

# DATA SHEET

## Three Phase Induction Motor - Squirrel Cage



Customer					
Product line		: NEMA Premium Efficiency Three-Phase	Product code :		12445720
			Catalog # :		00312ET3E213TC-W22
Frame		: 213/5TC	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>		: 159 lb
Protection degree		: IP55	Moment of inertia (J)		: 1.20 sq.ft.lb
Design		: B			
Output [HP]	3	3	3	3	
Poles	6	6	6	6	
Frequency [Hz]	60	50	50	50	
Rated voltage [V]	230/460	380	400	415	
Rated current [A]	8.83/4.41	5.09	4.92	4.87	
L. R. Amperes [A]	61.8/30.9	29.5	31.5	33.1	
LRC [A]	7.0x(Code K)	5.8x(Code H)	6.4x(Code J)	6.8x(Code J)	
No load current [A]	5.50/2.75	2.72	2.91	3.05	
Rated speed [RPM]	1175	965	970	970	
Slip [%]	2.08	3.50	3.00	3.00	
Rated torque [ft.lb]	13.4	16.3	16.2	16.2	
Locked rotor torque [%]	200	170	200	220	
Breakdown torque [%]	280	210	240	270	
Service factor	1.25	1.00	1.00	1.00	
Temperature rise	80 K	80 K	80 K	80 K	
Locked rotor time	104s (cold) 58s (hot)	72s (cold) 40s (hot)	72s (cold) 40s (hot)	72s (cold) 40s (hot)	
Noise level <sup>2</sup>	55.0 dB(A)	53.0 dB(A)	53.0 dB(A)	53.0 dB(A)	
Efficiency (%)	25%	85.4	88.0	86.1	86.1
	50%	86.5	87.5	86.5	86.5
	75%	88.5	88.5	88.5	88.5
	100%	89.5	87.5	88.5	88.5
Power Factor	25%	0.28	0.33	0.30	0.28
	50%	0.50	0.57	0.53	0.50
	75%	0.63	0.70	0.66	0.64
	100%	0.70	0.75	0.73	0.71
Bearing type		Drive end : 6308 ZZ	Non drive end : 6207 ZZ	Foundation loads	
Sealing		: V'Ring	: V'Ring	Max. traction : 168 lb	
Lubrication interval		: -	: -	Max. compression : 326 lb	
Lubricant amount		: -	: -		
Lubricant type		: Mobil Polyrex EM			
Notes					
USABLE @208V 9.76A SF 1.15 SFA 11.2A					
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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Performed by					
Checked by				Page	Revision
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# TORQUE AND CURRENT VS SPEED CURVE

Three Phase Induction Motor - Squirrel Cage



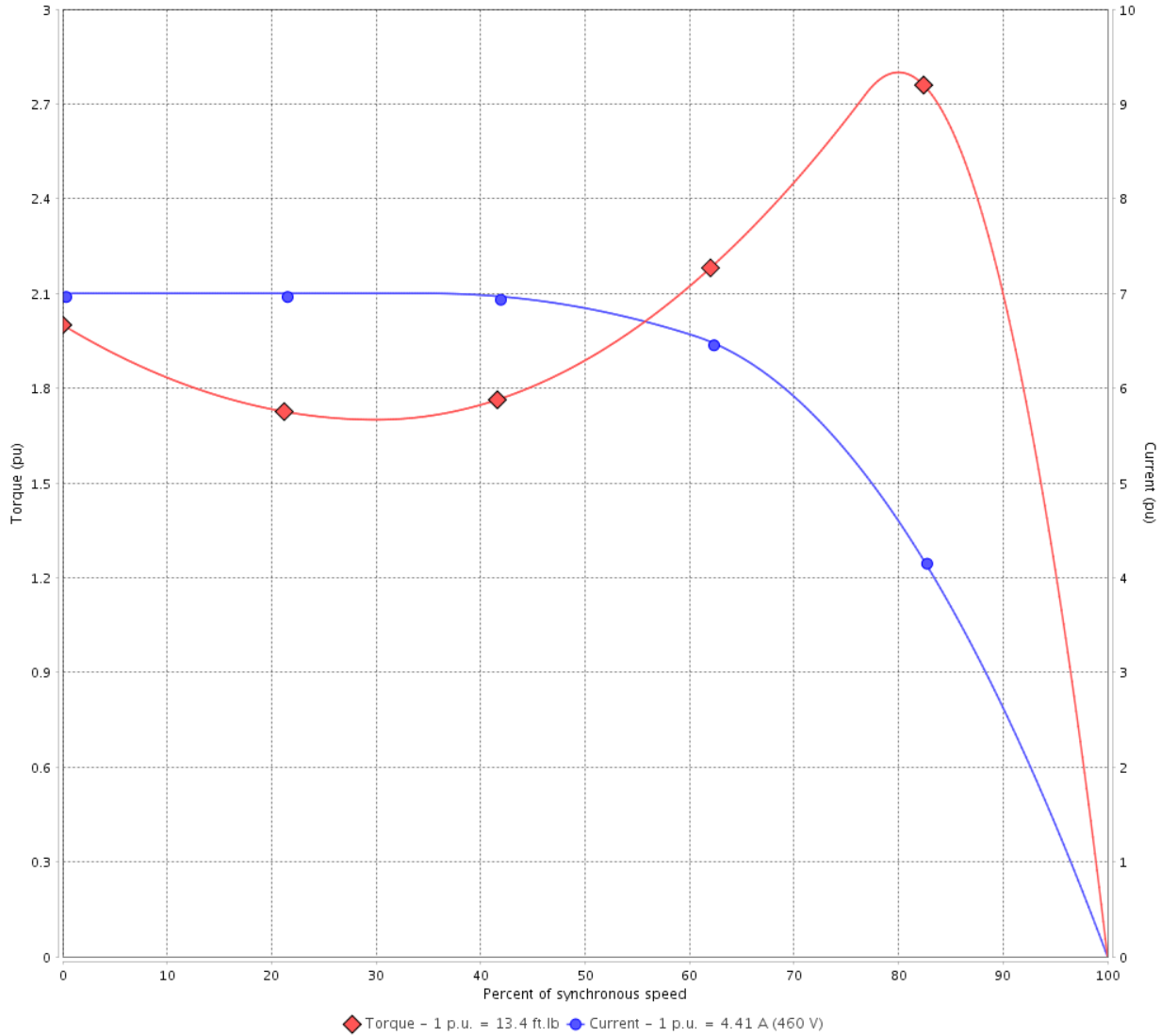
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12445720

Catalog # : 00312ET3E213TC-W22

TORQUE AND CURRENT VS SPEED CURVE



Performance : 230/460 V 60 Hz 6P

Rated current	: 8.83/4.41 A	Moment of inertia (J)	: 1.20 sq.ft.lb
LRC	: 7.0	Duty cycle	: Cont.(S1)
Rated torque	: 13.4 ft.lb	Insulation class	: F
Locked rotor torque	: 200 %	Service factor	: 1.25
Breakdown torque	: 280 %	Temperature rise	: 80 K
Rated speed	: 1175 rpm	Design	: B

Locked rotor time : 104s (cold) 58s (hot)

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Date	14/04/2022			

# TORQUE AND CURRENT VS SPEED CURVE



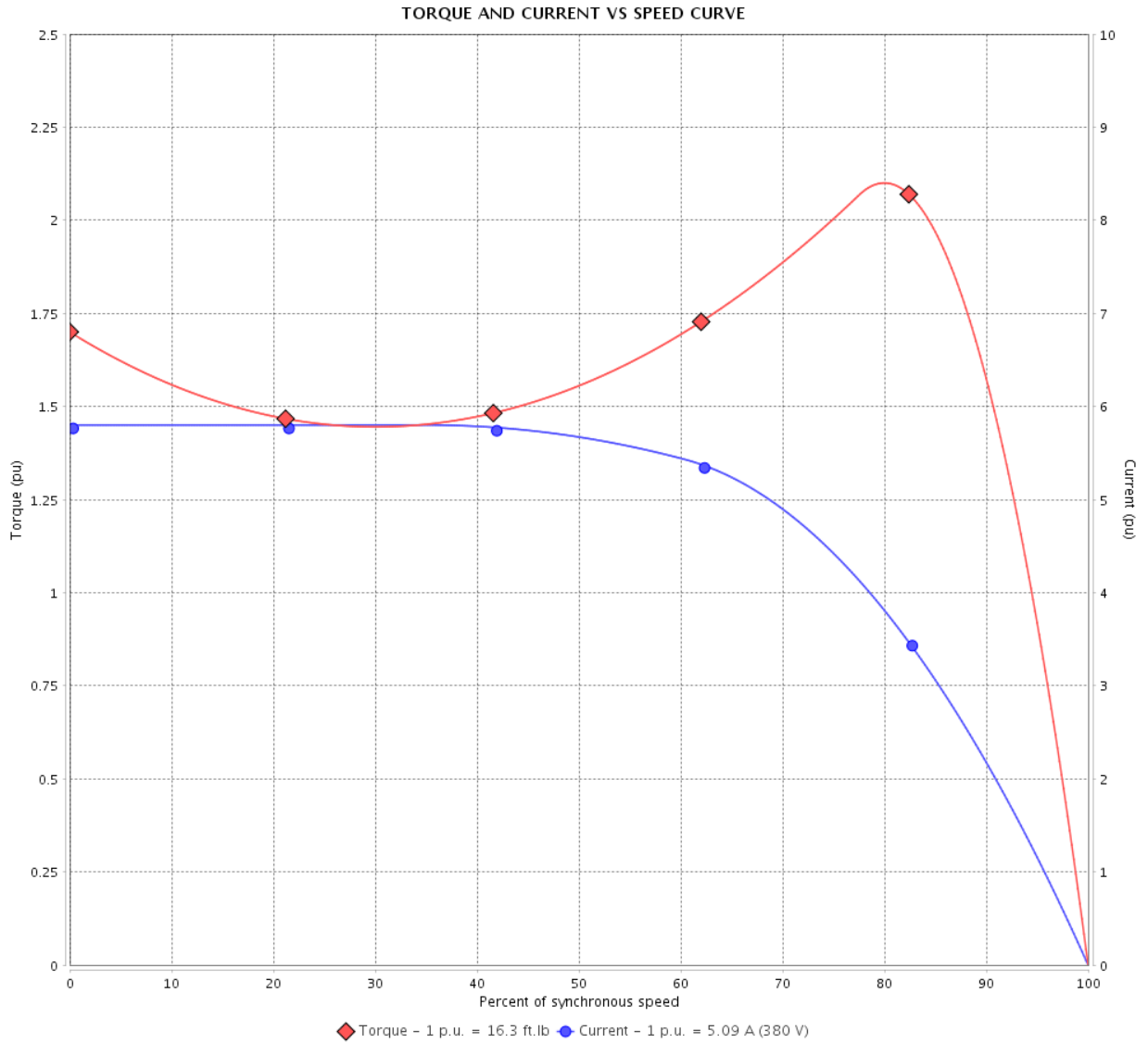
## Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12445720

Catalog # : 00312ET3E213TC-W22



Performance : 380 V 50 Hz 6P IE4

Rated current	: 5.09 A	Moment of inertia (J)	: 1.20 sq.ft.lb
LRC	: 5.8	Duty cycle	: Cont.(S1)
Rated torque	: 16.3 ft.lb	Insulation class	: F
Locked rotor torque	: 170 %	Service factor	: 1.00
Breakdown torque	: 210 %	Temperature rise	: 80 K
Rated speed	: 965 rpm	Design	: B

Locked rotor time : 72s (cold) 40s (hot)

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# TORQUE AND CURRENT VS SPEED CURVE

Three Phase Induction Motor - Squirrel Cage



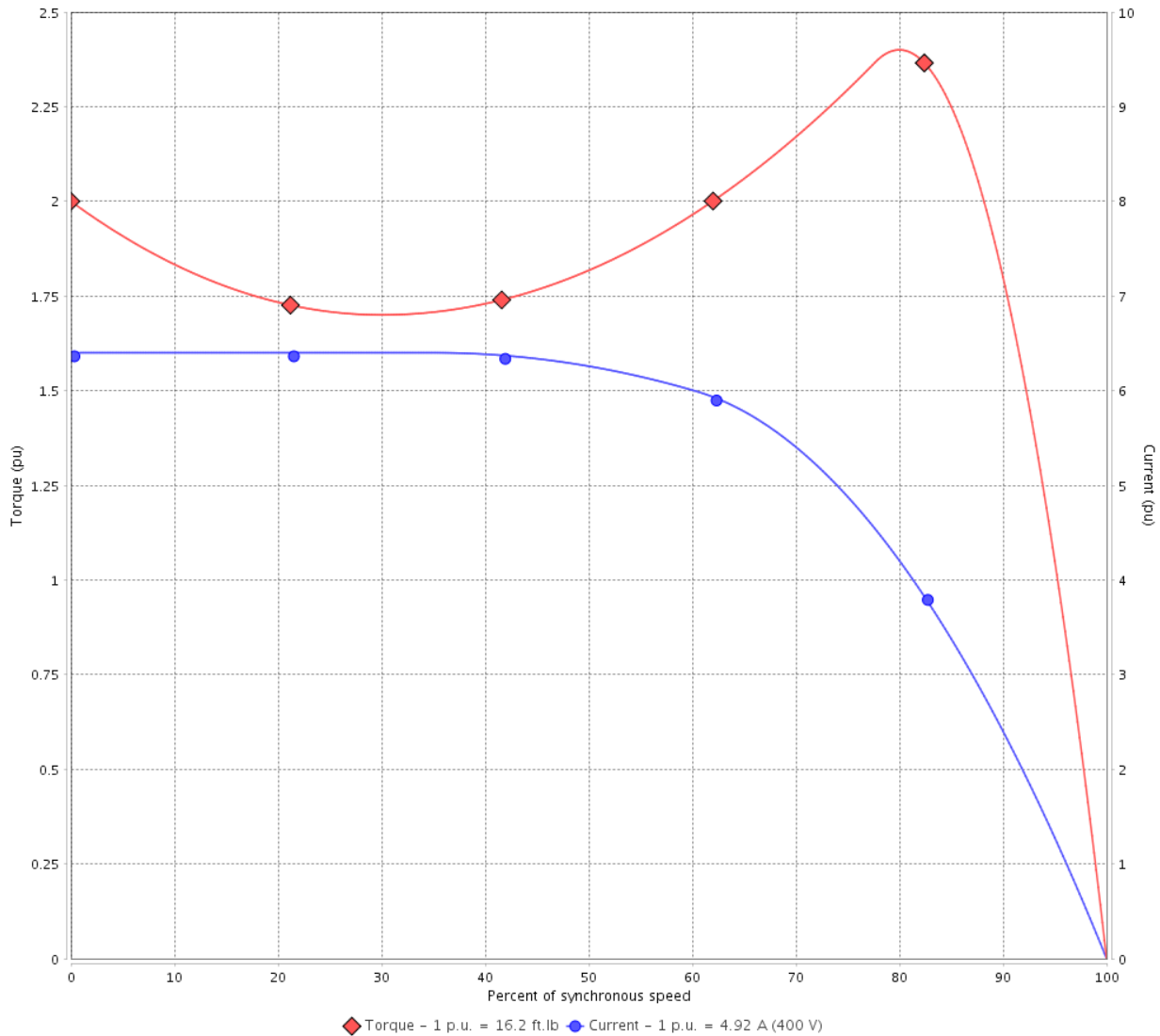
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12445720

Catalog # : 00312ET3E213TC-W22

TORQUE AND CURRENT VS SPEED CURVE



Performance : 400 V 50 Hz 6P IE4

Rated current	: 4.92 A	Moment of inertia (J)	: 1.20 sq.ft.lb
LRC	: 6.4	Duty cycle	: Cont.(S1)
Rated torque	: 16.2 ft.lb	Insulation class	: F
Locked rotor torque	: 200 %	Service factor	: 1.00
Breakdown torque	: 240 %	Temperature rise	: 80 K
Rated speed	: 970 rpm	Design	: B

Locked rotor time : 72s (cold) 40s (hot)

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# TORQUE AND CURRENT VS SPEED CURVE



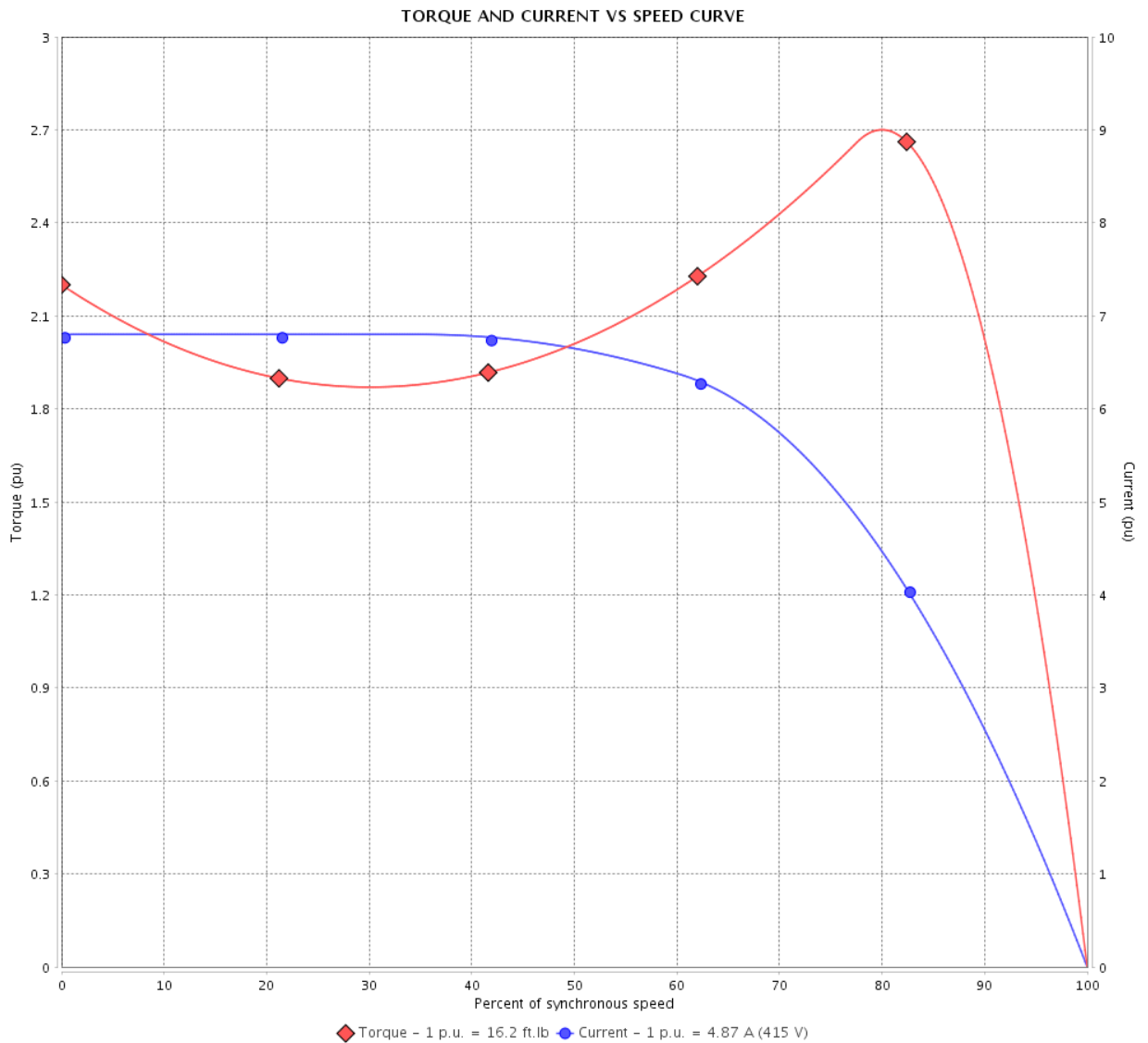
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Product line : NEMA Premium Efficiency Three-Phase

Product code : 12445720

Catalog # : 00312ET3E213TC-W22



Performance : 415 V 50 Hz 6P IE4

Rated current	: 4.87 A	Moment of inertia (J)	: 1.20 sq.ft.lb
LRC	: 6.8	Duty cycle	: Cont.(S1)
Rated torque	: 16.2 ft.lb	Insulation class	: F
Locked rotor torque	: 220 %	Service factor	: 1.00
Breakdown torque	: 270 %	Temperature rise	: 80 K
Rated speed	: 970 rpm	Design	: B

Locked rotor time : 72s (cold) 40s (hot)

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Date	14/04/2022			

# LOAD PERFORMANCE CURVE

Three Phase Induction Motor - Squirrel Cage



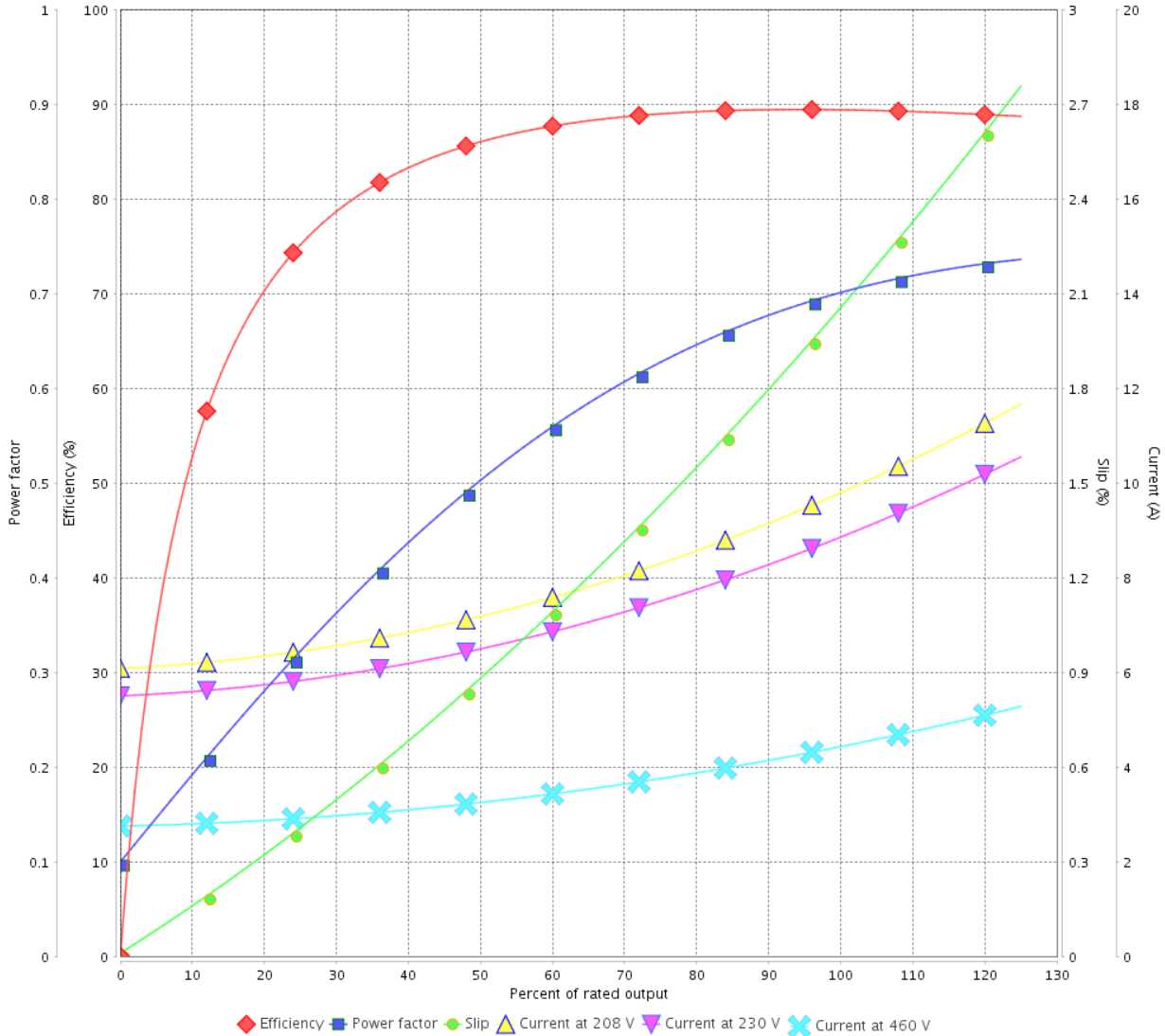
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12445720

Catalog # : 00312ET3E213TC-W22

LOAD PERFORMANCE CURVE



Performance : 230/460 V 60 Hz 6P

Rated current : 8.83/4.41 A  
 LRC : 7.0  
 Rated torque : 13.4 ft.lb  
 Locked rotor torque : 200 %  
 Breakdown torque : 280 %  
 Rated speed : 1175 rpm

Moment of inertia (J) : 1.20 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

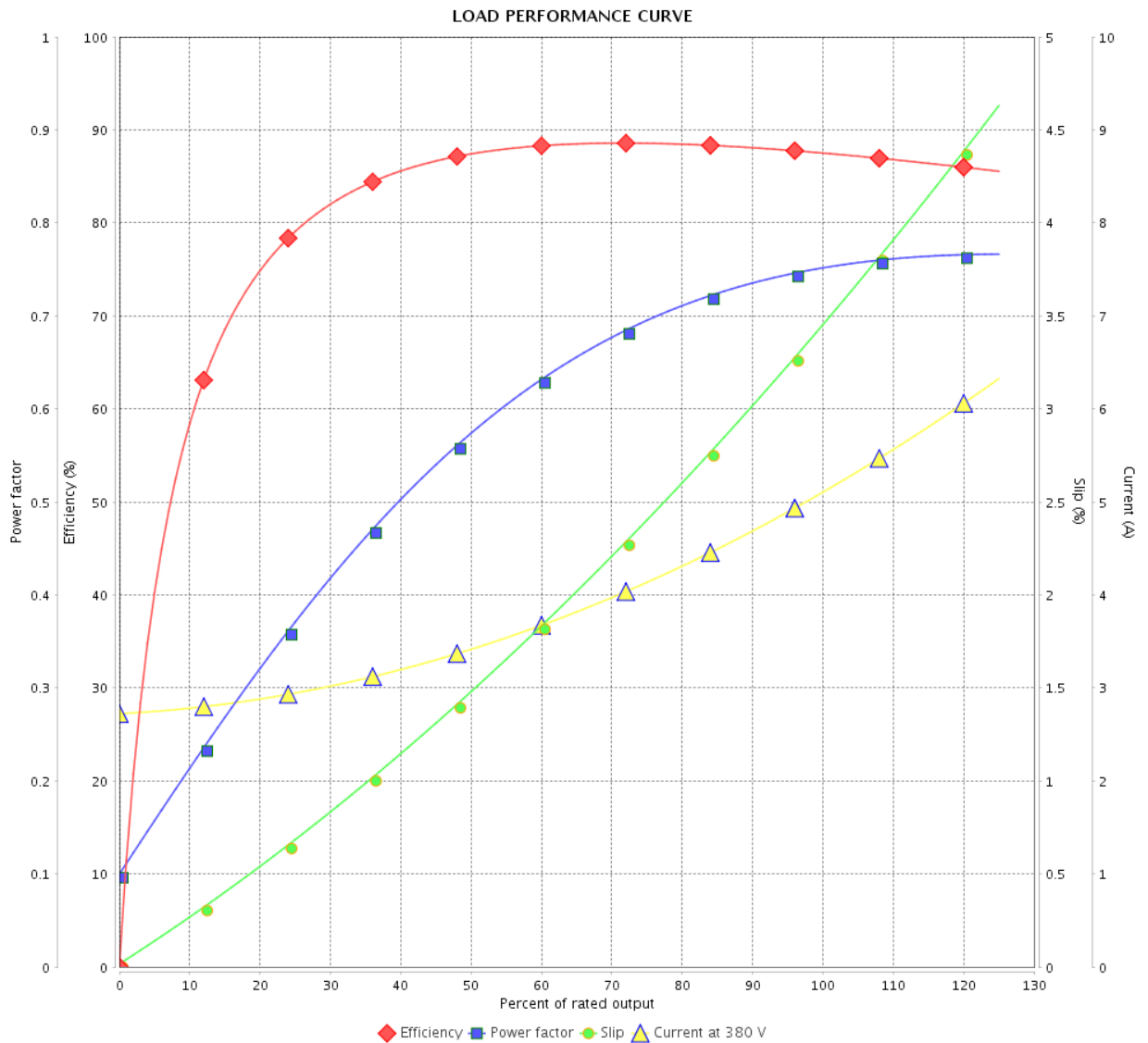


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Product line : NEMA Premium Efficiency Three-Phase

Product code : 12445720

Catalog # : 00312ET3E213TC-W22



Performance : 380 V 50 Hz 6P IE4

Rated current : 5.09 A  
 LRC : 5.8  
 Rated torque : 16.3 ft.lb  
 Locked rotor torque : 170 %  
 Breakdown torque : 210 %  
 Rated speed : 965 rpm

Moment of inertia (J) : 1.20 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



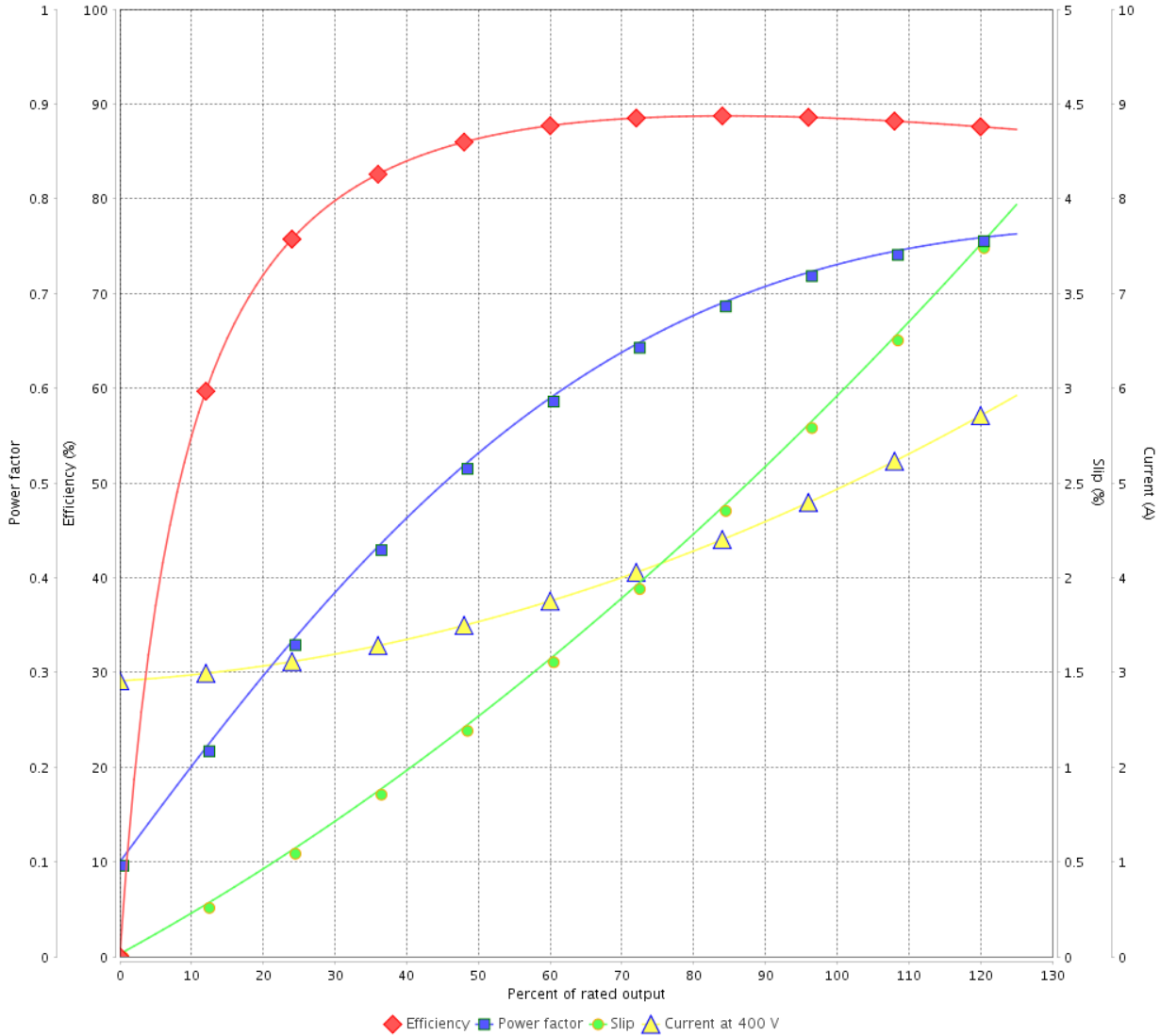
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12445720

Catalog # : 00312ET3E213TC-W22

LOAD PERFORMANCE CURVE



Performance : 400 V 50 Hz 6P IE4

Rated current : 4.92 A  
 LRC : 6.4  
 Rated torque : 16.2 ft.lb  
 Locked rotor torque : 200 %  
 Breakdown torque : 240 %  
 Rated speed : 970 rpm

Moment of inertia (J) : 1.20 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

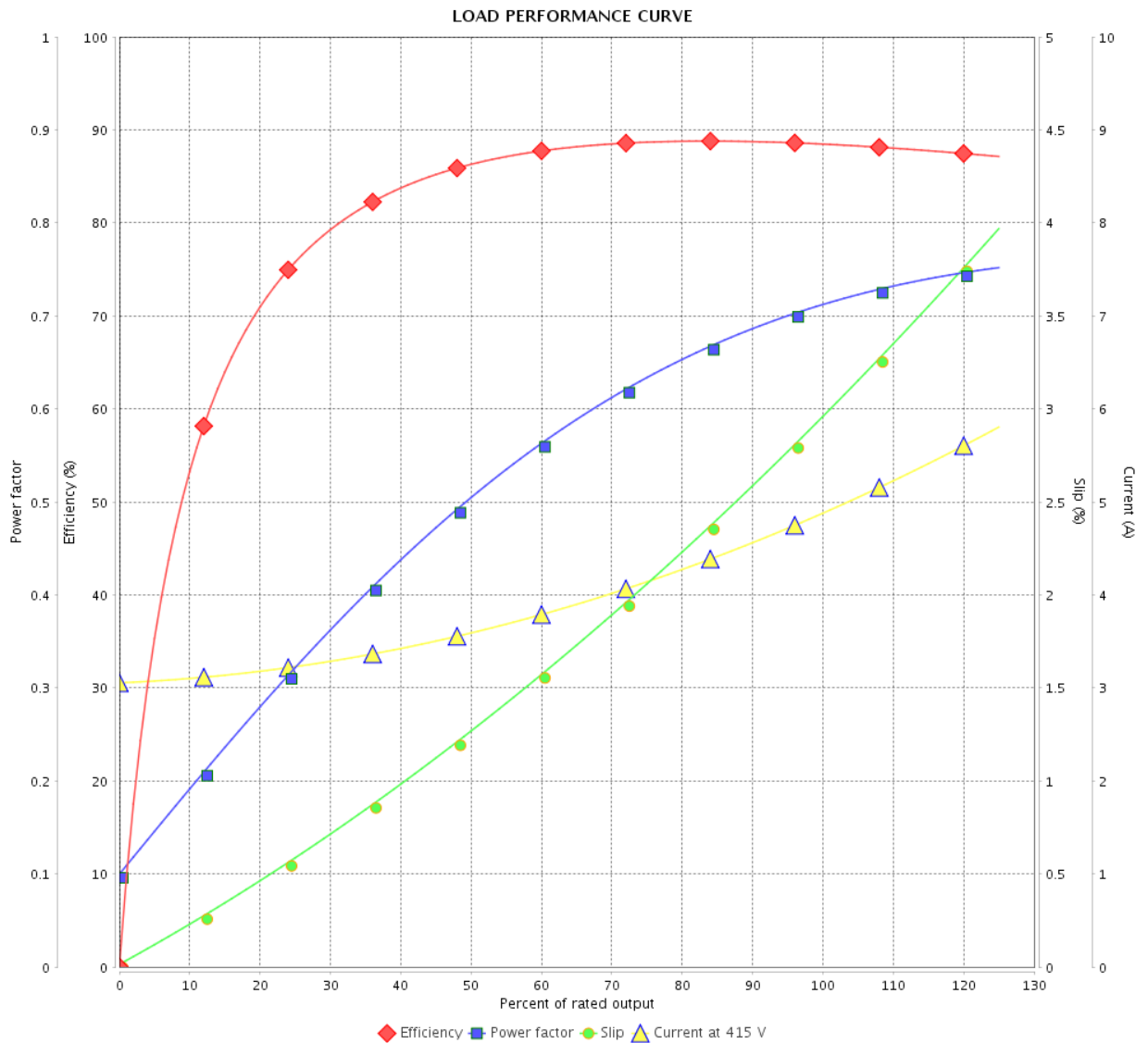


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Performance : 415 V 50 Hz 6P IE4

Rated current : 4.87 A  
 LRC : 6.8  
 Rated torque : 16.2 ft.lb  
 Locked rotor torque : 220 %  
 Breakdown torque : 270 %  
 Rated speed : 970 rpm

Moment of inertia (J) : 1.20 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 : 12445720  
Catalog # : 00312ET3E213TC-W22

Performance : 230/460 V 60 Hz 6P

Rated current	: 8.83/4.41 A	Moment of inertia (J)	: 1.20 sq.ft.lb
LRC	: 7.0	Duty cycle	: Cont.(S1)
Rated torque	: 13.4 ft.lb	Insulation class	: F
Locked rotor torque	: 200 %	Service factor	: 1.25
Breakdown torque	: 280 %	Temperature rise	: 80 K
Rated speed	: 1175 rpm	Design	: B

Heating constant

Cooling constant

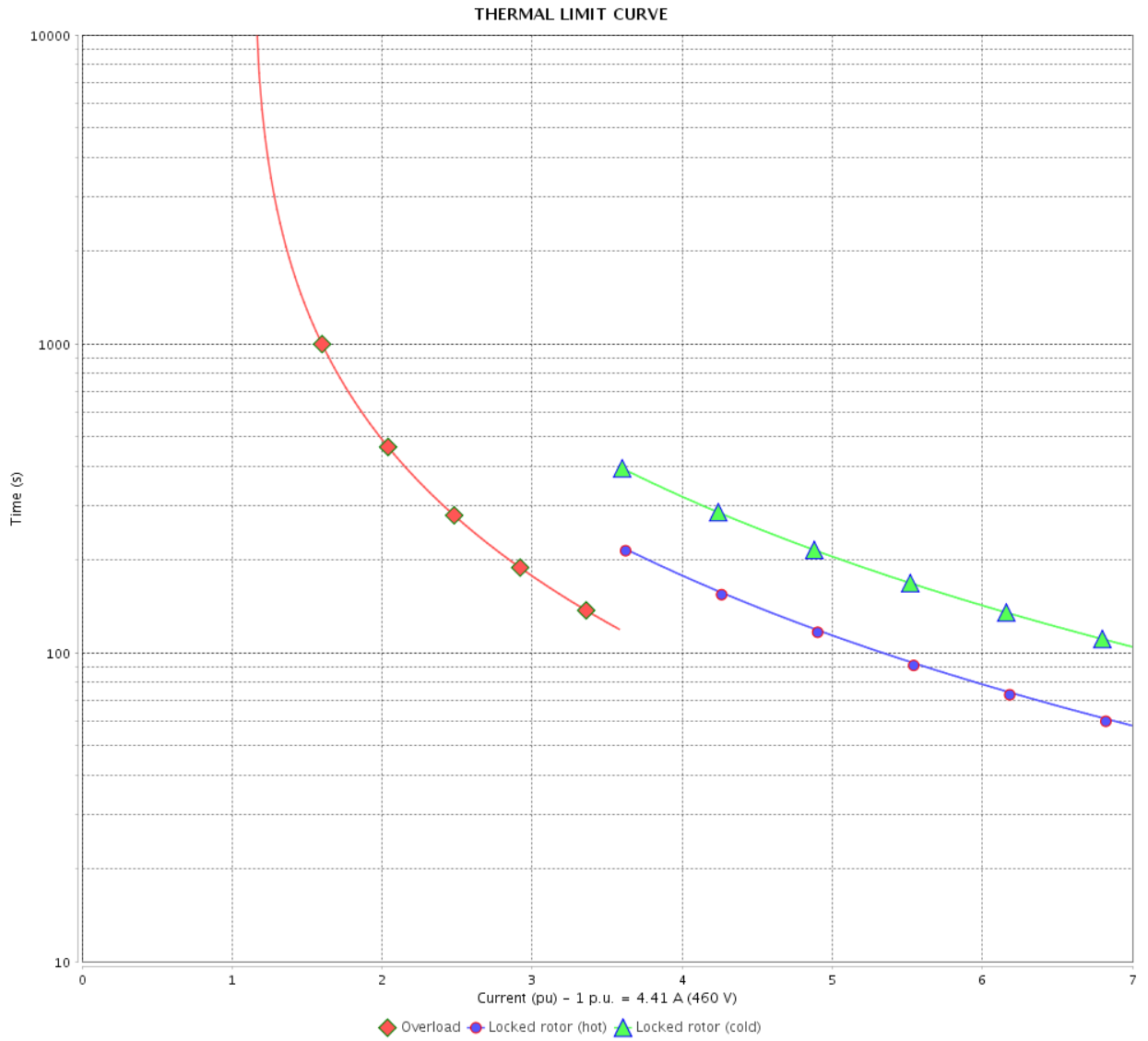
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# THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



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



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Date		14/04/2022		

# THERMAL LIMIT CURVE

## Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : NEMA Premium Efficiency Three-Phase  
Product code : 12445720  
Catalog # : 00312ET3E213TC-W22

Performance : 380 V 50 Hz 6P IE4

Rated current	: 5.09 A	Moment of inertia (J)	: 1.20 sq.ft.lb
LRC	: 5.8	Duty cycle	: Cont.(S1)
Rated torque	: 16.3 ft.lb	Insulation class	: F
Locked rotor torque	: 170 %	Service factor	: 1.00
Breakdown torque	: 210 %	Temperature rise	: 80 K
Rated speed	: 965 rpm	Design	: B

Heating constant

Cooling constant

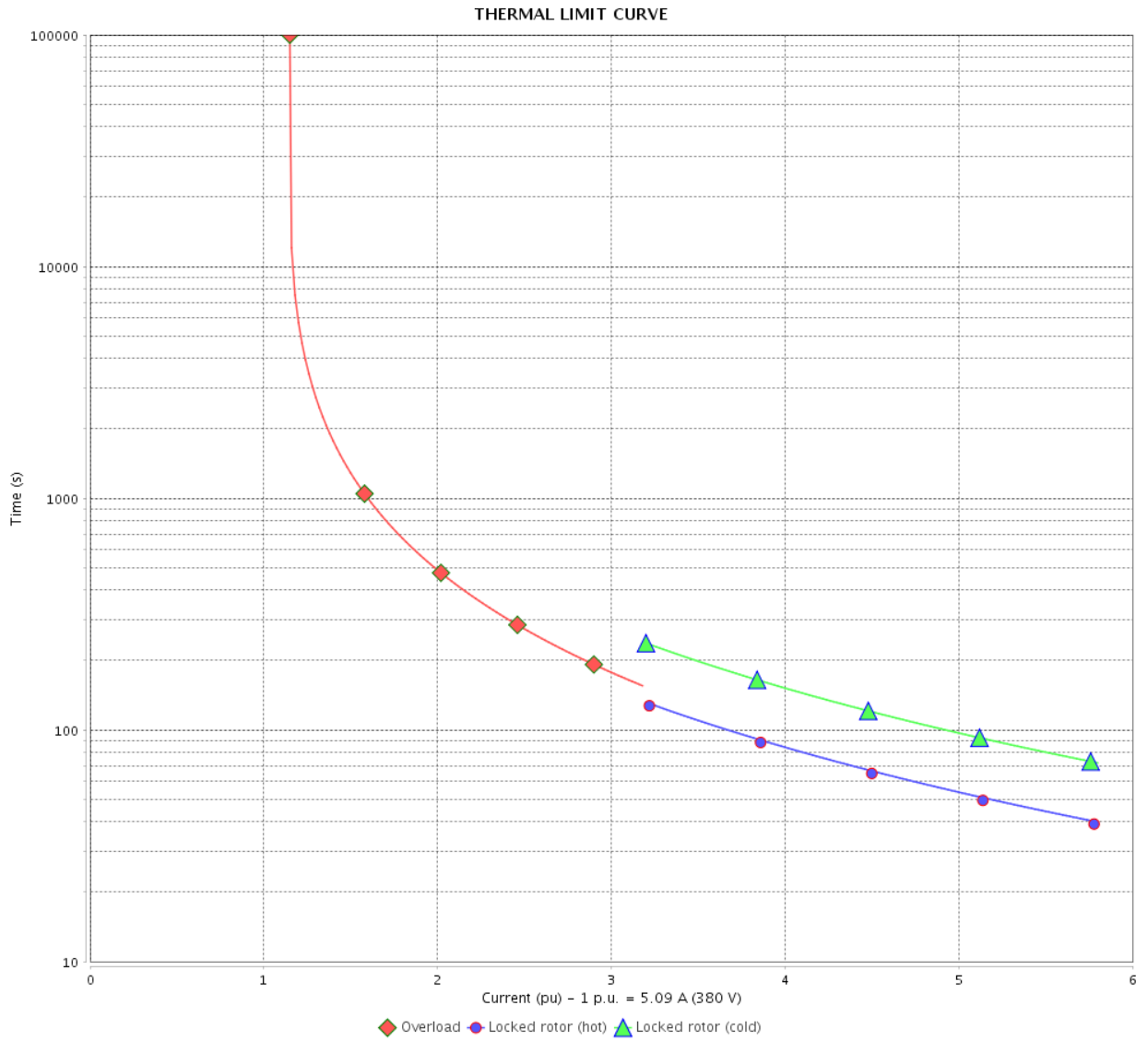
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# THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



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



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Checked by				
Date				
			Page	Revision
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# THERMAL LIMIT CURVE



## Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : NEMA Premium Efficiency Three-Phase  
Product code : 12445720  
Catalog # : 00312ET3E213TC-W22

Performance : 400 V 50 Hz 6P IE4

Rated current	: 4.92 A	Moment of inertia (J)	: 1.20 sq.ft.lb
LRC	: 6.4	Duty cycle	: Cont.(S1)
Rated torque	: 16.2 ft.lb	Insulation class	: F
Locked rotor torque	: 200 %	Service factor	: 1.00
Breakdown torque	: 240 %	Temperature rise	: 80 K
Rated speed	: 970 rpm	Design	: B

Heating constant

Cooling constant

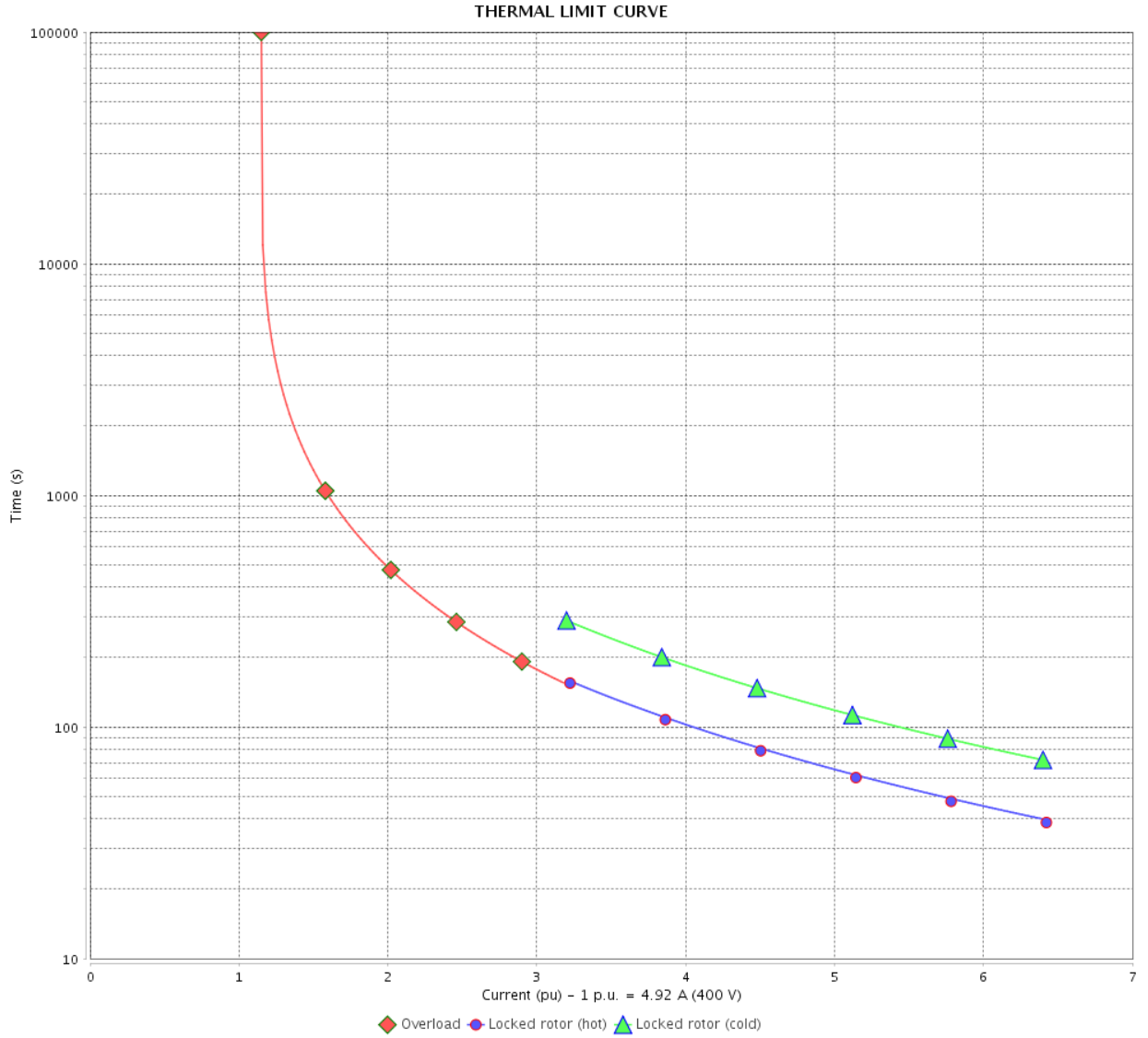
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Checked by			Page	Revision
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# THERMAL LIMIT CURVE

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 : 12445720  
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LRC	: 6.8	Duty cycle	: Cont.(S1)
Rated torque	: 16.2 ft.lb	Insulation class	: F
Locked rotor torque	: 220 %	Service factor	: 1.00
Breakdown torque	: 270 %	Temperature rise	: 80 K
Rated speed	: 970 rpm	Design	: B

Heating constant

Cooling constant

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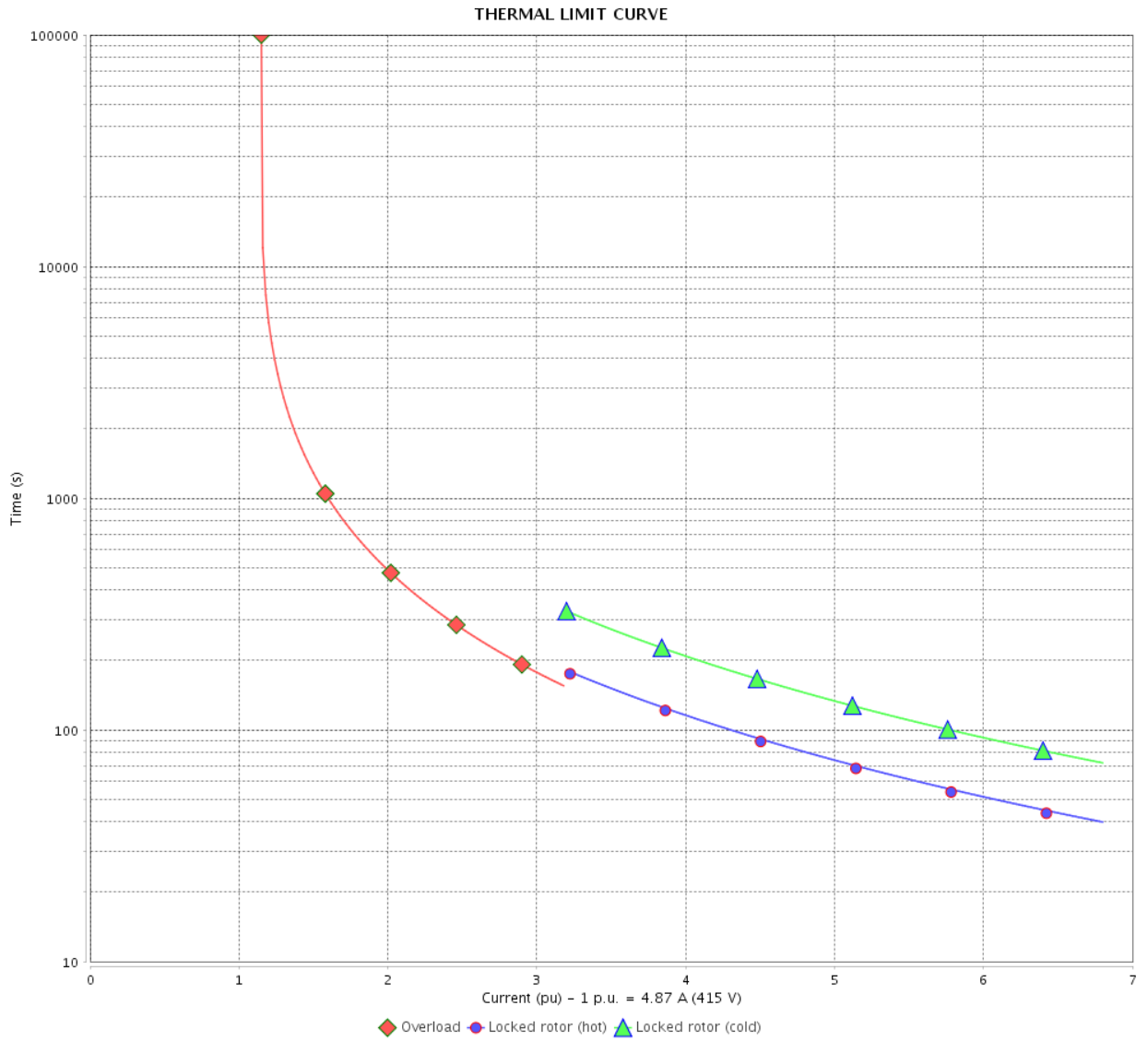


# THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



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



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Date				

# VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage

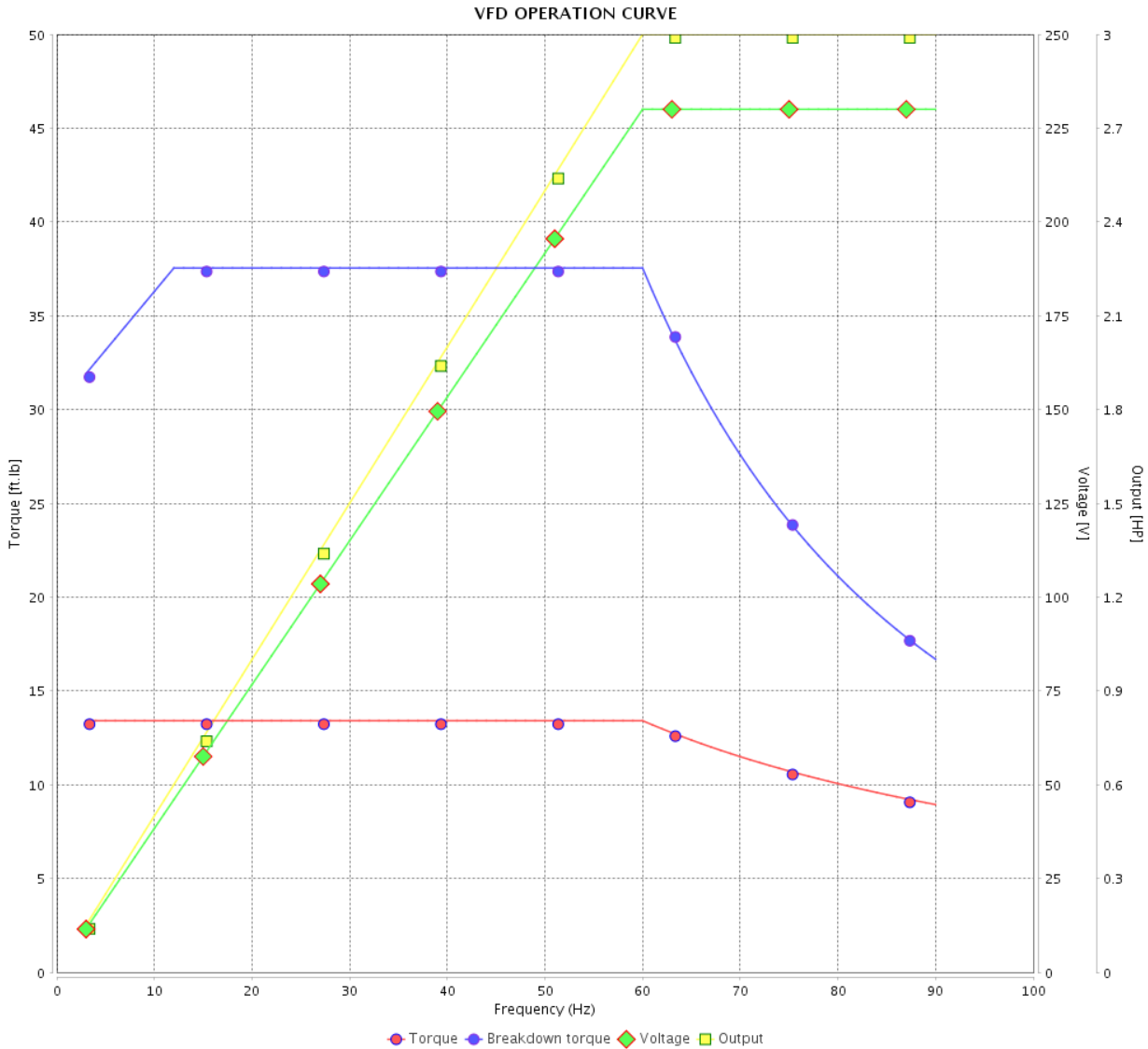


Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12445720

Catalog # : 00312ET3E213TC-W22



Performance : 230/460 V 60 Hz 6P

Rated current : 8.83/4.41 A  
 LRC : 7.0  
 Rated torque : 13.4 ft.lb  
 Locked rotor torque : 200 %  
 Breakdown torque : 280 %  
 Rated speed : 1175 rpm

Moment of inertia (J) : 1.20 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.25  
 Temperature rise : 80 K  
 Design : B

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Checked by				
Date	14/04/2022			

# VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage

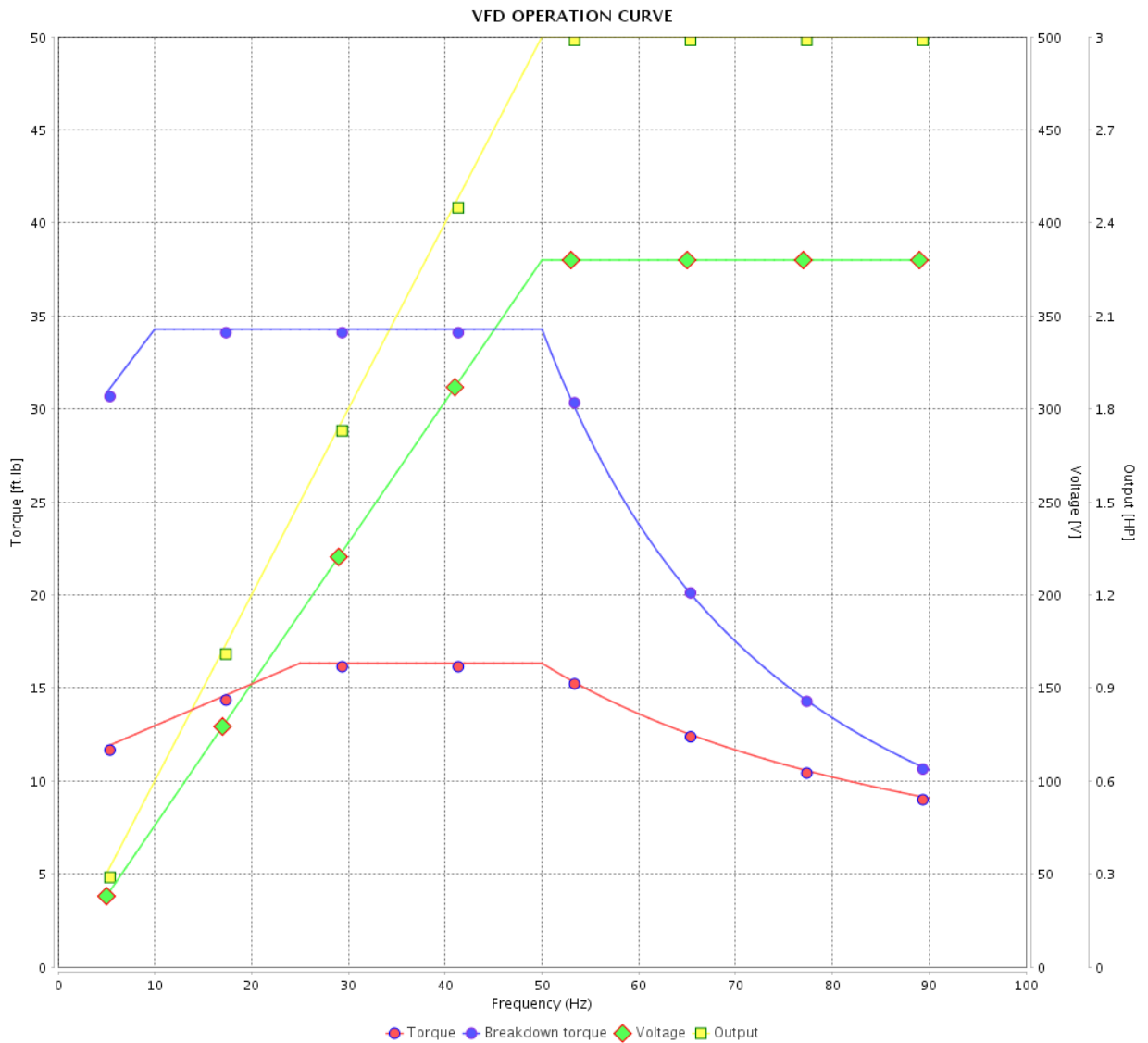


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Product code : 12445720

Catalog # : 00312ET3E213TC-W22



Performance : 380 V 50 Hz 6P IE4

Rated current : 5.09 A  
 LRC : 5.8  
 Rated torque : 16.3 ft.lb  
 Locked rotor torque : 170 %  
 Breakdown torque : 210 %  
 Rated speed : 965 rpm

Moment of inertia (J) : 1.20 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 80 K  
 Design : B

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# VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage

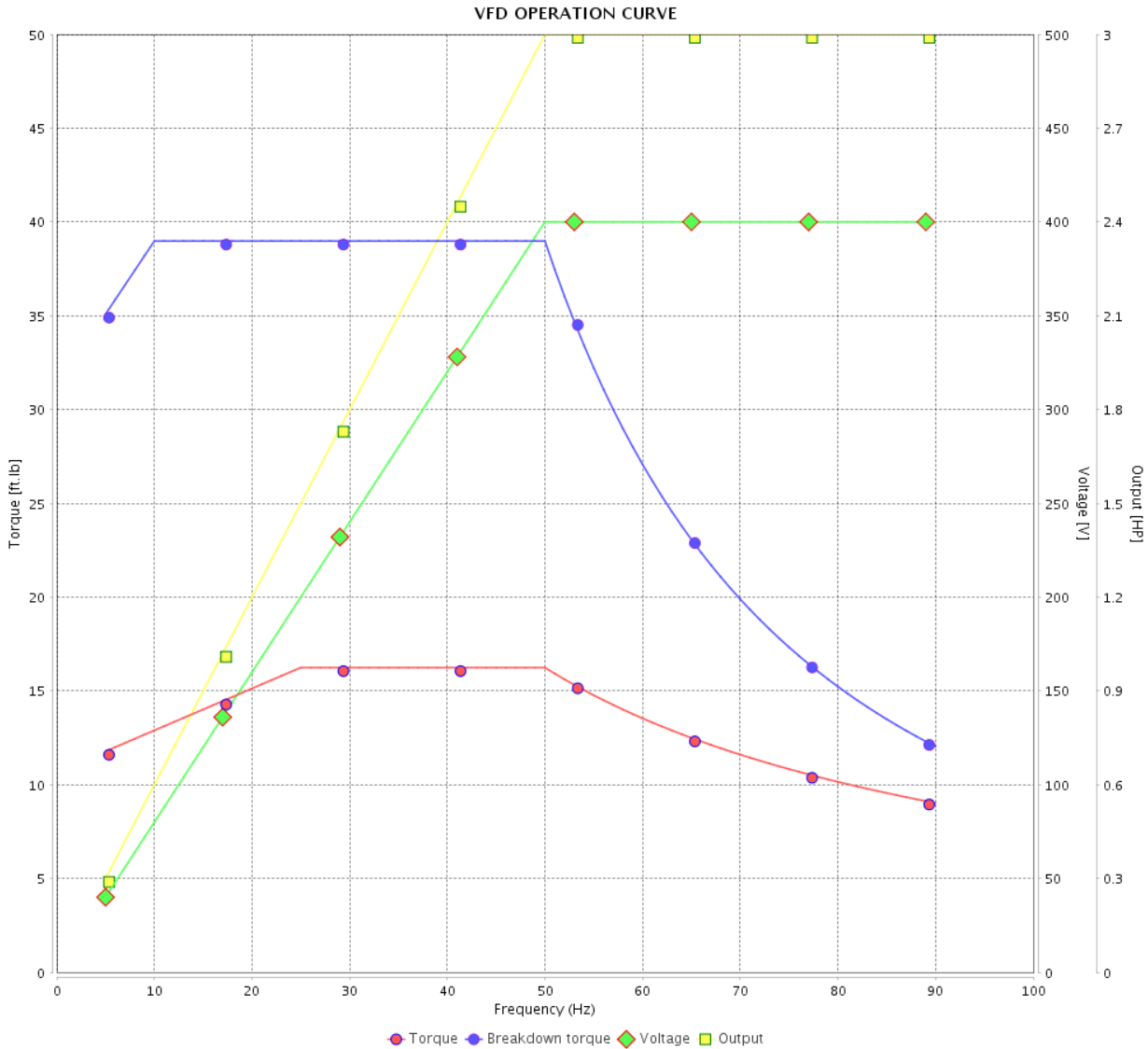


Customer : \_\_\_\_\_

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12445720

Catalog # : 00312ET3E213TC-W22



Performance : 400 V 50 Hz 6P IE4

Rated current : 4.92 A  
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 Locked rotor torque : 200 %  
 Breakdown torque : 240 %  
 Rated speed : 970 rpm

Moment of inertia (J) : 1.20 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.00  
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 Design : B

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Three Phase Induction Motor - Squirrel Cage

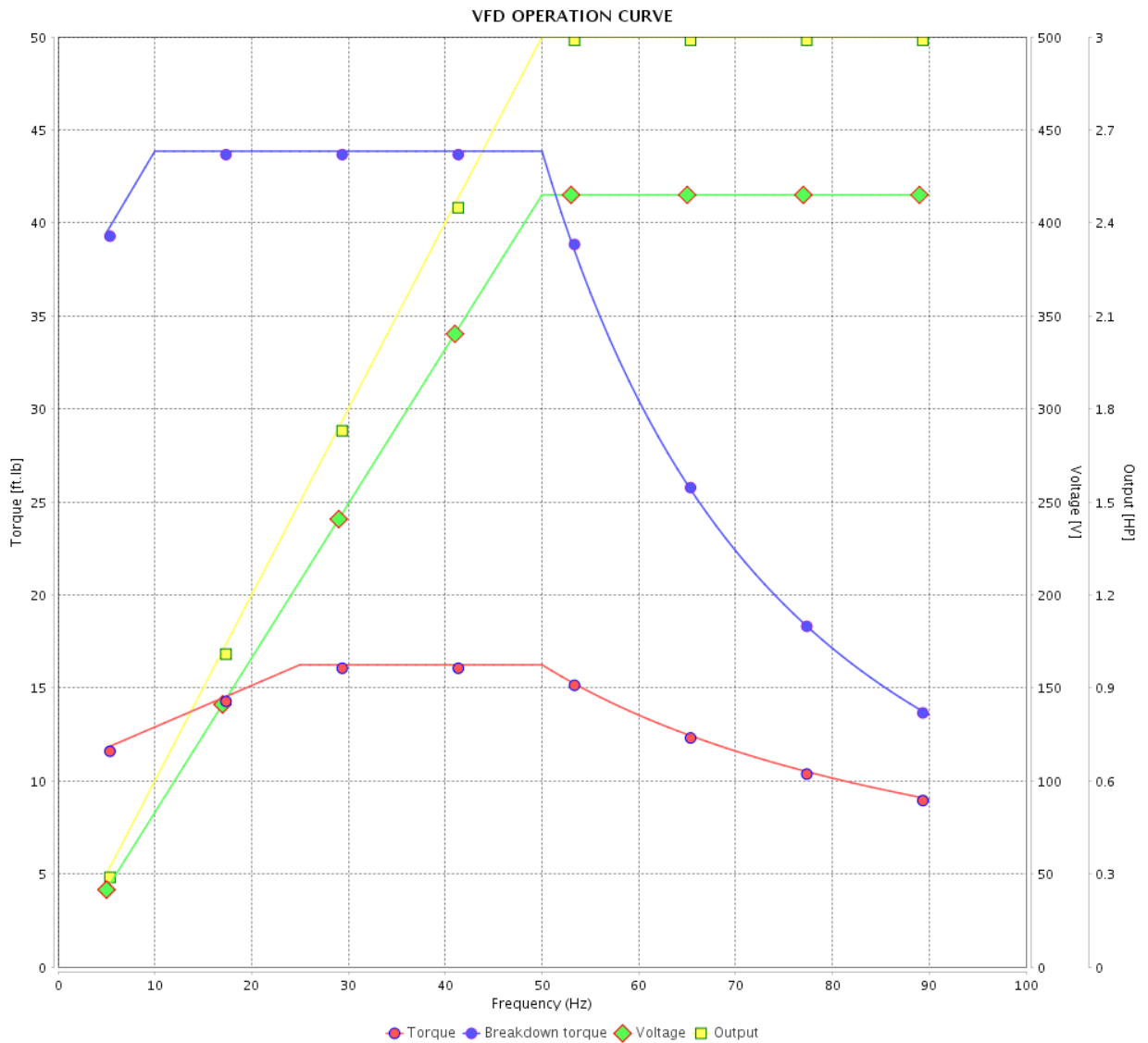


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 Rated torque : 16.2 ft.lb  
 Locked rotor torque : 220 %  
 Breakdown torque : 270 %  
 Rated speed : 970 rpm

Moment of inertia (J) : 1.20 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 80 K  
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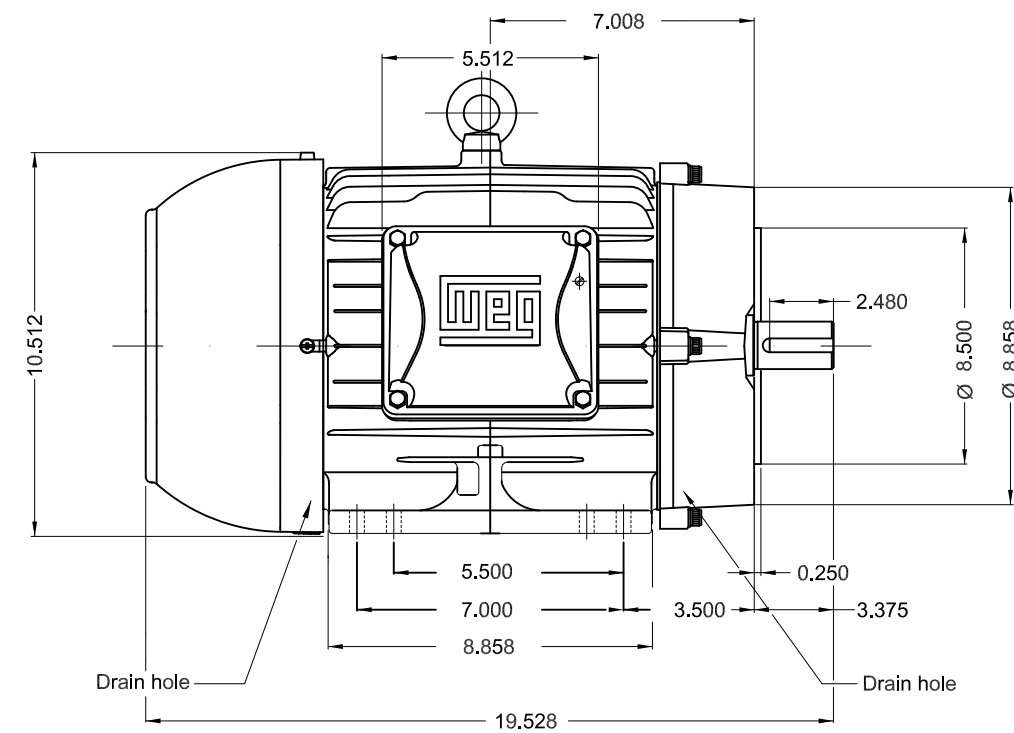
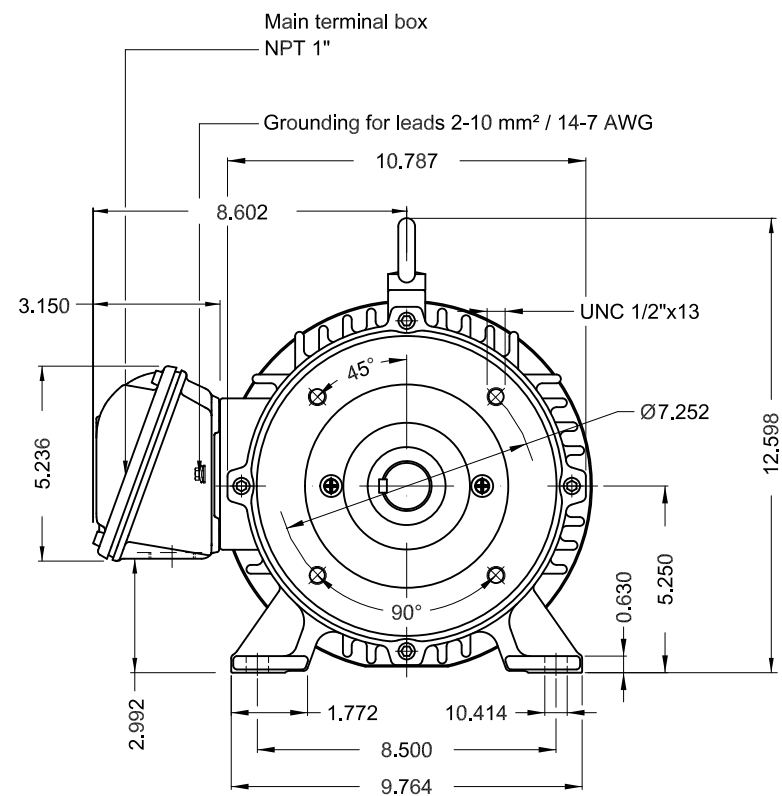
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				Revision

1 2 3 4 5 6

A

B

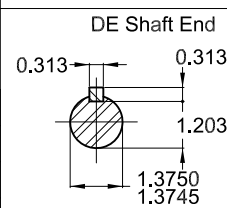
C



D

E

Bearing cap  
Color RAL 5009  
Painting plan 207A  
Mounting B34R(D)



3 HP 06 Poles 60 Hz A

ECM	LOC	SUMMARY OF MODIFICATIONS	EXECUTED	CHECKED	RELEASED	DATE	VER
EXECUTED	PIRWBUSER	THREE PH. MOTOR W22 PREM. EFF. FRAME 213/5TC IP55 TEFC					
CHECKED							
RELEASED							
REL DT.	WMO	Jaragua do Sul	Product Engineering	SHEET	1 / 1		

**PREVIEW**  
WDD



MADE IN BRAZIL  
12445720



W22

MODEL 00312ET3E213TC-W22

Inverter Duty Motor  
Severe Duty



For use on 60Hz  
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 - T4  
For use on PWM: Gr. A, B, C, D and F,  
VT 1000:1, CT 20:1, 1.00SF - T3A



FOR SAFE AREA  
Mod. TE1BFOXON  
CC029A

PH3 60Hz Fr. 213/5TC 1000m.a.s.l. IP55 TEFC 160lb

V 230/460

A 8.83/4.41

HP 3.0

kW 2.2

SF 1.25

SFA 11.0/5.51

RPM 1175

PF 0.70

AMB 40°C

INS cl. F DT80K

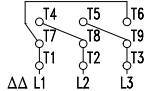
NEMA NOM EFF 89.5%

DUTY CONT.

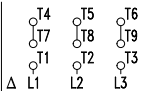
DES B Code K

USABLE @208V 9.76A SF 1.15 SFA 11.2

3.0HP 2.2kW 50Hz 380V 5.09A 965RPM SF 1.00 EFF 87.5% (IE4)



208-230V



380//460V



MOBIL POLYREX EM