

# DATA SHEET

## Three Phase Induction Motor - Squirrel Cage



Customer :					
Product line	: NEMA Premium Efficiency Three-Phase	Product code :	14383368		
		Catalog # :	10036ET3E405TS-W22G		
Frame	: 404/5TS	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>	: 1107 lb		
Protection degree	: IP55	Moment of inertia (J)	: 13.2 sq.ft.lb		
Design	: B				
Output [HP]	100	75	75	75	75
Poles	2	2	2	2	2
Frequency [Hz]	60	50	50	50	50
Rated voltage [V]	230/460	380	400	415	415
Rated current [A]	224/112	99.6	94.6	92.2	92.2
L. R. Amperes [A]	1456/728	677	719	756	756
LRC [A]	6.5x(Code G)	6.8x(Code G)	7.6x(Code H)	8.2x(Code J)	8.2x(Code J)
No load current [A]	52.0/26.0	25.7	27.5	29.1	29.1
Rated speed [RPM]	3545	2955	2960	2965	2965
Slip [%]	1.53	1.50	1.33	1.17	1.17
Rated torque [ft.lb]	148	133	133	133	133
Locked rotor torque [%]	240	250	280	300	300
Breakdown torque [%]	260	280	310	330	330
Service factor	1.25	1.00	1.00	1.00	1.00
Temperature rise	80 K	80 K	80 K	80 K	80 K
Locked rotor time	25s (cold) 14s (hot)	18s (cold) 10s (hot)	18s (cold) 10s (hot)	18s (cold) 10s (hot)	18s (cold) 10s (hot)
Noise level <sup>2</sup>	79.0 dB(A)	74.0 dB(A)	74.0 dB(A)	74.0 dB(A)	74.0 dB(A)
Efficiency (%)	25%	92.8	92.4	92.5	93.1
	50%	93.0	93.0	93.1	93.5
	75%	94.1	93.8	93.8	94.0
	100%	94.1	94.3	94.3	94.3
Power Factor	25%	0.61	0.59	0.55	0.53
	50%	0.83	0.82	0.80	0.78
	75%	0.88	0.88	0.86	0.85
	100%	0.89	0.89	0.89	0.88
Bearing type	: <u>Drive end</u> 6314 C3	<u>Non drive end</u> 6314 C3	Foundation loads		
Sealing	: WSeal	WSeal	Max. traction	: 762 lb	
Lubrication interval	: 4000 h	4000 h	Max. compression	: 1869 lb	
Lubricant amount	: 27 g	27 g			
Lubricant type	: Mobil Polyrex EM				
Notes					
USABLE @208V 243A SF 1.10 SFA 268A					
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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# TORQUE AND CURRENT VS SPEED CURVE

## Three Phase Induction Motor - Squirrel Cage



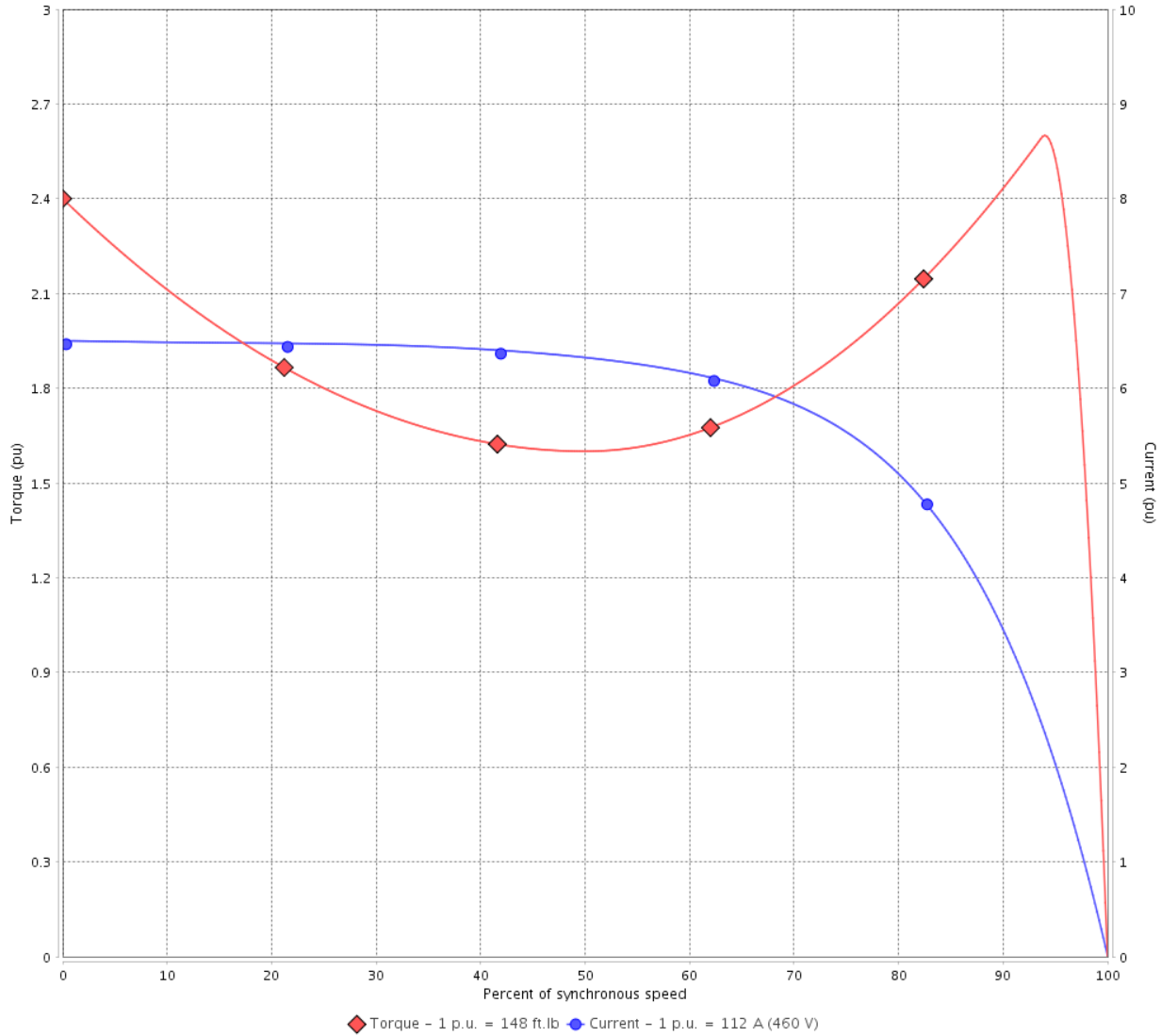
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 14383368

Catalog # : 10036ET3E405TS-W22G

TORQUE AND CURRENT VS SPEED CURVE



Performance : 230/460 V 60 Hz 2P

Rated current	: 224/112 A	Moment of inertia (J)	: 13.2 sq.ft.lb
LRC	: 6.5	Duty cycle	: Cont.(S1)
Rated torque	: 148 ft.lb	Insulation class	: F
Locked rotor torque	: 240 %	Service factor	: 1.25
Breakdown torque	: 260 %	Temperature rise	: 80 K
Rated speed	: 3545 rpm	Design	: B

Locked rotor time : 25s (cold) 14s (hot)

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# TORQUE AND CURRENT VS SPEED CURVE



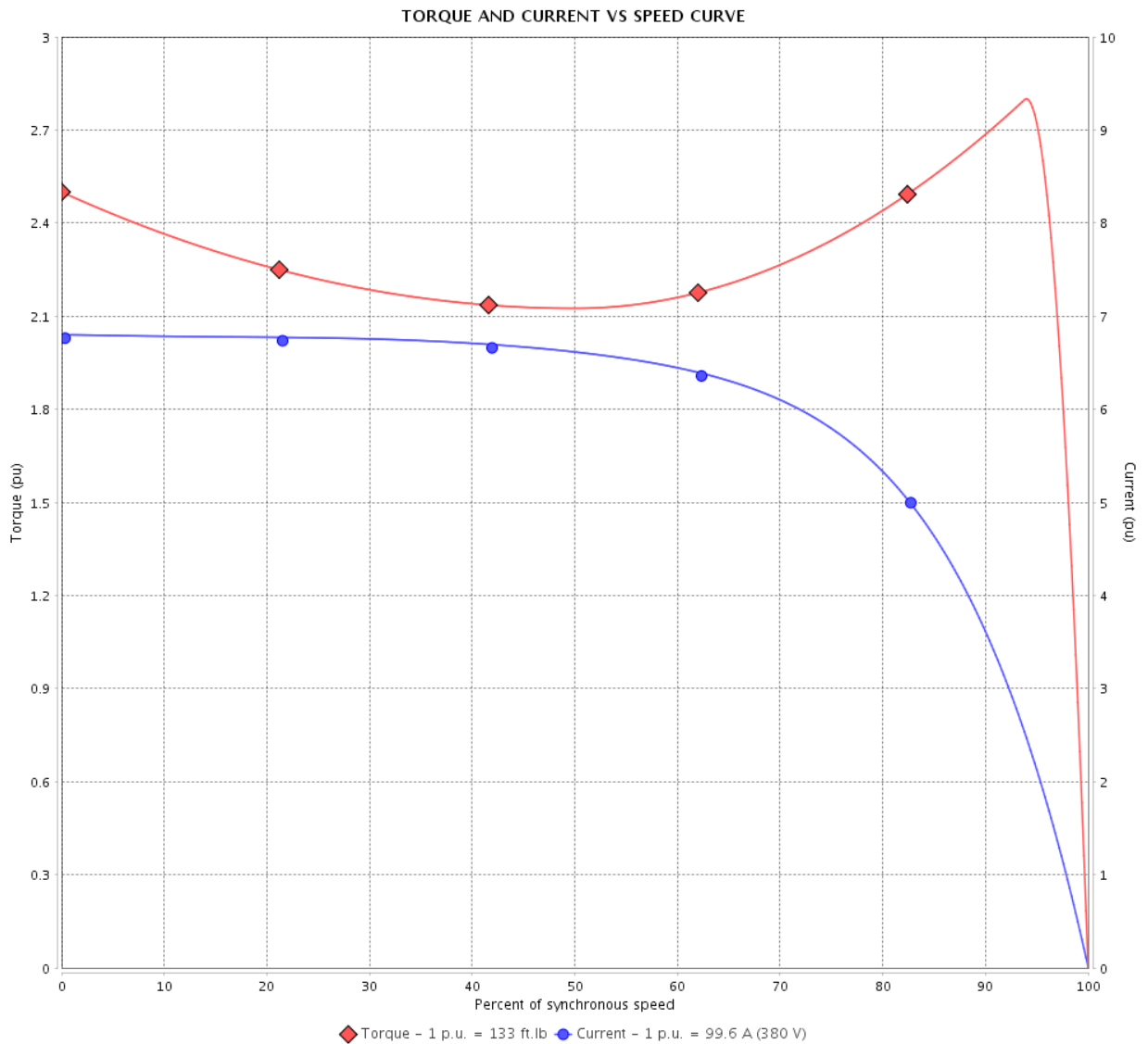
## Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 14383368

Catalog # : 10036ET3E405TS-W22G



Performance : 380 V 50 Hz 2P IE3

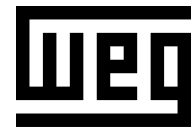
Rated current	: 99.6 A	Moment of inertia (J)	: 13.2 sq.ft.lb
LRC	: 6.8	Duty cycle	: Cont.(S1)
Rated torque	: 133 ft.lb	Insulation class	: F
Locked rotor torque	: 250 %	Service factor	: 1.00
Breakdown torque	: 280 %	Temperature rise	: 80 K
Rated speed	: 2955 rpm	Design	: B

Locked rotor time : 18s (cold) 10s (hot)

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# TORQUE AND CURRENT VS SPEED CURVE

Three Phase Induction Motor - Squirrel Cage



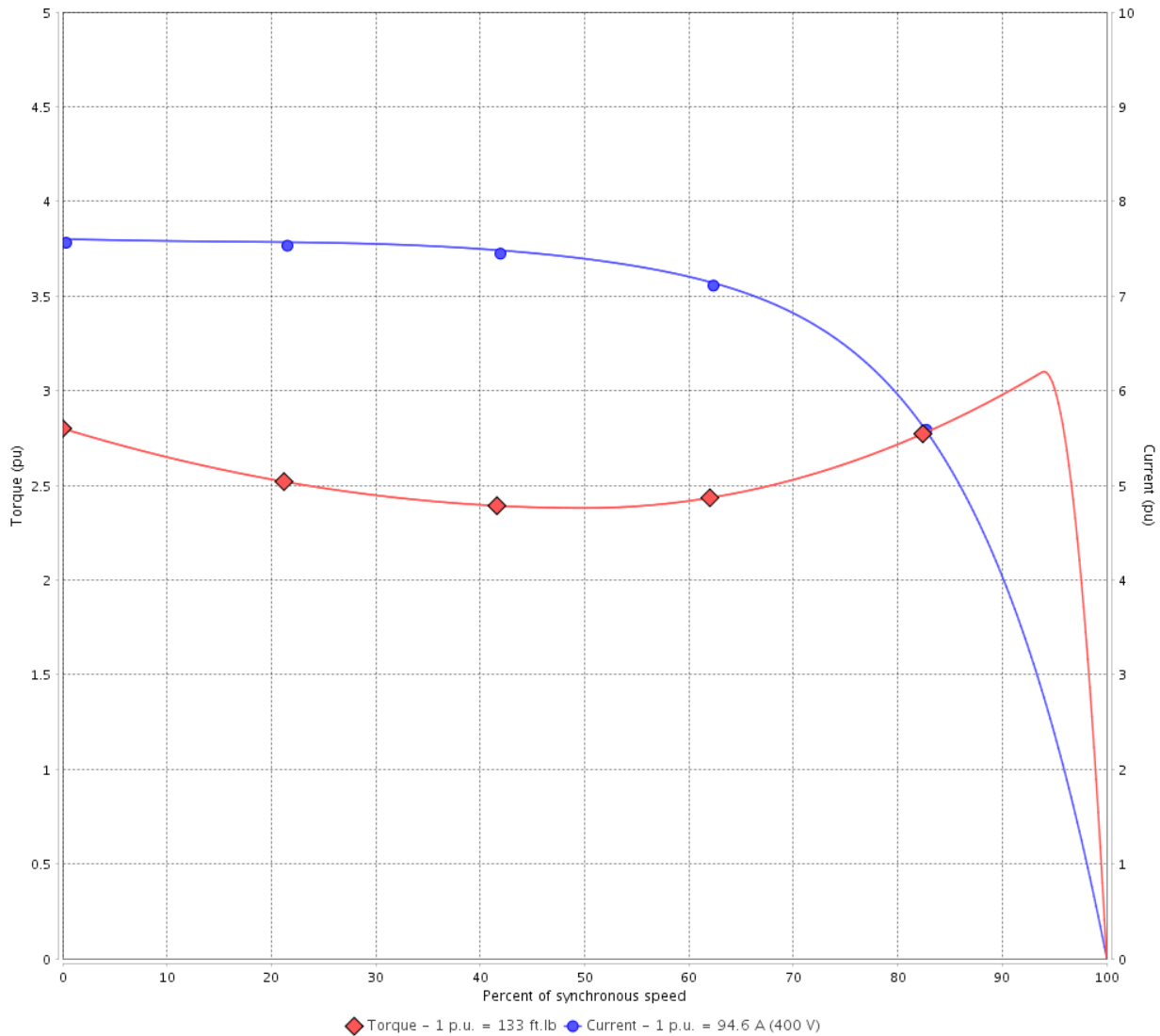
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 14383368

Catalog # : 10036ET3E405TS-W22G

TORQUE AND CURRENT VS SPEED CURVE



Performance : 400 V 50 Hz 2P IE3

Rated current	: 94.6 A	Moment of inertia (J)	: 13.2 sq.ft.lb
LRC	: 7.6	Duty cycle	: Cont.(S1)
Rated torque	: 133 ft.lb	Insulation class	: F
Locked rotor torque	: 280 %	Service factor	: 1.00
Breakdown torque	: 310 %	Temperature rise	: 80 K
Rated speed	: 2960 rpm	Design	: B

Locked rotor time : 18s (cold) 10s (hot)

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# TORQUE AND CURRENT VS SPEED CURVE



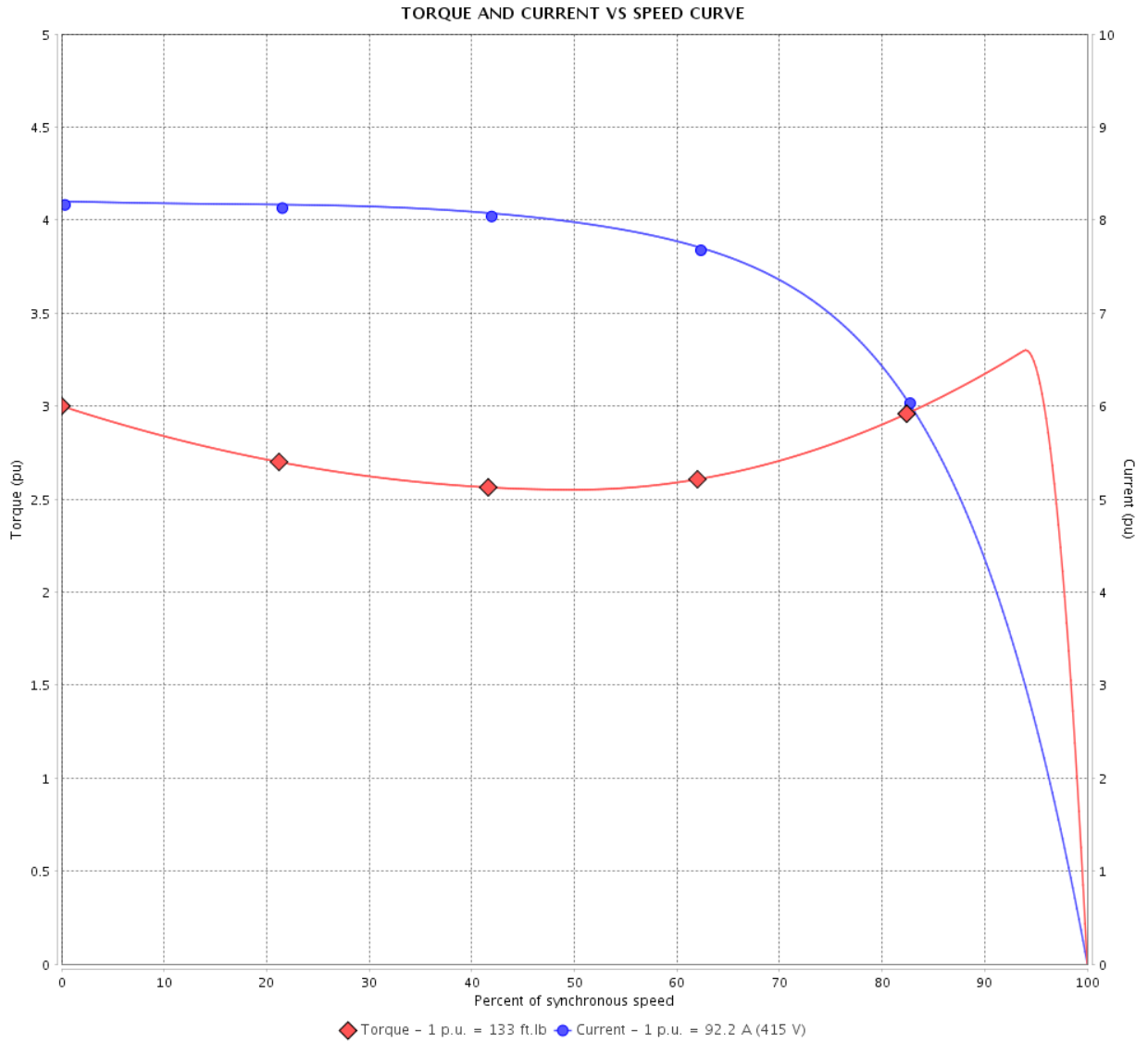
## Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 14383368

Catalog # : 10036ET3E405TS-W22G



Performance : 415 V 50 Hz 2P IE3

Rated current	: 92.2 A	Moment of inertia (J)	: 13.2 sq.ft.lb
LRC	: 8.2	Duty cycle	: Cont.(S1)
Rated torque	: 133 ft.lb	Insulation class	: F
Locked rotor torque	: 300 %	Service factor	: 1.00
Breakdown torque	: 330 %	Temperature rise	: 80 K
Rated speed	: 2965 rpm	Design	: B

Locked rotor time : 18s (cold) 10s (hot)

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# LOAD PERFORMANCE CURVE

Three Phase Induction Motor - Squirrel Cage

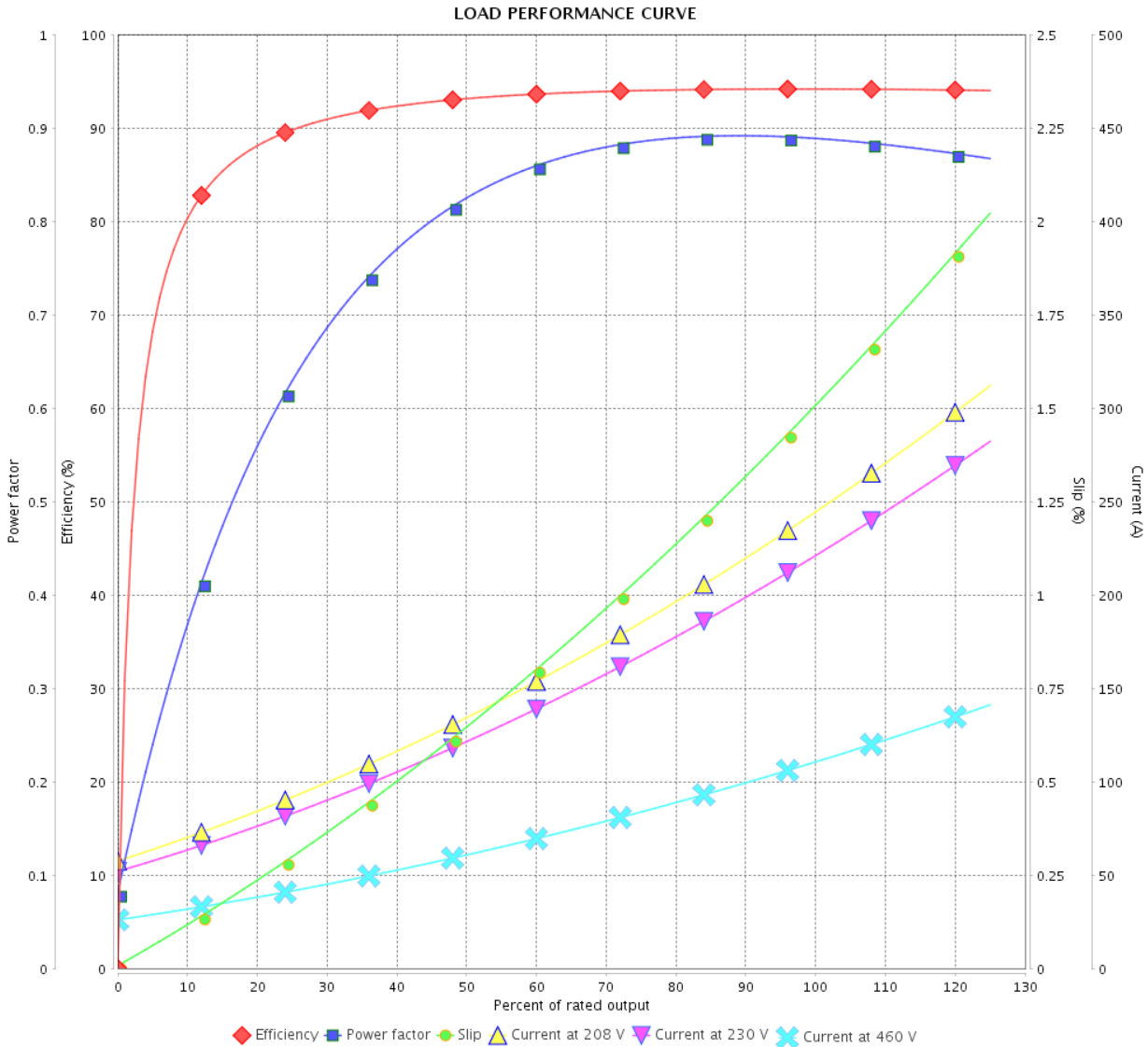


Customer : \_\_\_\_\_

Product line : NEMA Premium Efficiency Three-Phase

Product code : 14383368

Catalog # : 10036ET3E405TS-W22G



Performance : 230/460 V 60 Hz 2P

Rated current : 224/112 A  
 LRC : 6.5  
 Rated torque : 148 ft.lb  
 Locked rotor torque : 240 %  
 Breakdown torque : 260 %  
 Rated speed : 3545 rpm

Moment of inertia (J) : 13.2 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.25  
 Temperature rise : 80 K  
 Design : B

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# LOAD PERFORMANCE CURVE

## Three Phase Induction Motor - Squirrel Cage

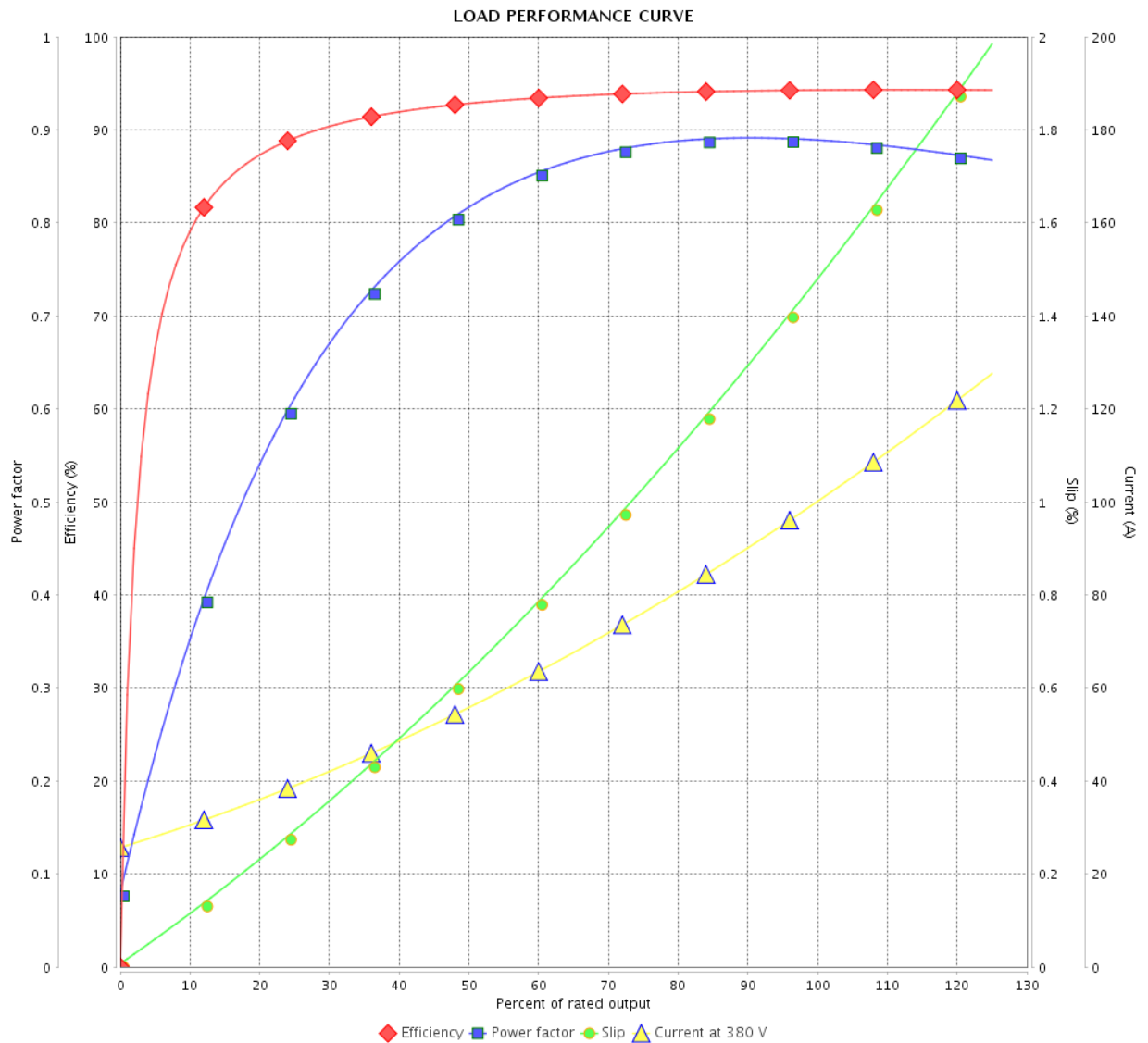


Customer : \_\_\_\_\_

Product line : NEMA Premium Efficiency Three-Phase

Product code : 14383368

Catalog # : 10036ET3E405TS-W22G



Performance : 380 V 50 Hz 2P IE3

Rated current : 99.6 A  
 LRC : 6.8  
 Rated torque : 133 ft.lb  
 Locked rotor torque : 250 %  
 Breakdown torque : 280 %  
 Rated speed : 2955 rpm

Moment of inertia (J) : 13.2 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

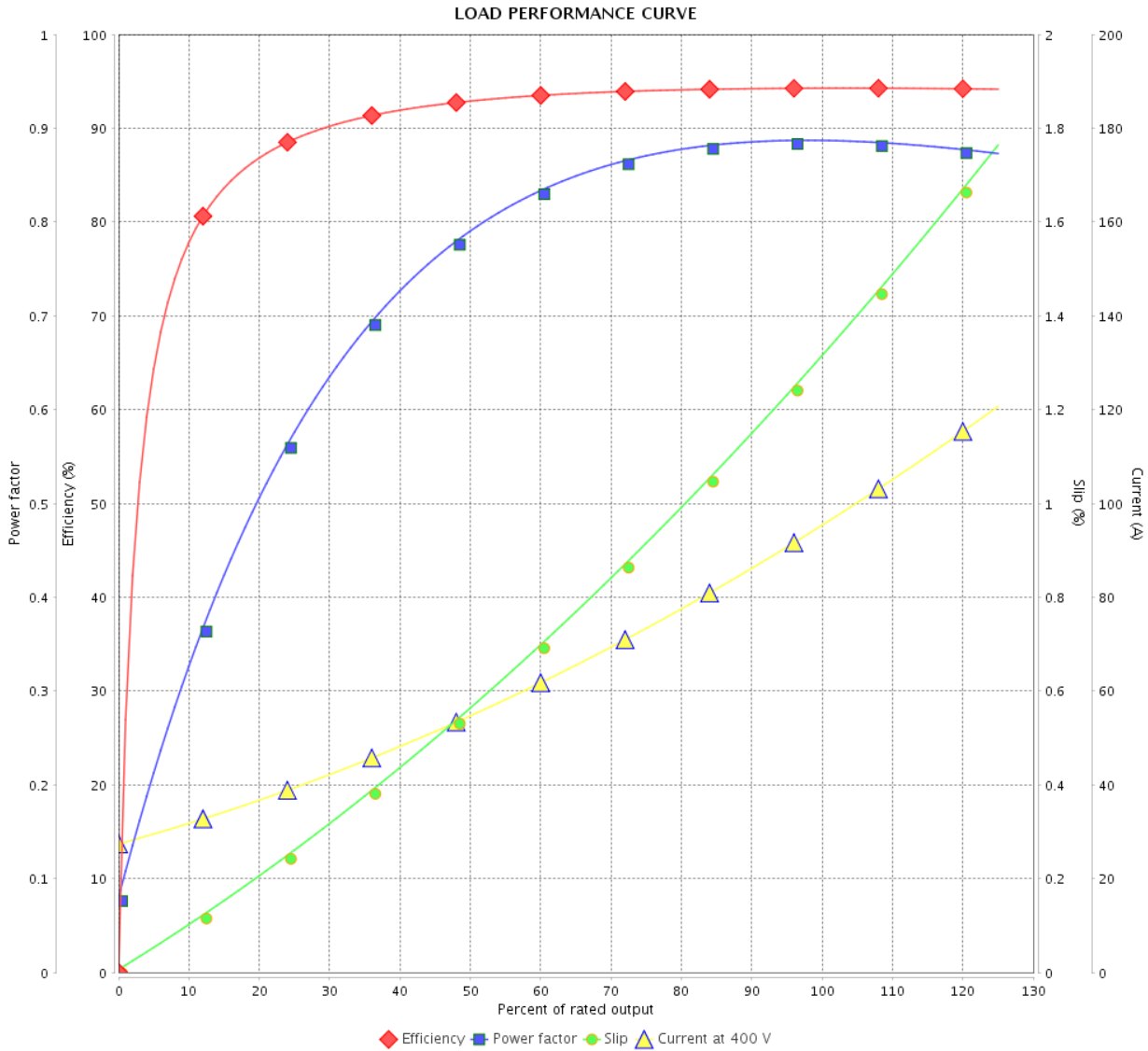


Customer : \_\_\_\_\_

Product line : NEMA Premium Efficiency Three-Phase

Product code : 14383368

Catalog # : 10036ET3E405TS-W22G



Performance : 400 V 50 Hz 2P IE3

Rated current : 94.6 A  
 LRC : 7.6  
 Rated torque : 133 ft.lb  
 Locked rotor torque : 280 %  
 Breakdown torque : 310 %  
 Rated speed : 2960 rpm

Moment of inertia (J) : 13.2 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

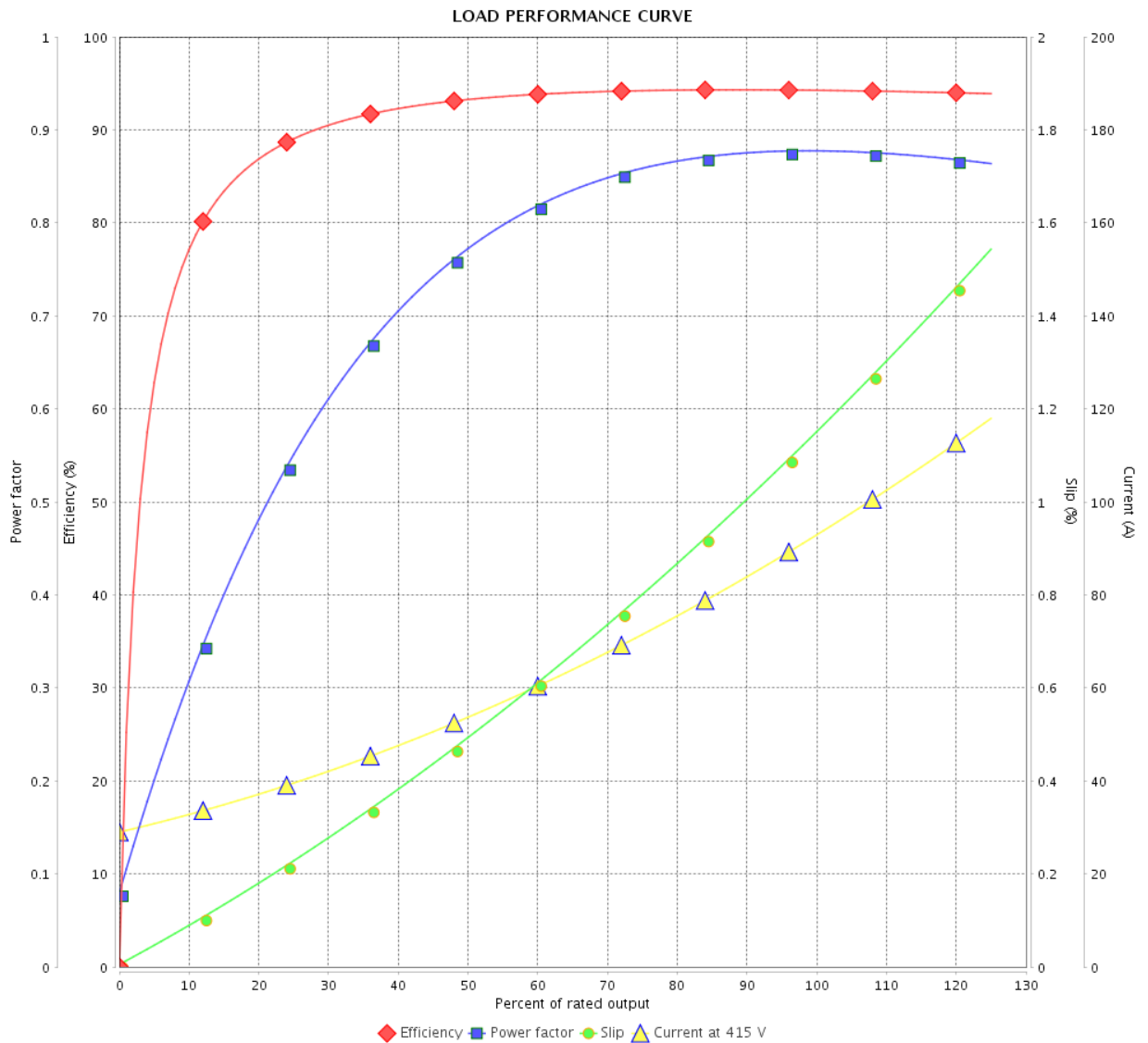


Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 14383368

Catalog # : 10036ET3E405TS-W22G



Performance : 415 V 50 Hz 2P IE3

Rated current : 92.2 A  
 LRC : 8.2  
 Rated torque : 133 ft.lb  
 Locked rotor torque : 300 %  
 Breakdown torque : 330 %  
 Rated speed : 2965 rpm

Moment of inertia (J) : 13.2 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 : 14383368  
 Catalog # : 10036ET3E405TS-W22G

Performance : 230/460 V 60 Hz 2P

Rated current : 224/112 A	Moment of inertia (J) : 13.2 sq.ft.lb
LRC : 6.5	Duty cycle : Cont.(S1)
Rated torque : 148 ft.lb	Insulation class : F
Locked rotor torque : 240 %	Service factor : 1.25
Breakdown torque : 260 %	Temperature rise : 80 K
Rated speed : 3545 rpm	Design : B

Heating constant

Cooling constant

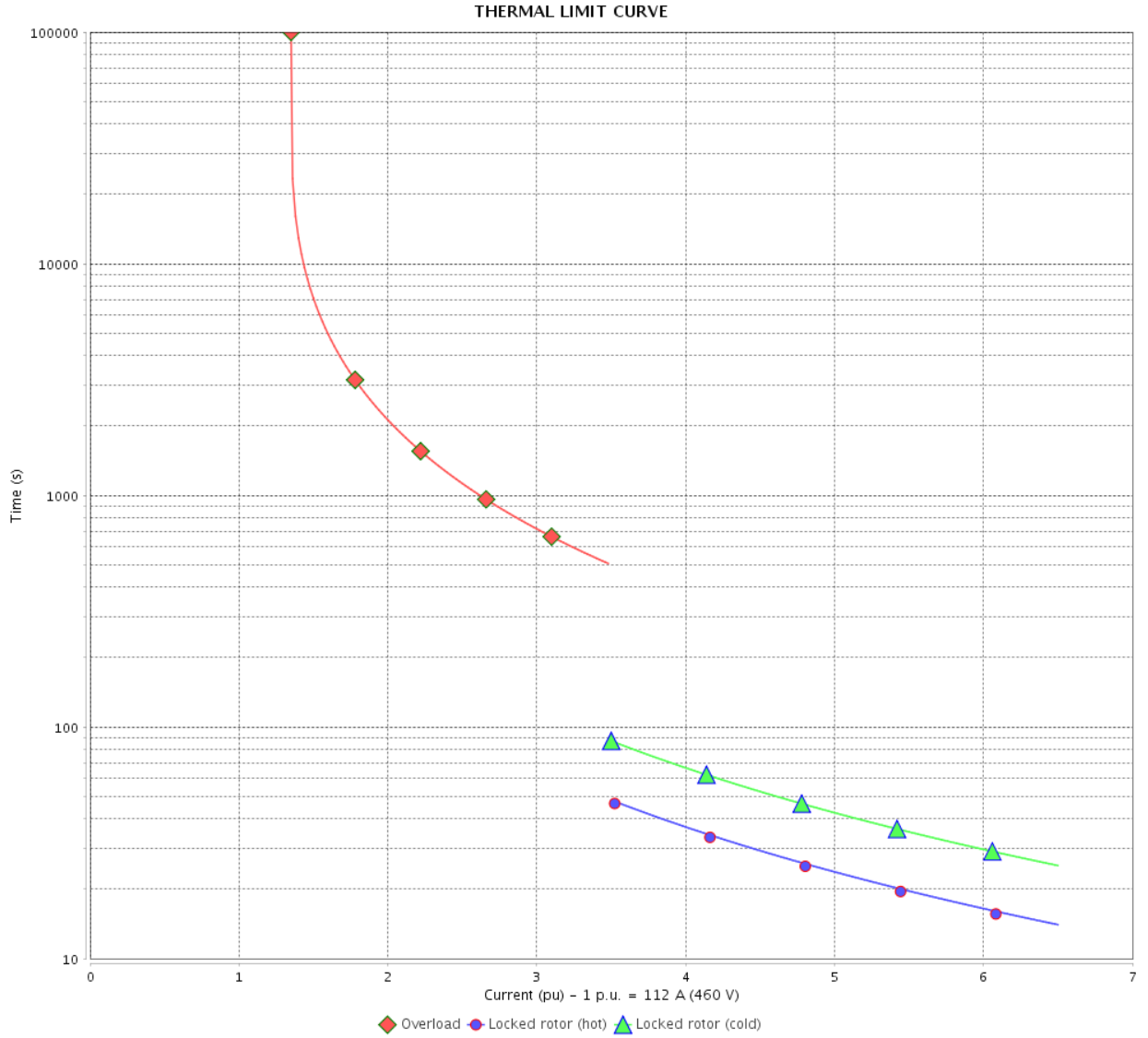
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# THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



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



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## Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : NEMA Premium Efficiency Three-Phase  
Product code : 14383368  
Catalog # : 10036ET3E405TS-W22G

Performance : 380 V 50 Hz 2P IE3

Rated current	: 99.6 A	Moment of inertia (J)	: 13.2 sq.ft.lb
LRC	: 6.8	Duty cycle	: Cont.(S1)
Rated torque	: 133 ft.lb	Insulation class	: F
Locked rotor torque	: 250 %	Service factor	: 1.00
Breakdown torque	: 280 %	Temperature rise	: 80 K
Rated speed	: 2955 rpm	Design	: B

Heating constant

Cooling constant

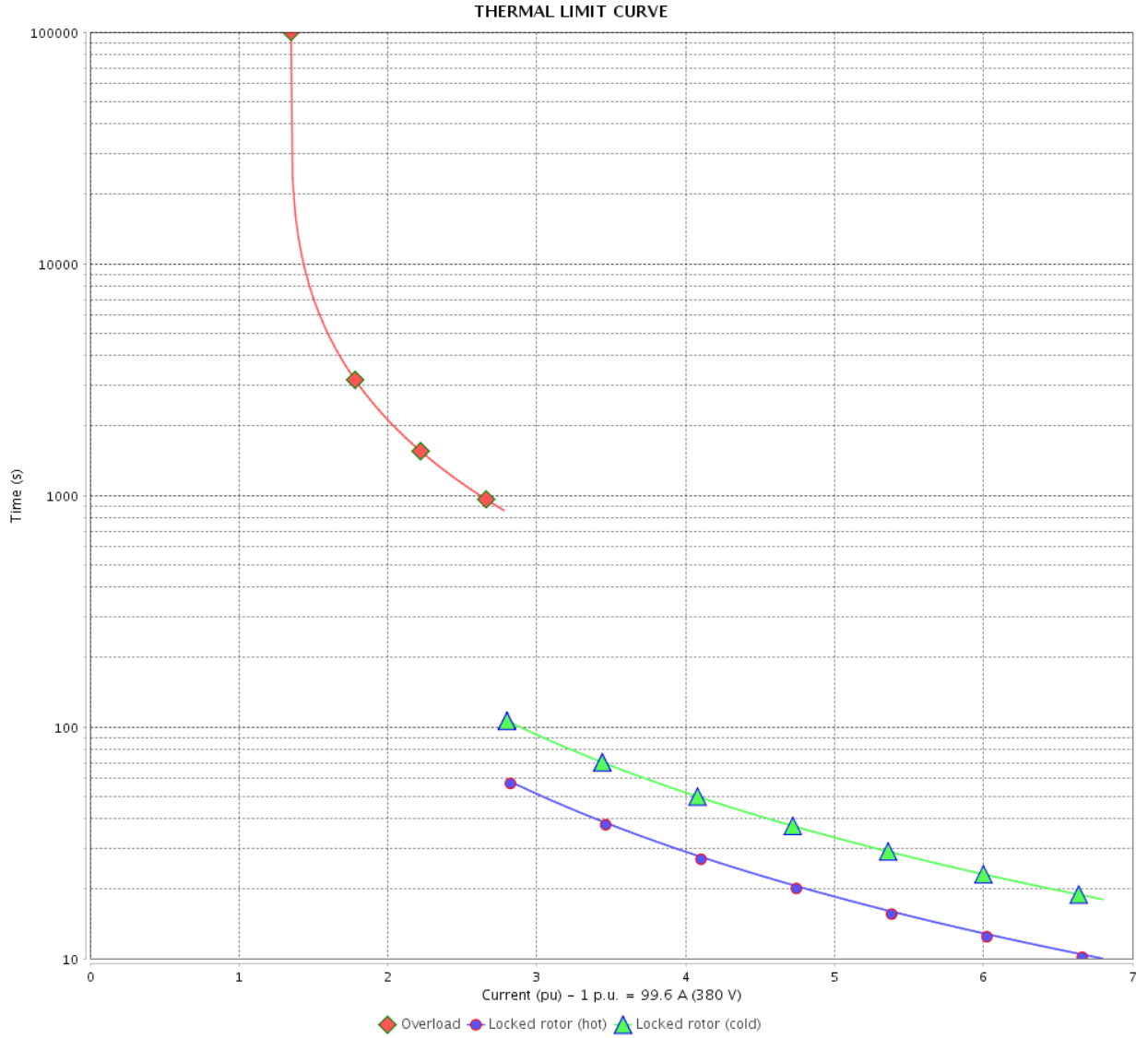
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# THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



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# THERMAL LIMIT CURVE

## Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : NEMA Premium Efficiency Three-Phase  
Product code : 14383368  
Catalog # : 10036ET3E405TS-W22G

Performance : 400 V 50 Hz 2P IE3

Rated current	: 94.6 A	Moment of inertia (J)	: 13.2 sq.ft.lb
LRC	: 7.6	Duty cycle	: Cont.(S1)
Rated torque	: 133 ft.lb	Insulation class	: F
Locked rotor torque	: 280 %	Service factor	: 1.00
Breakdown torque	: 310 %	Temperature rise	: 80 K
Rated speed	: 2960 rpm	Design	: B

Heating constant

Cooling constant

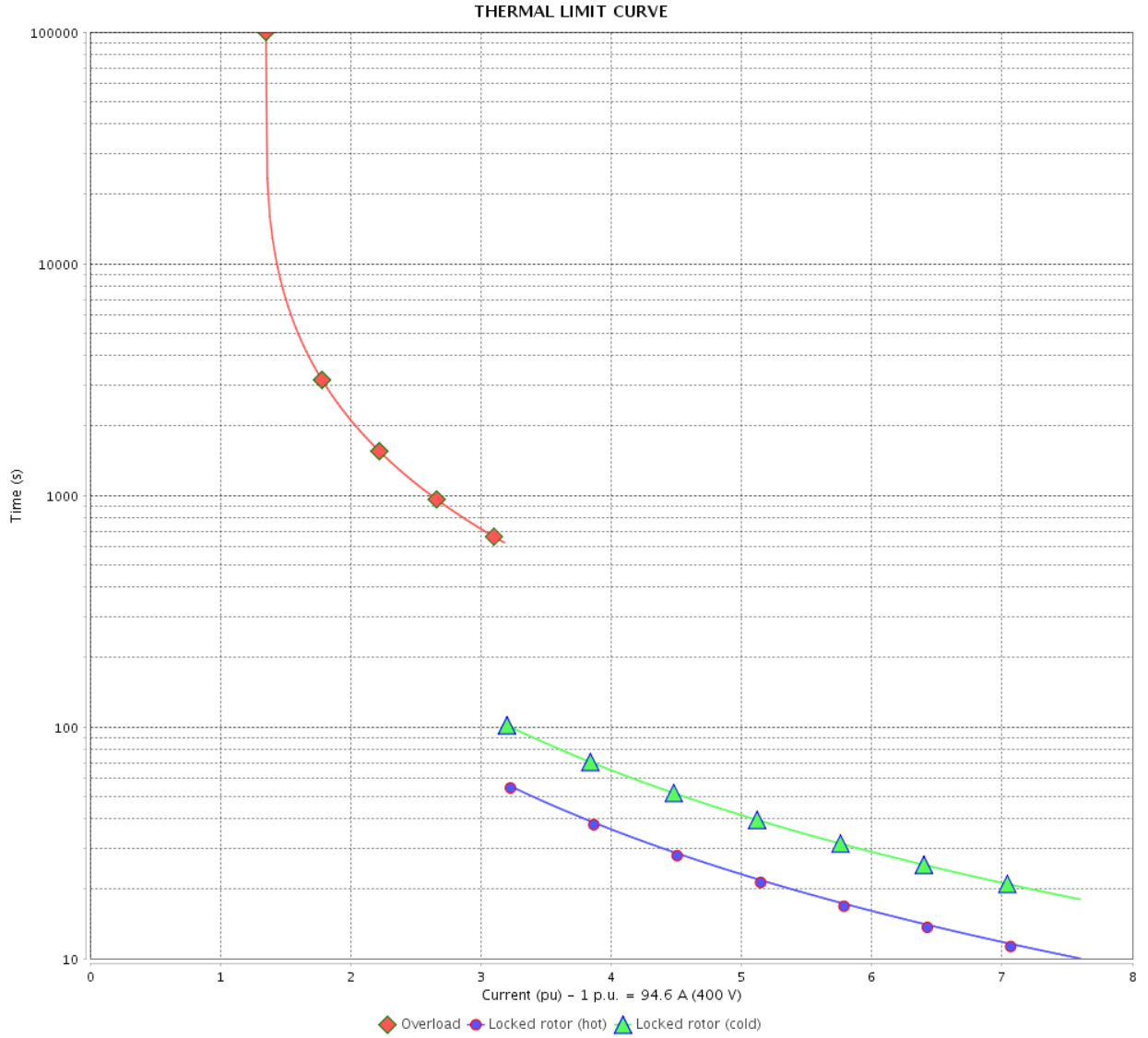
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# THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



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



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Date				

# THERMAL LIMIT CURVE



## Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : NEMA Premium Efficiency Three-Phase  
Product code : 14383368  
Catalog # : 10036ET3E405TS-W22G

Performance : 415 V 50 Hz 2P IE3

Rated current	: 92.2 A	Moment of inertia (J)	: 13.2 sq.ft.lb
LRC	: 8.2	Duty cycle	: Cont.(S1)
Rated torque	: 133 ft.lb	Insulation class	: F
Locked rotor torque	: 300 %	Service factor	: 1.00
Breakdown torque	: 330 %	Temperature rise	: 80 K
Rated speed	: 2965 rpm	Design	: B

Heating constant

Cooling constant

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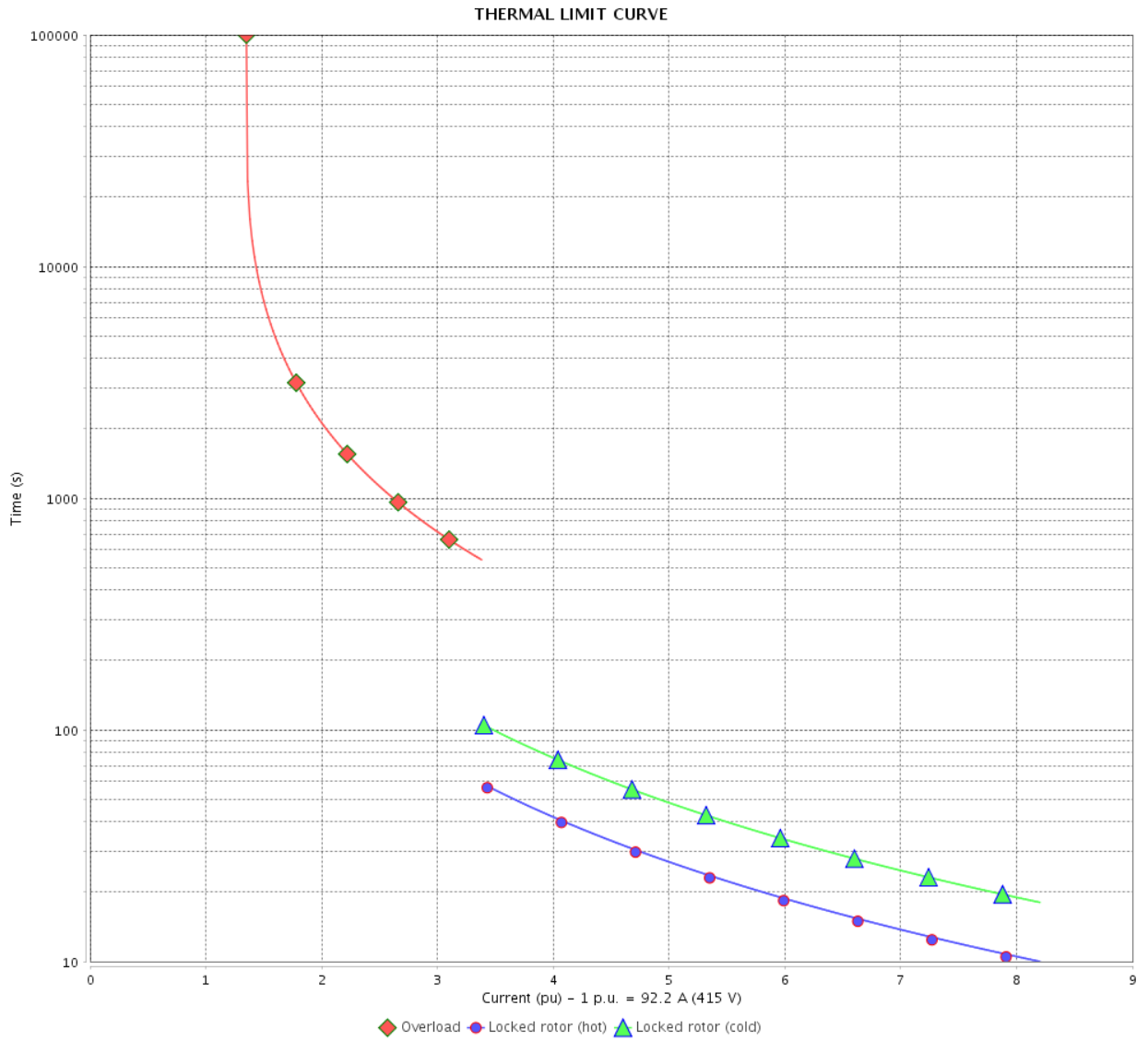


# THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



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



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# VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage



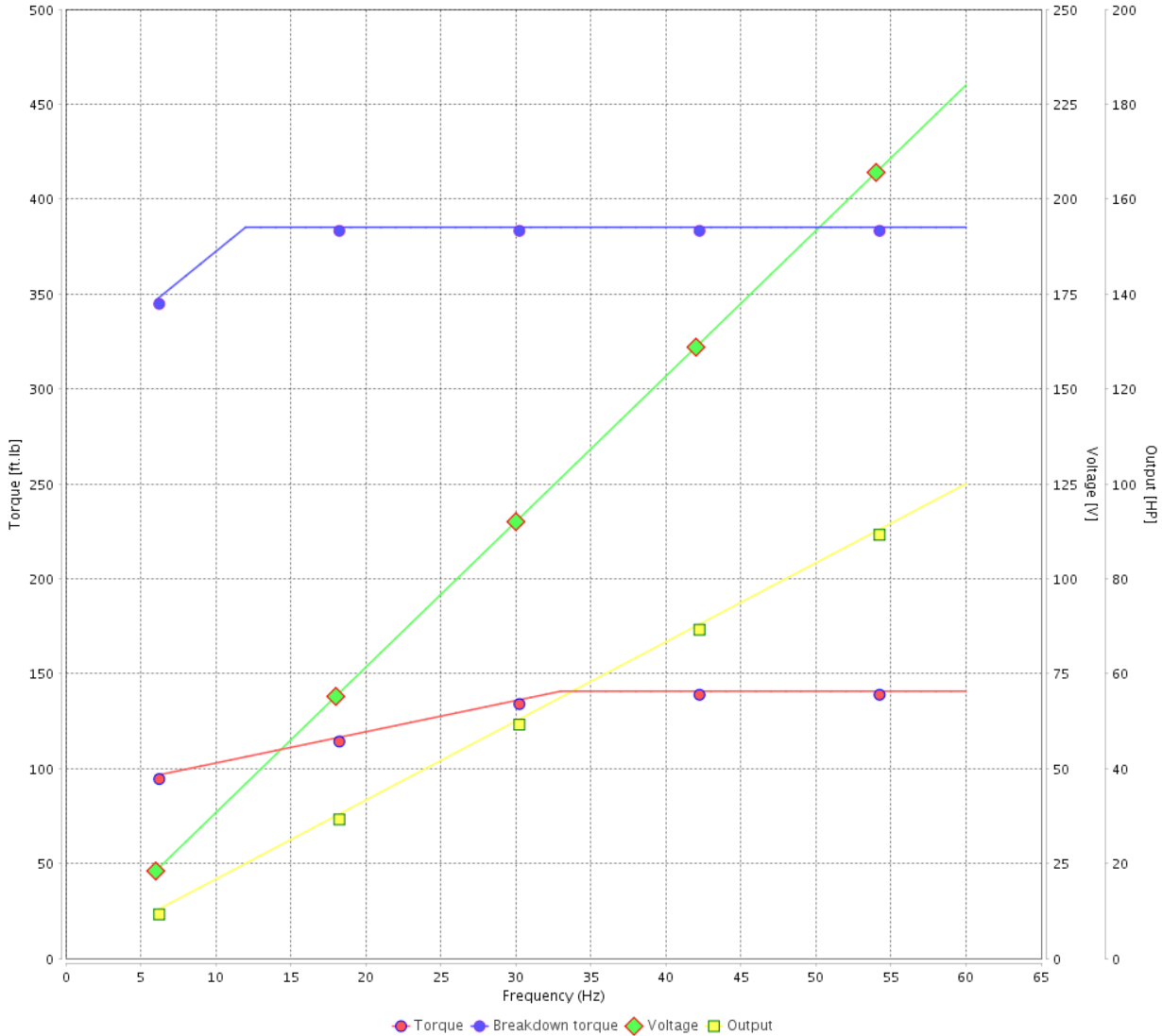
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Product line : NEMA Premium Efficiency Three-Phase

Product code : 14383368

Catalog # : 10036ET3E405TS-W22G

VFD OPERATION CURVE



Performance : 230/460 V 60 Hz 2P

Rated current : 224/112 A  
 LRC : 6.5  
 Rated torque : 148 ft.lb  
 Locked rotor torque : 240 %  
 Breakdown torque : 260 %  
 Rated speed : 3545 rpm

Moment of inertia (J) : 13.2 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.25  
 Temperature rise : 80 K  
 Design : B

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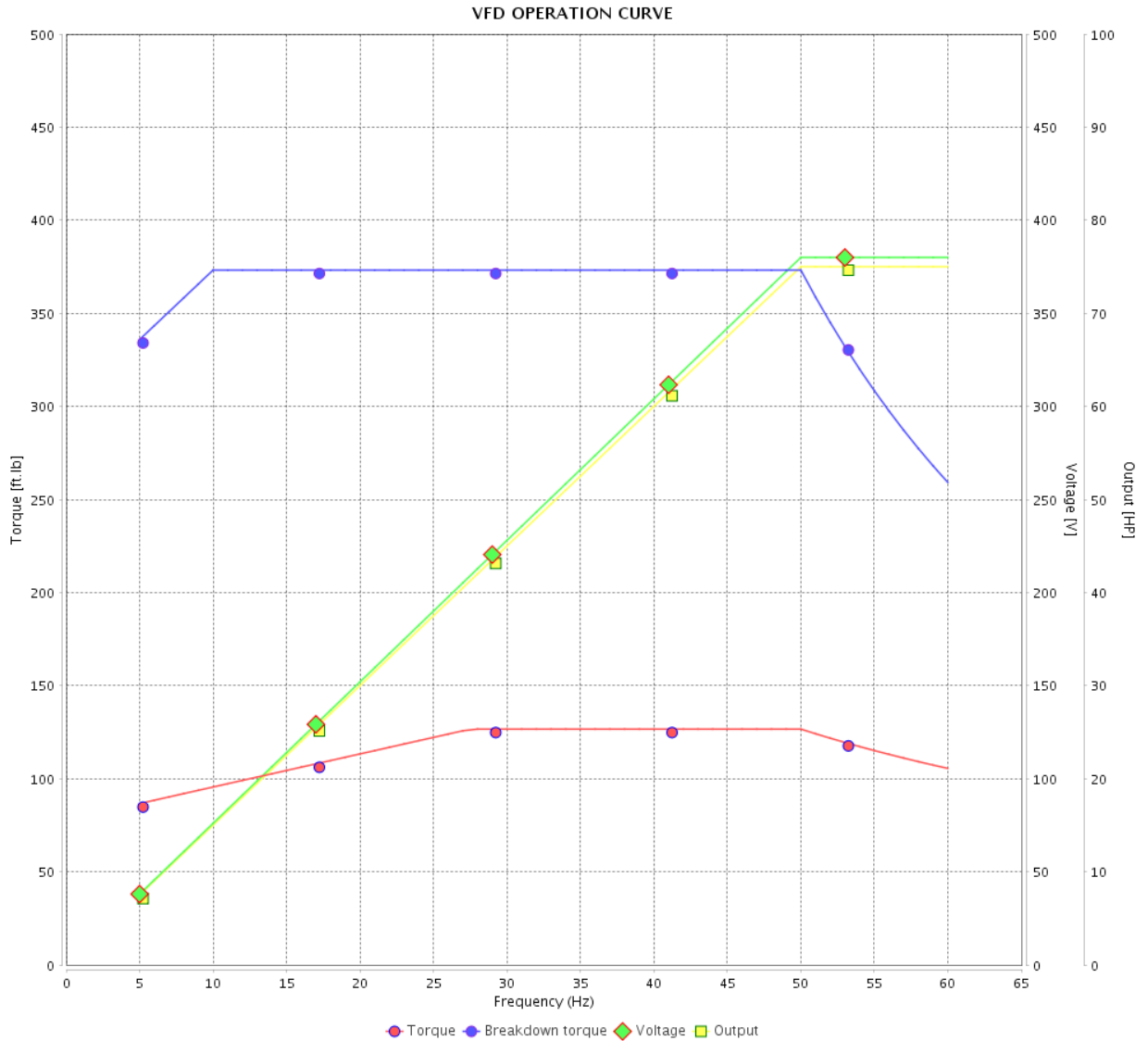
# VFD OPERATION CURVE

## Three Phase Induction Motor - Squirrel Cage



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

Product line : NEMA Premium Efficiency Three-Phase  
 Product code : 14383368  
 Catalog # : 10036ET3E405TS-W22G



Performance : 380 V 50 Hz 2P IE3

Rated current	: 99.6 A	Moment of inertia (J)	: 13.2 sq.ft.lb
LRC	: 6.8	Duty cycle	: Cont.(S1)
Rated torque	: 133 ft.lb	Insulation class	: F
Locked rotor torque	: 250 %	Service factor	: 1.00
Breakdown torque	: 280 %	Temperature rise	: 80 K
Rated speed	: 2955 rpm	Design	: B

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# VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage



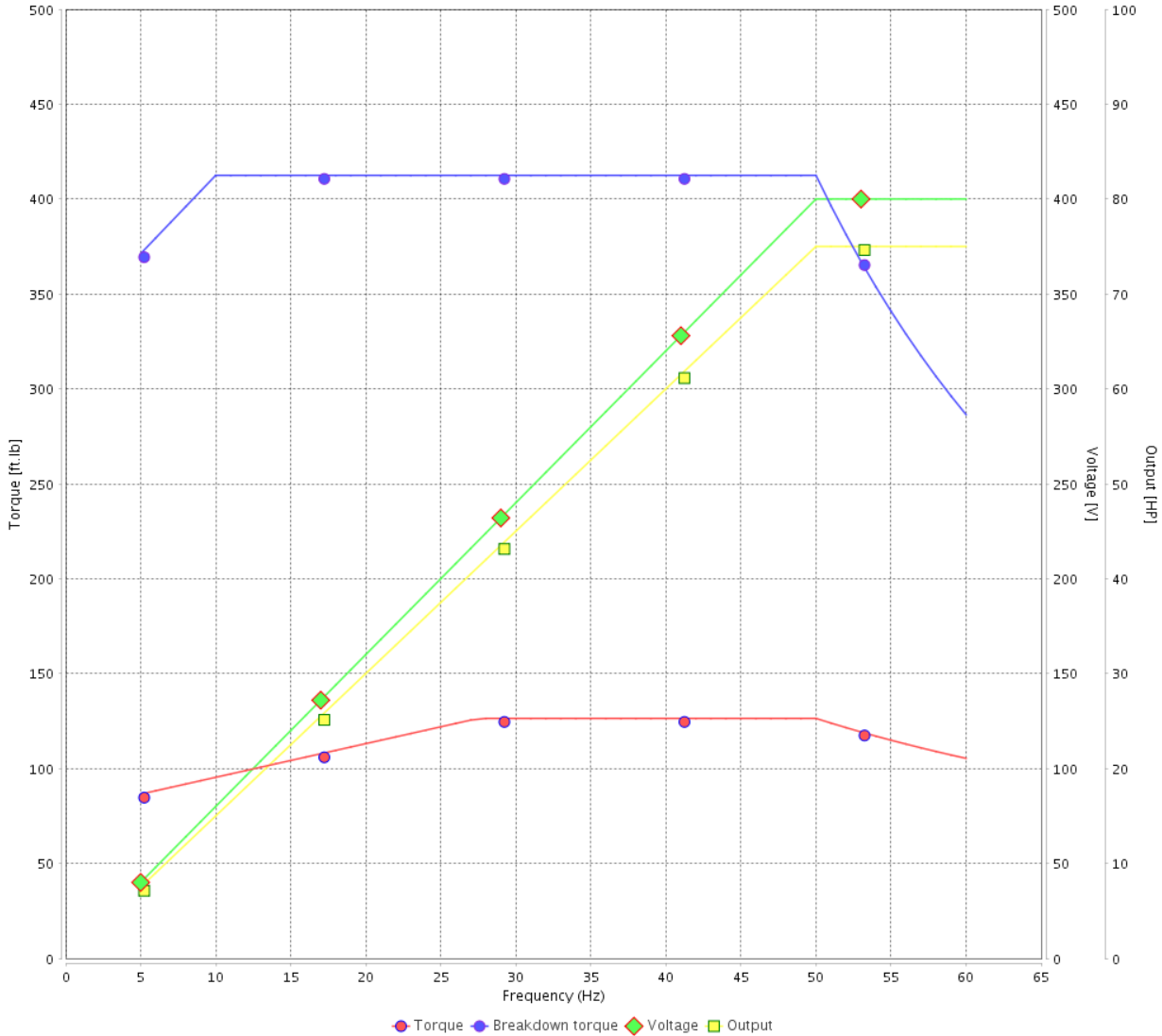
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VFD OPERATION CURVE



Performance : 400 V 50 Hz 2P IE3

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Locked rotor torque	: 280 %	Service factor	: 1.00
Breakdown torque	: 310 %	Temperature rise	: 80 K
Rated speed	: 2960 rpm	Design	: B

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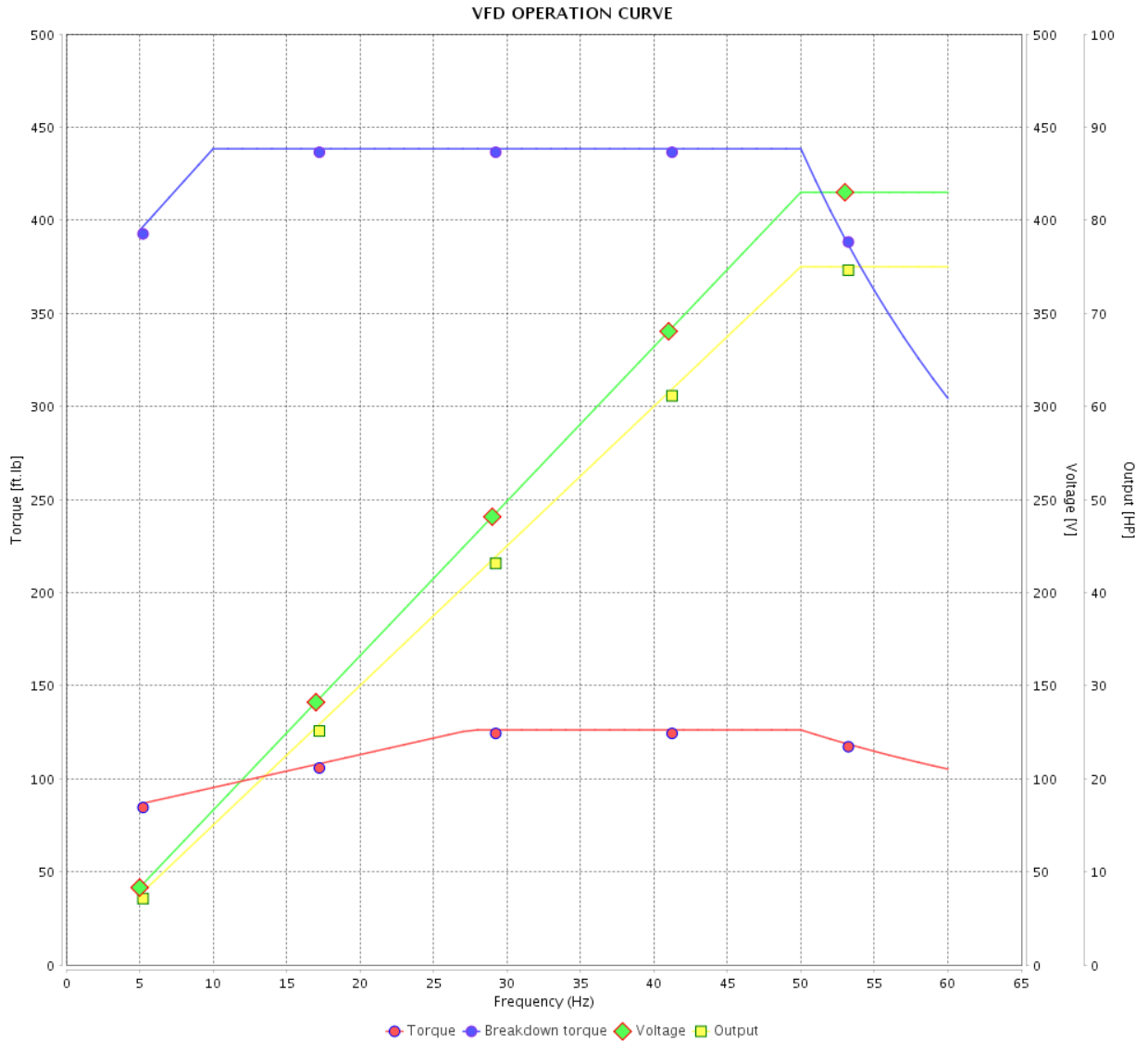
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 Product code : 14383368  
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Rated current : 92.2 A  
 LRC : 8.2  
 Rated torque : 133 ft.lb  
 Locked rotor torque : 300 %  
 Breakdown torque : 330 %  
 Rated speed : 2965 rpm

Moment of inertia (J) : 13.2 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 80 K  
 Design : B

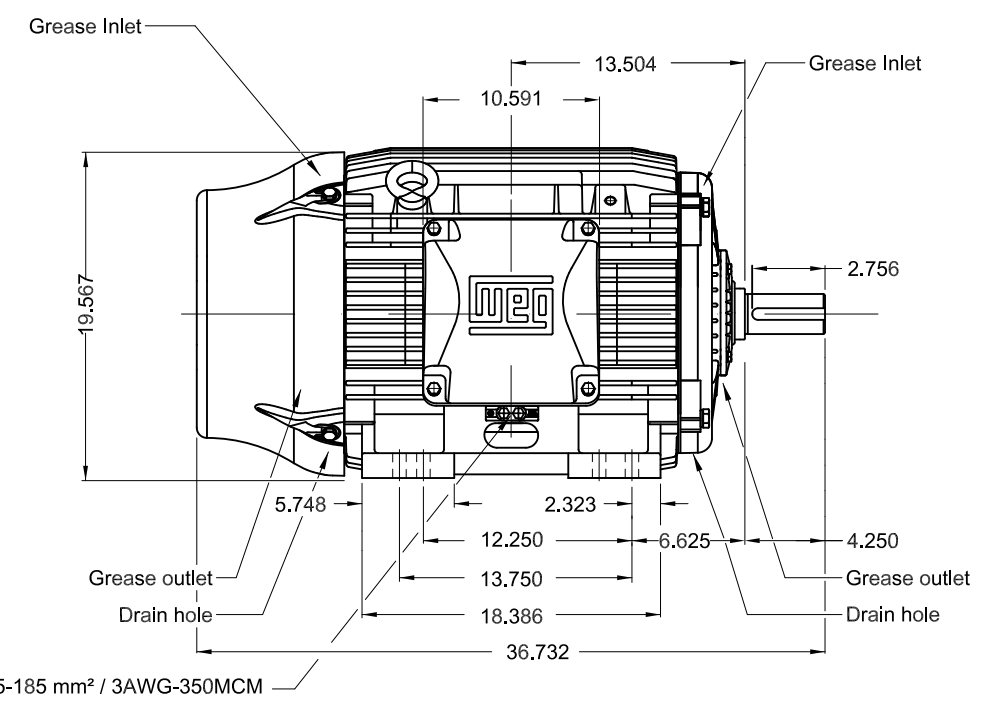
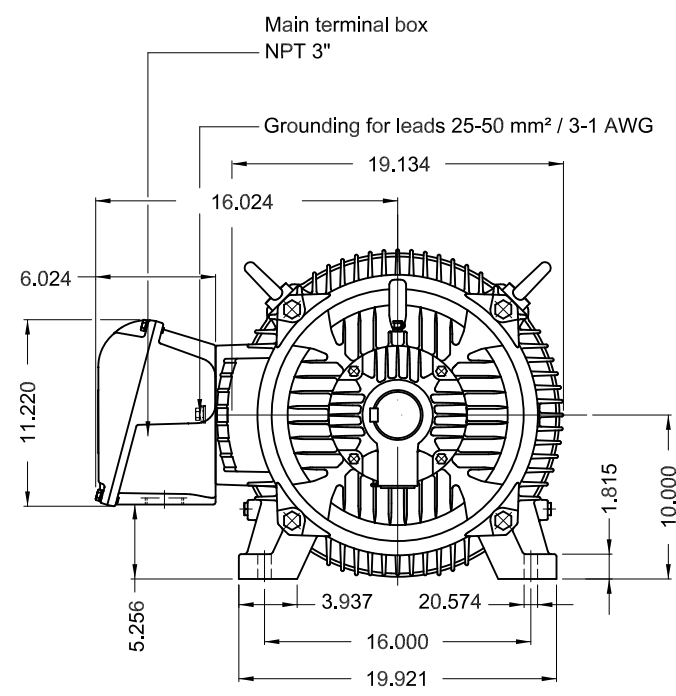
Rev.	Changes Summary	Performed	Checked	Date
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1 2 3 4 5 6

A

B

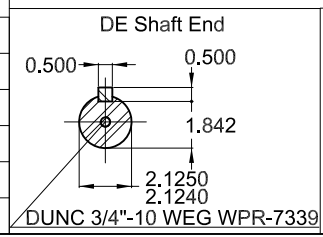
C



D

E

- Without vertical jackscrews
- Internal AEGIS ground ring on the DE
- Color RAL 5009
- Painting plan 203A
- Mounting NEMA F-1
- Mounting B3R(D)



100 HP 02 Poles 60 Hz A

ECM	LOC	SUMMARY OF MODIFICATIONS	EXECUTED	CHECKED	RELEASED	DATE	VER
EXECUTED	PIRWUSER	THREE PH. MOTOR W22 PREM. EFF.					
CHECKED		FRAME 404/5TS IP55 TEFC					
RELEASED							
REL DT.	WMO	Jaragua do Sul	Product Engineering	SHEET		1 / 1	

**PREVIEW**  
WDD



MODEL 10036ET3E405TS-W22G  
MADE IN BRAZIL  
14383368



*Inverter Duty Motor  
Severe Duty*

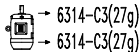
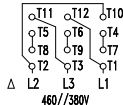
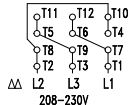


MOD.TE1BFOXON



For 60Hz use on PWM, VT 1000:1, CT 20:1, 1.0SF

PH 3	FR 404/5TS	HP(kW) 100.0(75.0)	Hz 60
V 230/460	A 224/112	RPM 3545	DES B
NEMA NOM EFF 94.1 %	INS. CL. F $\Delta$ T 80 K	IP55	
ENCL TEFC	DUTY CONT.	AMB. 40°C	
CODE G	PF 0.89	SF 1.25	SFA 280/140
USABLE @208V 243 A	SF 1.10	SFA 267	
75HP 55kW 50Hz 380V 99.6A 2955RPM SF1.00 EFF 94.3% (IE3)	ALT 1000 m.a.s.l.	1107 Lbs	



MOBIL POLYREX EM  
4000 h