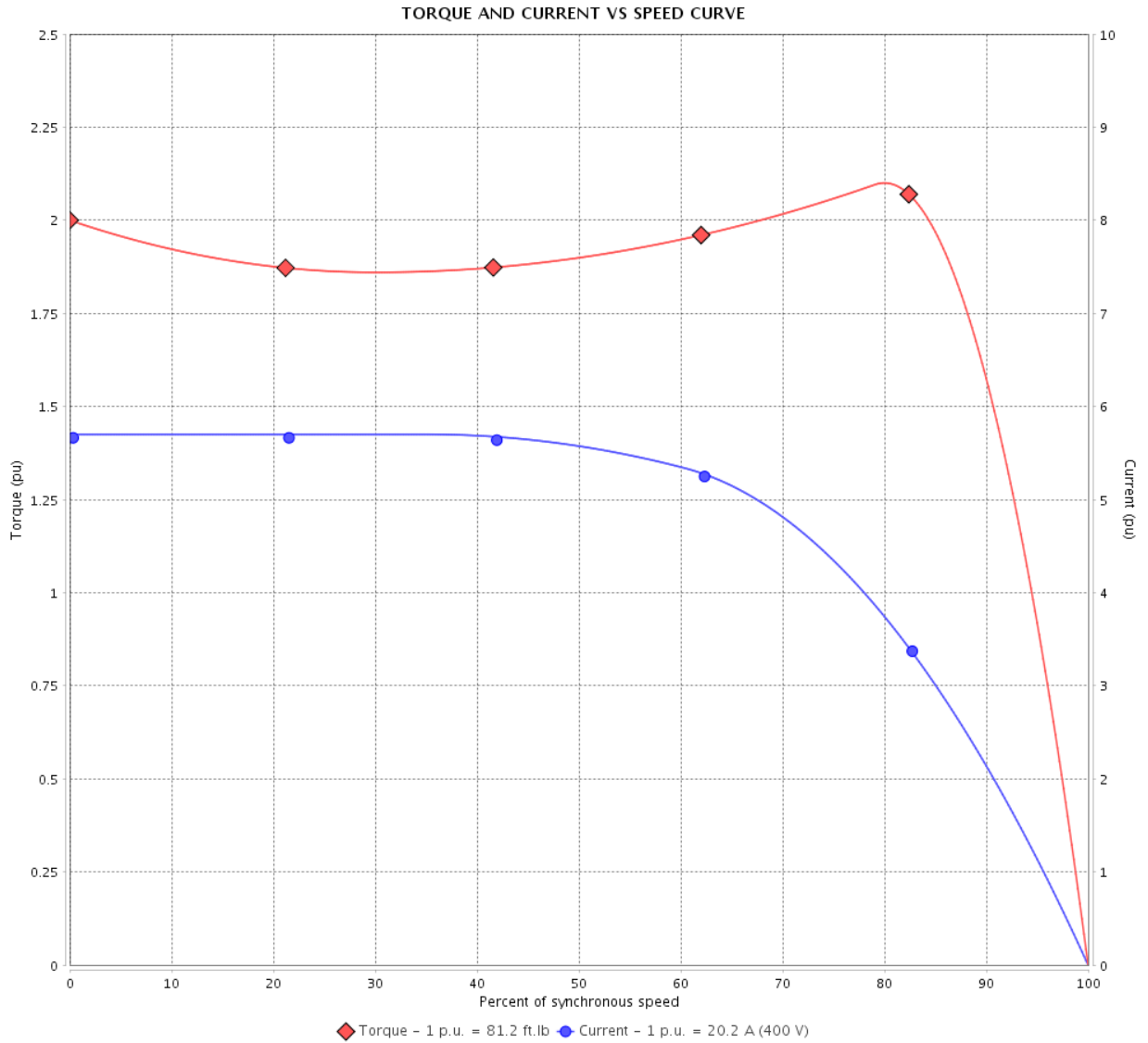
## Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 14407459

Catalog # : 01512XT3E284T



Performance : 400 V 50 Hz 6P IE2

Rated current	: 20.2 A	Moment of inertia (J)	: 7.07 sq.ft.lb
LRC	: 5.7	Duty cycle	: Cont.(S1)
Rated torque	: 81.2 ft.lb	Insulation class	: F
Locked rotor torque	: 200 %	Service factor	: 1.00
Breakdown torque	: 210 %	Temperature rise	: 80 K
Rated speed	: 970 rpm	Design	: B

Locked rotor time : 50s (cold) 28s (hot)

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# TORQUE AND CURRENT VS SPEED CURVE

Three Phase Induction Motor - Squirrel Cage



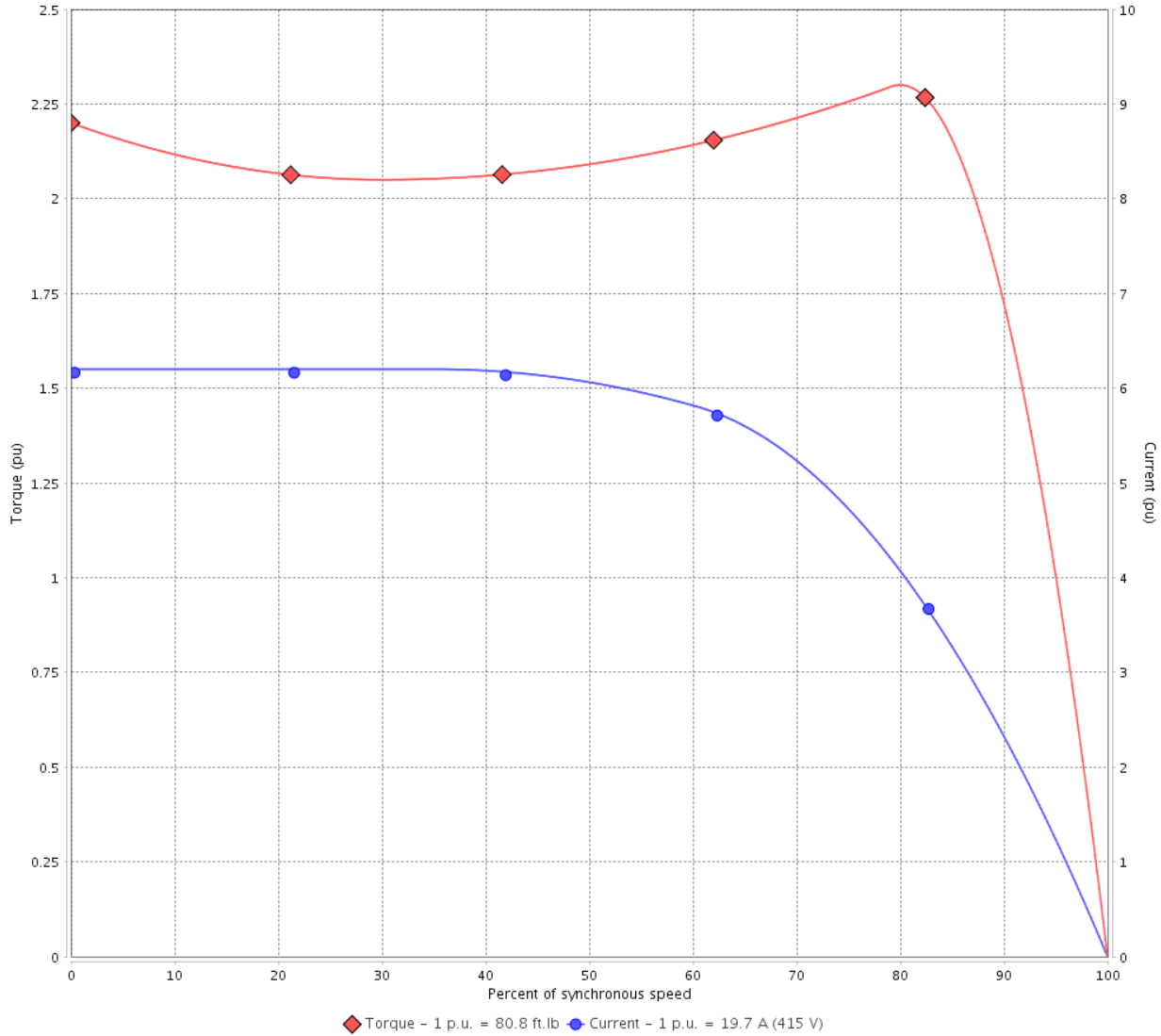
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 14407459

Catalog # : 01512XT3E284T

TORQUE AND CURRENT VS SPEED CURVE



Performance : 415 V 50 Hz 6P IE2

Rated current	: 19.7 A	Moment of inertia (J)	: 7.07 sq.ft.lb
LRC	: 6.2	Duty cycle	: Cont.(S1)
Rated torque	: 80.8 ft.lb	Insulation class	: F
Locked rotor torque	: 220 %	Service factor	: 1.00
Breakdown torque	: 229 %	Temperature rise	: 80 K
Rated speed	: 975 rpm	Design	: B

Locked rotor time : 50s (cold) 28s (hot)

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# LOAD PERFORMANCE CURVE

## Three Phase Induction Motor - Squirrel Cage

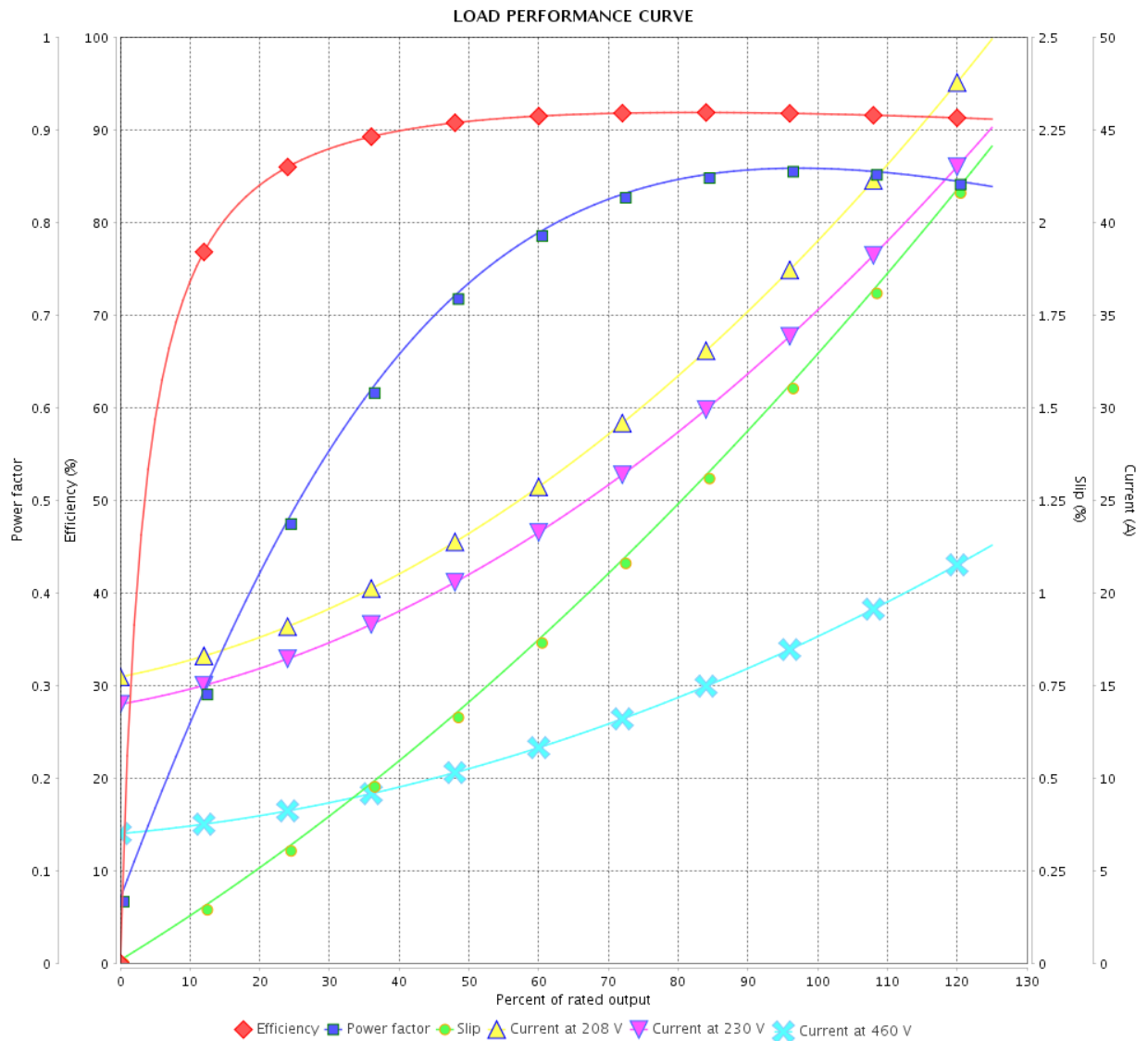


Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 14407459

Catalog # : 01512XT3E284T



Performance : 230/460 V 60 Hz 6P

Rated current : 35.0/17.5 A  
 LRC : 7.2  
 Rated torque : 66.8 ft.lb  
 Locked rotor torque : 250 %  
 Breakdown torque : 260 %  
 Rated speed : 1180 rpm

Moment of inertia (J) : 7.07 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



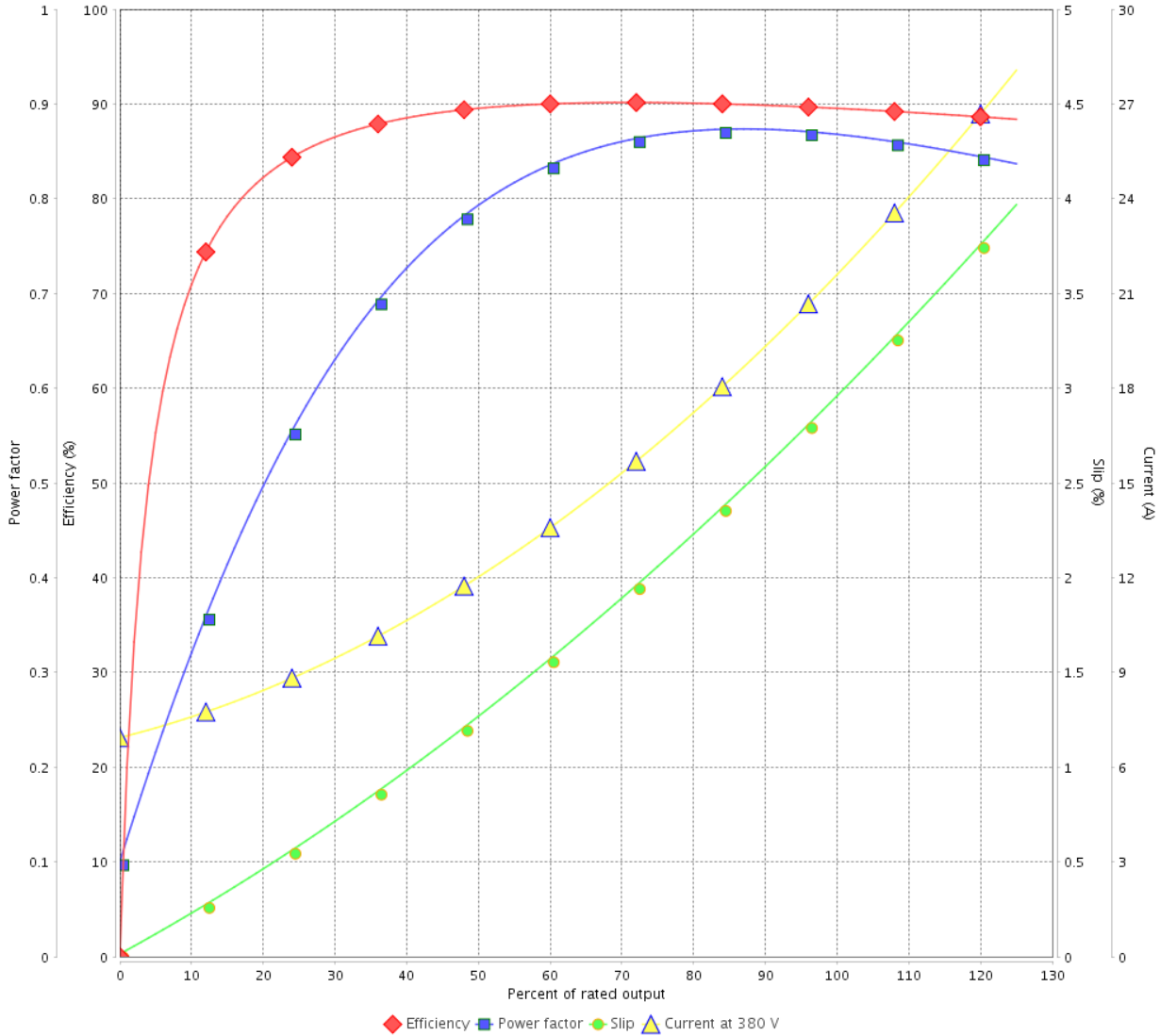
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 14407459

Catalog # : 01512XT3E284T

LOAD PERFORMANCE CURVE



Performance : 380 V 50 Hz 6P IE2

Rated current : 21.5 A  
 LRC : 5.3  
 Rated torque : 81.2 ft.lb  
 Locked rotor torque : 170 %  
 Breakdown torque : 190 %  
 Rated speed : 970 rpm

Moment of inertia (J) : 7.07 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

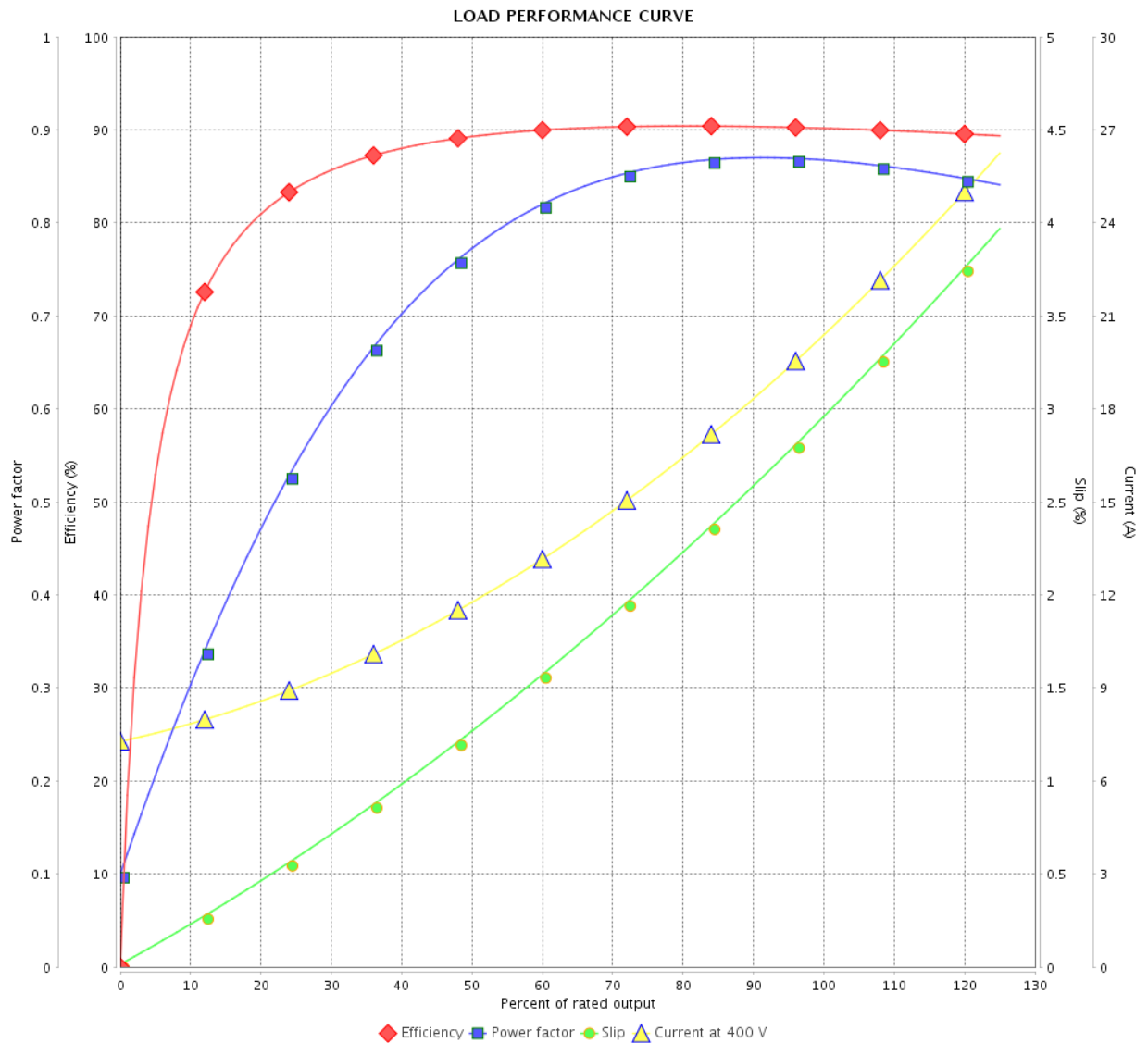


Customer : \_\_\_\_\_

Product line : NEMA Premium Efficiency Three-Phase

Product code : 14407459

Catalog # : 01512XT3E284T



Performance : 400 V 50 Hz 6P IE2

Rated current : 20.2 A  
 LRC : 5.7  
 Rated torque : 81.2 ft.lb  
 Locked rotor torque : 200 %  
 Breakdown torque : 210 %  
 Rated speed : 970 rpm

Moment of inertia (J) : 7.07 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



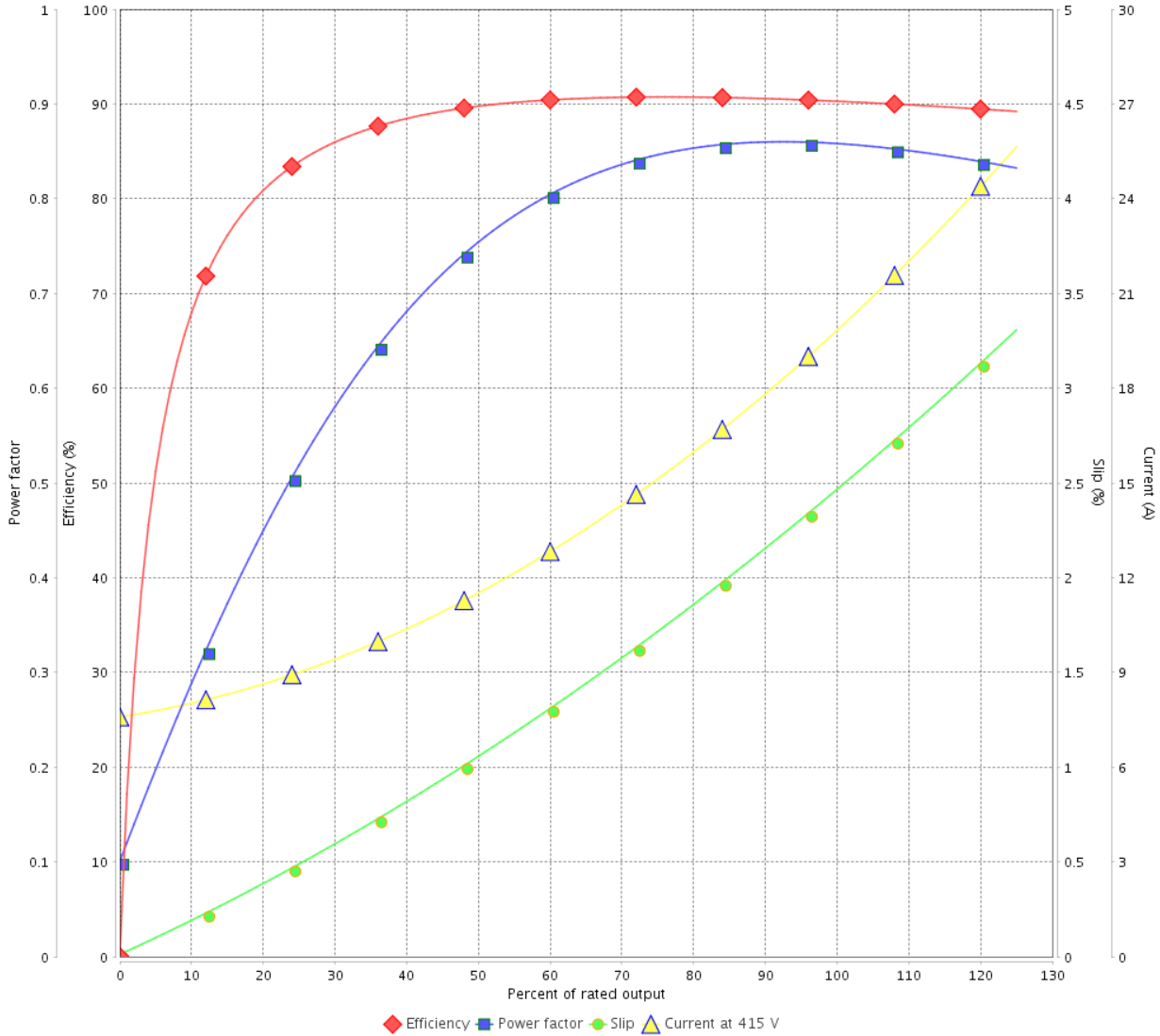
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Product line : NEMA Premium Efficiency Three-Phase

Product code : 14407459

Catalog # : 01512XT3E284T

LOAD PERFORMANCE CURVE



Performance : 415 V 50 Hz 6P IE2

Rated current : 19.7 A  
 LRC : 6.2  
 Rated torque : 80.8 ft.lb  
 Locked rotor torque : 220 %  
 Breakdown torque : 229 %  
 Rated speed : 975 rpm

Moment of inertia (J) : 7.07 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



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Performance : 230/460 V 60 Hz 6P

Rated current : 35.0/17.5 A	Moment of inertia (J) : 7.07 sq.ft.lb
LRC : 7.2	Duty cycle : Cont.(S1)
Rated torque : 66.8 ft.lb	Insulation class : F
Locked rotor torque : 250 %	Service factor : 1.15
Breakdown torque : 260 %	Temperature rise : 80 K
Rated speed : 1180 rpm	Design : B

Heating constant

Cooling constant

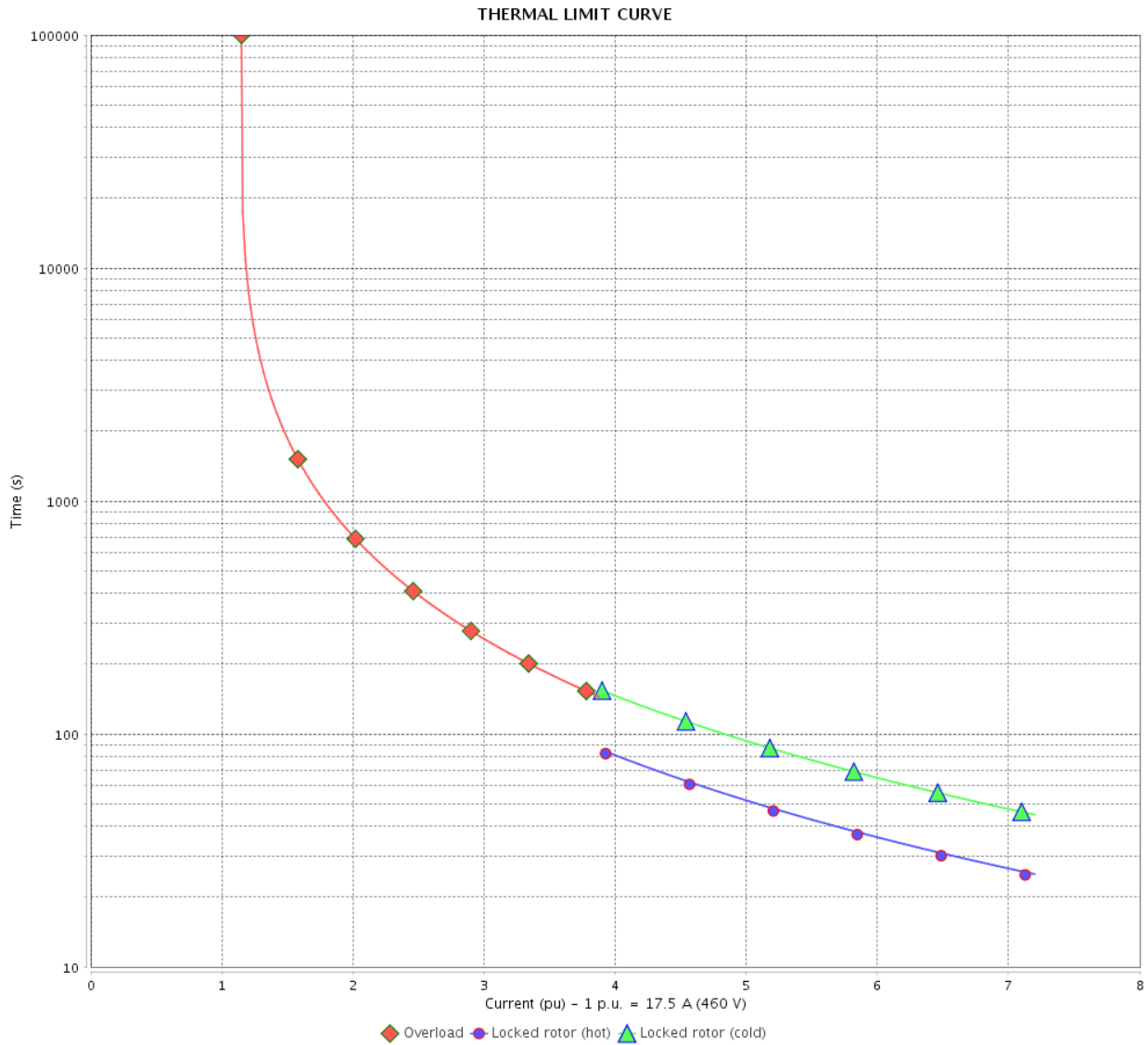
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# THERMAL LIMIT CURVE

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 : 14407459  
 Catalog # : 01512XT3E284T

Performance : 380 V 50 Hz 6P IE2

Rated current : 21.5 A	Moment of inertia (J) : 7.07 sq.ft.lb
LRC : 5.3	Duty cycle : Cont.(S1)
Rated torque : 81.2 ft.lb	Insulation class : F
Locked rotor torque : 170 %	Service factor : 1.00
Breakdown torque : 190 %	Temperature rise : 80 K
Rated speed : 970 rpm	Design : B

Heating constant

Cooling constant

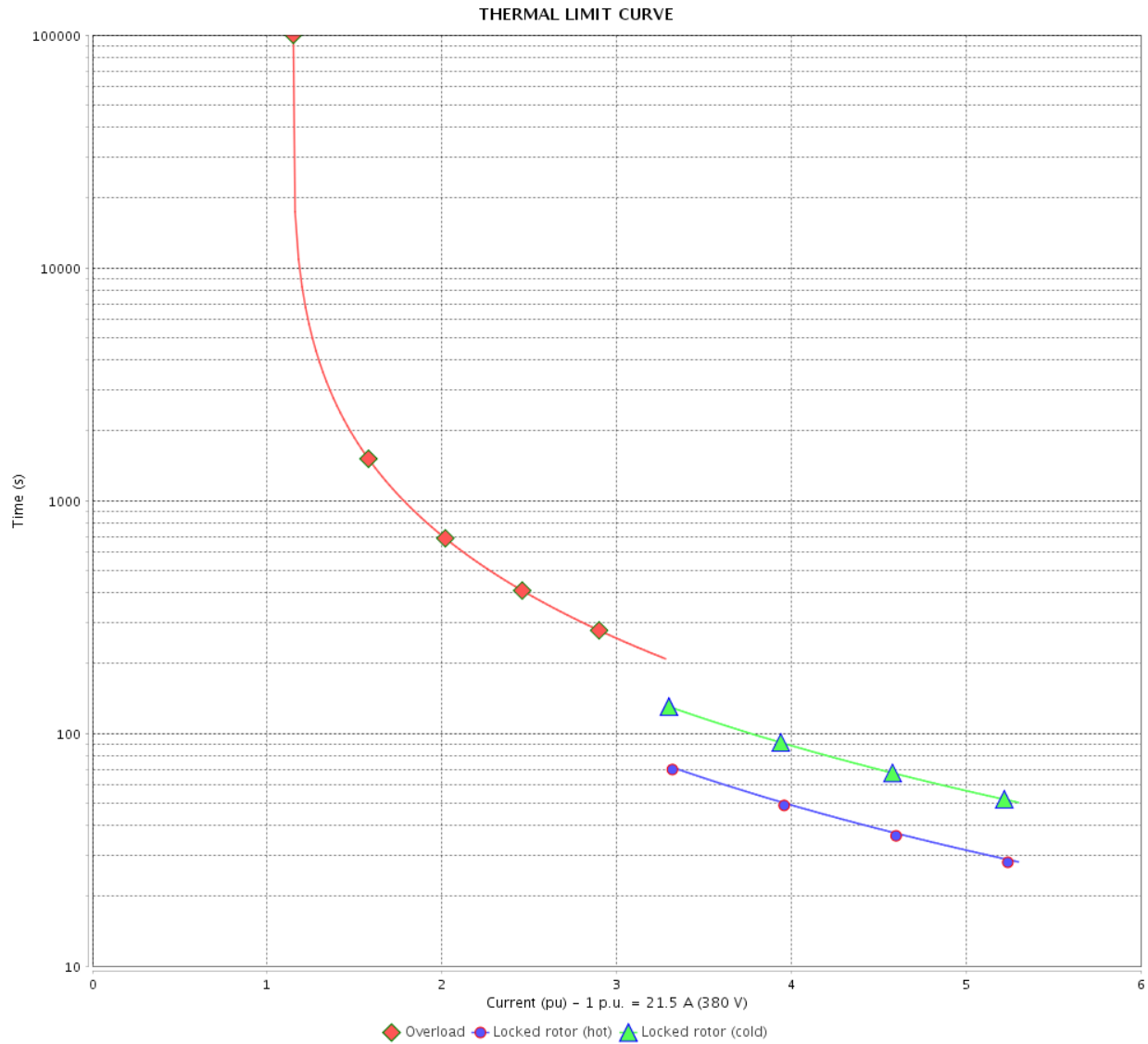
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Date	13/04/2022			

# 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 : 14407459  
Catalog # : 01512XT3E284T

Performance : 400 V 50 Hz 6P IE2

Rated current : 20.2 A	Moment of inertia (J) : 7.07 sq.ft.lb
LRC : 5.7	Duty cycle : Cont.(S1)
Rated torque : 81.2 ft.lb	Insulation class : F
Locked rotor torque : 200 %	Service factor : 1.00
Breakdown torque : 210 %	Temperature rise : 80 K
Rated speed : 970 rpm	Design : B

Heating constant

Cooling constant

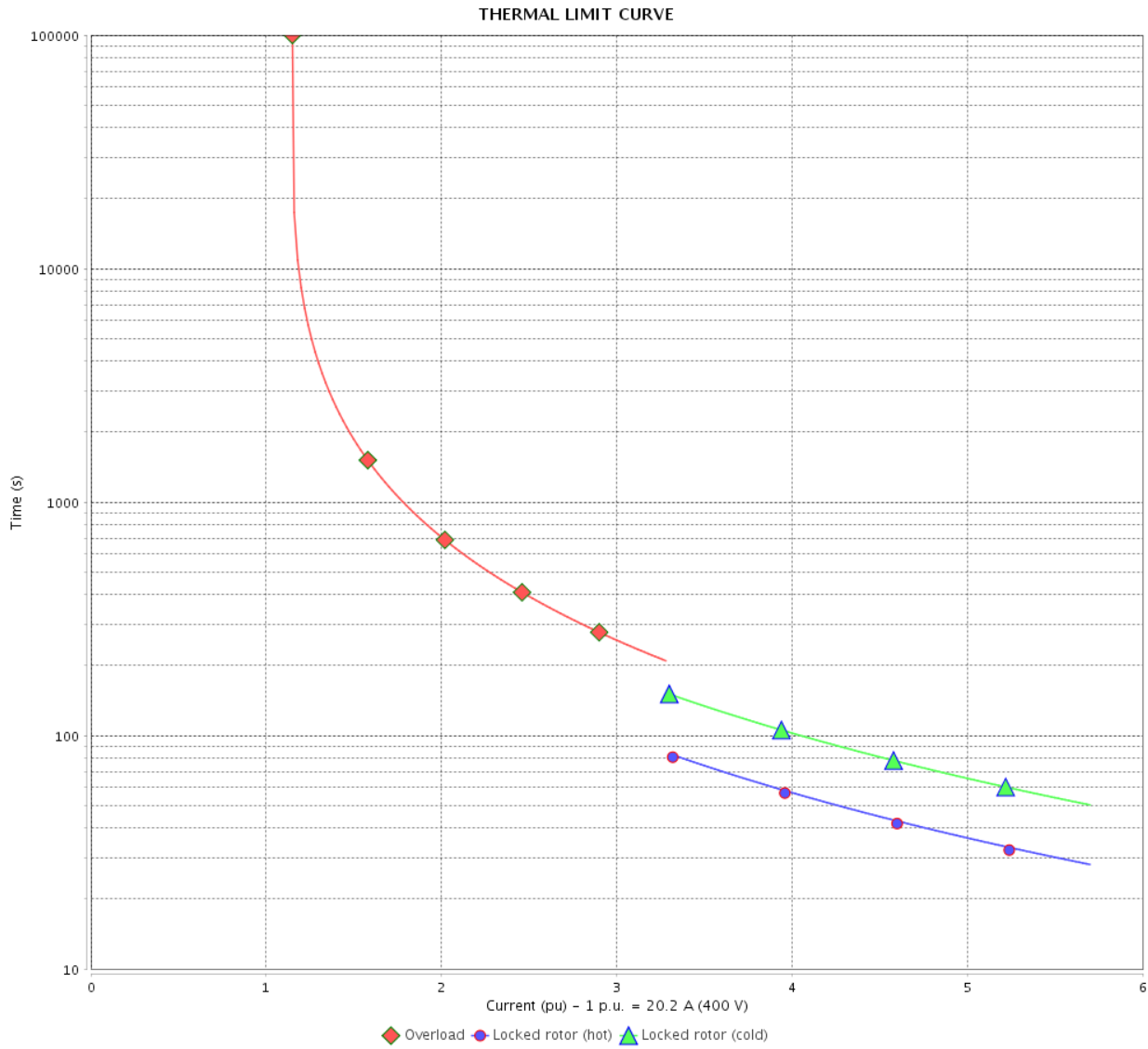
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# THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



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



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Date				



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## Three Phase Induction Motor - Squirrel Cage

Customer :

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 Product code : 14407459  
 Catalog # : 01512XT3E284T

Performance : 415 V 50 Hz 6P IE2

Rated current : 19.7 A	Moment of inertia (J) : 7.07 sq.ft.lb
LRC : 6.2	Duty cycle : Cont.(S1)
Rated torque : 80.8 ft.lb	Insulation class : F
Locked rotor torque : 220 %	Service factor : 1.00
Breakdown torque : 229 %	Temperature rise : 80 K
Rated speed : 975 rpm	Design : B

Heating constant

Cooling constant

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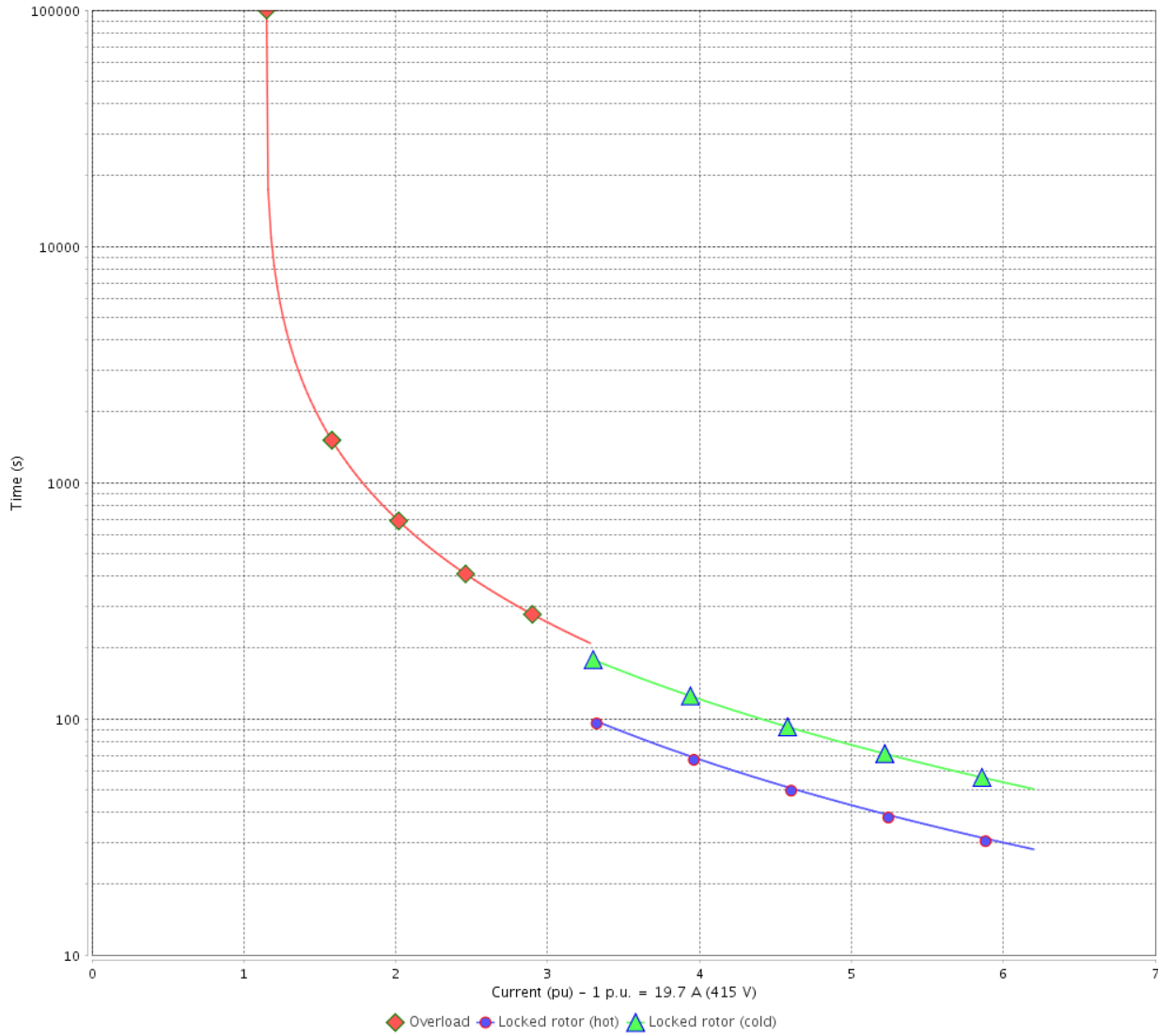
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Three Phase Induction Motor - Squirrel Cage



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THERMAL LIMIT CURVE



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# VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage

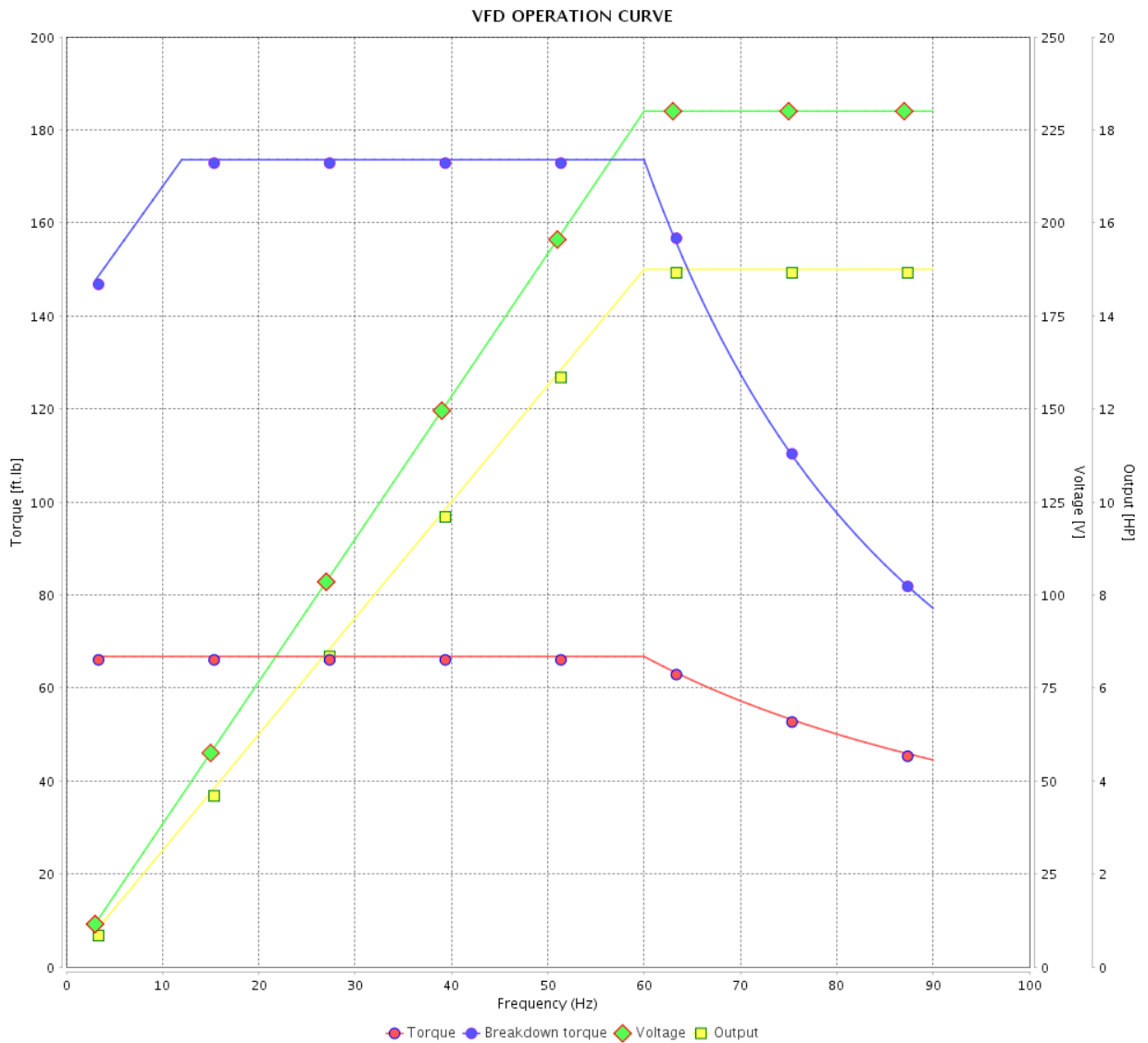


Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 14407459

Catalog # : 01512XT3E284T



Performance : 230/460 V 60 Hz 6P

Rated current : 35.0/17.5 A  
 LRC : 7.2  
 Rated torque : 66.8 ft.lb  
 Locked rotor torque : 250 %  
 Breakdown torque : 260 %  
 Rated speed : 1180 rpm

Moment of inertia (J) : 7.07 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



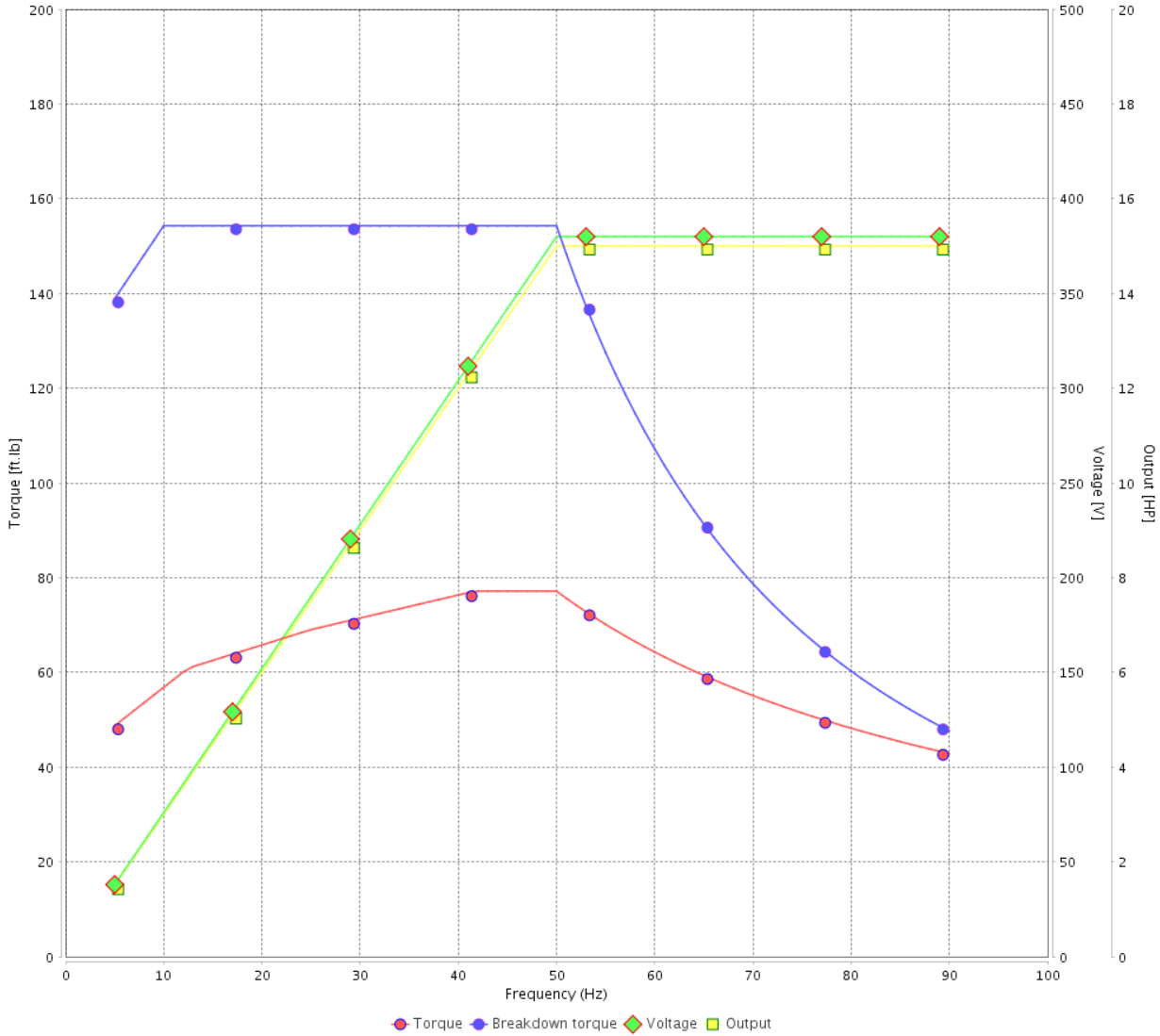
Customer :

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Catalog # : 01512XT3E284T

VFD OPERATION CURVE



Performance : 380 V 50 Hz 6P IE2

Rated current	: 21.5 A	Moment of inertia (J)	: 7.07 sq.ft.lb
LRC	: 5.3	Duty cycle	: Cont.(S1)
Rated torque	: 81.2 ft.lb	Insulation class	: F
Locked rotor torque	: 170 %	Service factor	: 1.00
Breakdown torque	: 190 %	Temperature rise	: 80 K
Rated speed	: 970 rpm	Design	: B

Rev.	Changes Summary	Performed	Checked	Date
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# VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage

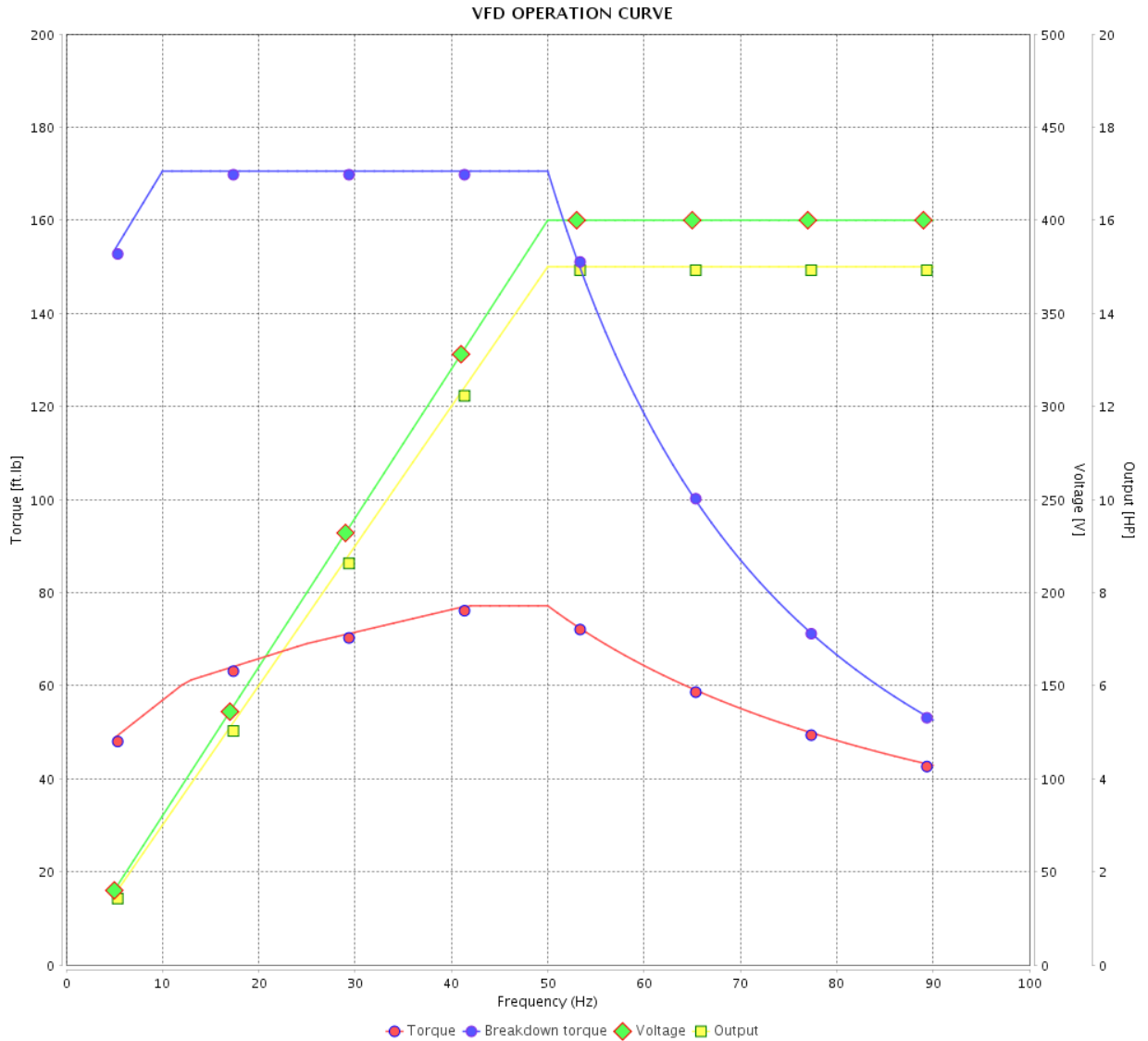


Customer : \_\_\_\_\_

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Performance : 400 V 50 Hz 6P IE2

Rated current : 20.2 A  
 LRC : 5.7  
 Rated torque : 81.2 ft.lb  
 Locked rotor torque : 200 %  
 Breakdown torque : 210 %  
 Rated speed : 970 rpm

Moment of inertia (J) : 7.07 sq.ft.lb  
 Duty cycle : Cont.(S1)  
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# VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage

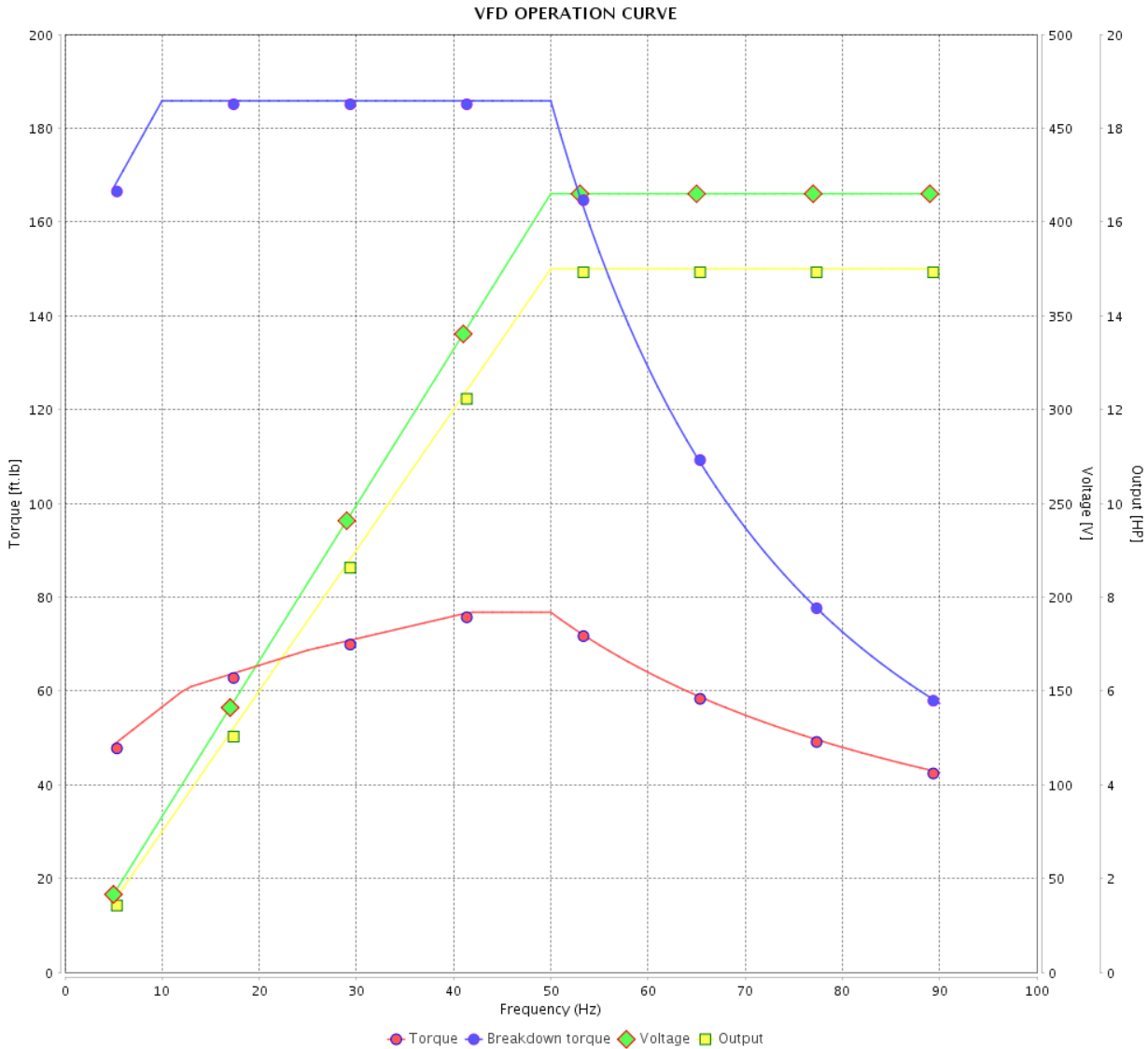


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LRC	: 6.2	Duty cycle	: Cont.(S1)
Rated torque	: 80.8 ft.lb	Insulation class	: F
Locked rotor torque	: 220 %	Service factor	: 1.00
Breakdown torque	: 229 %	Temperature rise	: 80 K
Rated speed	: 975 rpm	Design	: B

Rev.	Changes Summary	Performed	Checked	Date
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A

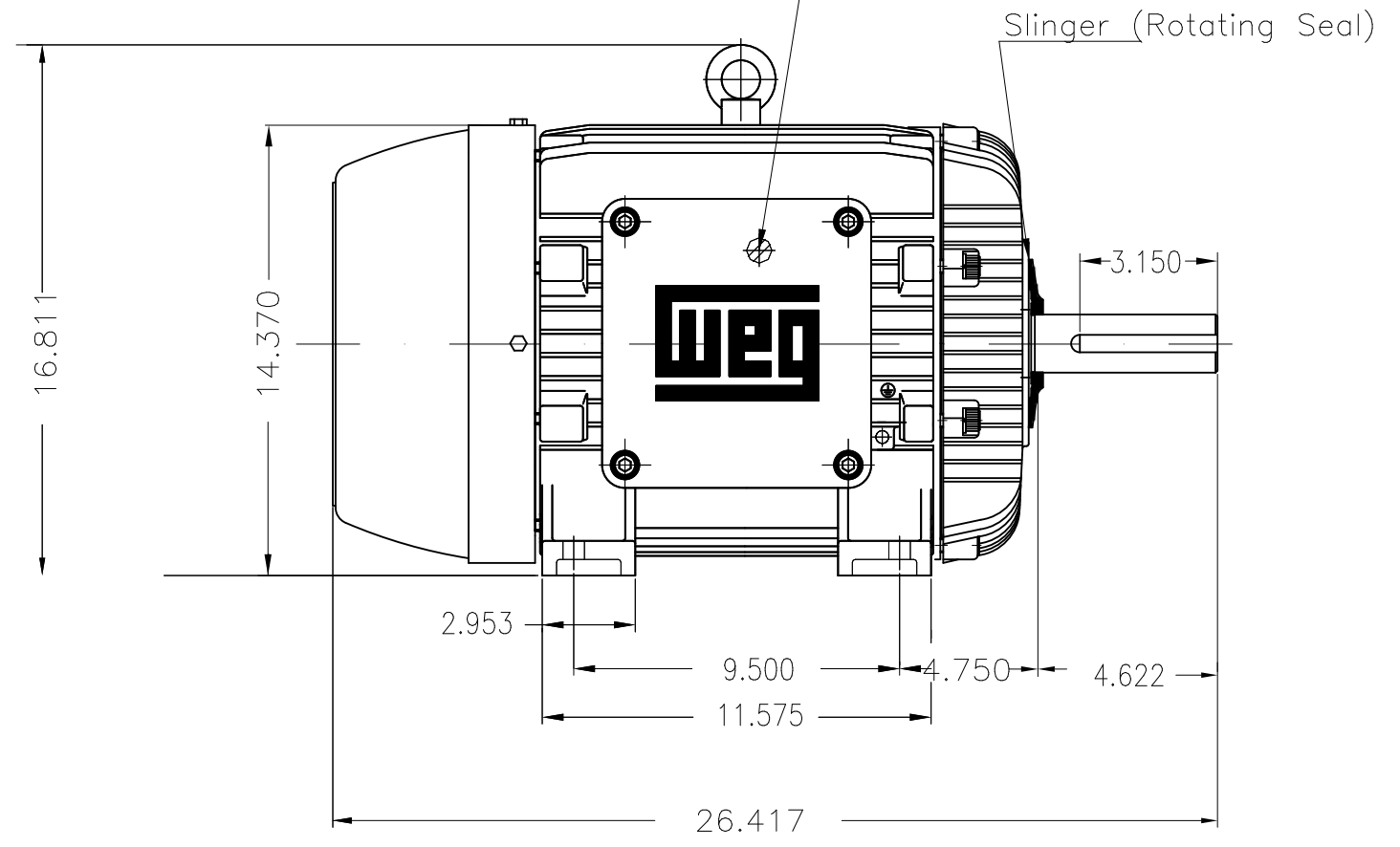
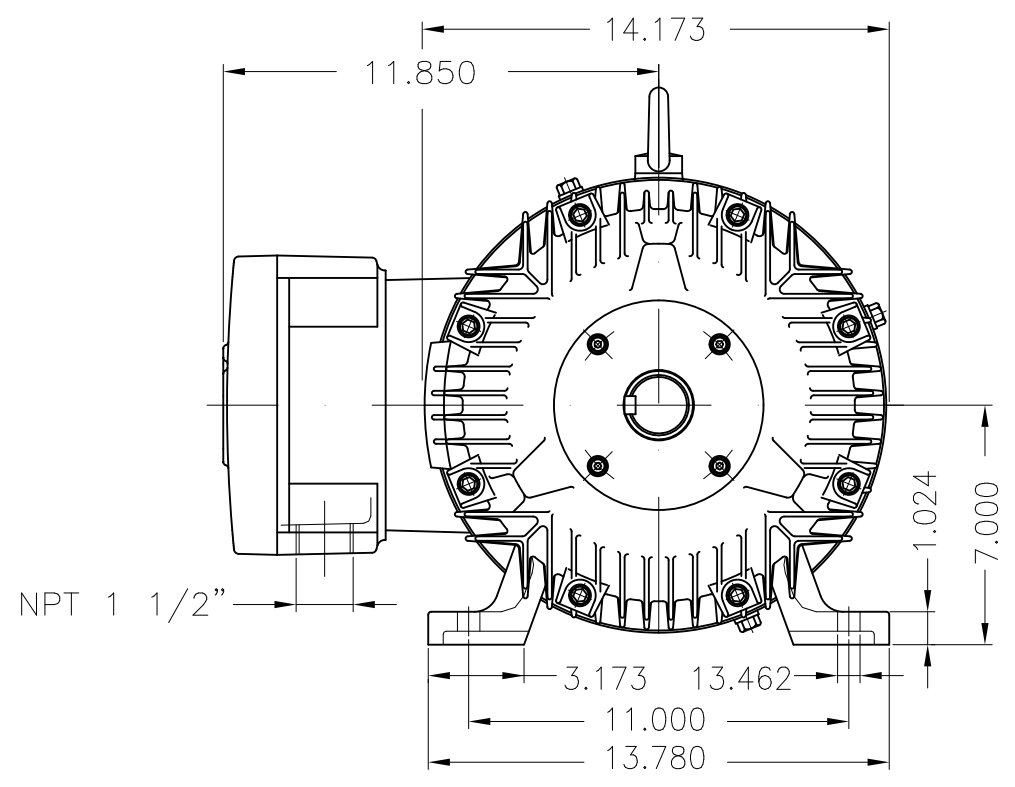
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C

D

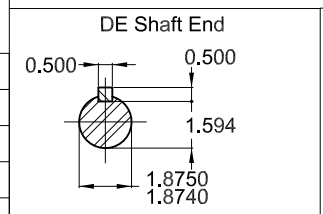
E

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



15 HP 06 Poles 60 Hz A

- With grease fitting
- Color RAL 5009
- Painting plan 202P
- Mounting NEMA F-1
- Mounting B3R(D)



ECM	LOC	SUMMARY OF MODIFICATIONS	EXECUTED	CHECKED	RELEASED	DATE	VER
EXECUTED	PIRWBUSER	THREE PH. MOTOR EXPLOSION PROOF PREM. EFF.					
CHECKED		FRAME 284T IP55 TEFC					
RELEASED							
REL DT.	WMO	Jaragua do Sul	Product Engineering				

PREVIEW  
WDD

SHEET 1 / 1

Dimensions in inches XME A3

MADE IN BRAZIL

**W21X NEMA**  
**Premium**

14407459



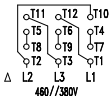
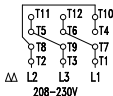
LISTED

CC029A

*Inverter Duty Motor*  
*Severe Duty*

HX015406NPW21X

PH 3	FR 284T		
HP(kW) 15.0(11.0)		HZ 60	IP55
V 230/460		A 35.0/17.5	
RPM 1180		NEMA NOM EFF 91.7%	
PF 0.86		SFA 40.3/20.1	DES B
INS CL F $\Delta$ T 80 K		SF 1.15	ENCL TEFC
DUTY CONT.		CODE H	ALT 1000 m.a.s.l.
AMB 40°C	USABLE @208V	38.7 A	SF 1.15 SFA 44.5
AMB 55°C SF1.0			
15HP 11kW 50Hz 380V 21.5A 970RPM SF1.00 EFF 89.5% (IE2)			



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

465 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.