

DATA SHEET

Three Phase Induction Motor - Squirrel Cage



Customer					
Product line		: NEMA Premium Efficiency Three-Phase	Product code :		12821974
			Catalog # :		00312ET3ER213TC-W22
Frame		: 213TC	Cooling method		: IC411 - TEFC
Insulation class		: F	Mounting		: W-6
Duty cycle		: Cont.(S1)	Rotation ¹		: Both (CW and CCW)
Ambient temperature		: -20°C to +40°C	Starting method		: Direct On Line
Altitude		: 1000 m.a.s.l.	Approx. weight ²		: 147 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 ²	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		: <u>Drive end</u> 6308 ZZ	<u>Non drive end</u> 6207 ZZ	Foundation loads	
Sealing		: V'Ring	V'Ring	Max. traction : 173 lb	
Lubrication interval		: -	-	Max. compression : 321 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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TORQUE AND CURRENT VS SPEED CURVE

Three Phase Induction Motor - Squirrel Cage



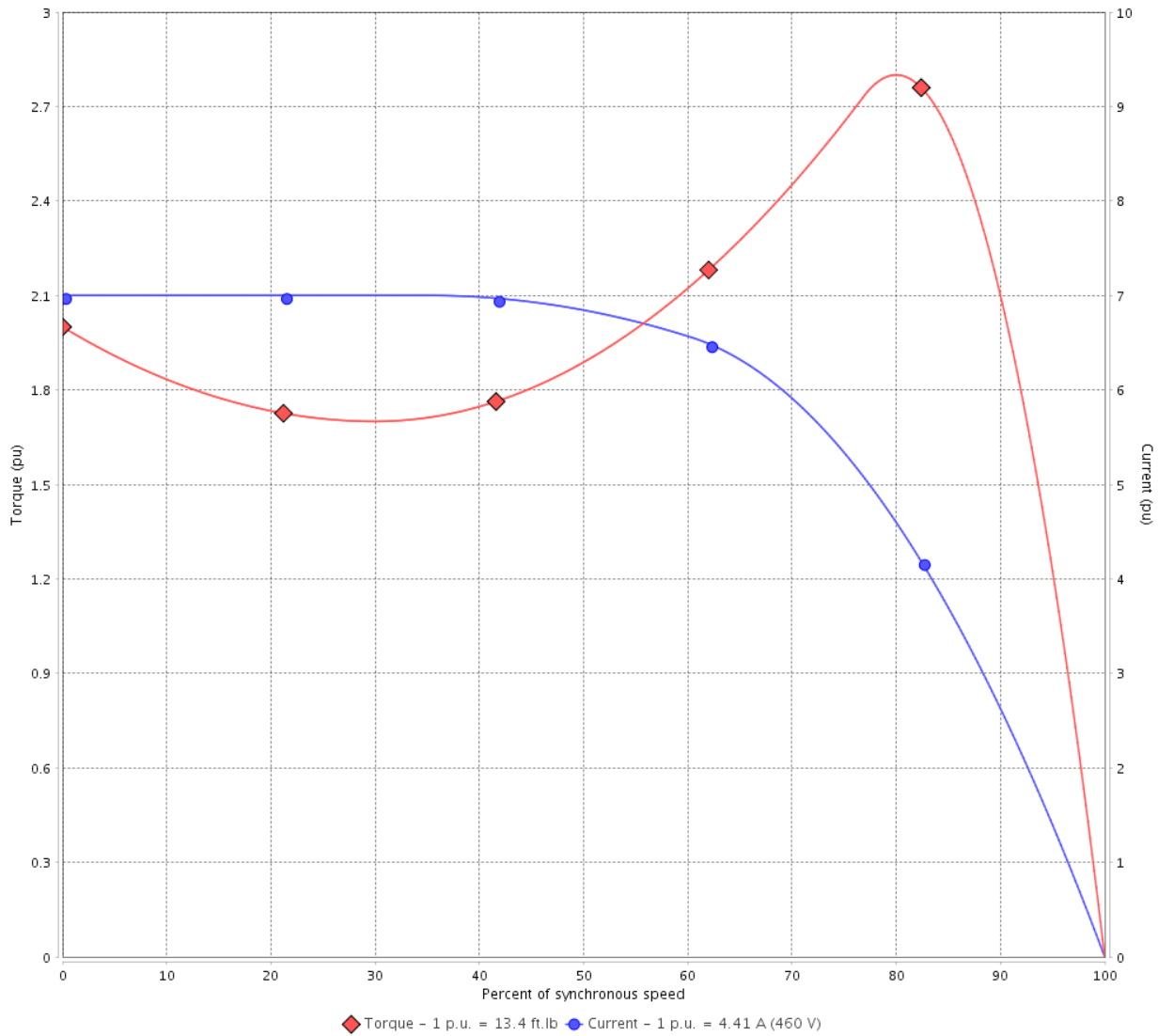
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12821974

Catalog # : 00312ET3ER213TC-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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TORQUE AND CURRENT VS SPEED CURVE



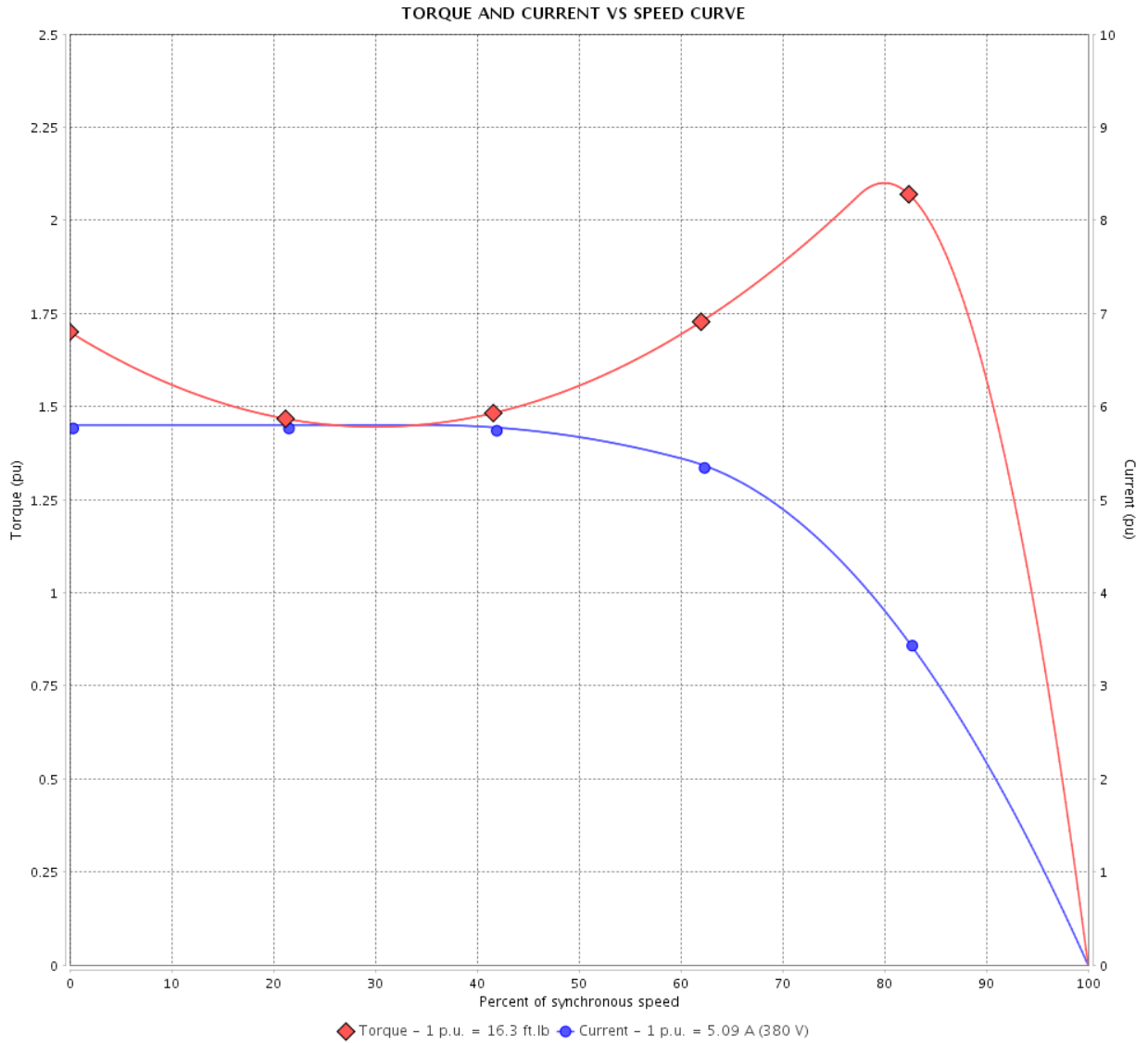
Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12821974

Catalog # : 00312ET3ER213TC-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



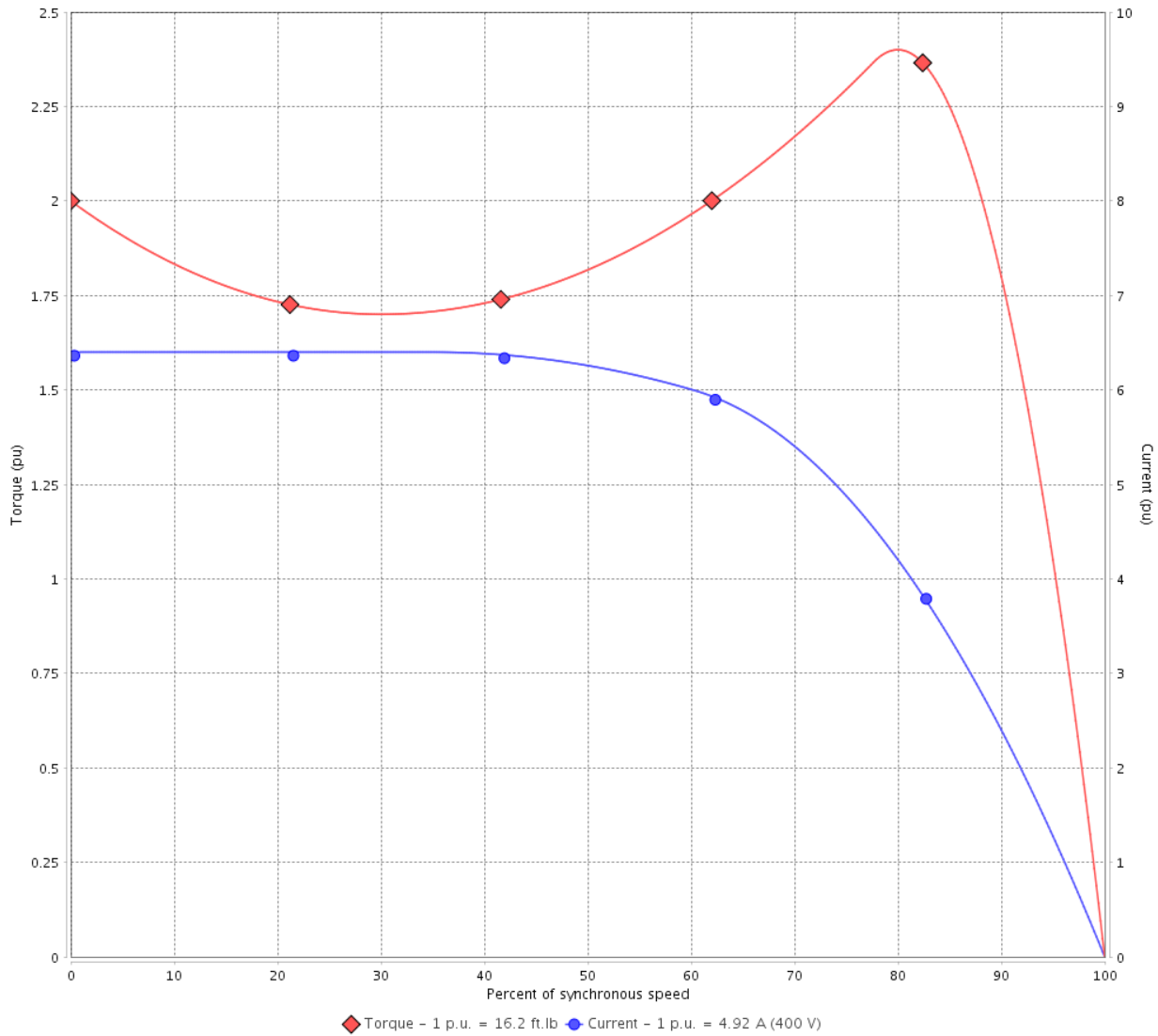
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12821974

Catalog # : 00312ET3ER213TC-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



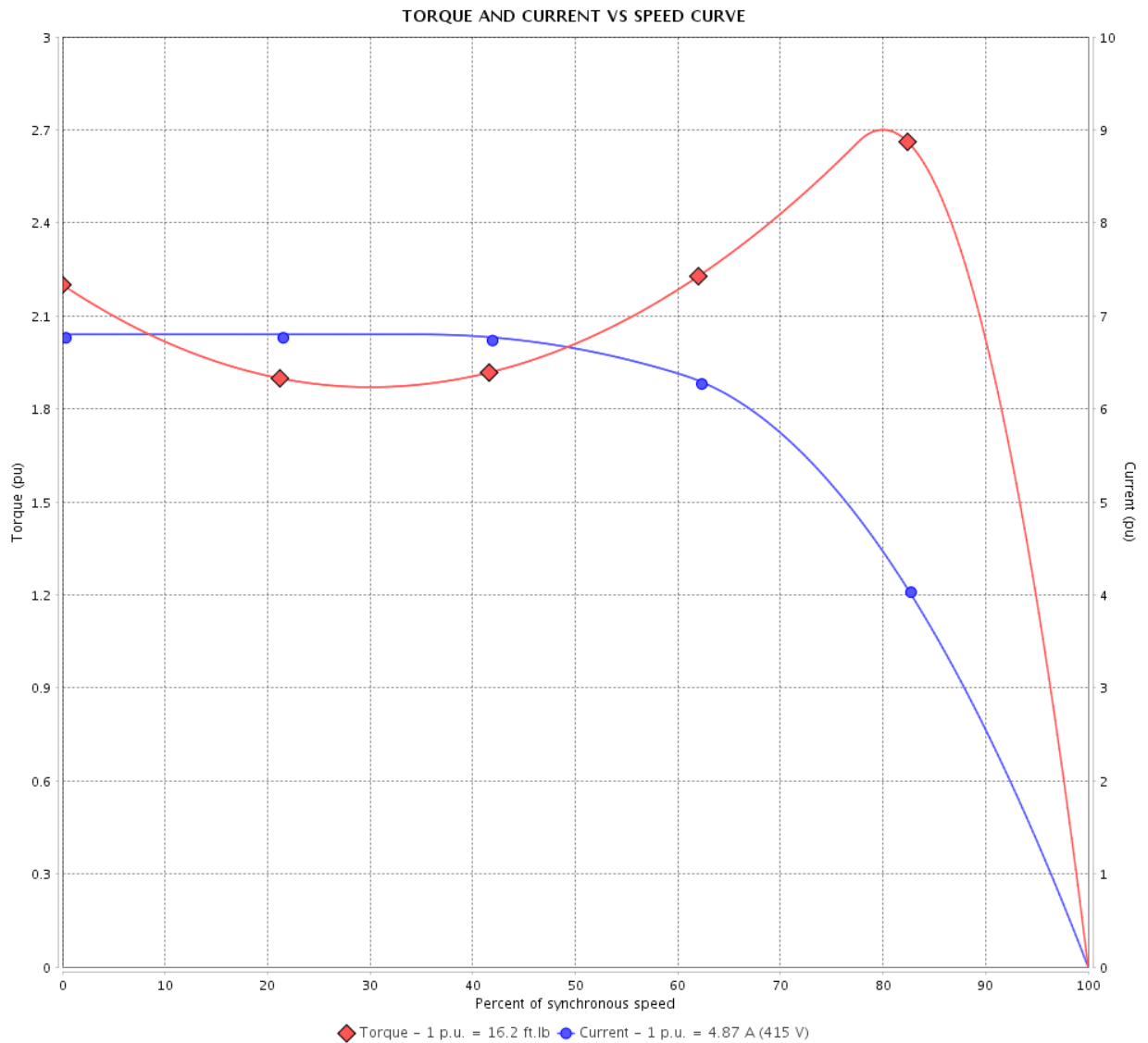
Three Phase Induction Motor - Squirrel Cage

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Performance : 415 V 50 Hz 6P IE4

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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

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

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LOAD PERFORMANCE CURVE

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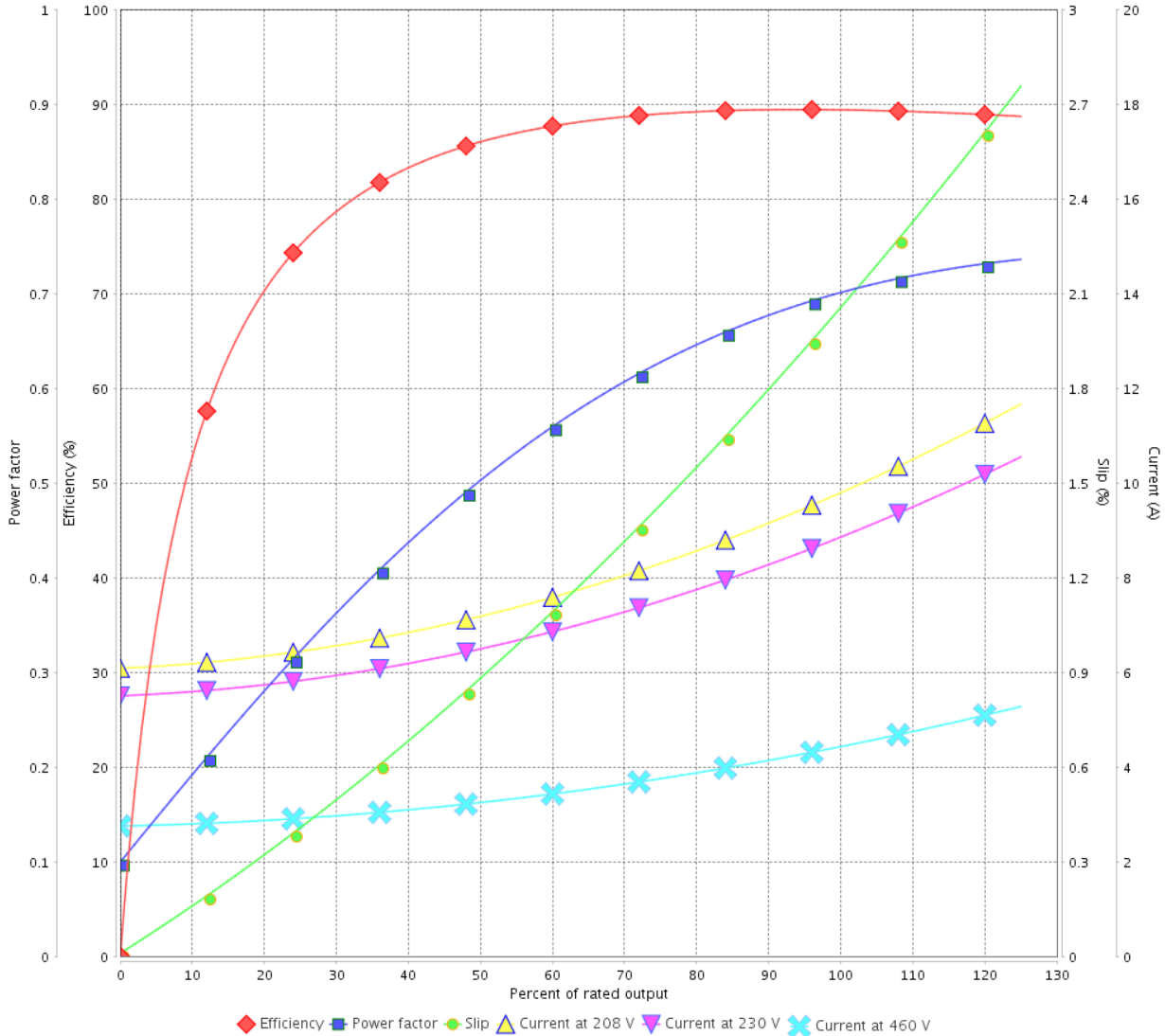
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12821974

Catalog # : 00312ET3ER213TC-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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Date				

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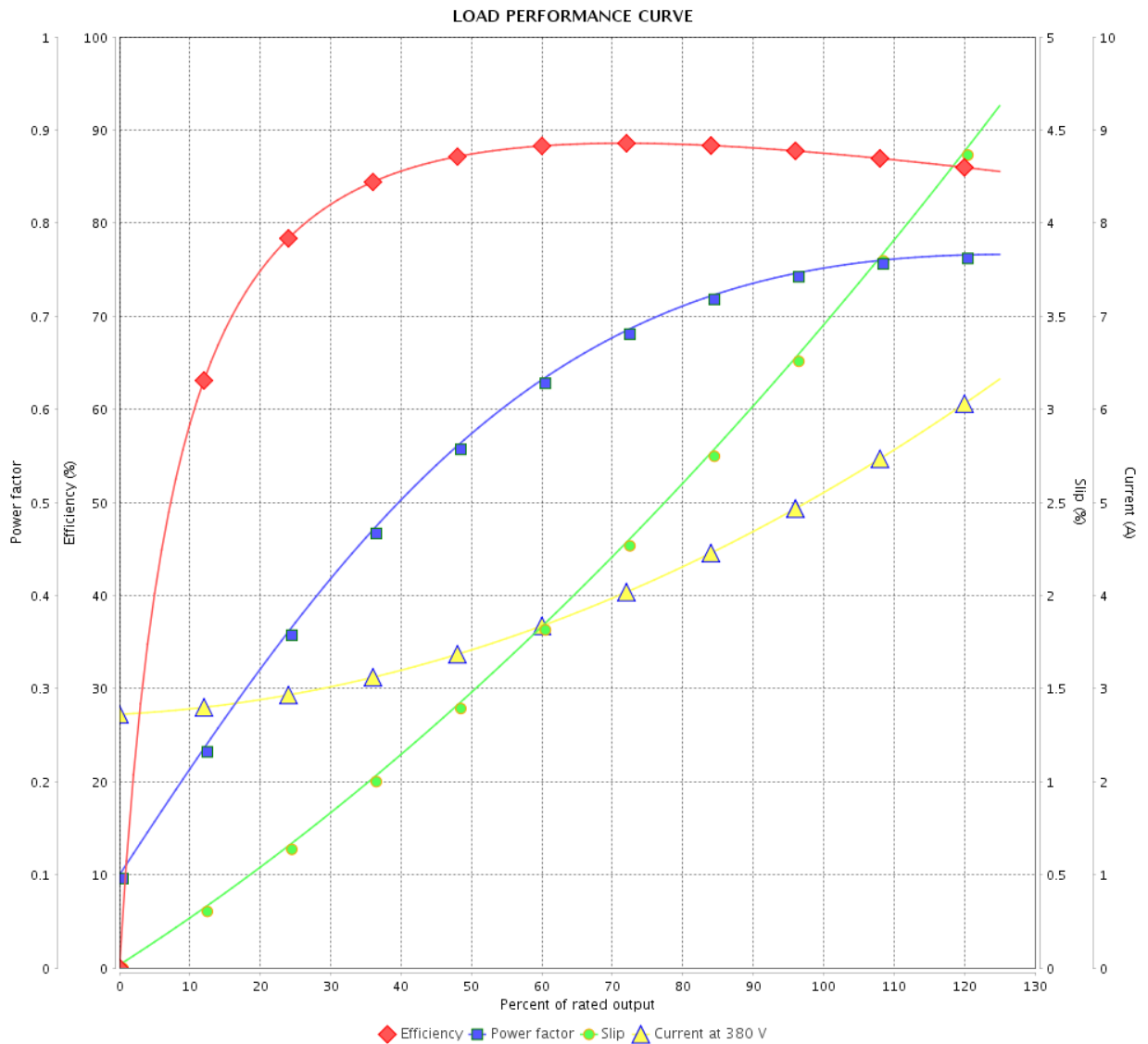


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Performance : 380 V 50 Hz 6P IE4

Rated current : 5.09 A
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 Locked rotor torque : 170 %
 Breakdown torque : 210 %
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 Duty cycle : Cont.(S1)
 Insulation class : F
 Service factor : 1.00
 Temperature rise : 80 K
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Three Phase Induction Motor - Squirrel Cage



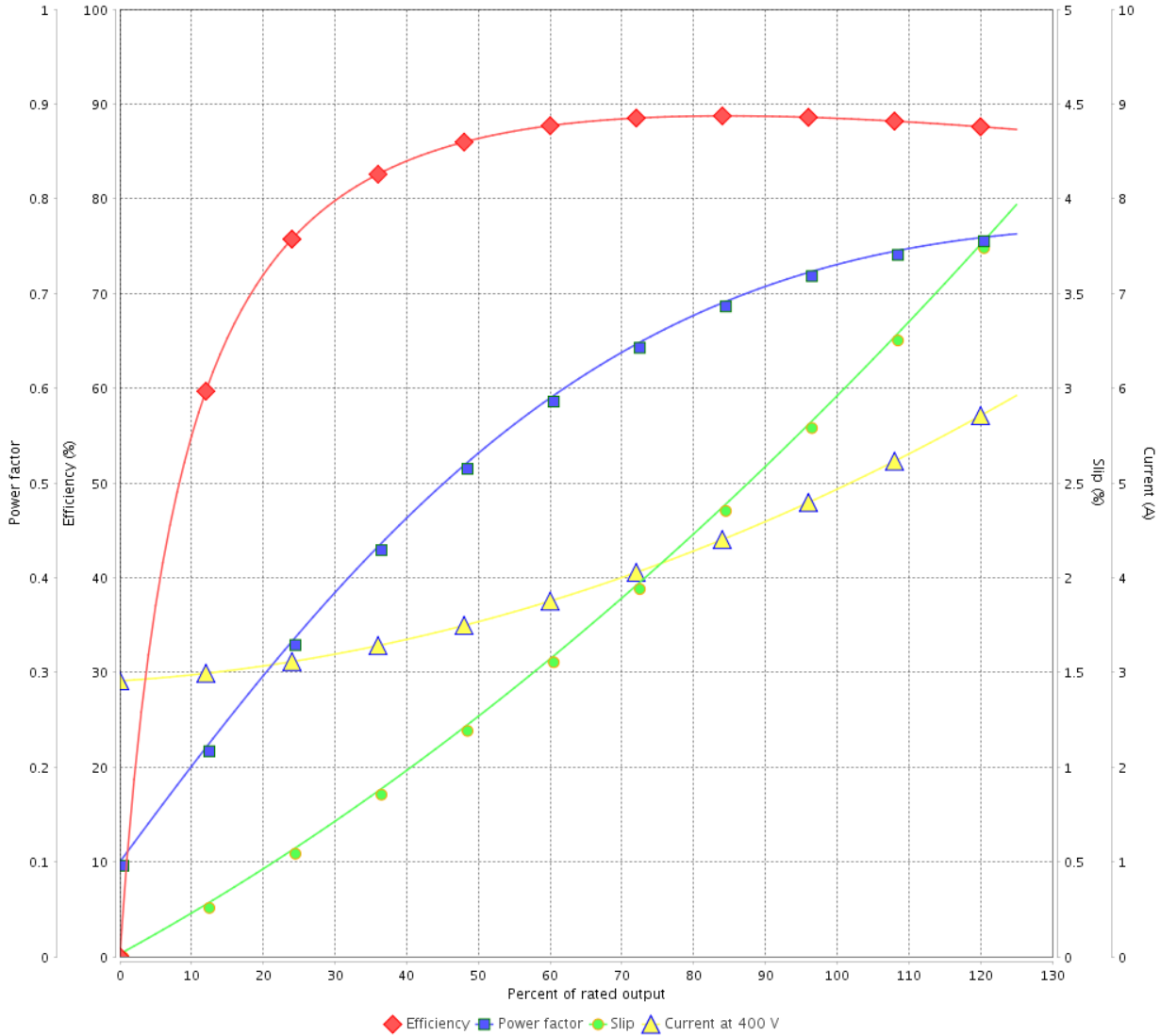
Customer :

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Catalog # : 00312ET3ER213TC-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

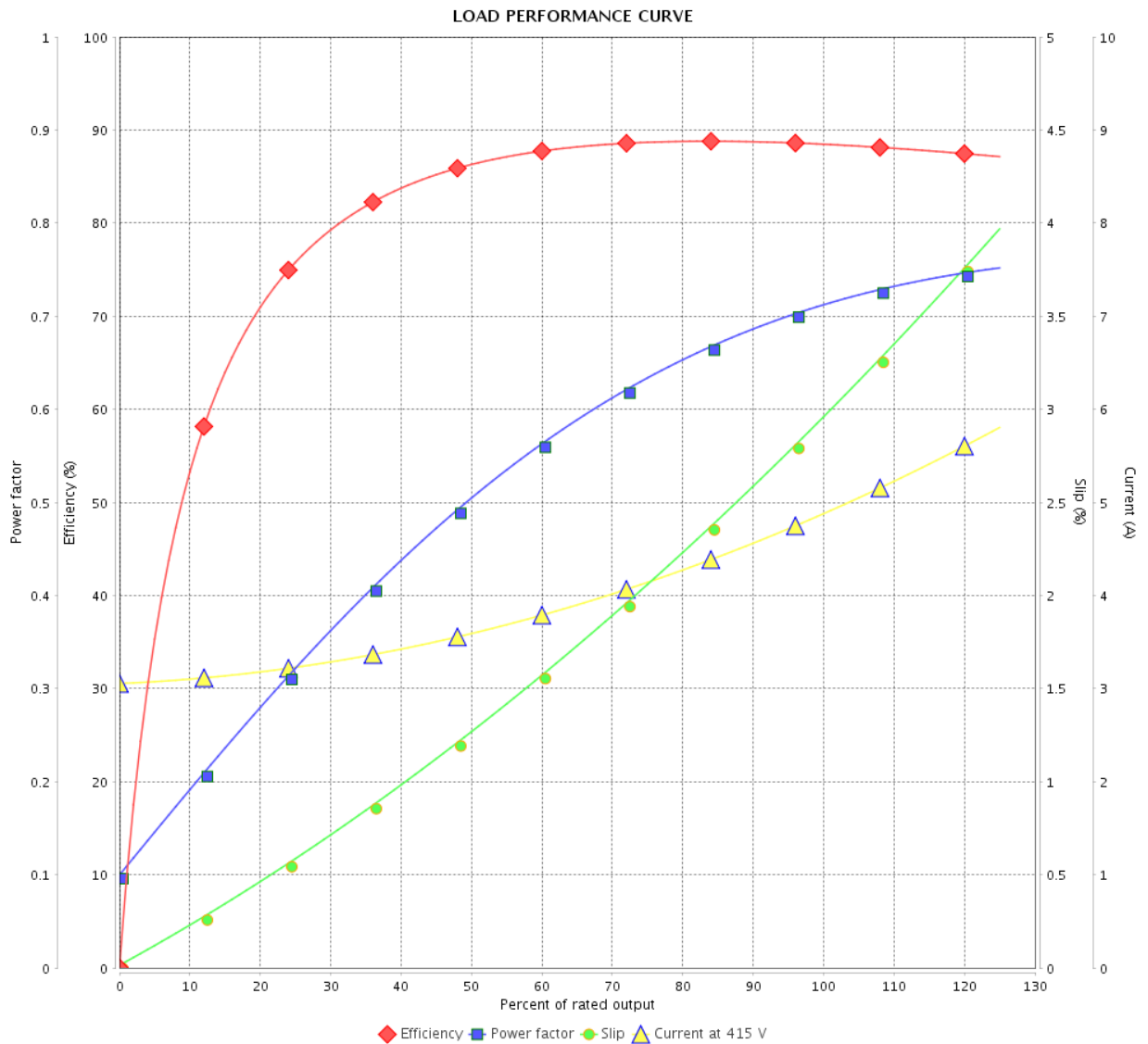


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 Breakdown torque : 270 %
 Rated speed : 970 rpm

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 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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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

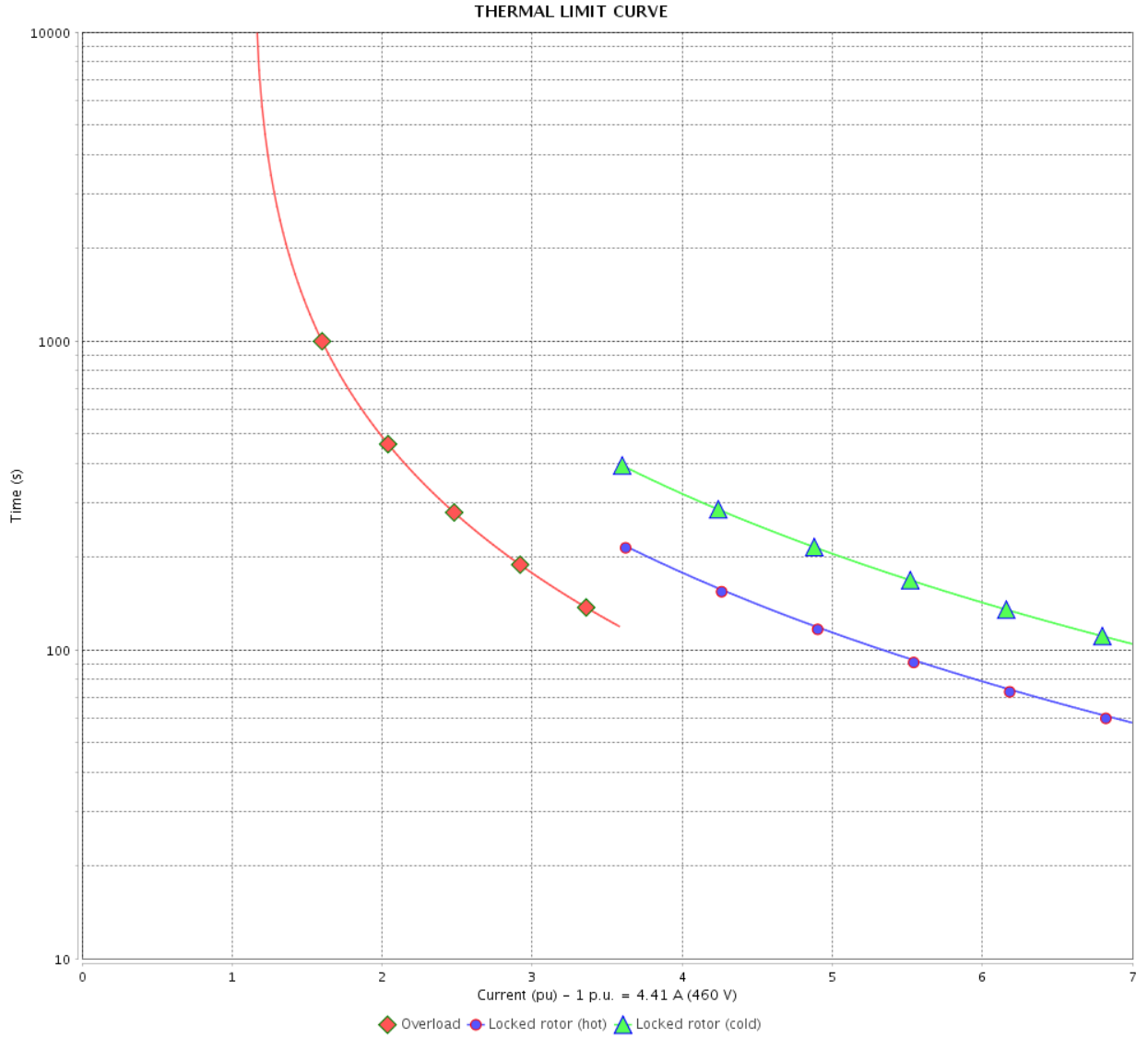
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THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



Customer : _____



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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

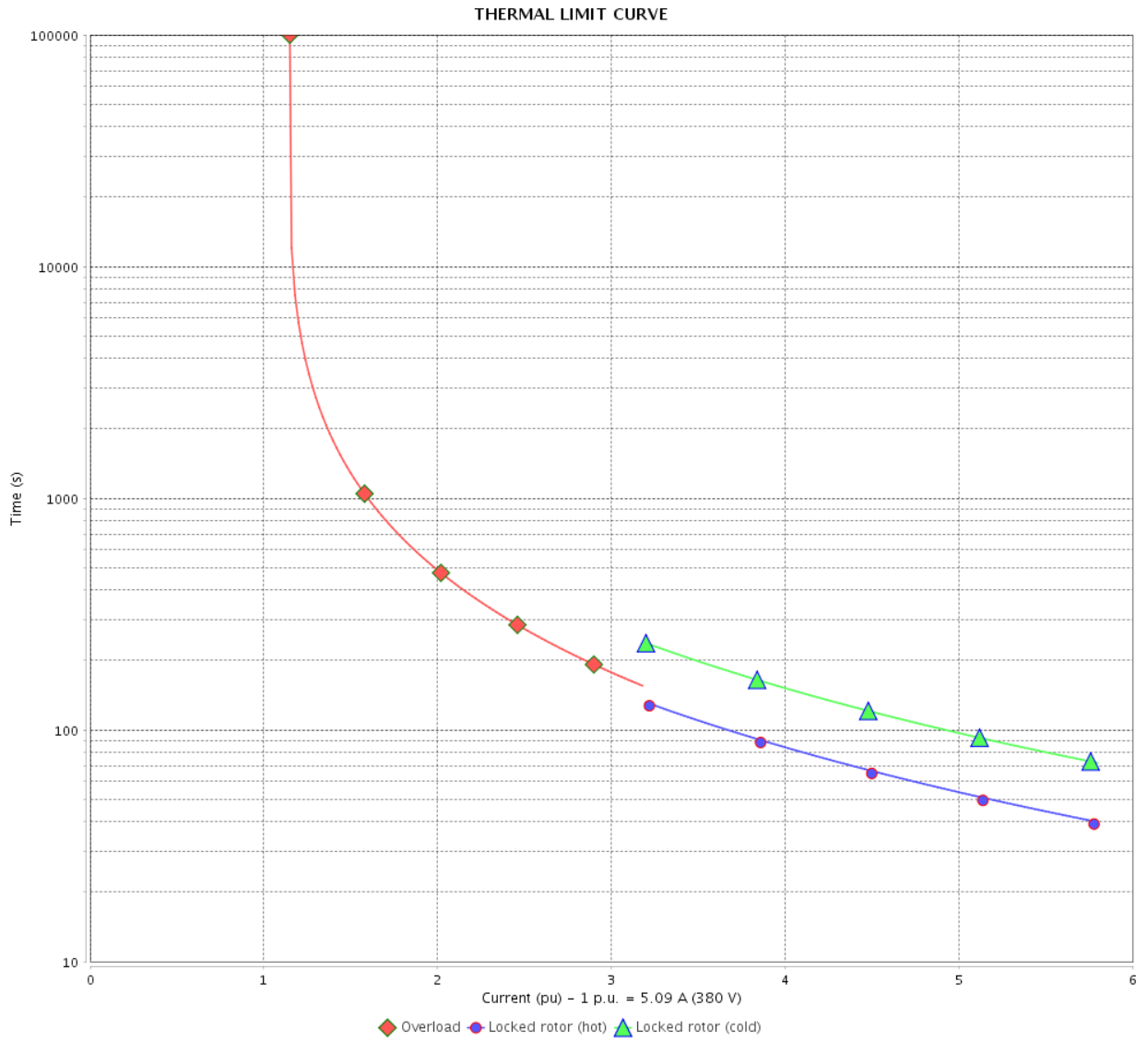
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Customer : _____



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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

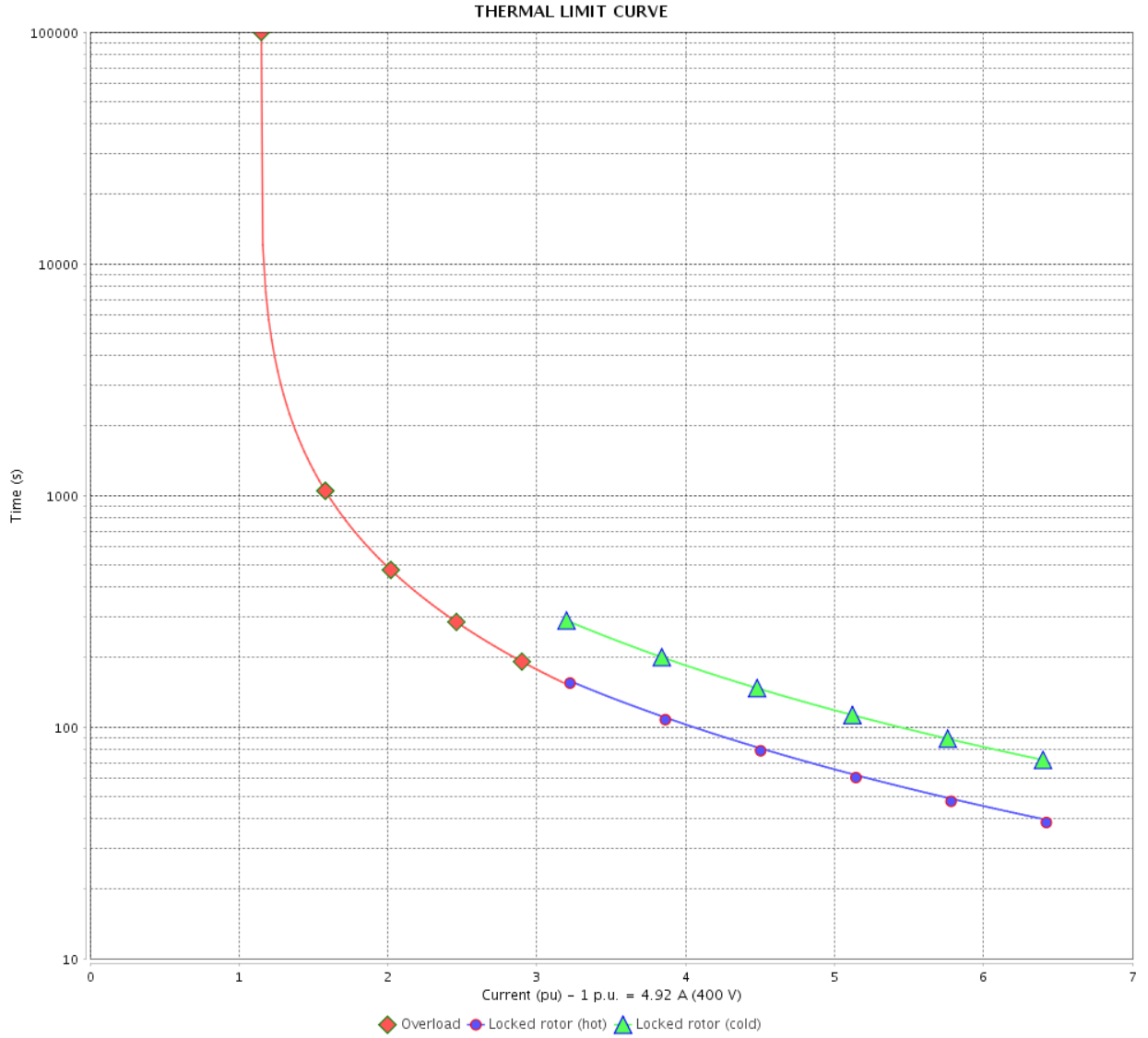
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Checked by			Page	Revision
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THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



Customer : _____



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THERMAL LIMIT CURVE



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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

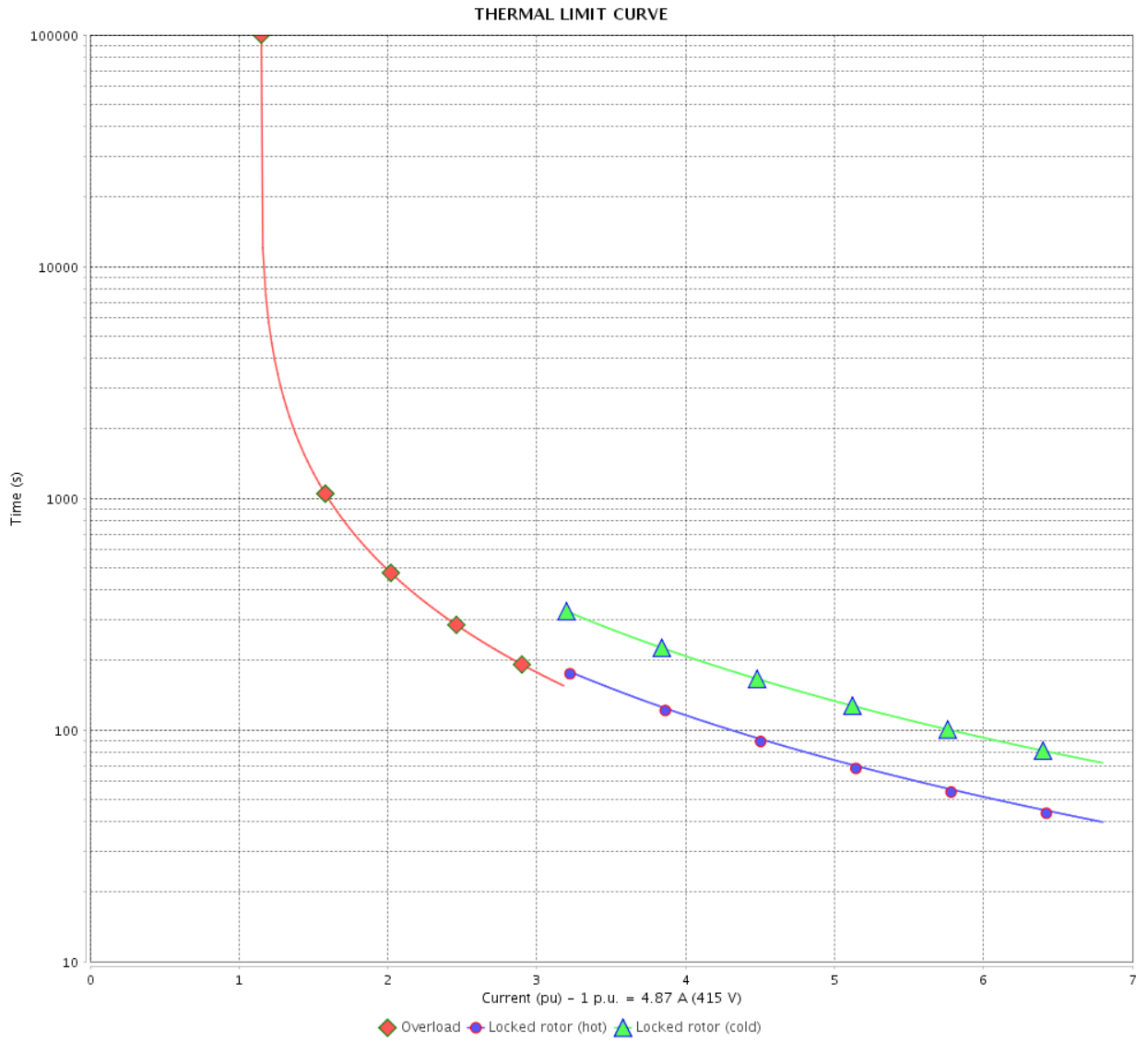
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THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



Customer : _____



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Date				

VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage

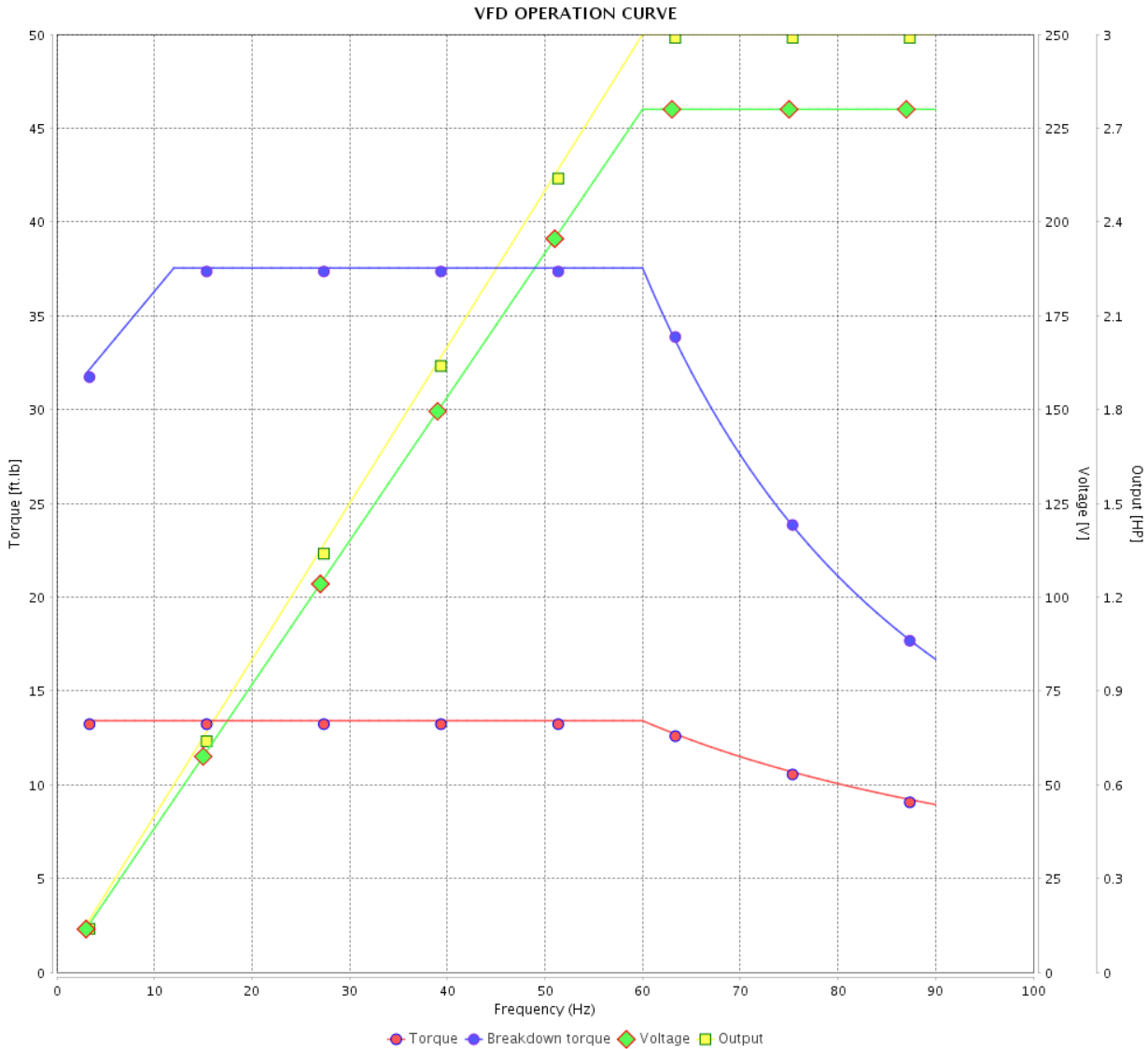


Customer :

Product line : NEMA Premium Efficiency Three-Phase

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Catalog # : 00312ET3ER213TC-W22



Performance : 230/460 V 60 Hz 6P

Rated current : 8.83/4.41 A
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 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

Rev.	Changes Summary	Performed	Checked	Date
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VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage

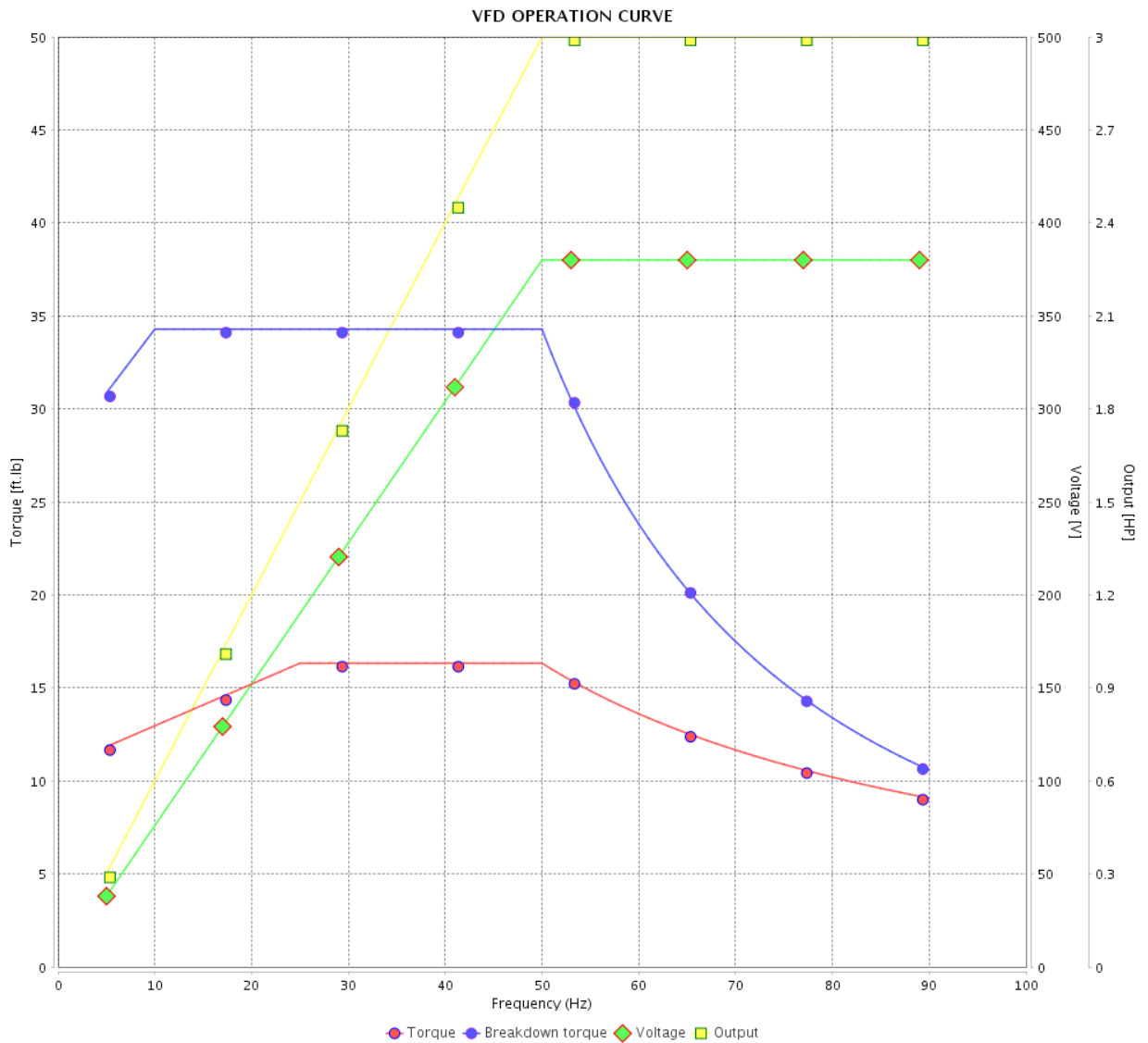


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Performance : 380 V 50 Hz 6P IE4

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 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

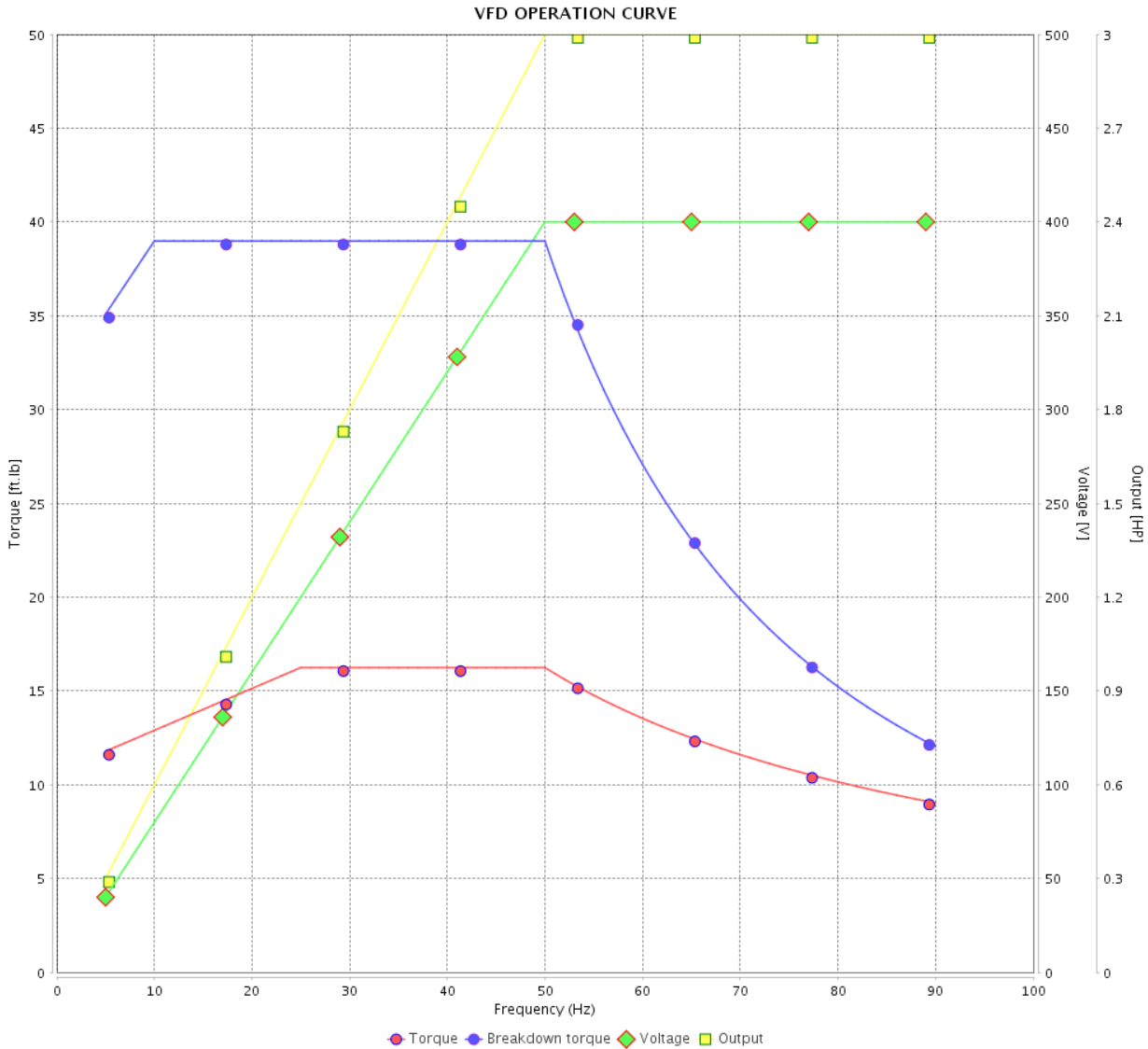


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Performance : 400 V 50 Hz 6P IE4

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

Moment of inertia (J) : 1.20 sq.ft.lb
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 Insulation class : F
 Service factor : 1.00
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VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage

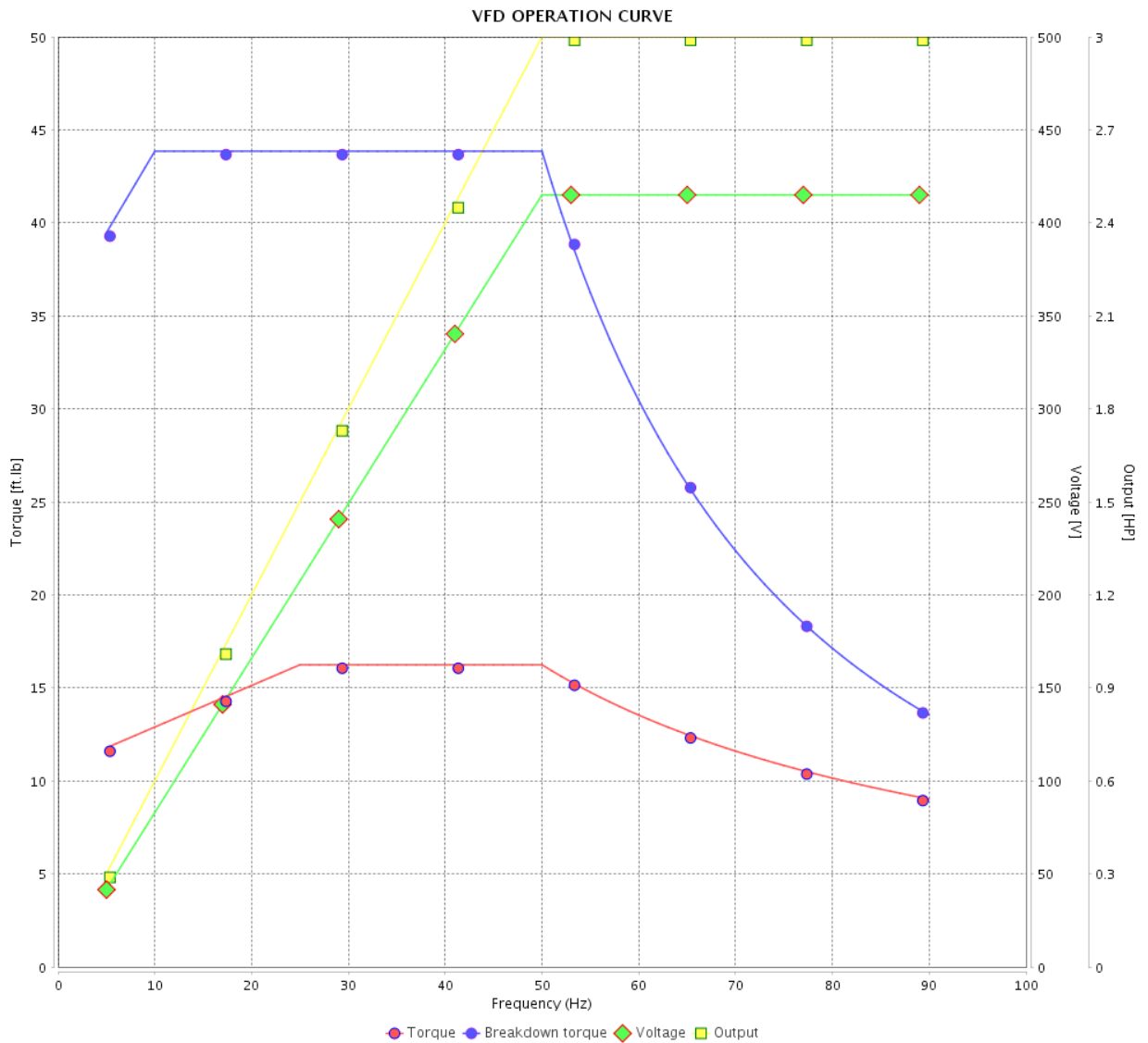


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 Design : B

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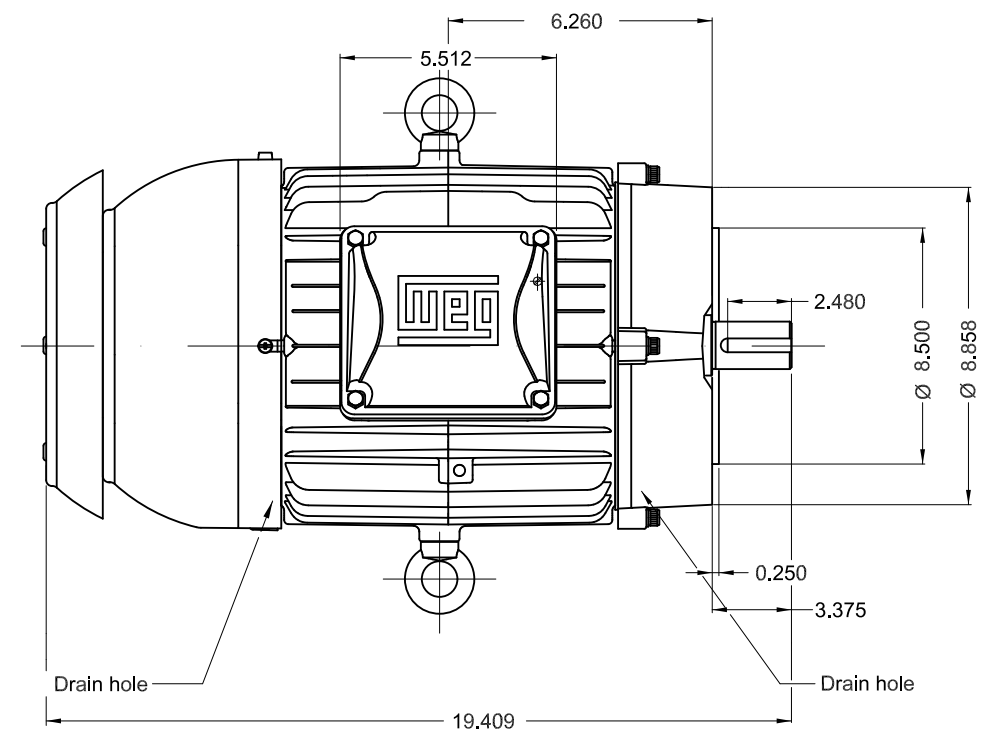
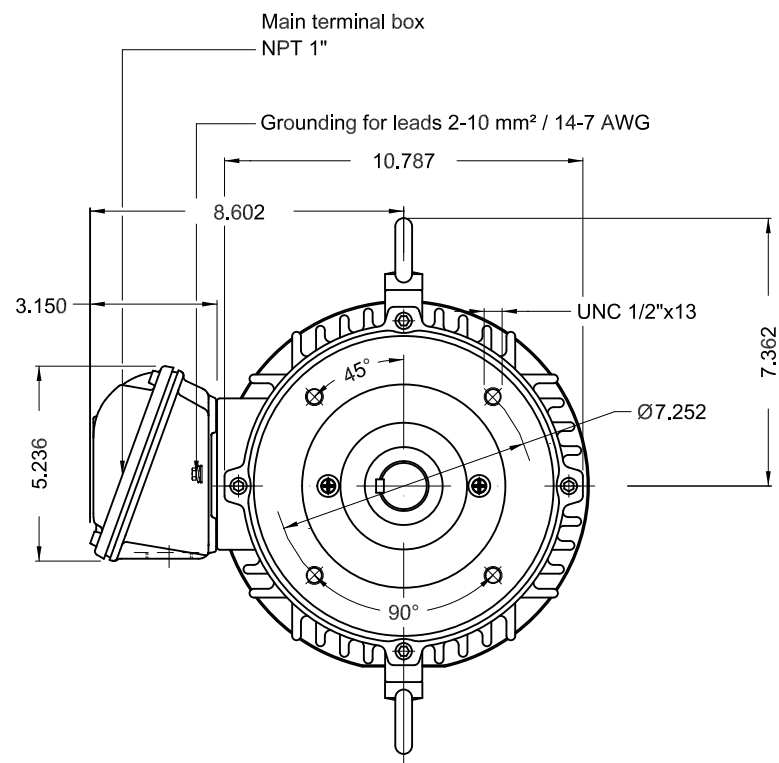
A

B

C

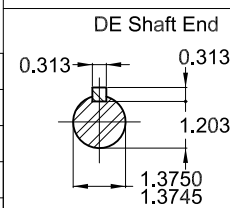
D

E



3 HP 06 Poles 60 Hz A

Bearing cap
Color RAL 5009
Painting plan 207A
Mounting NEMA W-6
Mounting V18



ECM	LOC	SUMMARY OF MODIFICATIONS	EXECUTED	CHECKED	RELEASED	DATE	VER
EXECUTED	PIRWBUSER	THREE PH. MOTOR W22 PREM. EFF. FRAME 213TC IP55 TEFC					
CHECKED							
RELEASED							
REL DT.							

PREVIEW
WDD



WMO Jaragua do Sul Product Engineering SHEET 1 / 1

Dimensions in inches

XME A3

MADE IN BRAZIL
12821974



W22

MODEL 00312ET3ER213TC-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. 213TC 1000m.a.s.l. IP55 TEFC 152lb

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)

