

# DATA SHEET

## Three Phase Induction Motor - Squirrel Cage



Customer :					
Product line	: NEMA Premium Efficiency Three-Phase	Product code :	12408987		
		Catalog # :	10018XT3E405TC		
Frame	: 404/5TC	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>	: 1230 lb		
Protection degree	: IP55	Moment of inertia (J)	: 26.4 sq.ft.lb		
Design	: B				
Output [HP]	100	75	75	75	
Poles	4	4	4	4	
Frequency [Hz]	60	50	50	50	
Rated voltage [V]	230/460	380	400	415	
Rated current [A]	226/113	103	100	98.7	
L. R. Amperes [A]	1627/814	773	840	898	
LRC [A]	7.2x(Code H)	7.5x(Code H)	8.4x(Code J)	9.1x(Code K)	
No load current [A]	86.0/43.0	42.0	46.0	49.0	
Rated speed [RPM]	1780	1480	1485	1485	
Slip [%]	1.11	1.33	1.00	1.00	
Rated torque [ft.lb]	295	266	265	265	
Locked rotor torque [%]	270	270	300	320	
Breakdown torque [%]	300	310	360	370	
Service factor	1.15	1.00	1.00	1.00	
Temperature rise	80 K	80 K	80 K	80 K	
Locked rotor time	23s (cold) 13s (hot)	21s (cold) 12s (hot)	21s (cold) 12s (hot)	21s (cold) 12s (hot)	
Noise level <sup>2</sup>	75.0 dB(A)	70.0 dB(A)	70.0 dB(A)	70.0 dB(A)	
Efficiency (%)	25%	94.0	93.9	93.4	93.4
	50%	94.5	94.0	93.6	93.6
	75%	95.0	94.5	94.5	94.5
	100%	95.4	94.5	94.5	94.5
Power Factor	25%	0.46	0.43	0.40	0.37
	50%	0.72	0.69	0.65	0.62
	75%	0.82	0.80	0.77	0.75
	100%	0.87	0.86	0.84	0.82
Bearing type	: <u>Drive end</u> 6217 C3 <u>Non drive end</u> 6314 C3	Foundation loads			
Sealing	: Oil Seal Lip Seal	Max. traction	: 2328 lb		
Lubrication interval	: 9149 h 9789 h	Max. compression	: 3558 lb		
Lubricant amount	: 21 g 27 g				
Lubricant type	: Mobil Polyrex EM				
Notes USABLE @208V 250A SF 1.00 SFA 250A					
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



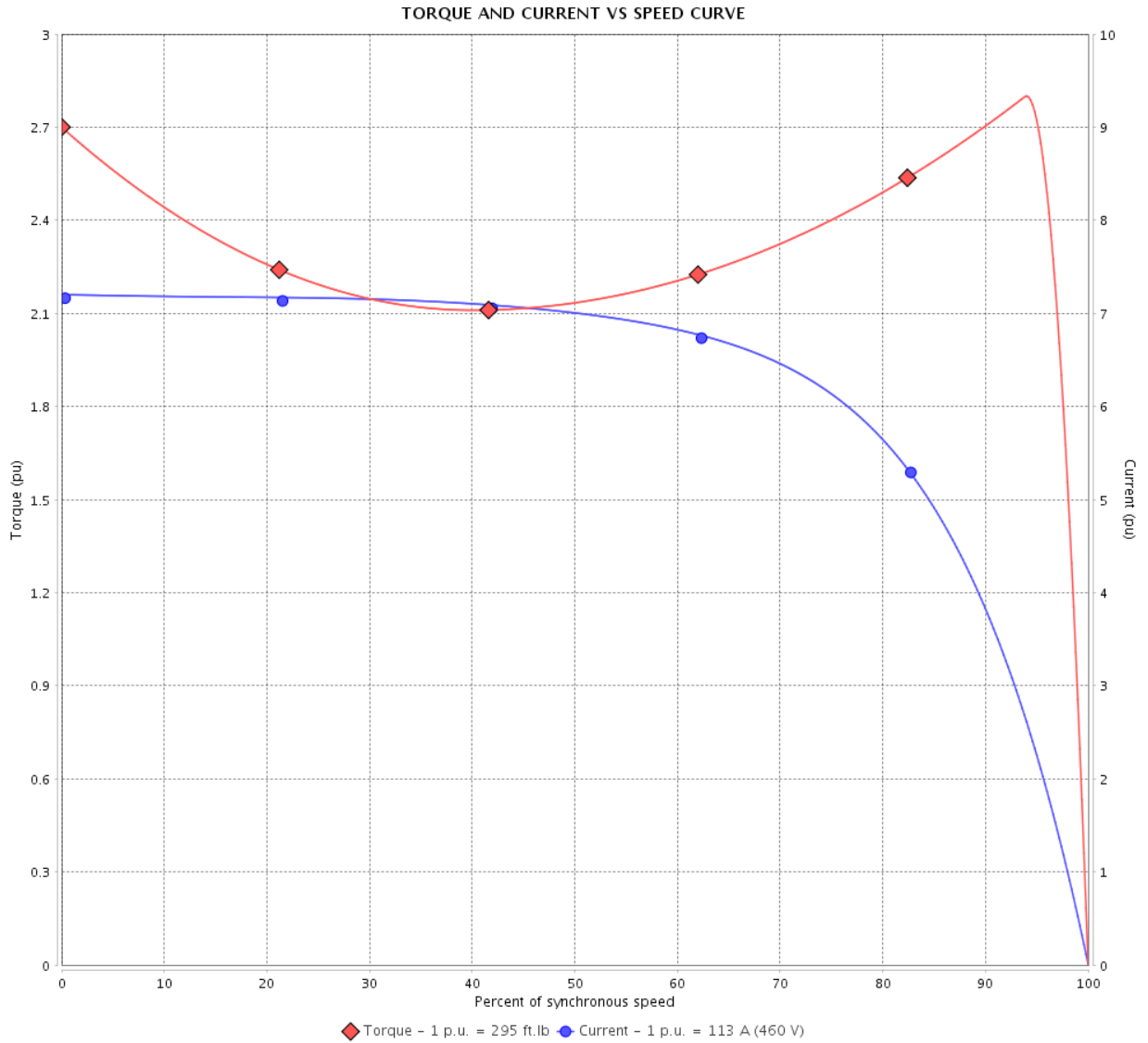
## Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12408987

Catalog # : 10018XT3E405TC



Performance : 230/460 V 60 Hz 4P

Rated current : 226/113 A  
 LRC : 7.2  
 Rated torque : 295 ft.lb  
 Locked rotor torque : 270 %  
 Breakdown torque : 300 %  
 Rated speed : 1780 rpm

Moment of inertia (J) : 26.4 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



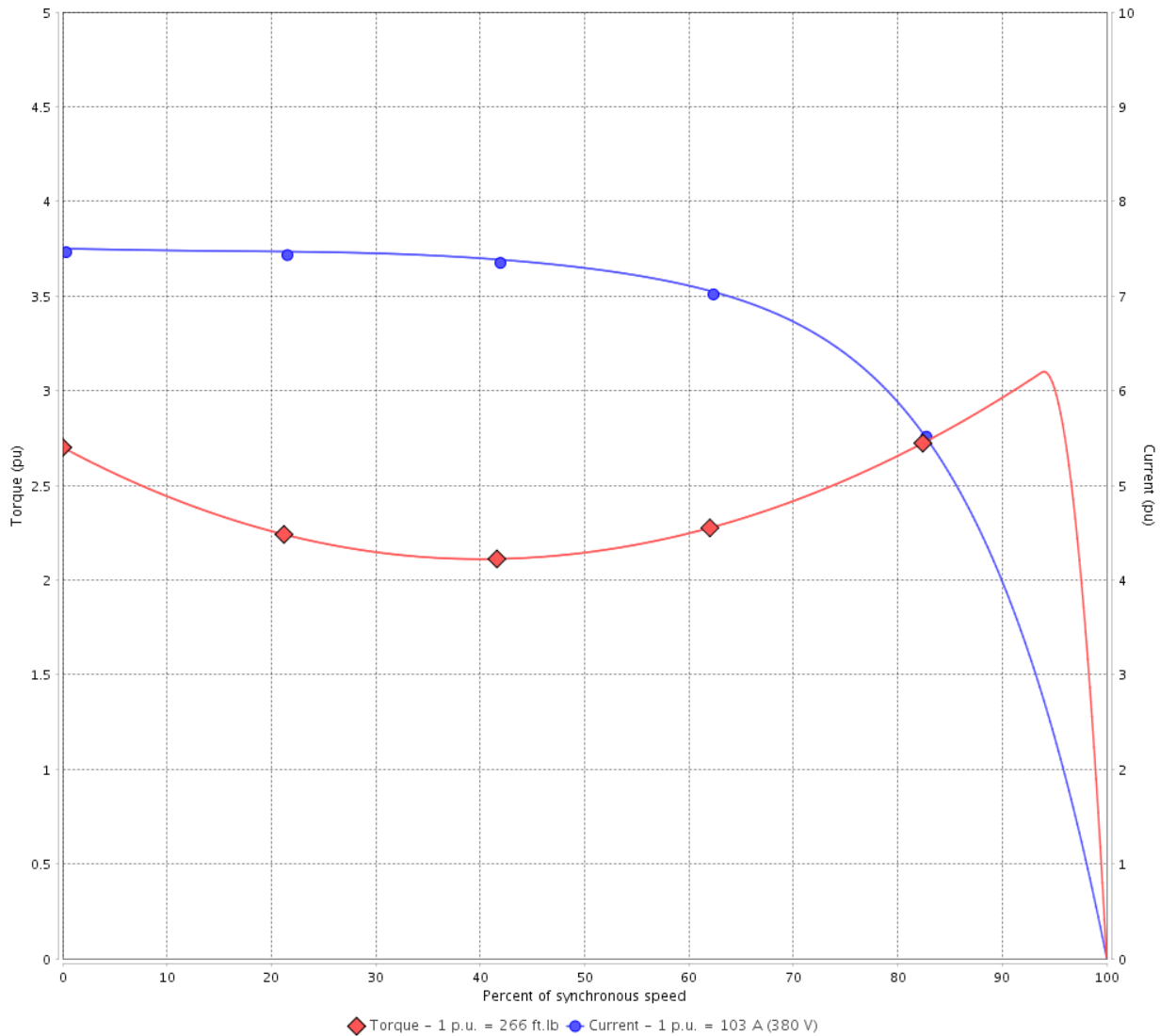
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12408987

Catalog # : 10018XT3E405TC

TORQUE AND CURRENT VS SPEED CURVE



Performance : 380 V 50 Hz 4P IE2

Rated current	: 103 A	Moment of inertia (J)	: 26.4 sq.ft.lb
LRC	: 7.5	Duty cycle	: Cont.(S1)
Rated torque	: 266 ft.lb	Insulation class	: F
Locked rotor torque	: 270 %	Service factor	: 1.00
Breakdown torque	: 310 %	Temperature rise	: 80 K
Rated speed	: 1480 rpm	Design	: B

Locked rotor time : 21s (cold) 12s (hot)

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# TORQUE AND CURRENT VS SPEED CURVE



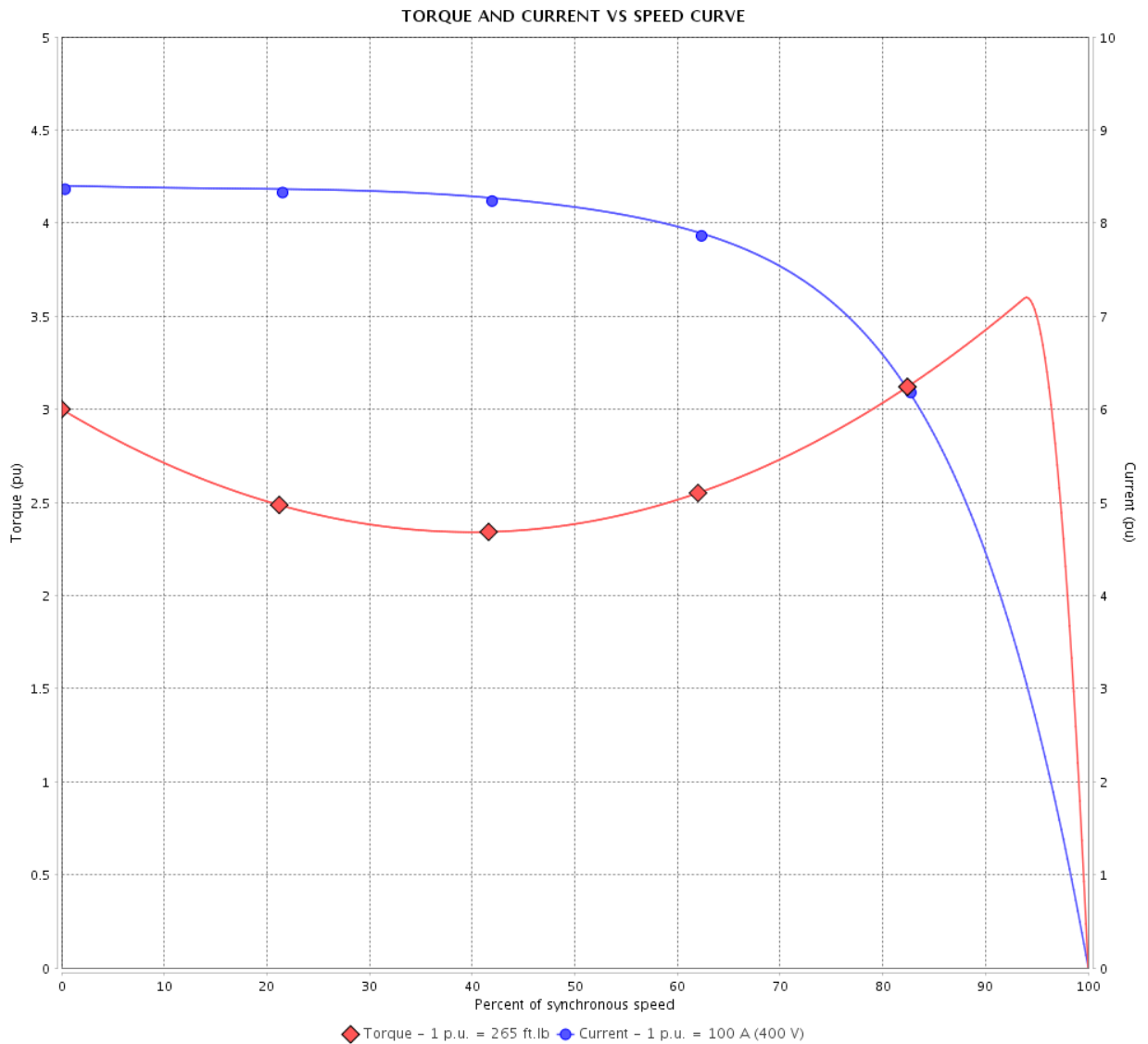
## Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12408987

Catalog # : 10018XT3E405TC



Performance : 400 V 50 Hz 4P IE2

Rated current	: 100 A	Moment of inertia (J)	: 26.4 sq.ft.lb
LRC	: 8.4	Duty cycle	: Cont.(S1)
Rated torque	: 265 ft.lb	Insulation class	: F
Locked rotor torque	: 300 %	Service factor	: 1.00
Breakdown torque	: 360 %	Temperature rise	: 80 K
Rated speed	: 1485 rpm	Design	: B

Locked rotor time : 21s (cold) 12s (hot)

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# TORQUE AND CURRENT VS SPEED CURVE

## Three Phase Induction Motor - Squirrel Cage



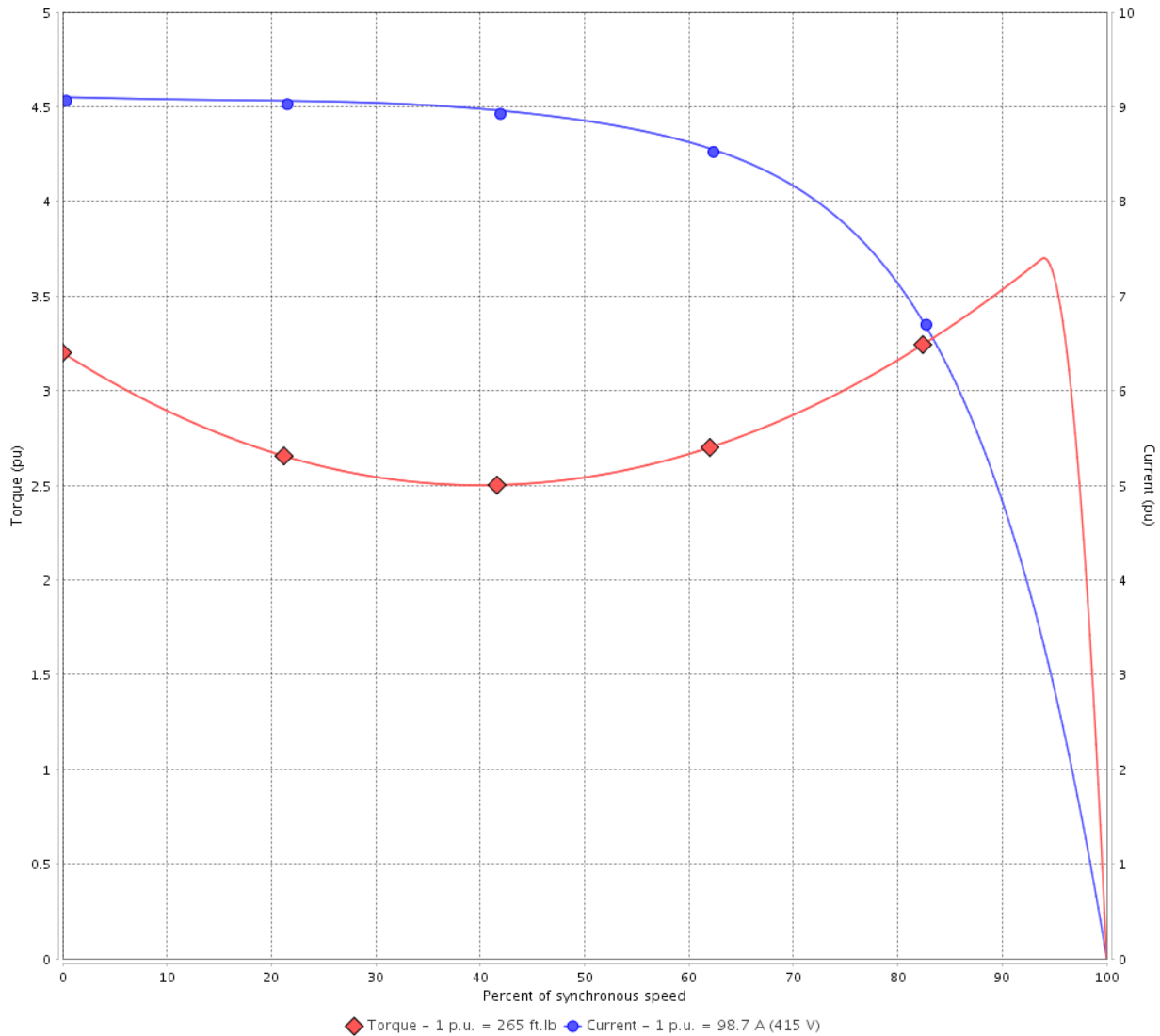
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12408987

Catalog # : 10018XT3E405TC

TORQUE AND CURRENT VS SPEED CURVE



Performance : 415 V 50 Hz 4P IE2

Rated current	: 98.7 A	Moment of inertia (J)	: 26.4 sq.ft.lb
LRC	: 9.1	Duty cycle	: Cont.(S1)
Rated torque	: 265 ft.lb	Insulation class	: F
Locked rotor torque	: 320 %	Service factor	: 1.00
Breakdown torque	: 370 %	Temperature rise	: 80 K
Rated speed	: 1485 rpm	Design	: B

Locked rotor time : 21s (cold) 12s (hot)

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# LOAD PERFORMANCE CURVE

## Three Phase Induction Motor - Squirrel Cage

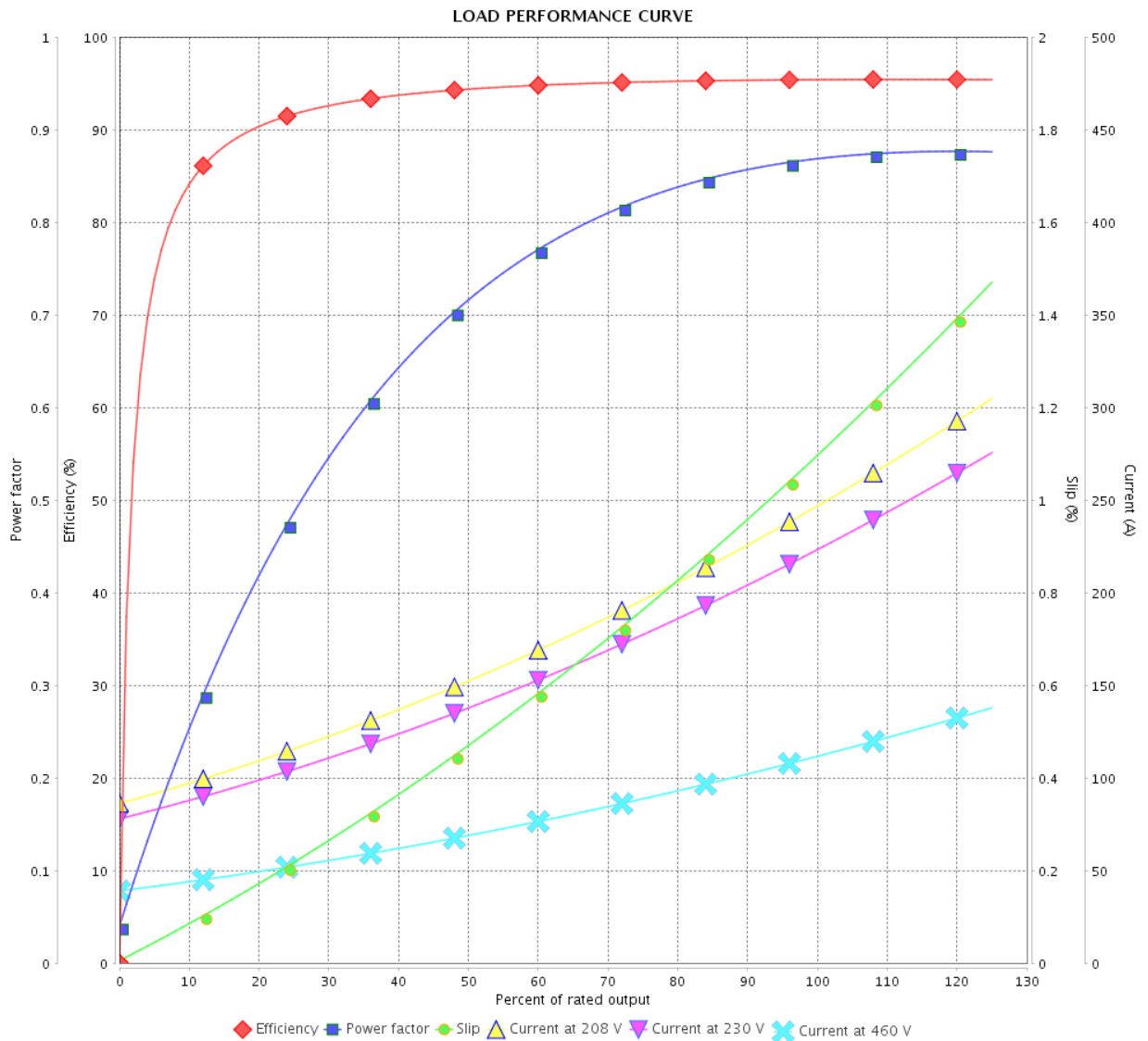


Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12408987

Catalog # : 10018XT3E405TC



Performance : 230/460 V 60 Hz 4P

Rated current : 226/113 A  
 LRC : 7.2  
 Rated torque : 295 ft.lb  
 Locked rotor torque : 270 %  
 Breakdown torque : 300 %  
 Rated speed : 1780 rpm

Moment of inertia (J) : 26.4 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



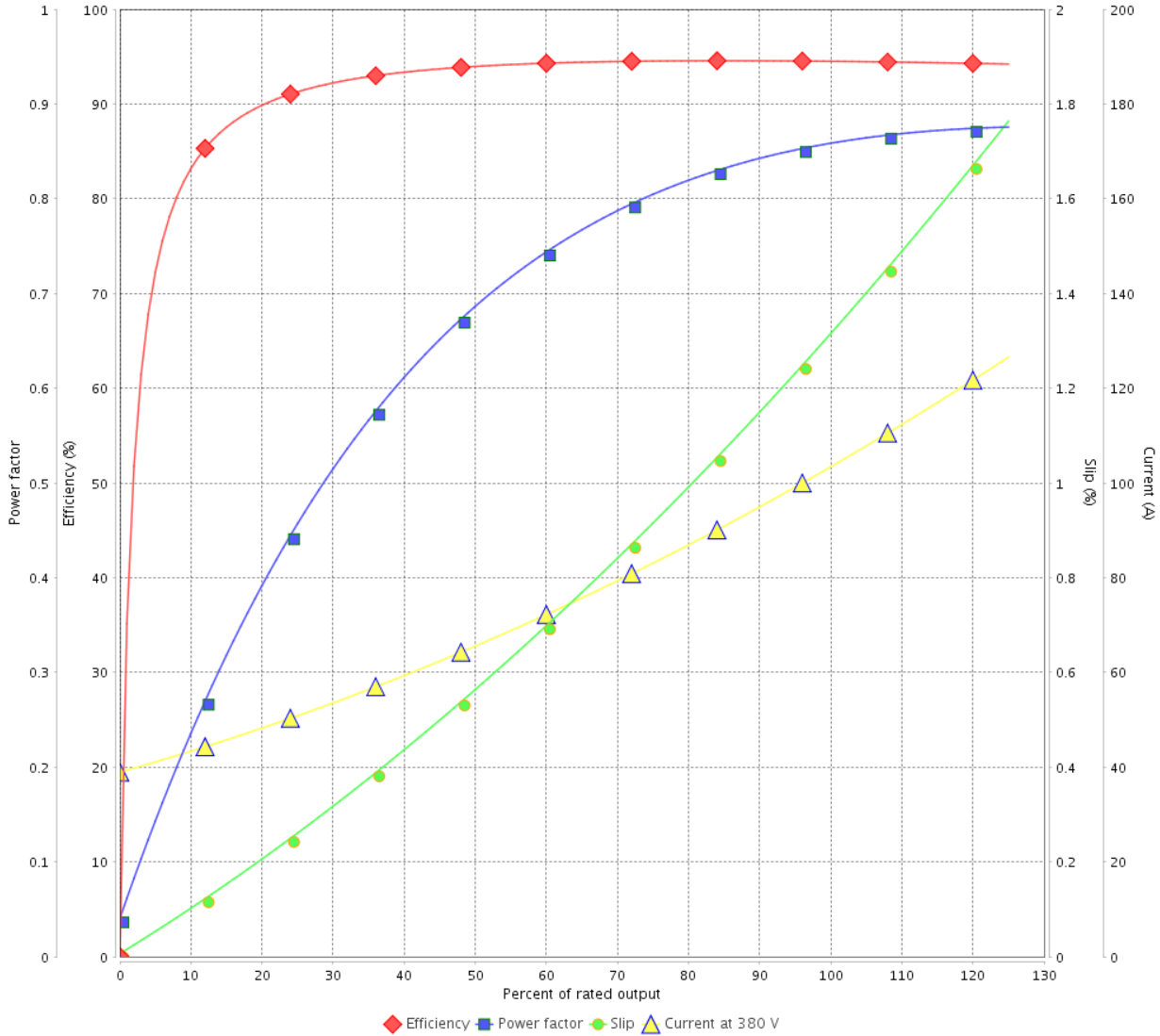
Customer : \_\_\_\_\_

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12408987

Catalog # : 10018XT3E405TC

LOAD PERFORMANCE CURVE



Performance : 380 V 50 Hz 4P IE2

Rated current : 103 A  
 LRC : 7.5  
 Rated torque : 266 ft.lb  
 Locked rotor torque : 270 %  
 Breakdown torque : 310 %  
 Rated speed : 1480 rpm

Moment of inertia (J) : 26.4 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

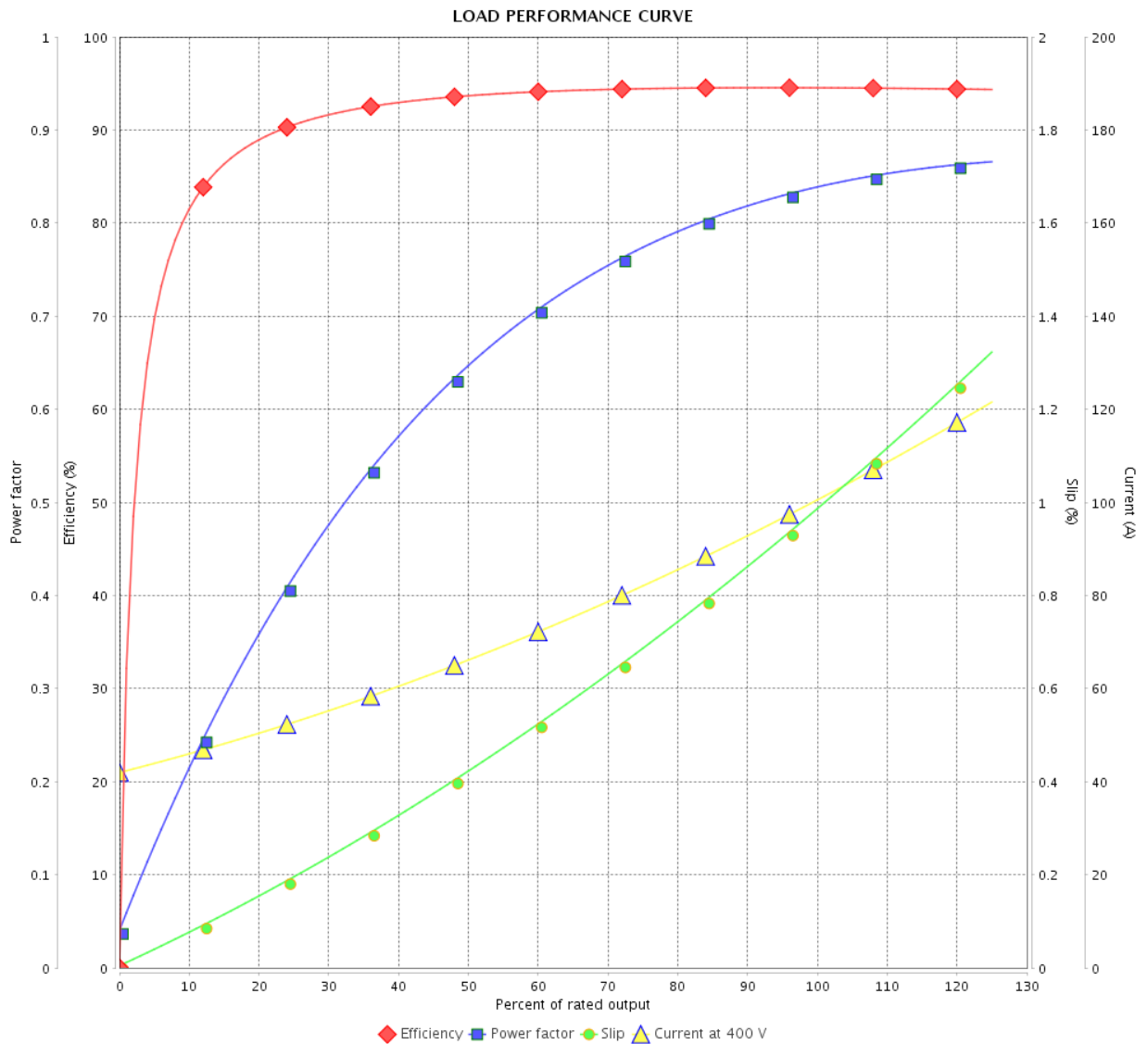


Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12408987

Catalog # : 10018XT3E405TC



Performance : 400 V 50 Hz 4P IE2

Rated current : 100 A  
 LRC : 8.4  
 Rated torque : 265 ft.lb  
 Locked rotor torque : 300 %  
 Breakdown torque : 360 %  
 Rated speed : 1485 rpm

Moment of inertia (J) : 26.4 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 80 K  
 Design : B

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Date				

# LOAD PERFORMANCE CURVE

Three Phase Induction Motor - Squirrel Cage

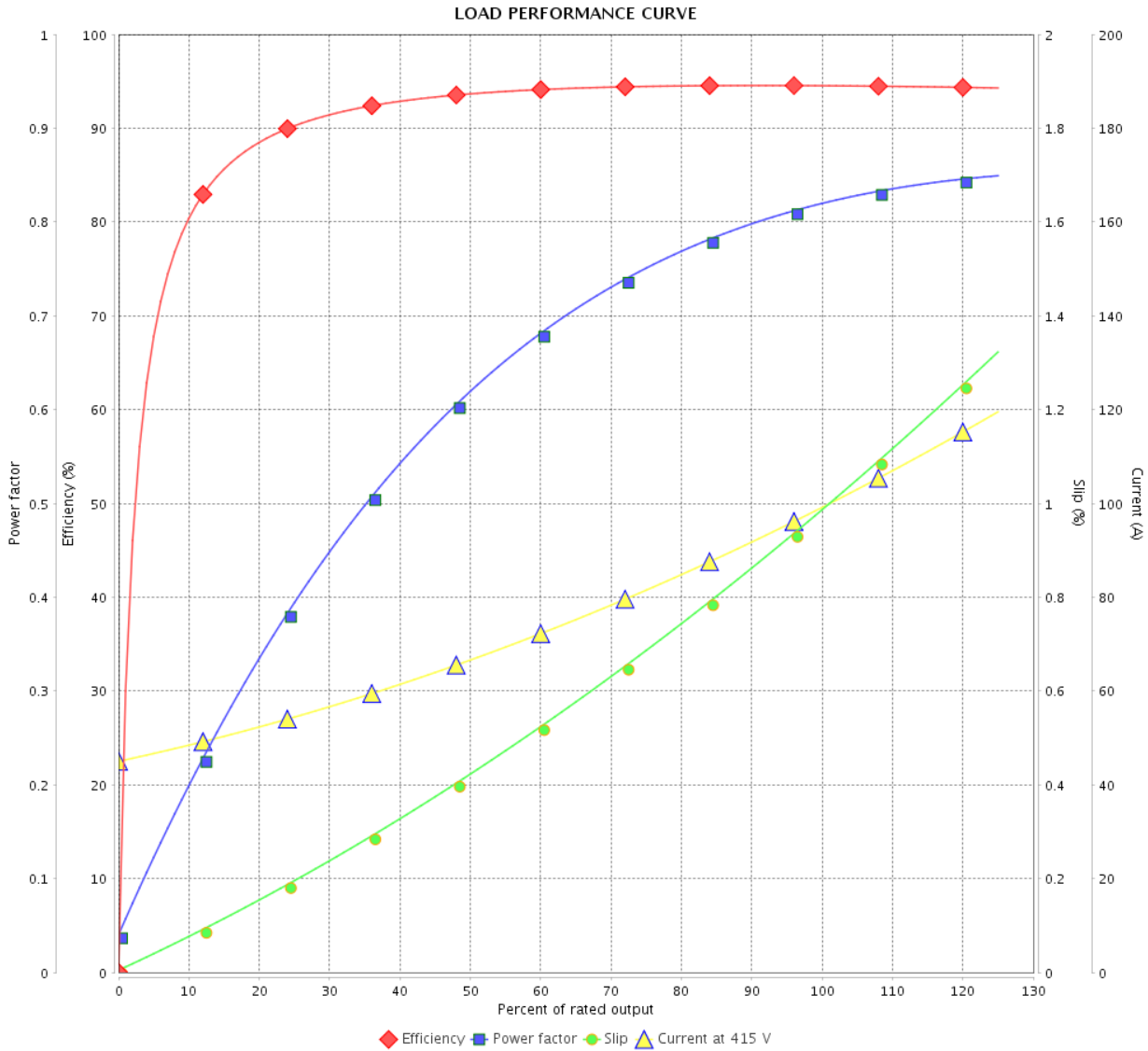


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Product line : NEMA Premium Efficiency Three-Phase

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Rated current : 98.7 A  
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 Locked rotor torque : 320 %  
 Breakdown torque : 370 %  
 Rated speed : 1485 rpm

Moment of inertia (J) : 26.4 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 : 12408987  
 Catalog # : 10018XT3E405TC

Performance : 230/460 V 60 Hz 4P

Rated current : 226/113 A	Moment of inertia (J) : 26.4 sq.ft.lb
LRC : 7.2	Duty cycle : Cont.(S1)
Rated torque : 295 ft.lb	Insulation class : F
Locked rotor torque : 270 %	Service factor : 1.15
Breakdown torque : 300 %	Temperature rise : 80 K
Rated speed : 1780 rpm	Design : B

Heating constant

Cooling constant

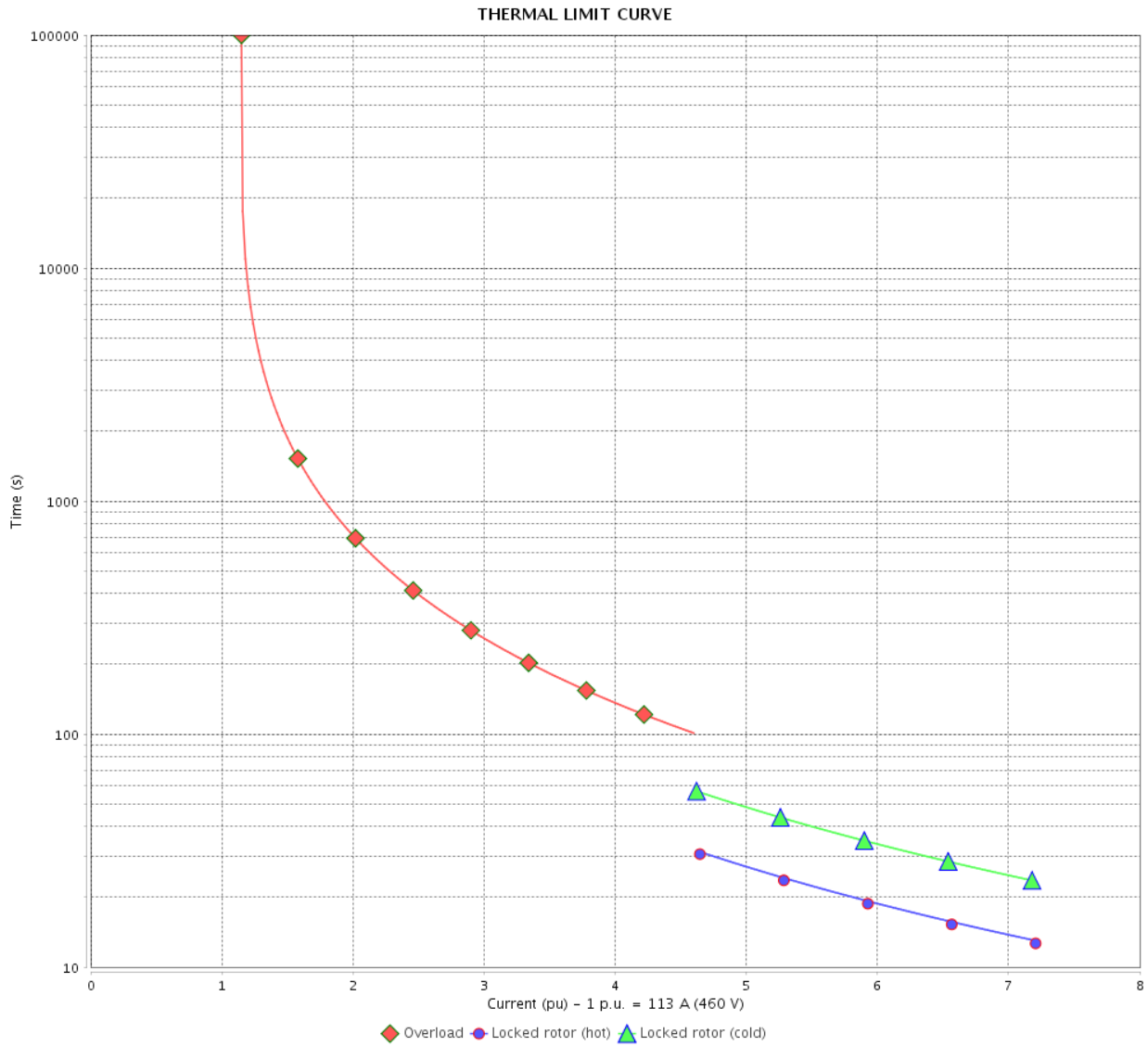
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# THERMAL LIMIT CURVE

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 : 12408987  
 Catalog # : 10018XT3E405TC

Performance : 380 V 50 Hz 4P IE2

Rated current : 103 A	Moment of inertia (J) : 26.4 sq.ft.lb
LRC : 7.5	Duty cycle : Cont.(S1)
Rated torque : 266 ft.lb	Insulation class : F
Locked rotor torque : 270 %	Service factor : 1.00
Breakdown torque : 310 %	Temperature rise : 80 K
Rated speed : 1480 rpm	Design : B

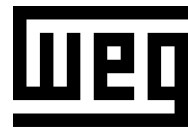
Heating constant

Cooling constant

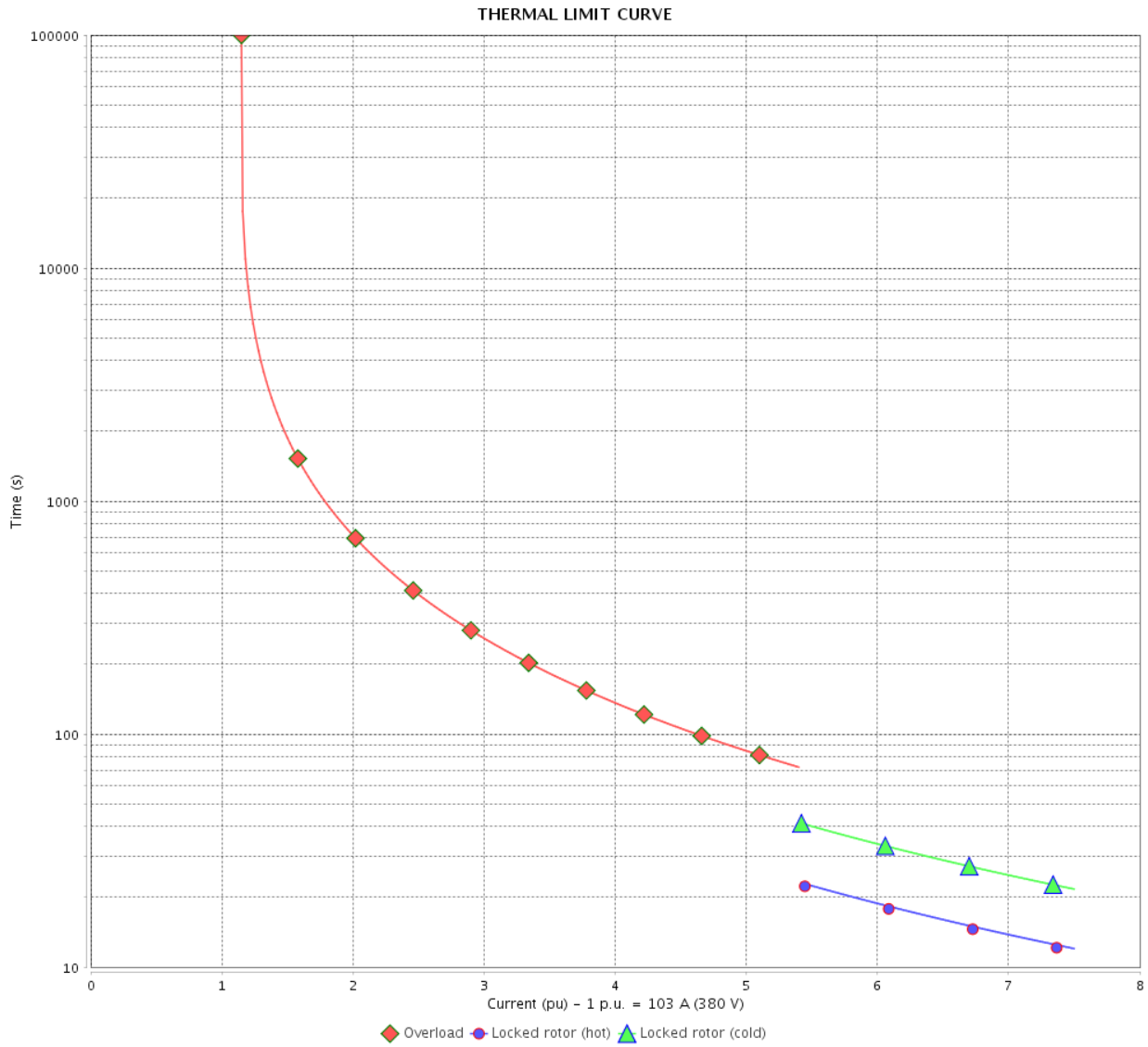
Rev.	Changes Summary	Performed	Checked	Date
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Date	14/04/2022			

# THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



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



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Date		14/04/2022		

# THERMAL LIMIT CURVE



## Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : NEMA Premium Efficiency Three-Phase  
 Product code : 12408987  
 Catalog # : 10018XT3E405TC

Performance : 400 V 50 Hz 4P IE2

Rated current : 100 A	Moment of inertia (J) : 26.4 sq.ft.lb
LRC : 8.4	Duty cycle : Cont.(S1)
Rated torque : 265 ft.lb	Insulation class : F
Locked rotor torque : 300 %	Service factor : 1.00
Breakdown torque : 360 %	Temperature rise : 80 K
Rated speed : 1485 rpm	Design : B

Heating constant

Cooling constant

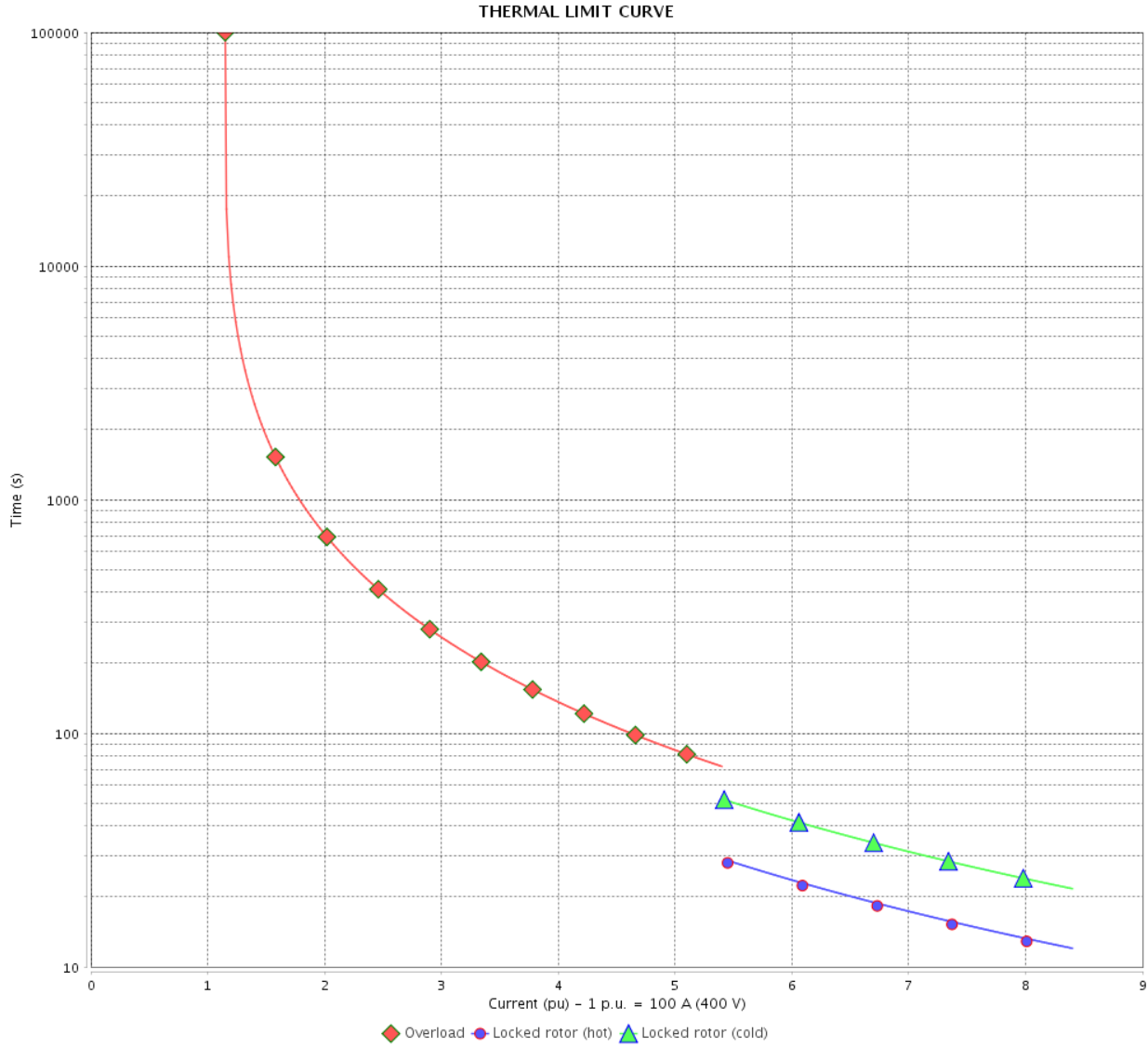
Rev.	Changes Summary	Performed	Checked	Date
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# THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



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



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# THERMAL LIMIT CURVE



## Three Phase Induction Motor - Squirrel Cage

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Rated current : 98.7 A	Moment of inertia (J) : 26.4 sq.ft.lb
LRC : 9.1	Duty cycle : Cont.(S1)
Rated torque : 265 ft.lb	Insulation class : F
Locked rotor torque : 320 %	Service factor : 1.00
Breakdown torque : 370 %	Temperature rise : 80 K
Rated speed : 1485 rpm	Design : B

Heating constant

Cooling constant

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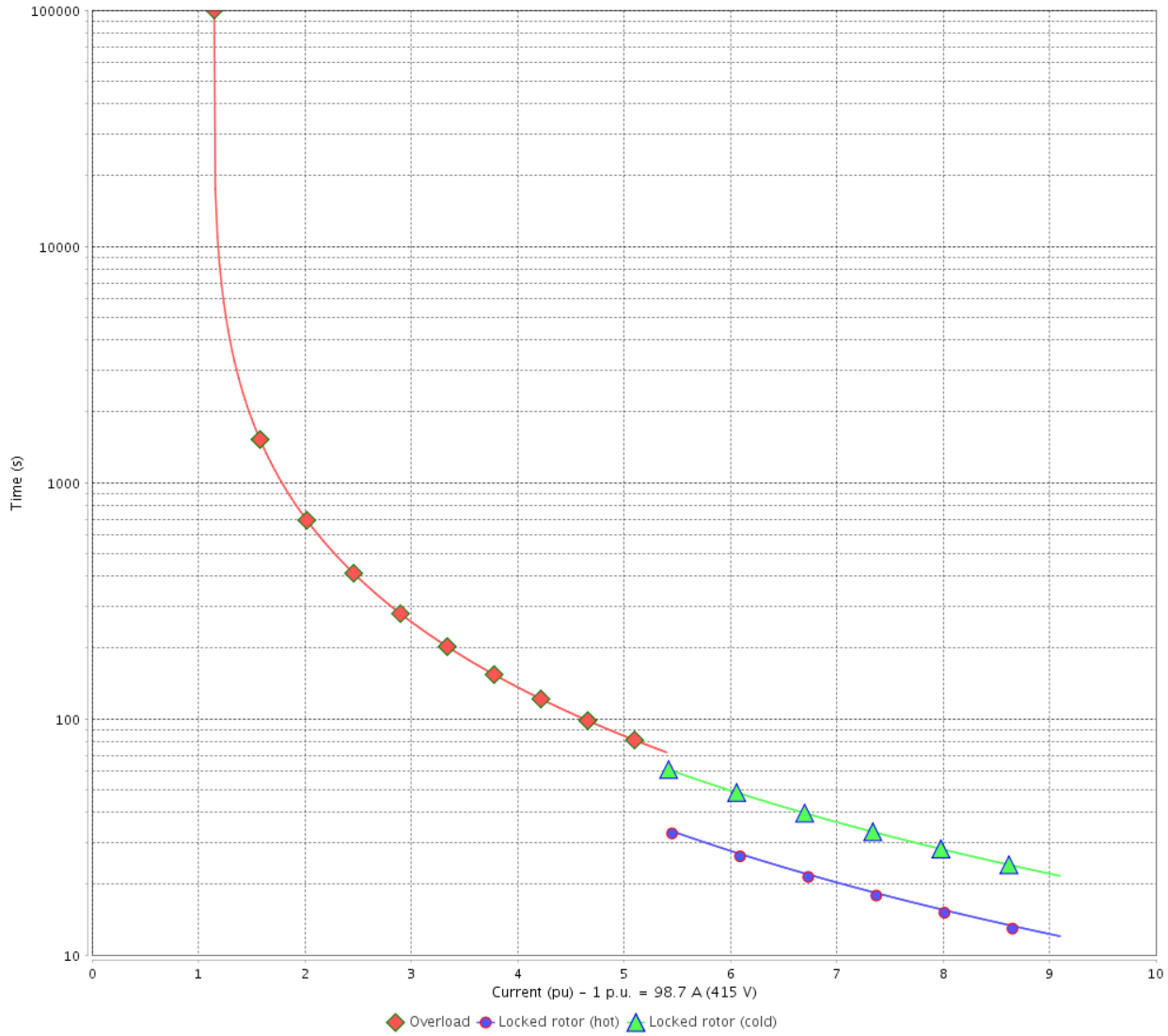
# THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



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

THERMAL LIMIT CURVE



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# VFD OPERATION CURVE

## Three Phase Induction Motor - Squirrel Cage

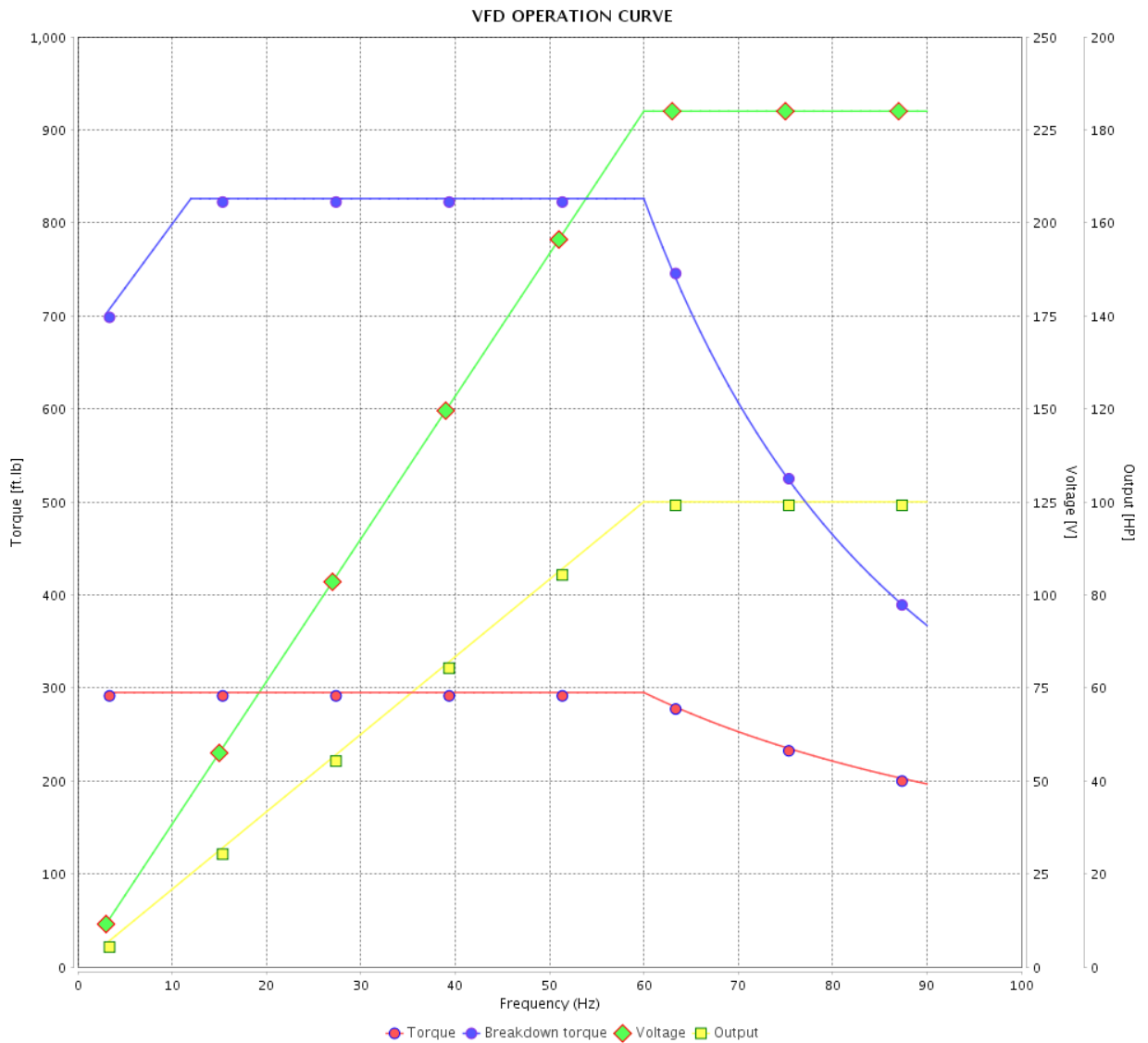


Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12408987

Catalog # : 10018XT3E405TC



Performance : 230/460 V 60 Hz 4P

Rated current : 226/113 A  
 LRC : 7.2  
 Rated torque : 295 ft.lb  
 Locked rotor torque : 270 %  
 Breakdown torque : 300 %  
 Rated speed : 1780 rpm

Moment of inertia (J) : 26.4 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

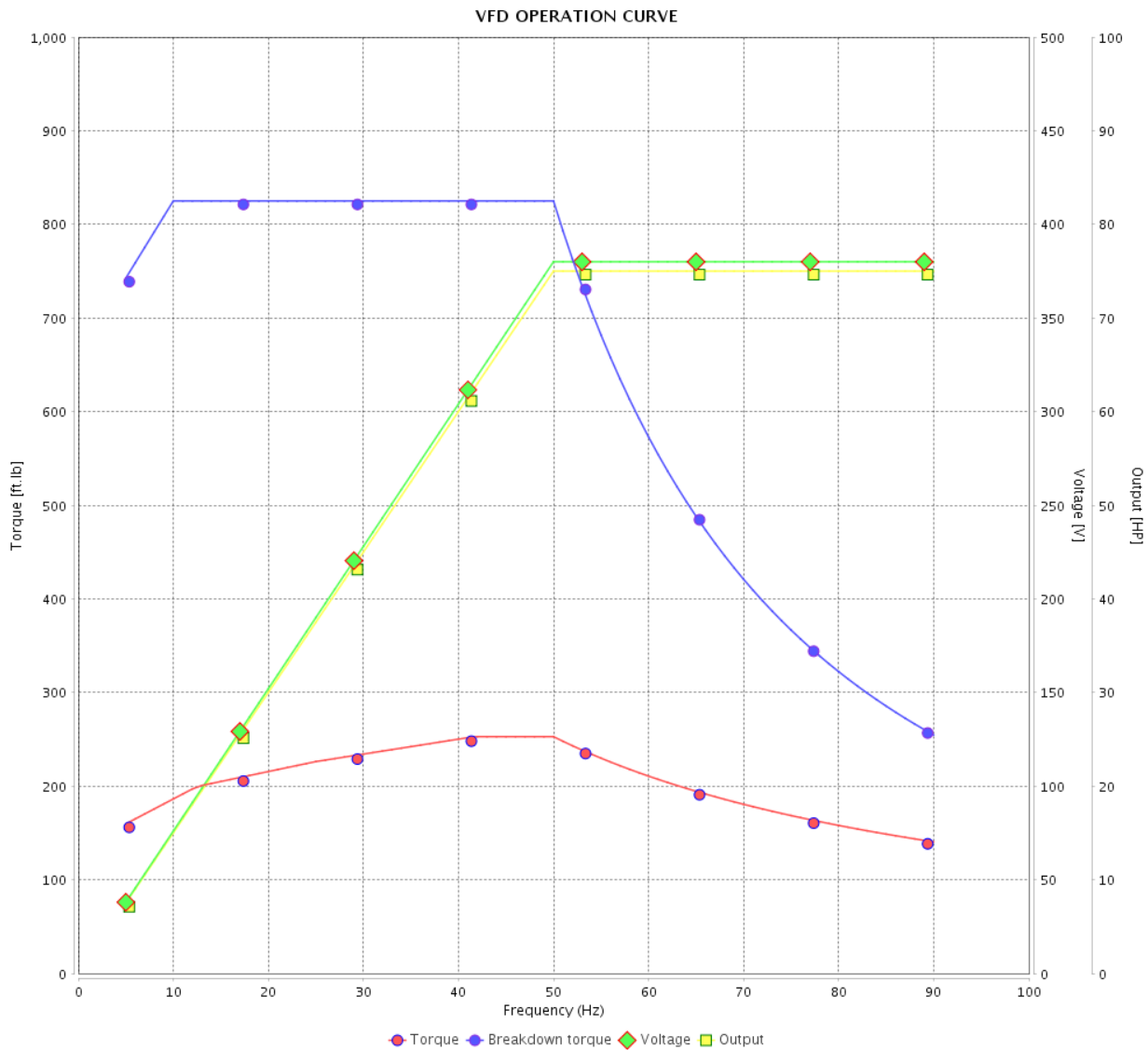


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Product code : 12408987

Catalog # : 10018XT3E405TC



Performance : 380 V 50 Hz 4P IE2

Rated current	: 103 A	Moment of inertia (J)	: 26.4 sq.ft.lb
LRC	: 7.5	Duty cycle	: Cont.(S1)
Rated torque	: 266 ft.lb	Insulation class	: F
Locked rotor torque	: 270 %	Service factor	: 1.00
Breakdown torque	: 310 %	Temperature rise	: 80 K
Rated speed	: 1480 rpm	Design	: B

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# VFD OPERATION CURVE

## Three Phase Induction Motor - Squirrel Cage

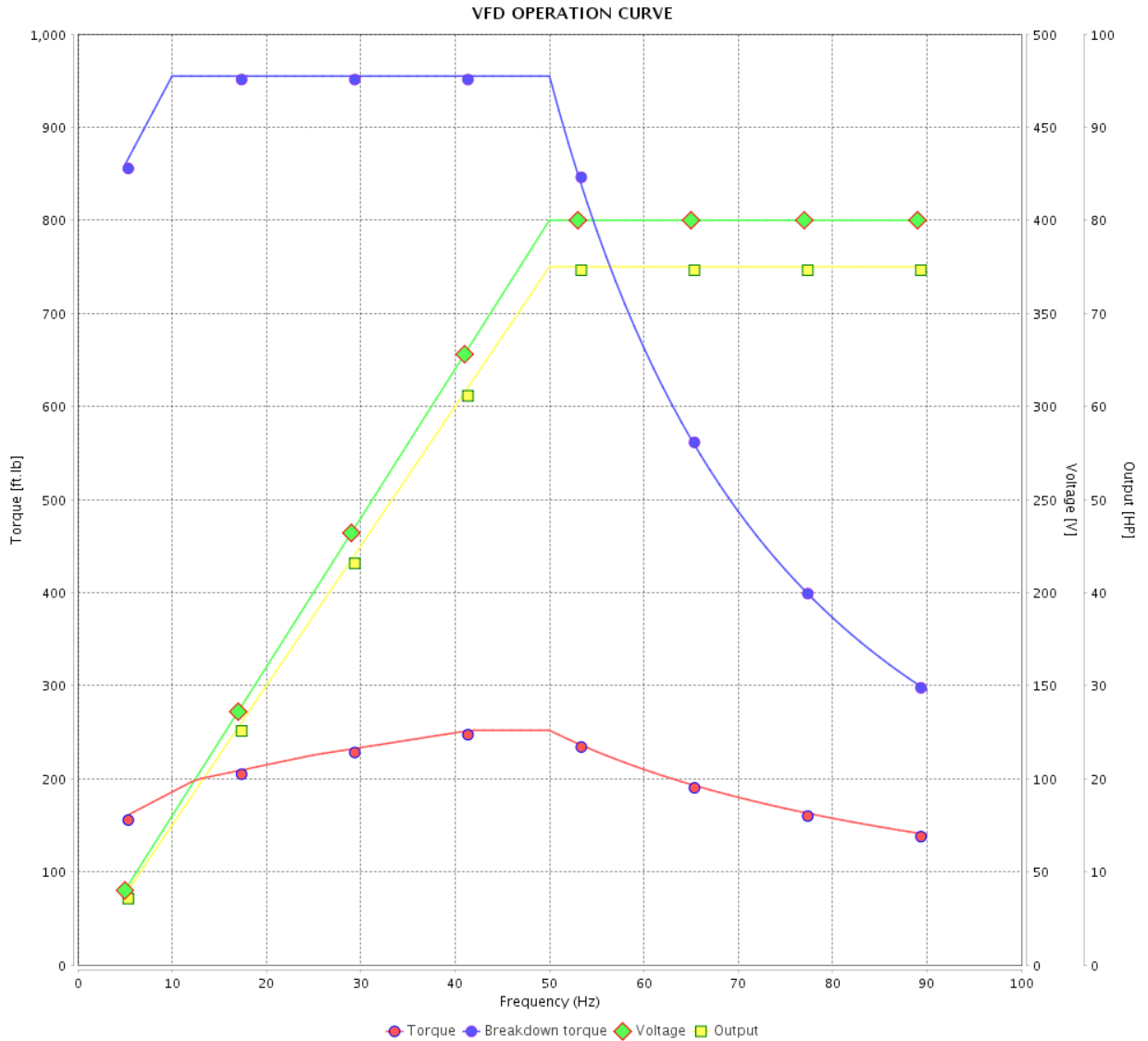


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Catalog # : 10018XT3E405TC



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Rated current : 100 A  
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 Breakdown torque : 360 %  
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 Insulation class : F  
 Service factor : 1.00  
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 Design : B

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# VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage

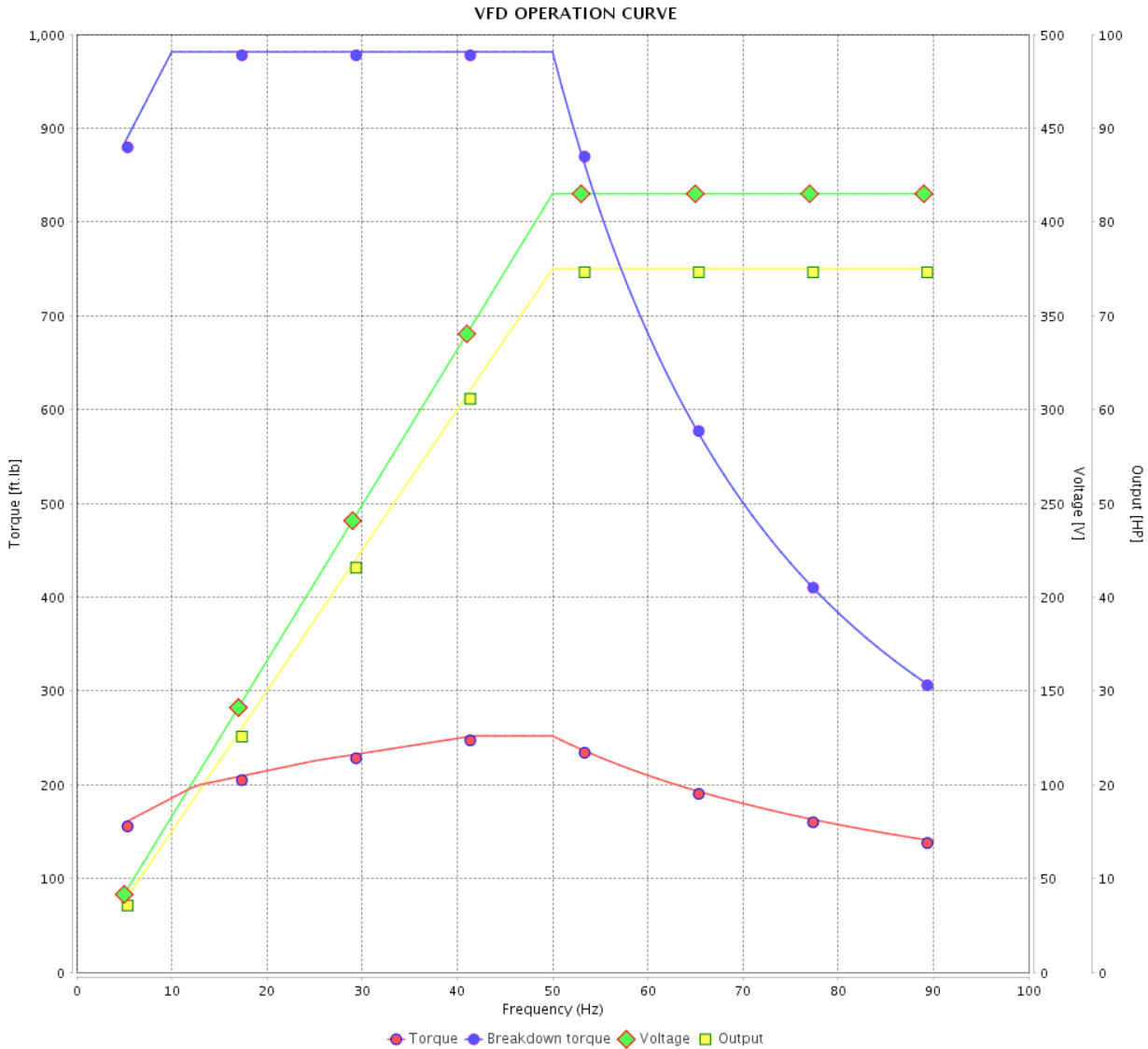


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Product line : NEMA Premium Efficiency Three-Phase

Product code : 12408987

Catalog # : 10018XT3E405TC

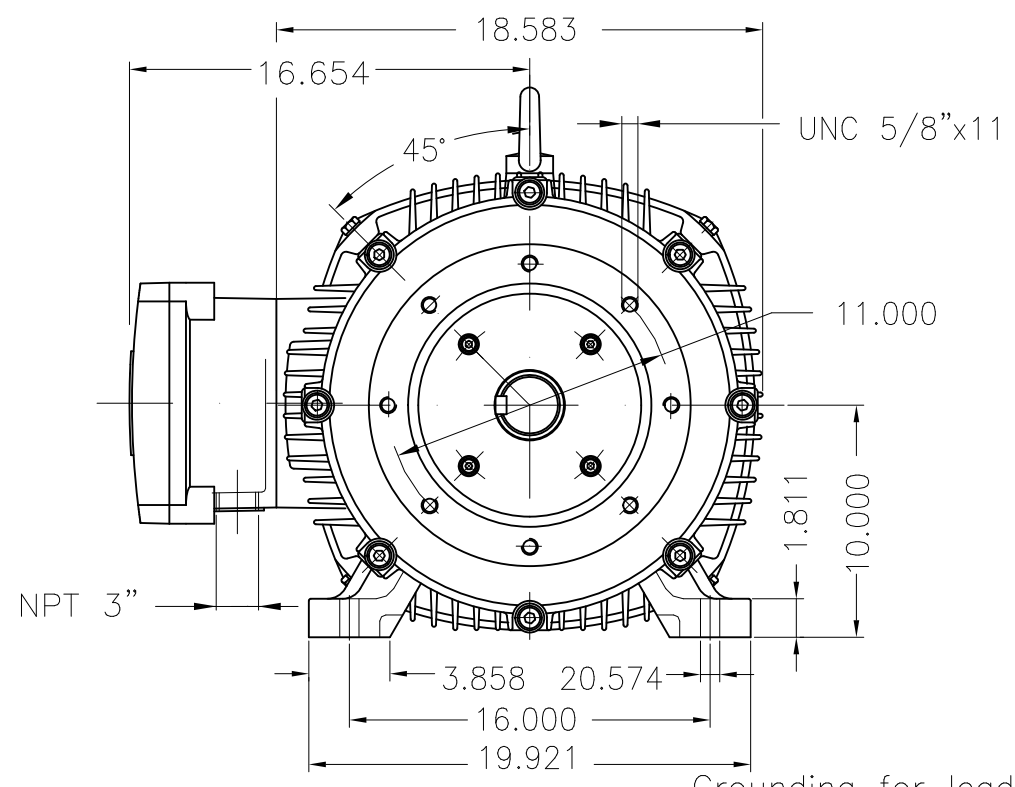


Performance : 415 V 50 Hz 4P IE2

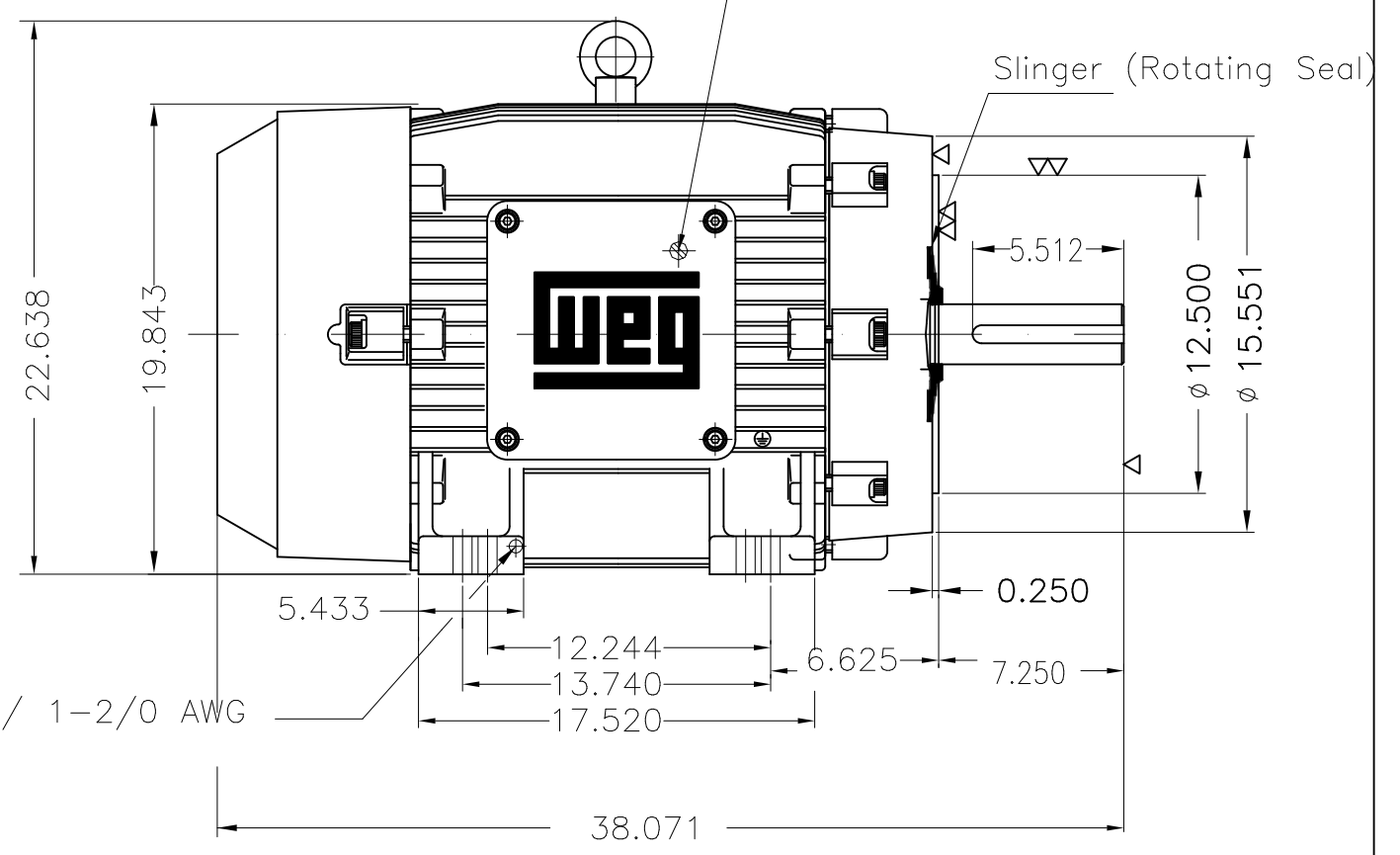
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 LRC : 9.1  
 Rated torque : 265 ft.lb  
 Locked rotor torque : 320 %  
 Breakdown torque : 370 %  
 Rated speed : 1485 rpm

Moment of inertia (J) : 26.4 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 80 K  
 Design : B

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Date	14/04/2022			



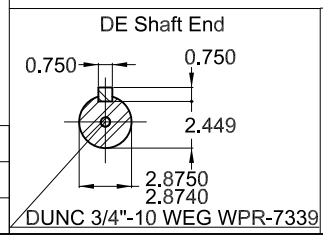
Grounding for leads 25-50 mm<sup>2</sup> / 3-1 AWG



Grounding for leads 35-70 mm<sup>2</sup> / 1-2/0 AWG

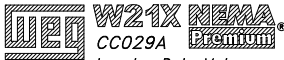
100 HP 04 Poles 60 Hz A

Color RAL 5009  
 Painting plan 202P  
 Mounting B34R(D)



ECM	LOC	SUMMARY OF MODIFICATIONS	EXECUTED	CHECKED	RELEASED	DATE	VER
EXECUTED	PIRWBUSER	THREE PH. MOTOR EXPLOSION PROOF PREM. EFF.					
CHECKED		FRAME 404/5TC IP55 TEFC					
RELEASED							
REL DT.	WMO	Jaragua do Sul	Product Engineering	PREVIEW	WDD		





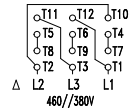
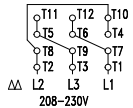
Inverter Duty Motor  
Severe Duty



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, 2:1CT, 1.0SF, T3C, AMB 40°C.

MODEL 10018XT3E405TC  
 MADE IN BRAZIL  
 12408987

PH 3	FR 404/5TC	HP(kW) 100.0(75.0)	Hz 60
V 230/460	A 226/113	RPM 1780	
NEMA NOM. EFF. 95.4%	INS CL F	$\Delta T$ 80 K	IP55
PF 0.87	DUTY CONT.	CODE H	
ENCL. TEFC	SF 1.15	SFA 260/130	
AMB 40°C	DES B	USABLE @208V 250 A SF 1.00	
AMB 55°C SF1.0	-bearings lub interval reduced by a factor of 50%		
75HP 55kW 50Hz 380V 103A 1480RPM SF1.00 EFF 94.5% (IE2)			



→ 6217-C3(21g)      MOBIL POLYREX EM  
 → 6314-C3(27g)      9149 h  
 ALT 1000 m.a.s.l      1 2 2 1 Lbs