

# DATA SHEET

## Three Phase Induction Motor - Squirrel Cage



Customer :					
Product line	: NEMA Premium Efficiency Three-Phase	Product code :	13270588		
		Catalog # :	00158ST3QIER145TC-W2		
Frame	: 145TC	Cooling method	: IC411 - TEFC		
Insulation class	: F	Mounting	: W-6		
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>	: 59.8 lb		
Protection degree	: IP55	Moment of inertia (J)	: 0.1431 sq.ft.lb		
Design	: B				
Output [HP]	1.5	1.5	1.5	1.5	
Poles	4	4	4	4	
Frequency [Hz]	60	50	50	50	
Rated voltage [V]	460	380	400	415	
Rated current [A]	2.02	2.42	2.33	2.30	
L. R. Amperes [A]	17.0	15.5	16.3	17.0	
LRC [A]	8.4x(Code L)	6.4x(Code H)	7.0x(Code J)	7.4x(Code K)	
No load current [A]	1.10	1.10	1.20	1.30	
Rated speed [RPM]	1755	1440	1445	1450	
Slip [%]	2.50	4.00	3.67	3.33	
Rated torque [ft.lb]	4.49	5.47	5.45	5.43	
Locked rotor torque [%]	290	220	250	280	
Breakdown torque [%]	350	250	290	320	
Service factor	1.25	1.25	1.25	1.25	
Temperature rise	80 K	80 K	80 K	80 K	
Locked rotor time	25s (cold) 14s (hot)	25s (cold) 14s (hot)	25s (cold) 14s (hot)	25s (cold) 14s (hot)	
Noise level <sup>2</sup>	51.0 dB(A)	49.0 dB(A)	49.0 dB(A)	49.0 dB(A)	
Efficiency (%)	25%	81.3	82.0	82.1	80.5
	50%	82.5	82.5	82.5	81.0
	75%	85.5	84.0	84.0	84.0
	100%	86.5	84.1	84.1	84.1
Power Factor	25%	0.35	0.41	0.37	0.34
	50%	0.60	0.67	0.63	0.60
	75%	0.70	0.76	0.74	0.70
	100%	0.79	0.82	0.81	0.79
Bearing type	: <u>Drive end</u> 6205 C3 <u>Non drive end</u> 6204 C3	Foundation loads			
Sealing	: Inpro/Seal Inpro/Seal	Max. traction	: 121 lb		
Lubrication interval	: 20000 h 20000 h	Max. compression	: 181 lb		
Lubricant amount	: 4 g 4 g				
Lubricant type	: Mobil Polyrex EM				
Notes					
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



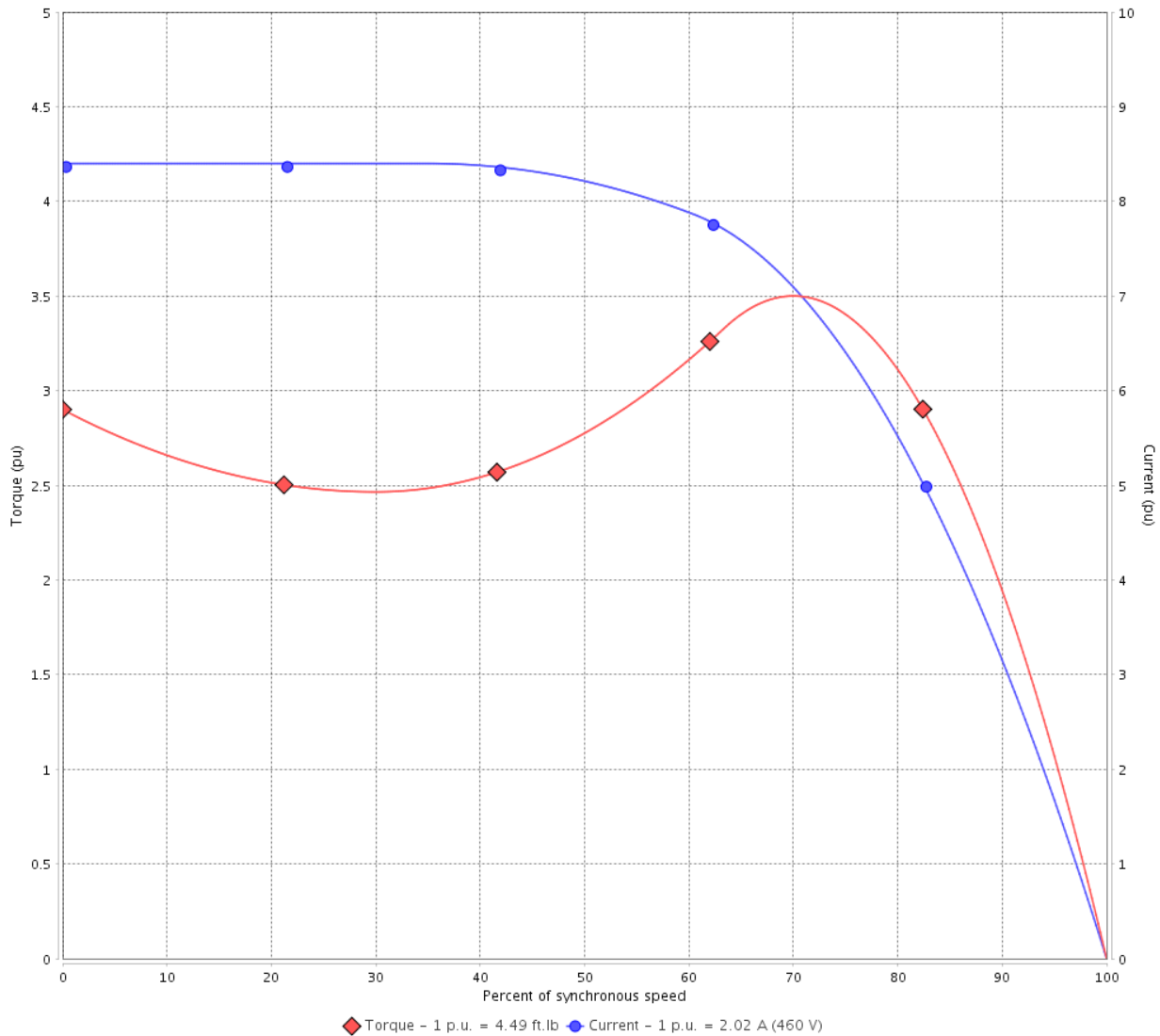
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 13270588

Catalog # : 00158ST3QUIER145TC-W2

TORQUE AND CURRENT VS SPEED CURVE



Performance : 460 V 60 Hz 4P

Rated current	: 2.02 A	Moment of inertia (J)	: 0.1431 sq.ft.lb
LRC	: 8.4	Duty cycle	: Cont.(S1)
Rated torque	: 4.49 ft.lb	Insulation class	: F
Locked rotor torque	: 290 %	Service factor	: 1.25
Breakdown torque	: 350 %	Temperature rise	: 80 K
Rated speed	: 1755 rpm	Design	: B

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

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# TORQUE AND CURRENT VS SPEED CURVE



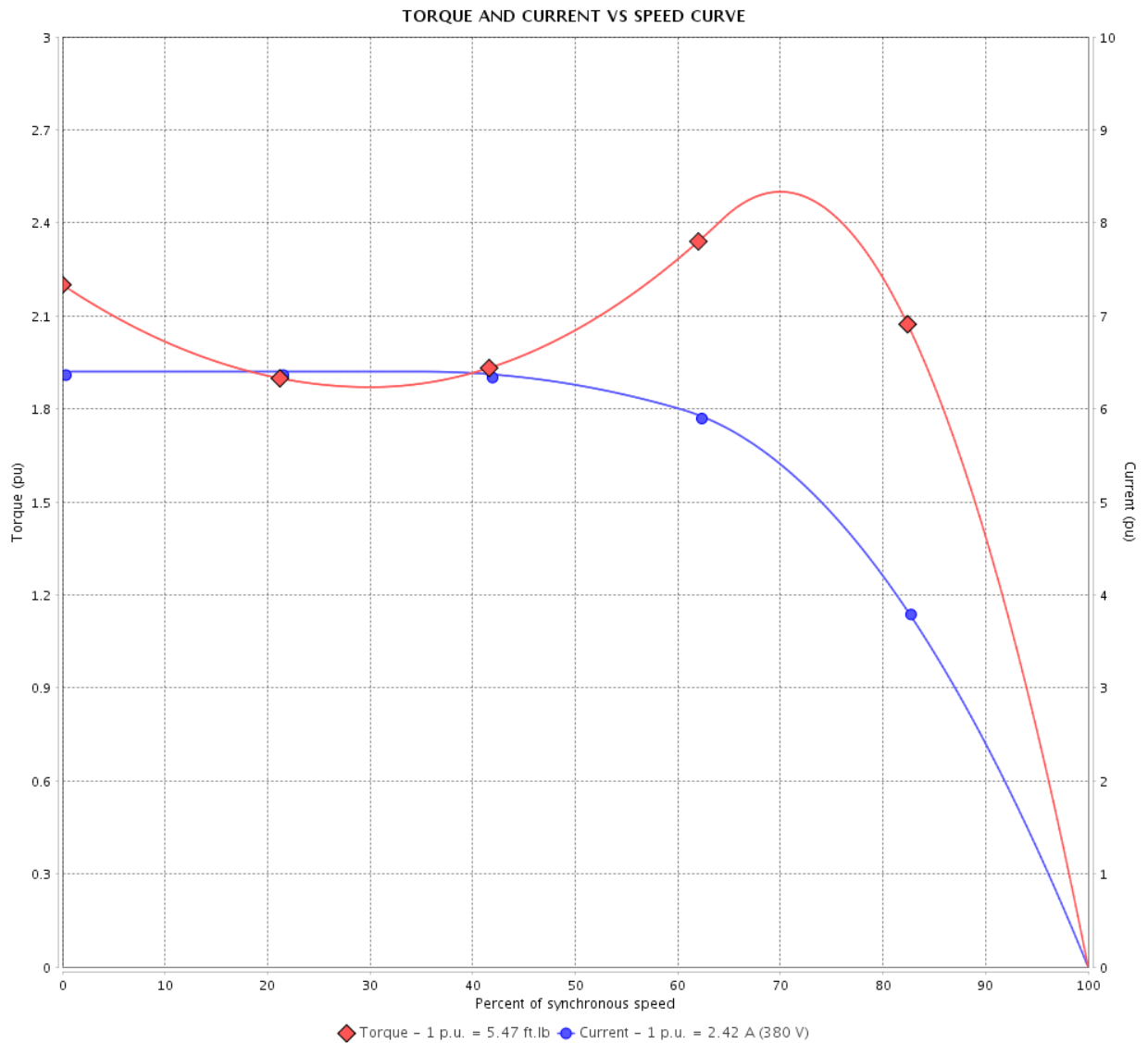
## Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 13270588

Catalog # : 00158ST3QIER145TC-W2



Performance : 380 V 50 Hz 4P IE3

Rated current	: 2.42 A	Moment of inertia (J)	: 0.1431 sq.ft.lb
LRC	: 6.4	Duty cycle	: Cont.(S1)
Rated torque	: 5.47 ft.lb	Insulation class	: F
Locked rotor torque	: 220 %	Service factor	: 1.25
Breakdown torque	: 250 %	Temperature rise	: 80 K
Rated speed	: 1440 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



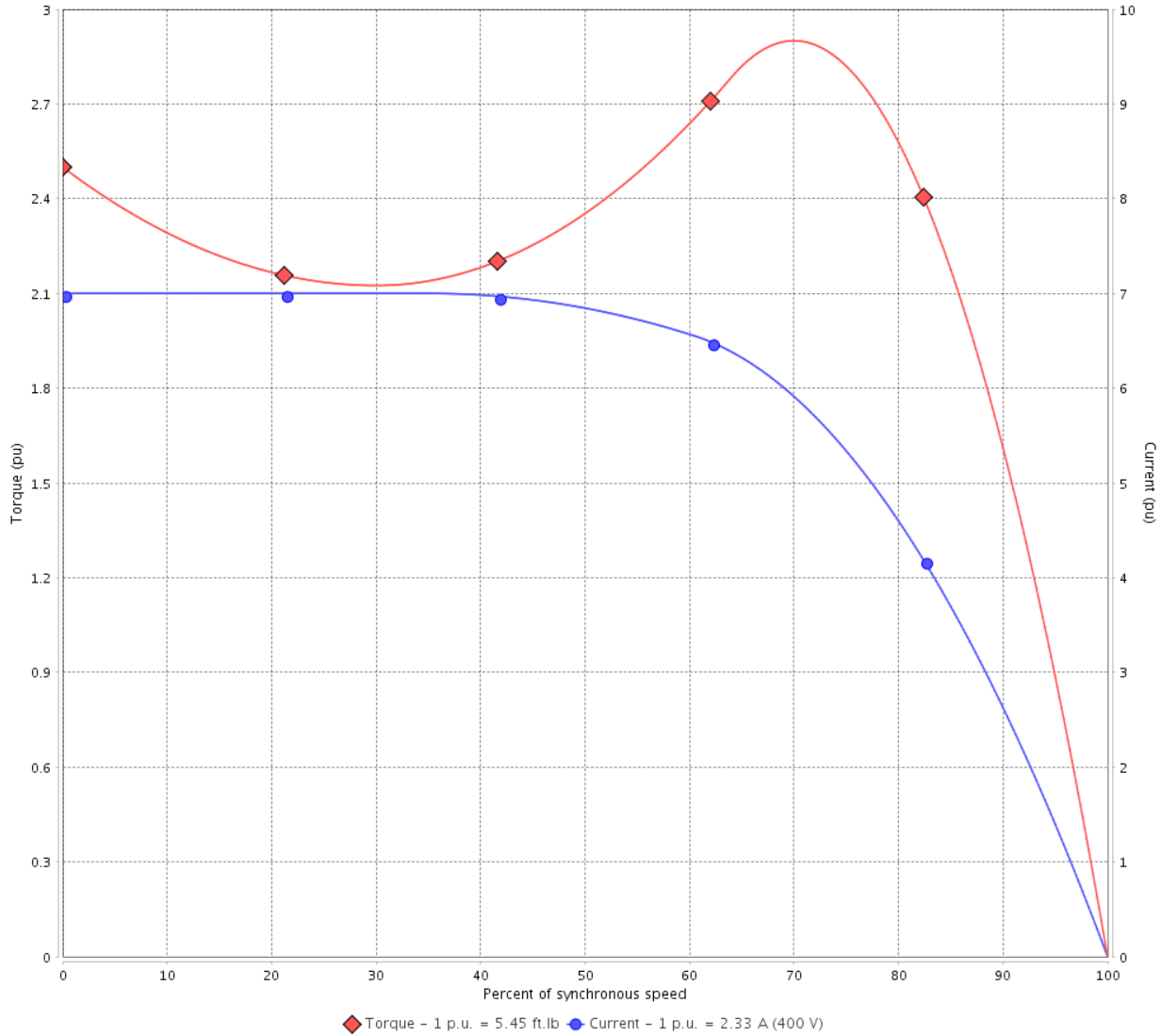
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 13270588

Catalog # : 00158ST3QIER145TC-W2

TORQUE AND CURRENT VS SPEED CURVE



Performance : 400 V 50 Hz 4P IE3

Rated current	: 2.33 A	Moment of inertia (J)	: 0.1431 sq.ft.lb
LRC	: 7.0	Duty cycle	: Cont.(S1)
Rated torque	: 5.45 ft.lb	Insulation class	: F
Locked rotor torque	: 250 %	Service factor	: 1.25
Breakdown torque	: 290 %	Temperature rise	: 80 K
Rated speed	: 1445 rpm	Design	: B

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

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# TORQUE AND CURRENT VS SPEED CURVE



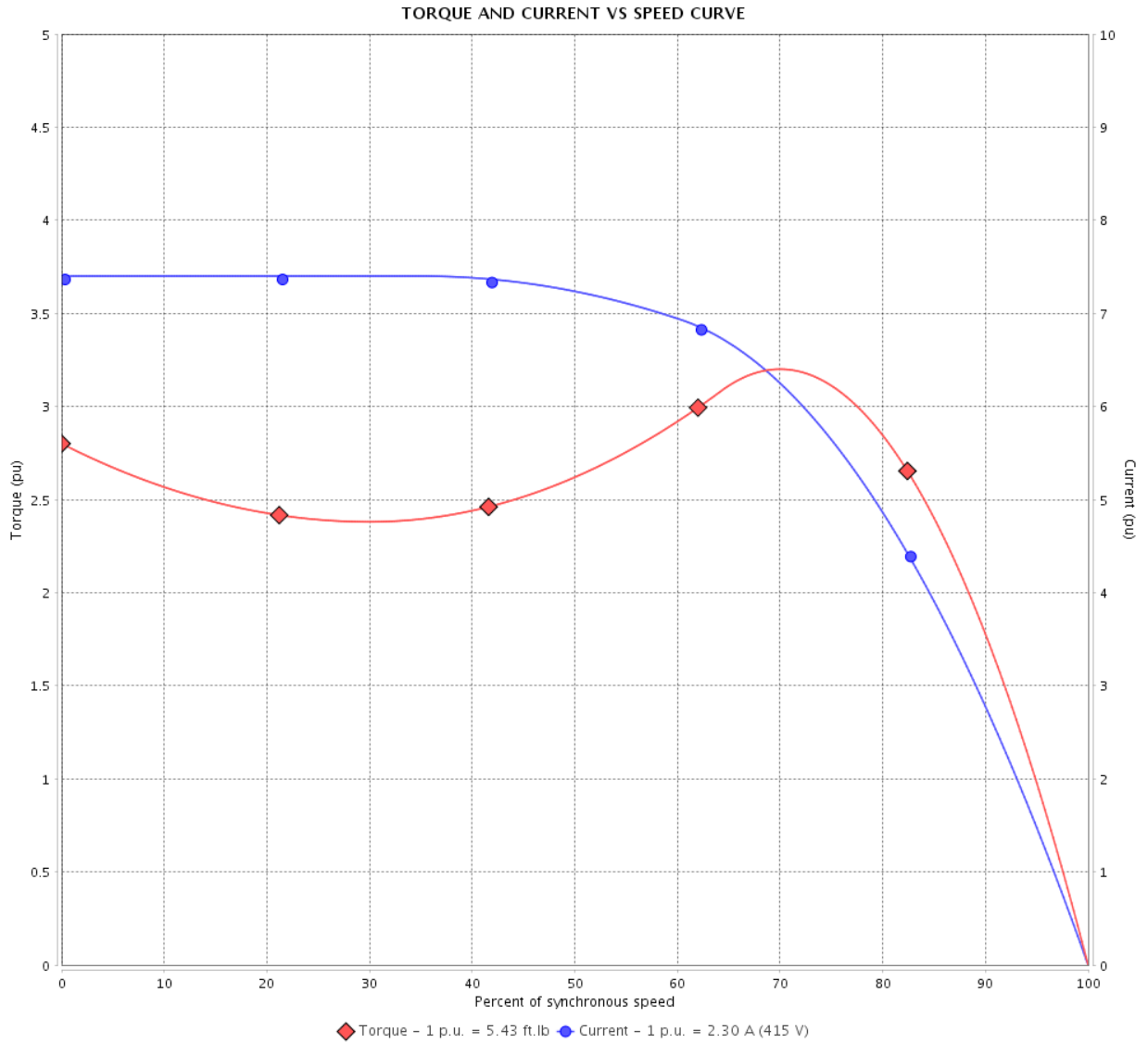
## Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 13270588

Catalog # : 00158ST3QIER145TC-W2



Performance : 415 V 50 Hz 4P IE3

Rated current : 2.30 A  
 LRC : 7.4  
 Rated torque : 5.43 ft.lb  
 Locked rotor torque : 280 %  
 Breakdown torque : 320 %  
 Rated speed : 1450 rpm

Moment of inertia (J) : 0.1431 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.25  
 Temperature rise : 80 K  
 Design : B

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

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# LOAD PERFORMANCE CURVE

Three Phase Induction Motor - Squirrel Cage



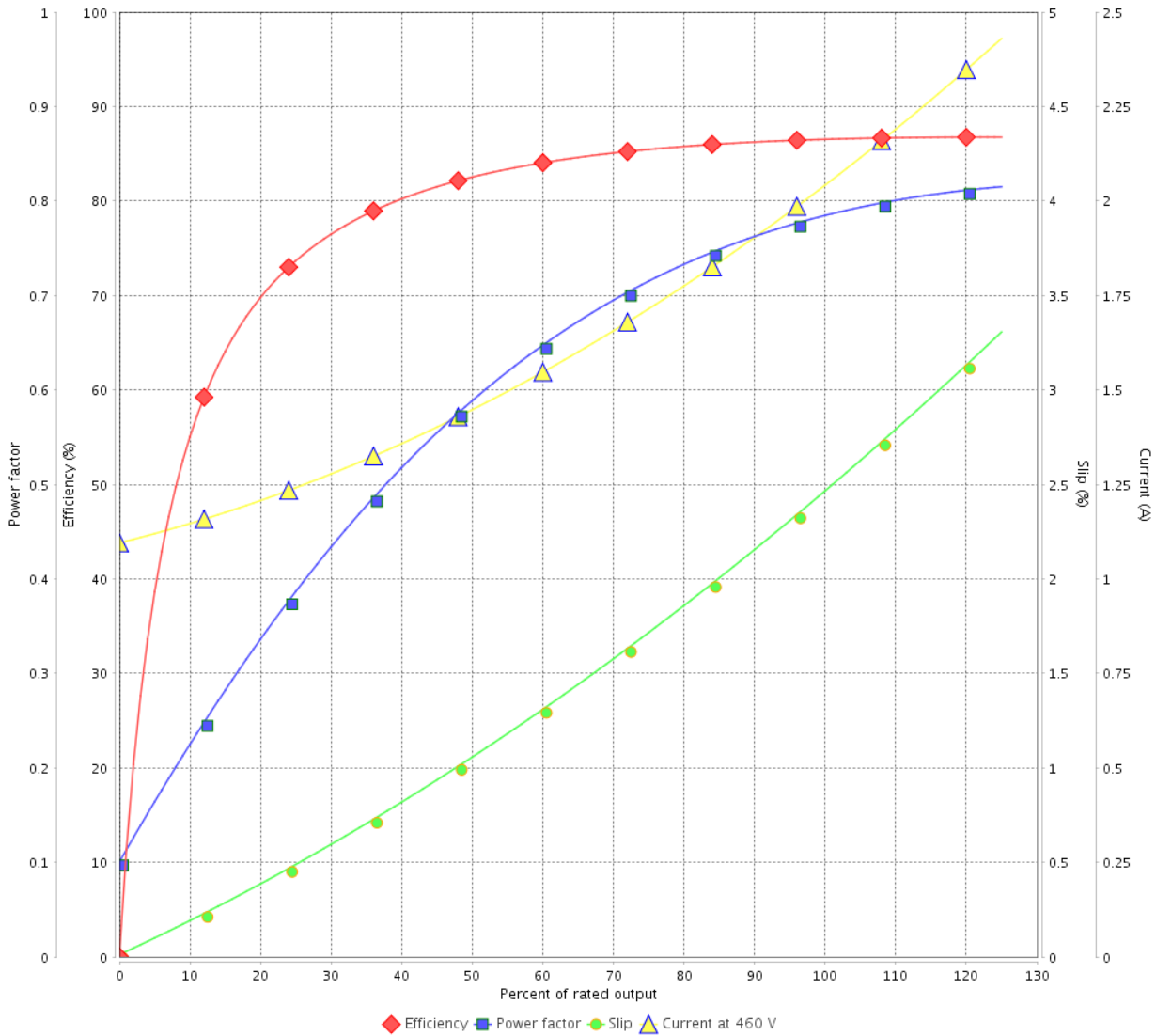
Customer : \_\_\_\_\_

Product line : NEMA Premium Efficiency Three-Phase

Product code : 13270588

Catalog # : 00158ST3QUIER145TC-W2

LOAD PERFORMANCE CURVE



Performance : 460 V 60 Hz 4P

Rated current : 2.02 A  
 LRC : 8.4  
 Rated torque : 4.49 ft.lb  
 Locked rotor torque : 290 %  
 Breakdown torque : 350 %  
 Rated speed : 1755 rpm

Moment of inertia (J) : 0.1431 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

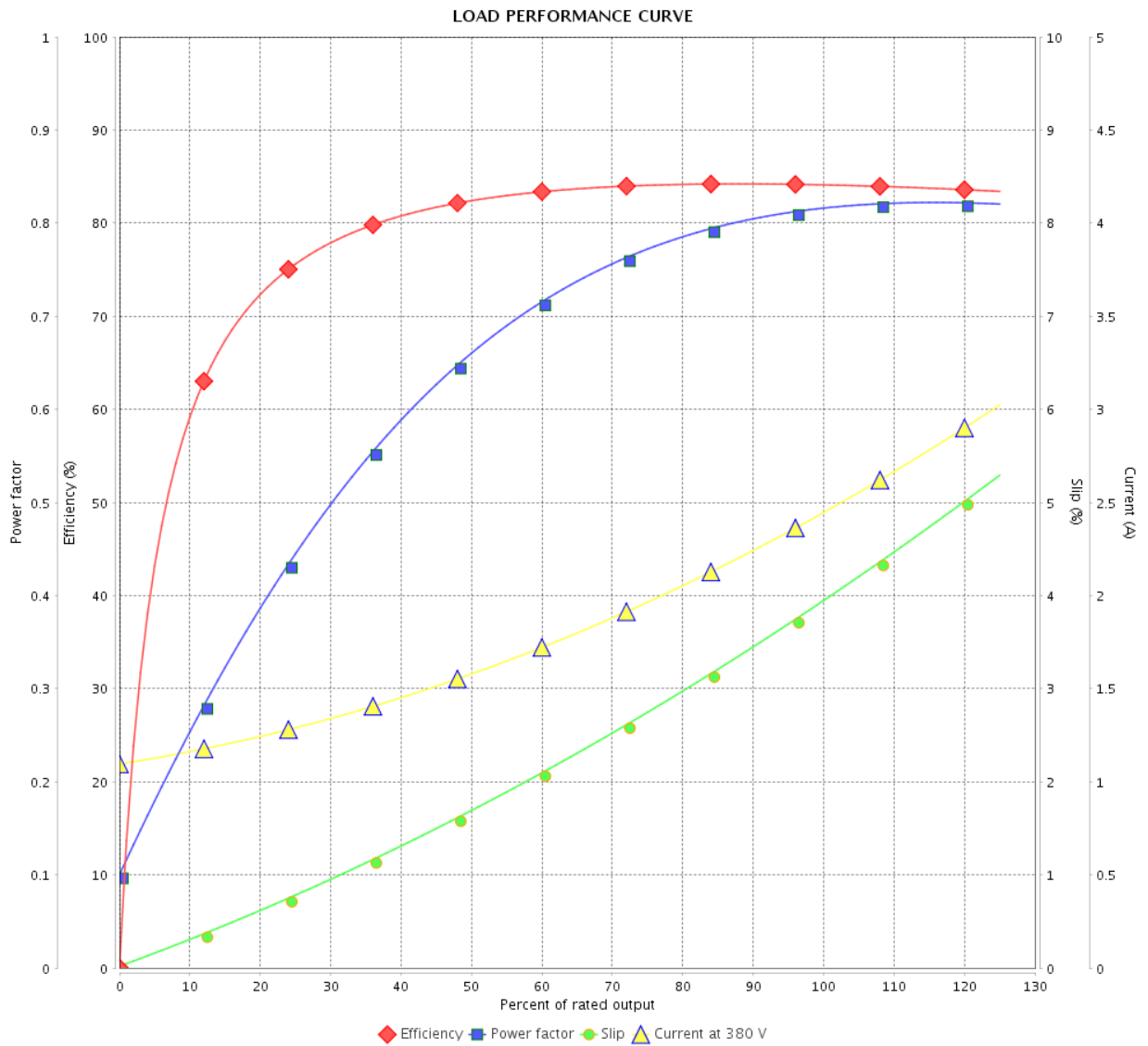


Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 13270588

Catalog # : 00158ST3QIER145TC-W2



Performance : 380 V 50 Hz 4P IE3

Rated current : 2.42 A  
 LRC : 6.4  
 Rated torque : 5.47 ft.lb  
 Locked rotor torque : 220 %  
 Breakdown torque : 250 %  
 Rated speed : 1440 rpm

Moment of inertia (J) : 0.1431 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



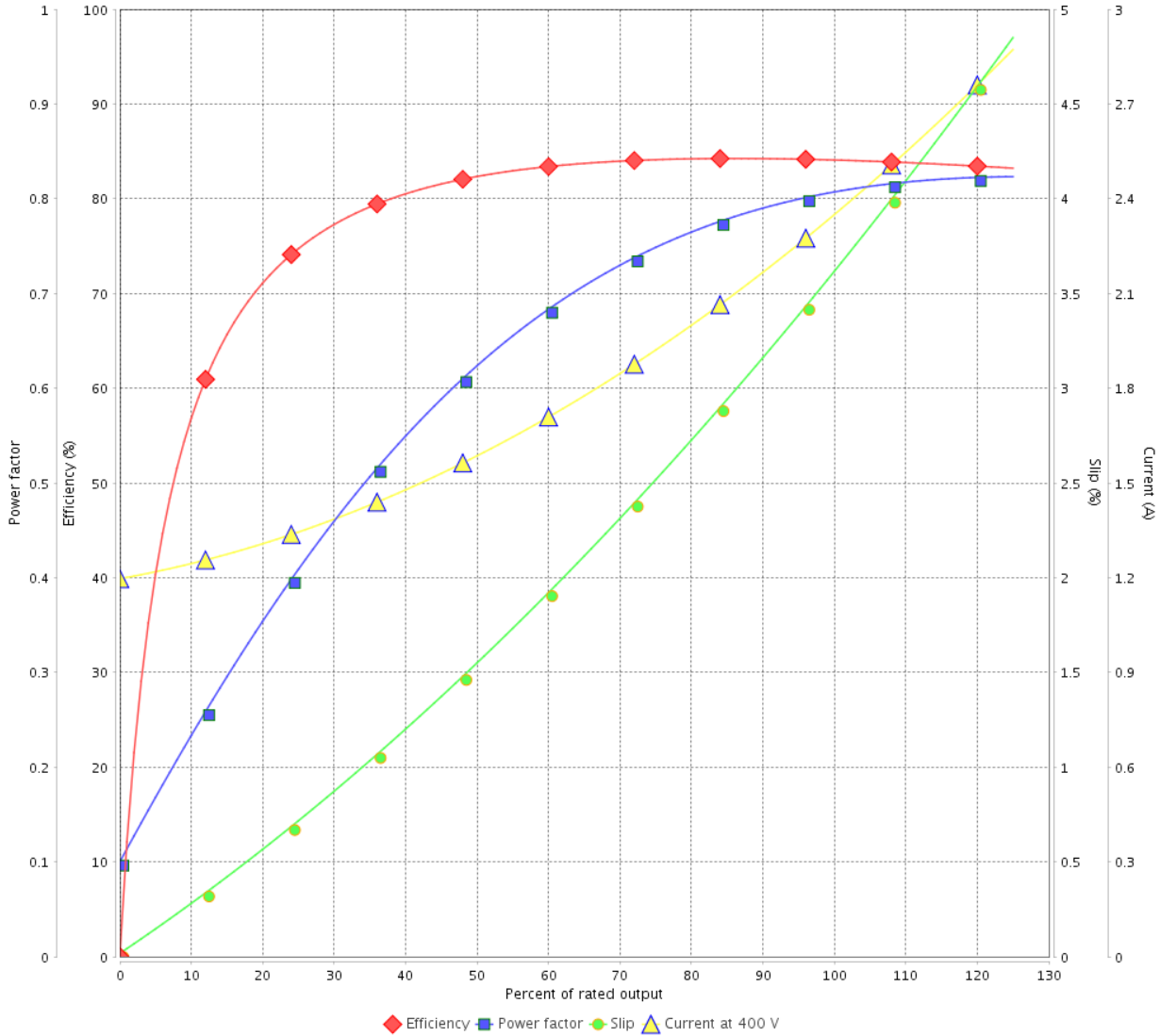
Customer : \_\_\_\_\_

Product line : NEMA Premium Efficiency Three-Phase

Product code : 13270588

Catalog # : 00158ST3QIER145TC-W2

LOAD PERFORMANCE CURVE



Performance : 400 V 50 Hz 4P IE3

Rated current : 2.33 A  
 LRC : 7.0  
 Rated torque : 5.45 ft.lb  
 Locked rotor torque : 250 %  
 Breakdown torque : 290 %  
 Rated speed : 1445 rpm

Moment of inertia (J) : 0.1431 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

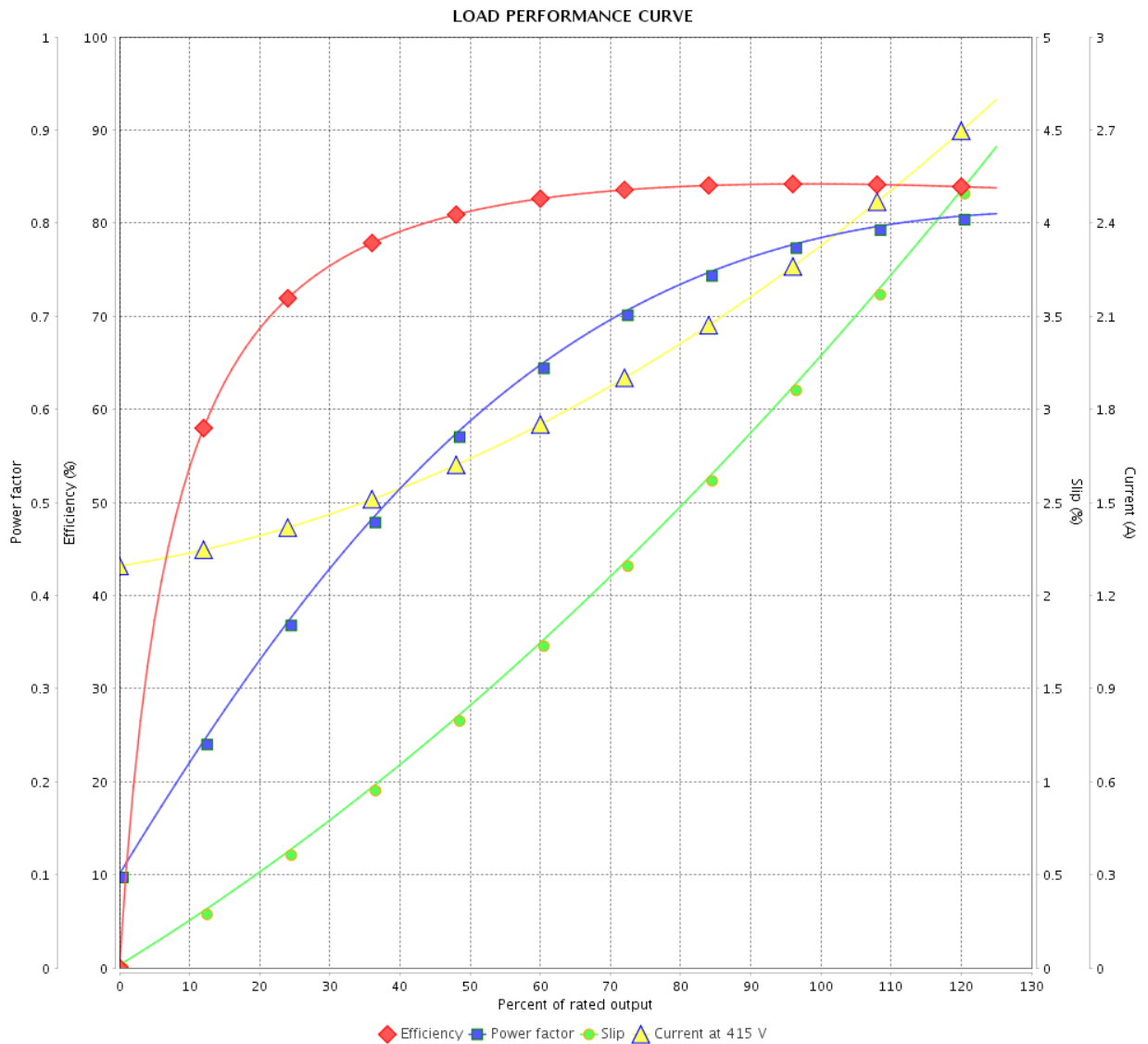


Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 13270588

Catalog # : 00158ST3QIER145TC-W2



Performance : 415 V 50 Hz 4P IE3

Rated current : 2.30 A  
 LRC : 7.4  
 Rated torque : 5.43 ft.lb  
 Locked rotor torque : 280 %  
 Breakdown torque : 320 %  
 Rated speed : 1450 rpm

Moment of inertia (J) : 0.1431 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.25  
 Temperature rise : 80 K  
 Design : B

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# THERMAL LIMIT CURVE



## Three Phase Induction Motor - Squirrel Cage

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LRC	: 8.4	Duty cycle	: Cont.(S1)
Rated torque	: 4.49 ft.lb	Insulation class	: F
Locked rotor torque	: 290 %	Service factor	: 1.25
Breakdown torque	: 350 %	Temperature rise	: 80 K
Rated speed	: 1755 rpm	Design	: B

Heating constant

Cooling constant

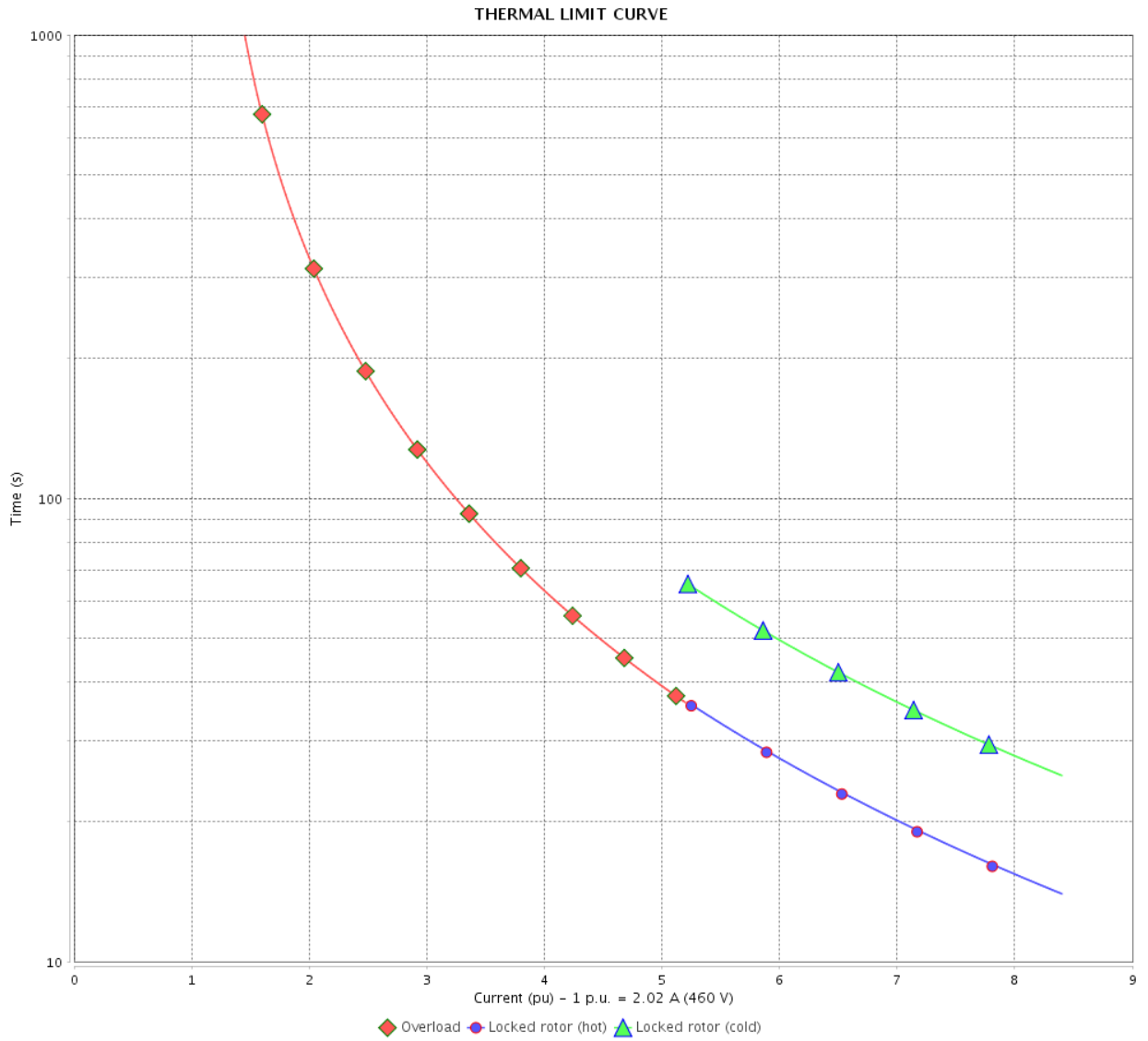
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# THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



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



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# THERMAL LIMIT CURVE

## Three Phase Induction Motor - Squirrel Cage



Customer :

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Product code : 13270588  
Catalog # : 00158ST3QUIER145TC-W2

Performance : 380 V 50 Hz 4P IE3

Rated current	: 2.42 A	Moment of inertia (J)	: 0.1431 sq.ft.lb
LRC	: 6.4	Duty cycle	: Cont.(S1)
Rated torque	: 5.47 ft.lb	Insulation class	: F
Locked rotor torque	: 220 %	Service factor	: 1.25
Breakdown torque	: 250 %	Temperature rise	: 80 K
Rated speed	: 1440 rpm	Design	: B

Heating constant

Cooling constant

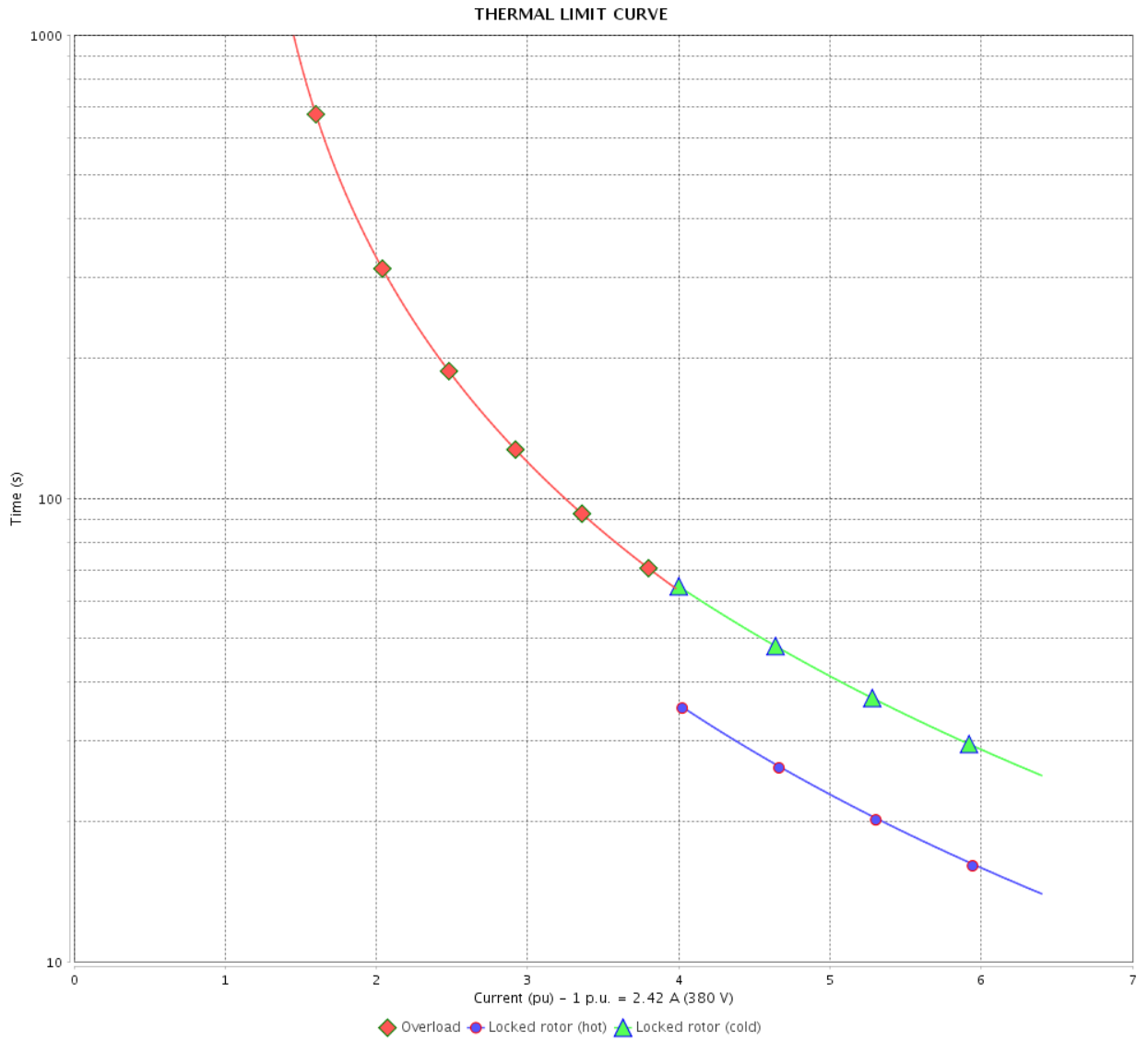
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# THERMAL LIMIT CURVE

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 : 13270588  
Catalog # : 00158ST3QUIER145TC-W2

Performance : 400 V 50 Hz 4P IE3

Rated current	: 2.33 A	Moment of inertia (J)	: 0.1431 sq.ft.lb
LRC	: 7.0	Duty cycle	: Cont.(S1)
Rated torque	: 5.45 ft.lb	Insulation class	: F
Locked rotor torque	: 250 %	Service factor	: 1.25
Breakdown torque	: 290 %	Temperature rise	: 80 K
Rated speed	: 1445 rpm	Design	: B

Heating constant

Cooling constant

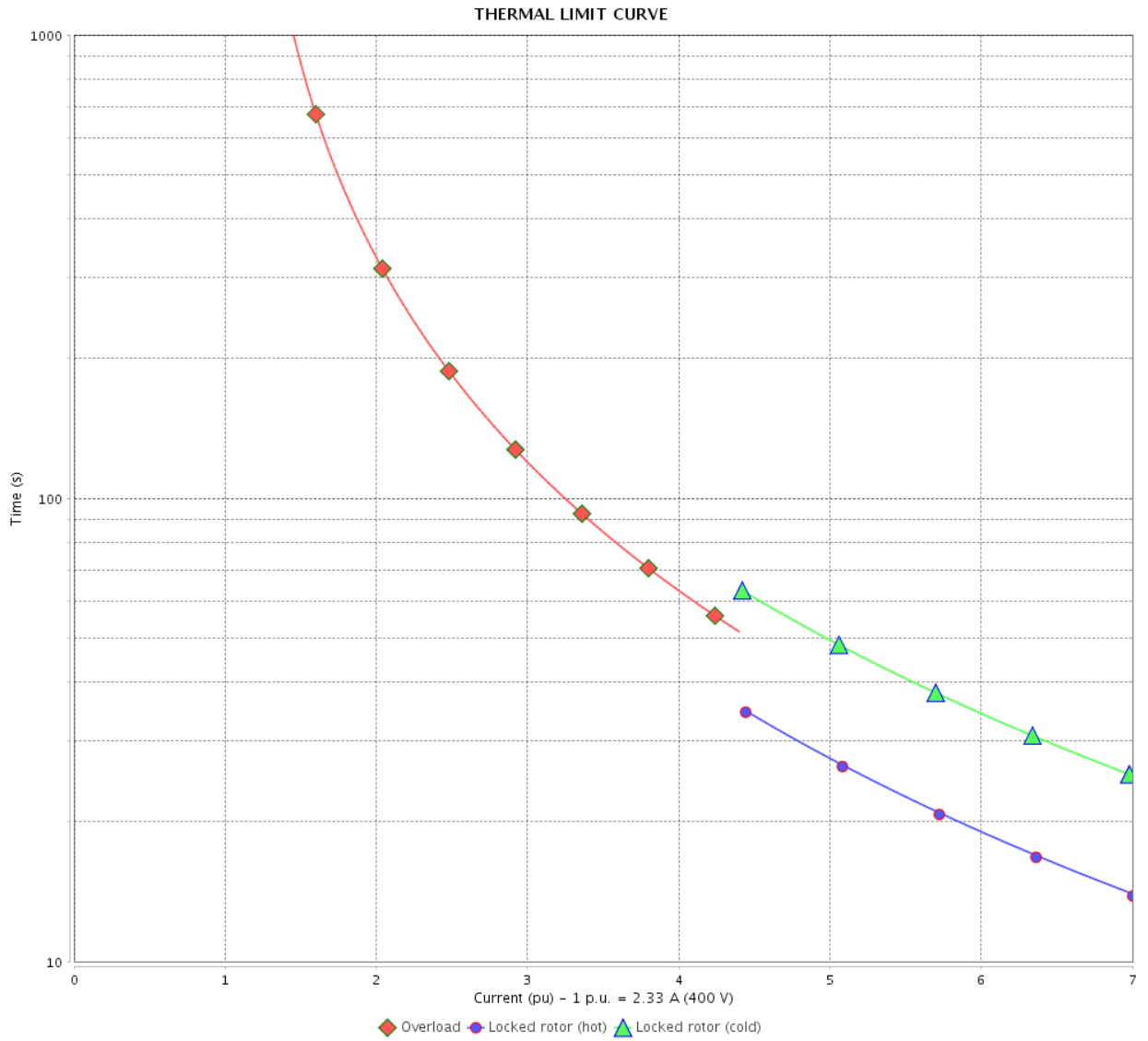
Rev.	Changes Summary	Performed	Checked	Date
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# THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



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



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Date		14/04/2022		

# THERMAL LIMIT CURVE



## Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : NEMA Premium Efficiency Three-Phase  
Product code : 13270588  
Catalog # : 00158ST3QUIER145TC-W2

Performance : 415 V 50 Hz 4P IE3

Rated current	: 2.30 A	Moment of inertia (J)	: 0.1431 sq.ft.lb
LRC	: 7.4	Duty cycle	: Cont.(S1)
Rated torque	: 5.43 ft.lb	Insulation class	: F
Locked rotor torque	: 280 %	Service factor	: 1.25
Breakdown torque	: 320 %	Temperature rise	: 80 K
Rated speed	: 1450 rpm	Design	: B

Heating constant

Cooling constant

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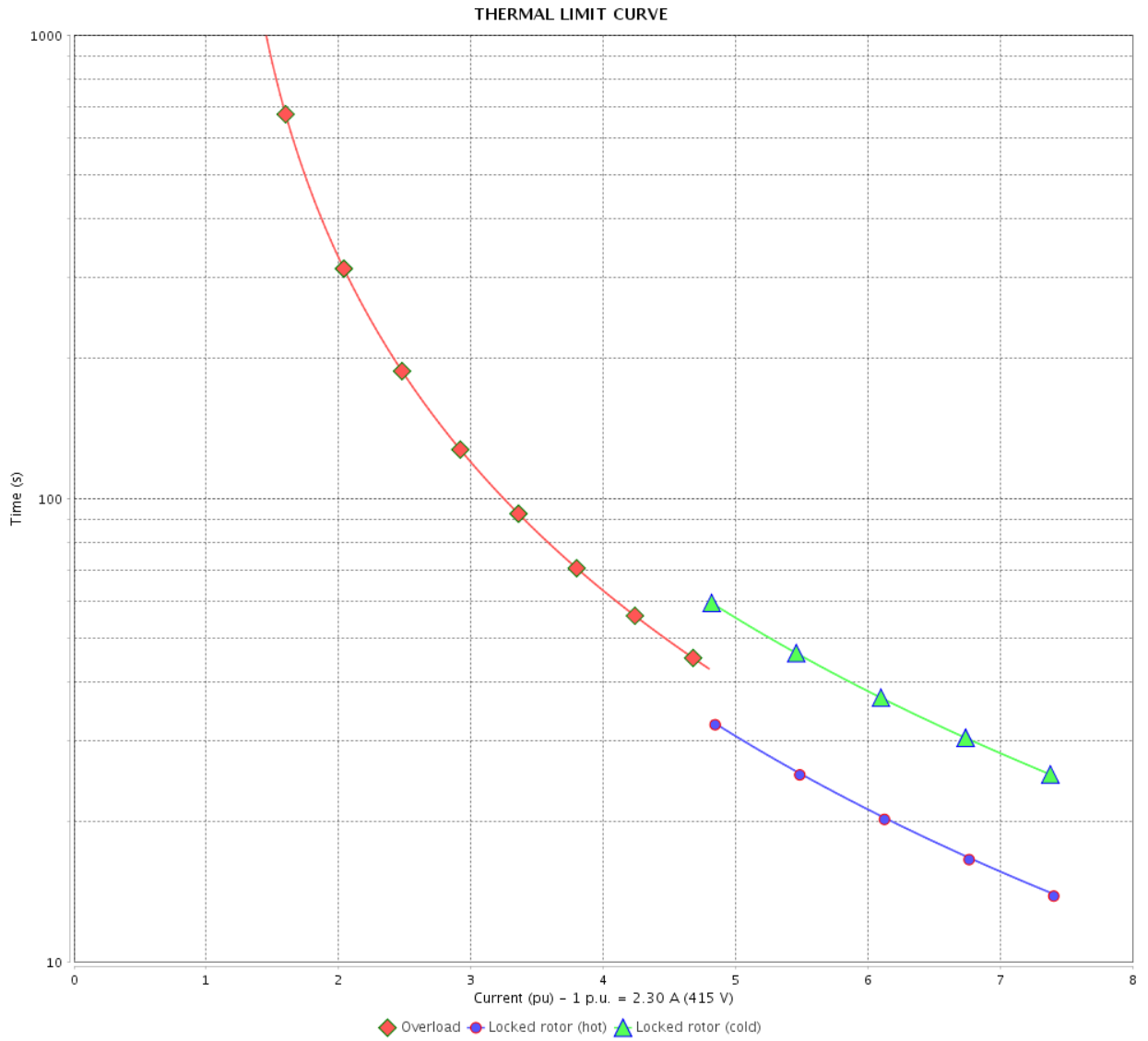


# THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



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



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# VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage



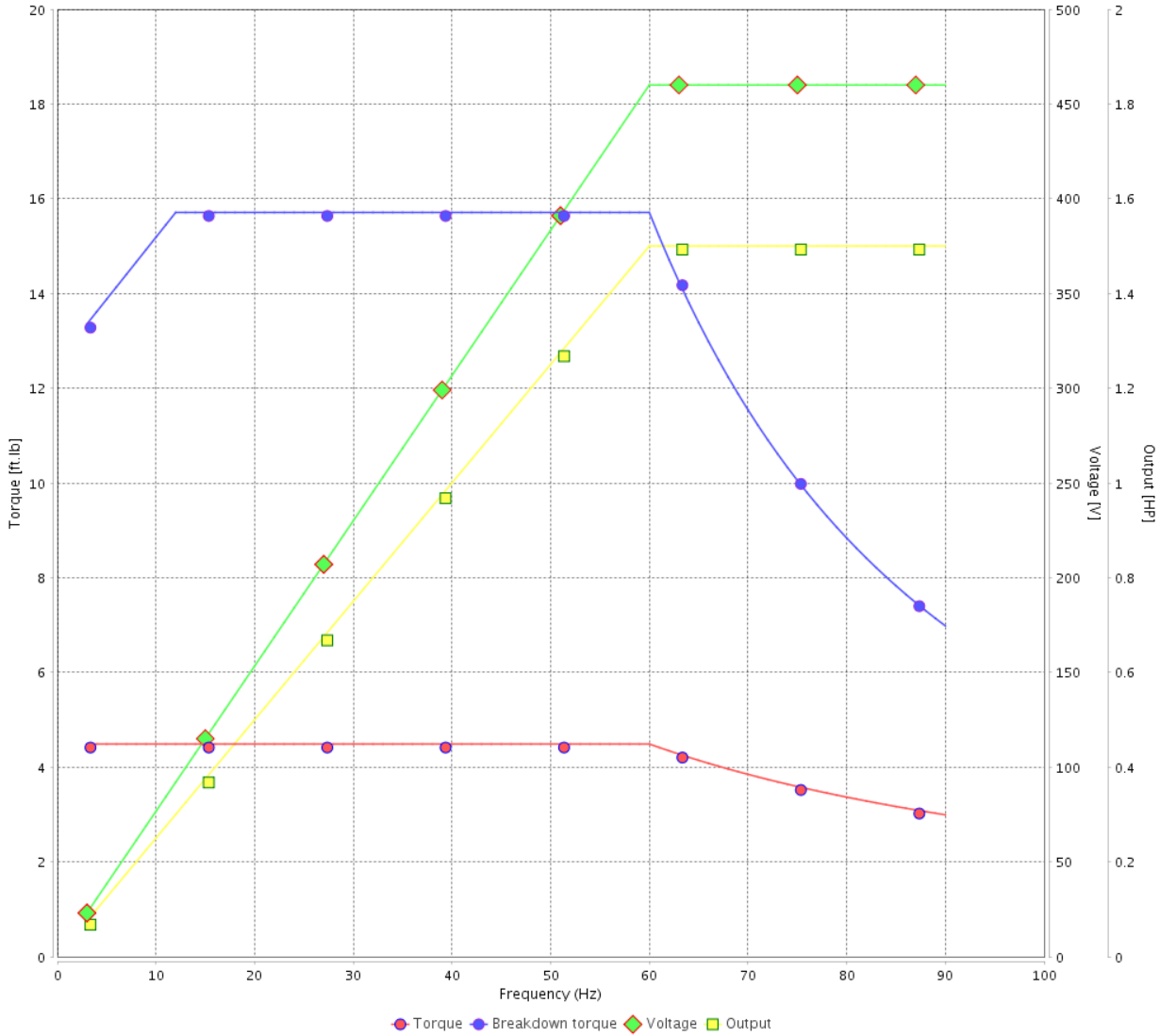
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 13270588

Catalog # : 00158ST3QUIER145TC-W2

VFD OPERATION CURVE



Performance : 460 V 60 Hz 4P

Rated current : 2.02 A  
 LRC : 8.4  
 Rated torque : 4.49 ft.lb  
 Locked rotor torque : 290 %  
 Breakdown torque : 350 %  
 Rated speed : 1755 rpm

Moment of inertia (J) : 0.1431 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.25  
 Temperature rise : 80 K  
 Design : B

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Date				

# VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage

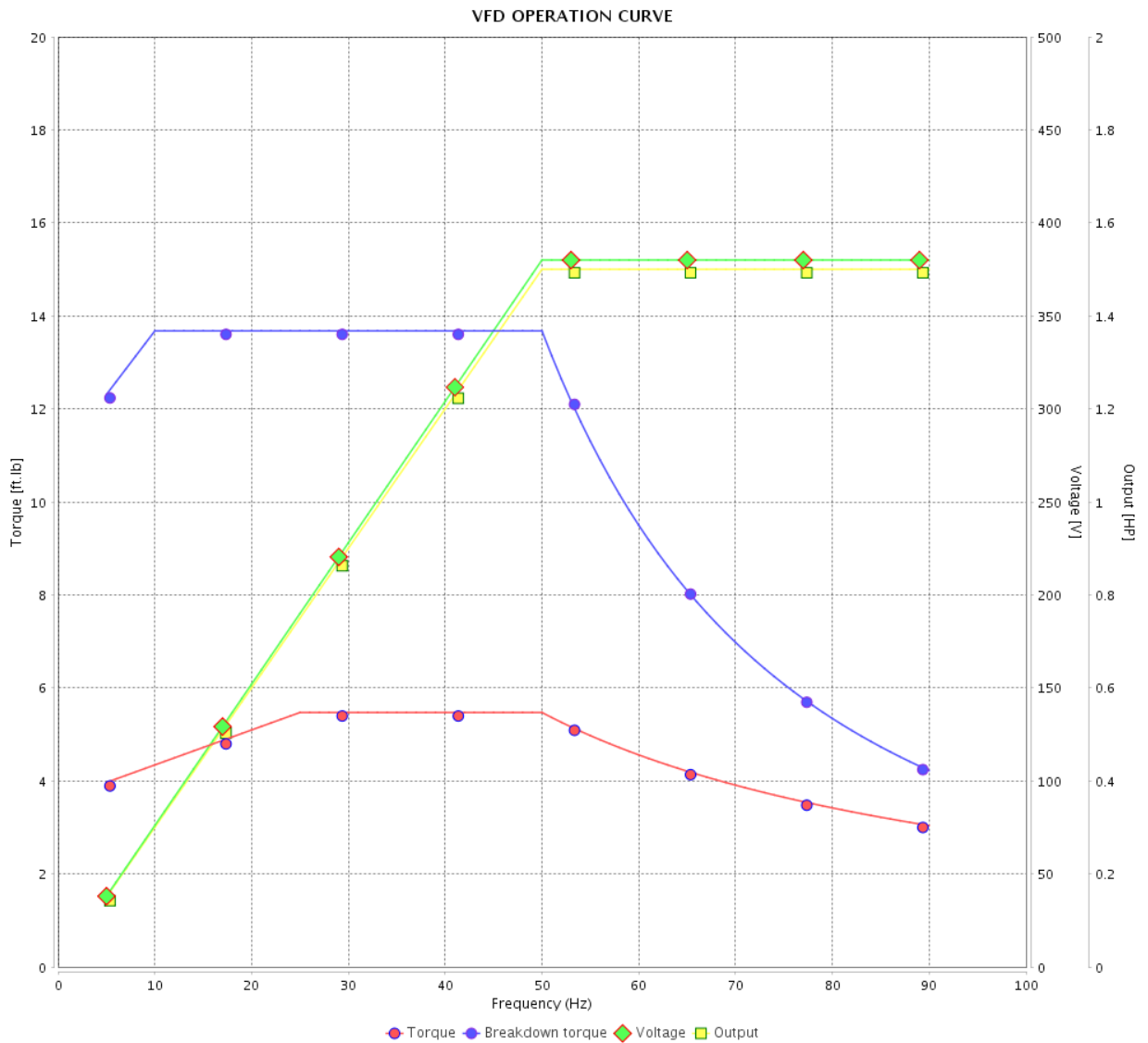


Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 13270588

Catalog # : 00158ST3QIER145TC-W2



Performance : 380 V 50 Hz 4P IE3

Rated current : 2.42 A  
 LRC : 6.4  
 Rated torque : 5.47 ft.lb  
 Locked rotor torque : 220 %  
 Breakdown torque : 250 %  
 Rated speed : 1440 rpm

Moment of inertia (J) : 0.1431 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

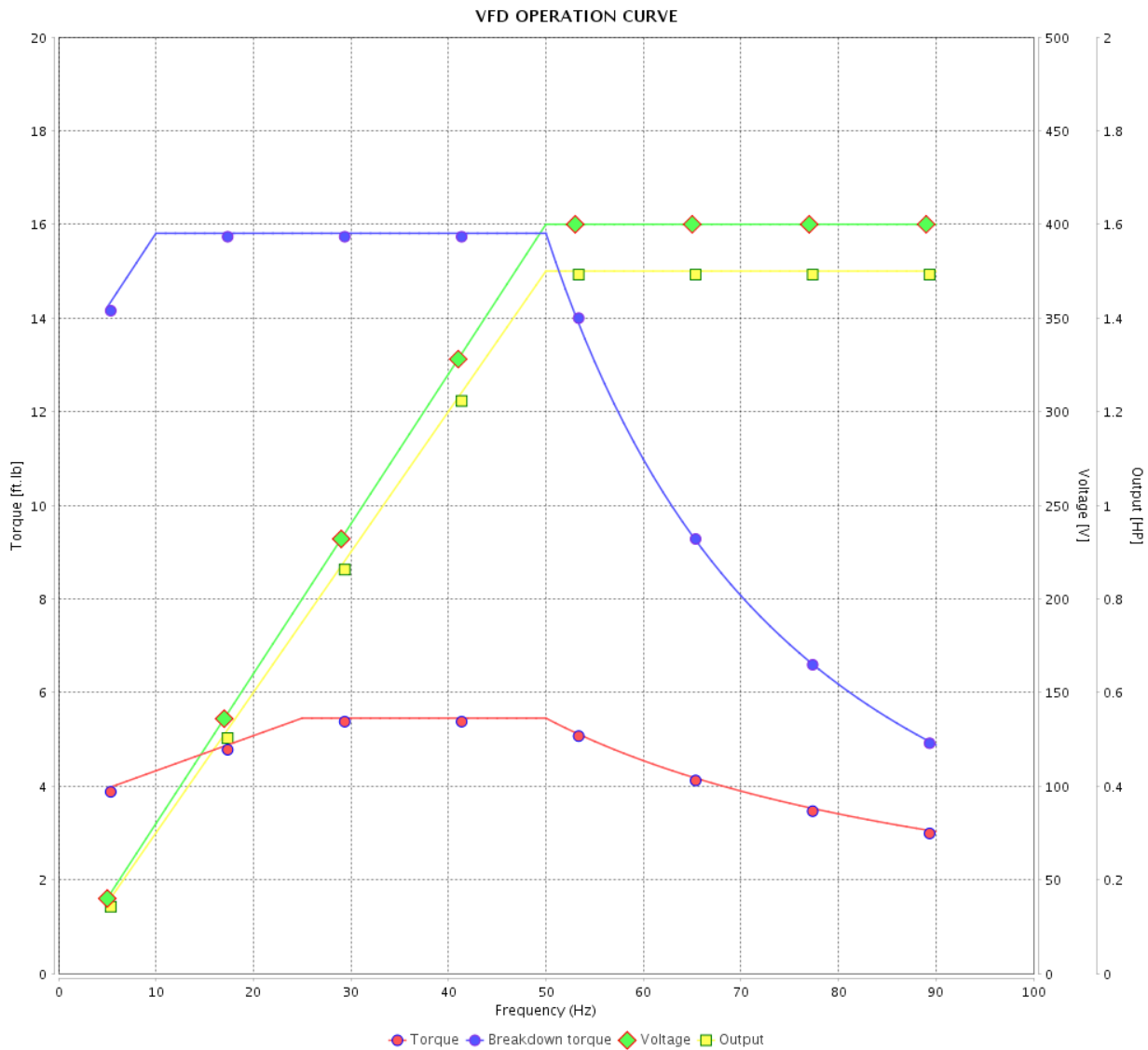


Customer : \_\_\_\_\_

Product line : NEMA Premium Efficiency Three-Phase

Product code : 13270588

Catalog # : 00158ST3QUIER145TC-W2



Performance : 400 V 50 Hz 4P IE3

Rated current : 2.33 A  
 LRC : 7.0  
 Rated torque : 5.45 ft.lb  
 Locked rotor torque : 250 %  
 Breakdown torque : 290 %  
 Rated speed : 1445 rpm

Moment of inertia (J) : 0.1431 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

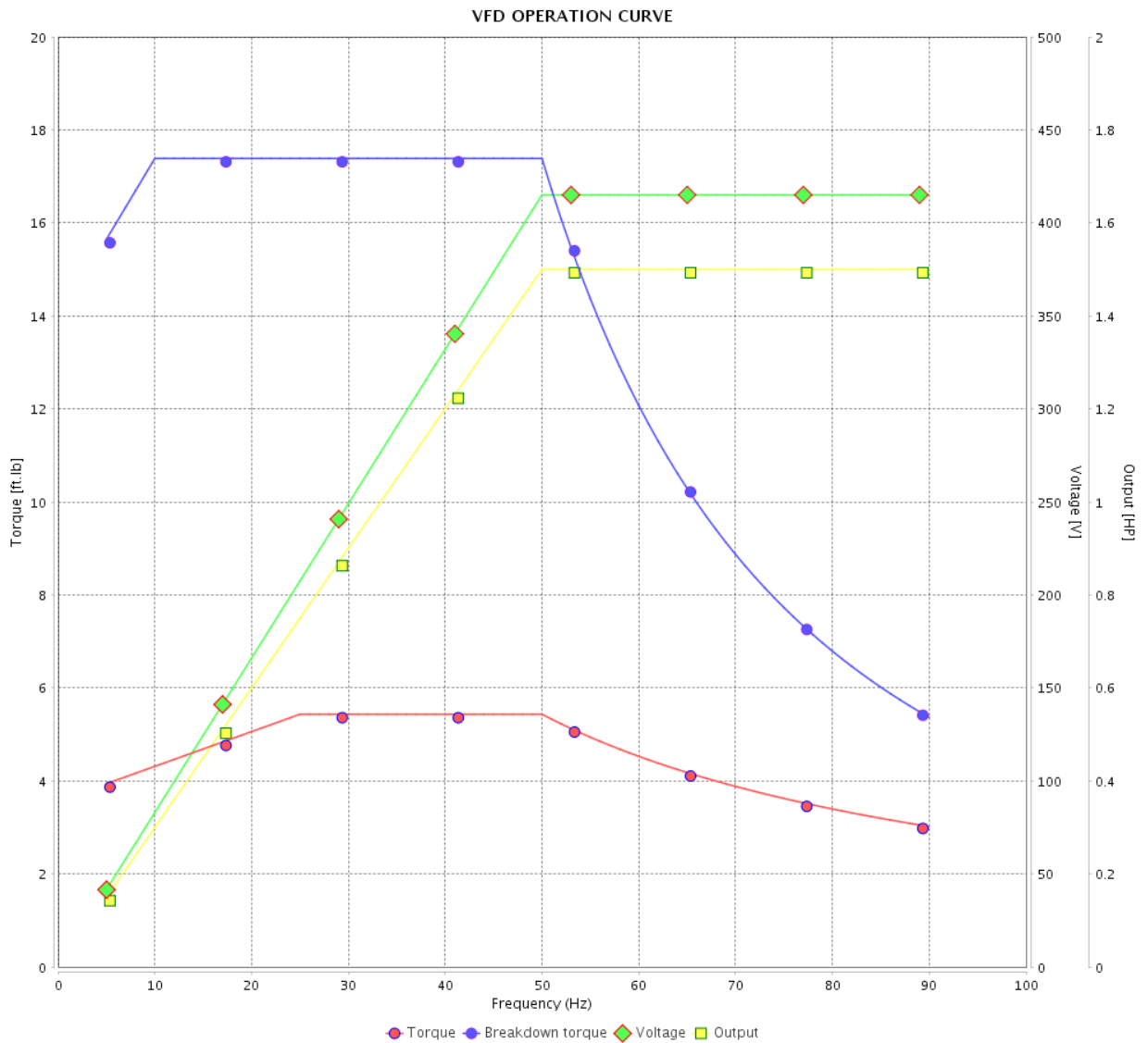


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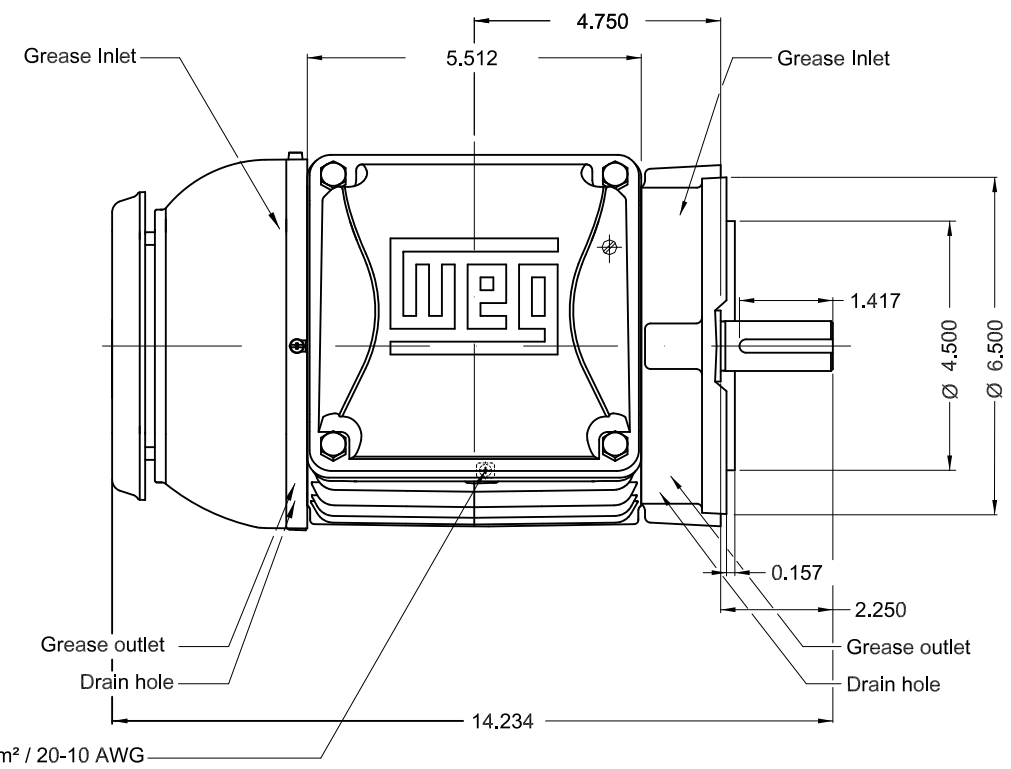
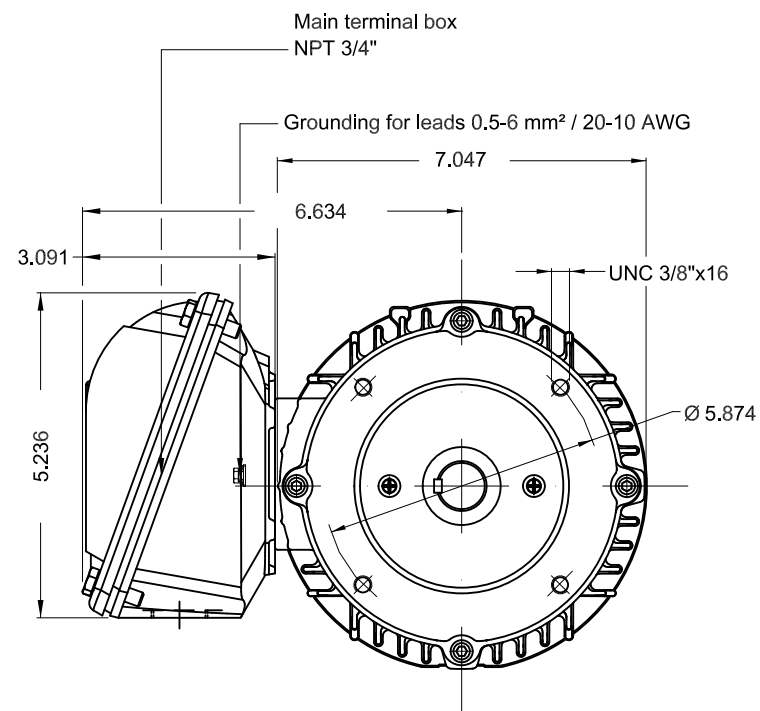


Performance : 415 V 50 Hz 4P IE3

Rated current : 2.30 A  
 LRC : 7.4  
 Rated torque : 5.43 ft.lb  
 Locked rotor torque : 280 %  
 Breakdown torque : 320 %  
 Rated speed : 1450 rpm

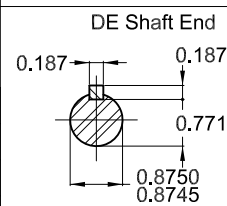
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 Insulation class : F  
 Service factor : 1.25  
 Temperature rise : 80 K  
 Design : B

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Grounding for leads 0.5-6 mm<sup>2</sup> / 20-10 AWG

Color RAL 5009  
 Painting plan 202E  
 Mounting NEMA W-6  
 Mounting V18



1.5 HP 04 Poles 60 Hz

A

ECM	LOC	SUMMARY OF MODIFICATIONS	EXECUTED	CHECKED	RELEASED	DATE	VER
EXECUTED	PIRWBUSER	THREE PH. MOTOR IEEE 841 W22 PREM. EFF.					
CHECKED		FRAME 145TC IP55 TEFC					
RELEASED							
REL DT.	WMO	Jaragua do Sul	Product Engineering				

**PREVIEW**  
 WDD



SHEET 1 / 1

Dimensions in inches

XME A3

MADE IN BRAZIL  
13270588



**NEMA**  
Premium



Class I, Div 2, Gr A, B, C and D - T3  
Class I, Zone 2, IIC - T3  
Class II, Div 2, Gr F and G - T5  
For use on PWM: Gr. A, B, C, D, F and G,  
VT 1000:1, CT 20:1, 1.00SF - T4A

MODEL 00158ST3QIER145TC-W2

Inverter Duty Motor  
Severe Duty

**IEEE**  
841-2009



FOR SAFE AREA  
Mod. TE1BFOXON  
CC029A

PH3 60Hz Fr. 145TC 1000m.a.s.l. IP55 TEFC 60lb

V 460

A 2.02

HP 1.5

kW 1.1

SF 1.25

SFA 2.52

RPM 1755

PF 0.79

AMB 40°C

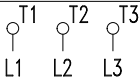
INS cl. F DT80K

NEMA NOM EFF 86.5%

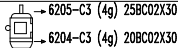
DUTY CONT.

DES B Code L

GUARANT. EFF 84.0%



460V



MOBIL POLYREX EM (20000h)

