

DATA SHEET

Three Phase Induction Motor - Squirrel Cage



Customer							
Product line	: NEMA Premium Efficiency Three-Phase	Product code	: 14325585				
		Catalog #	: 06012ST3QIE404TC-W22				
Frame	: 404/5TC	Cooling method	: IC411 - TEFC				
Insulation class	: F	Mounting	: F-1				
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	: 1036 lb				
Protection degree	: IP55	Moment of inertia (J)	: 36.9 sq.ft.lb				
Design	: B						
Output [HP]	60	50	50	50	60	60	60
Poles	6	6	6	6	6	6	6
Frequency [Hz]	60	50	50	50	50	50	50
Rated voltage [V]	460	380	400	415	380	400	415
Rated current [A]	69.5	70.1	67.3	64.8	85.1	80.3	78.3
L. R. Amperes [A]	452	421	444	467	426	442	470
LRC [A]	6.5x(Code G)	6.0x(Code F)	6.6x(Code G)	7.2x(Code H)	5.0x(Code E)	5.5x(Code F)	6.0x(Code G)
No load current [A]	23.0	23.0	24.0	25.0	23.0	24.0	25.0
Rated speed [RPM]	1185	985	985	985	975	980	985
Slip [%]	1.25	1.50	1.50	1.50	2.50	2.00	1.50
Rated torque [ft.lb]	266	267	267	267	323	322	320
Locked rotor torque [%]	200	180	220	229	150	180	190
Breakdown torque [%]	229	220	240	260	180	200	220
Service factor	1.25	1.00	1.00	1.00	1.00	1.00	1.00
Temperature rise	80 K	80 K	80 K	80 K	105 K	80 K	80 K
Locked rotor time	36s (cold) 20s (hot)	28s (cold) 16s (hot)	28s (cold) 16s (hot)	28s (cold) 16s (hot)	28s (cold) 16s (hot)	28s (cold) 16s (hot)	28s (cold) 16s (hot)
Noise level ²	68.0 dB(A)	64.0 dB(A)	64.0 dB(A)	64.0 dB(A)	64.0 dB(A)	64.0 dB(A)	64.0 dB(A)
Efficiency (%)	25%	94.0	93.3	93.4	93.4	94.0	94.0
	50%	94.1	93.3	93.3	93.3	93.6	93.6
	75%	94.5	93.4	93.7	93.7	93.0	93.6
	100%	94.5	93.3	93.4	93.4	92.4	93.0
Power Factor	25%	0.49	0.49	0.46	0.43	0.55	0.52
	50%	0.74	0.73	0.70	0.67	0.79	0.77
	75%	0.82	0.83	0.82	0.79	0.85	0.84
	100%	0.86	0.86	0.85	0.85	0.87	0.87
Bearing type	: Drive end 6316 C3	Non drive end 6314 C3	Foundation loads				
Sealing	: Inpro/Seal	Inpro/Seal	Max. traction : 1594 lb				
Lubrication interval	: 16000 h	17000 h	Max. compression : 2630 lb				
Lubricant amount	: 34 g	27 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



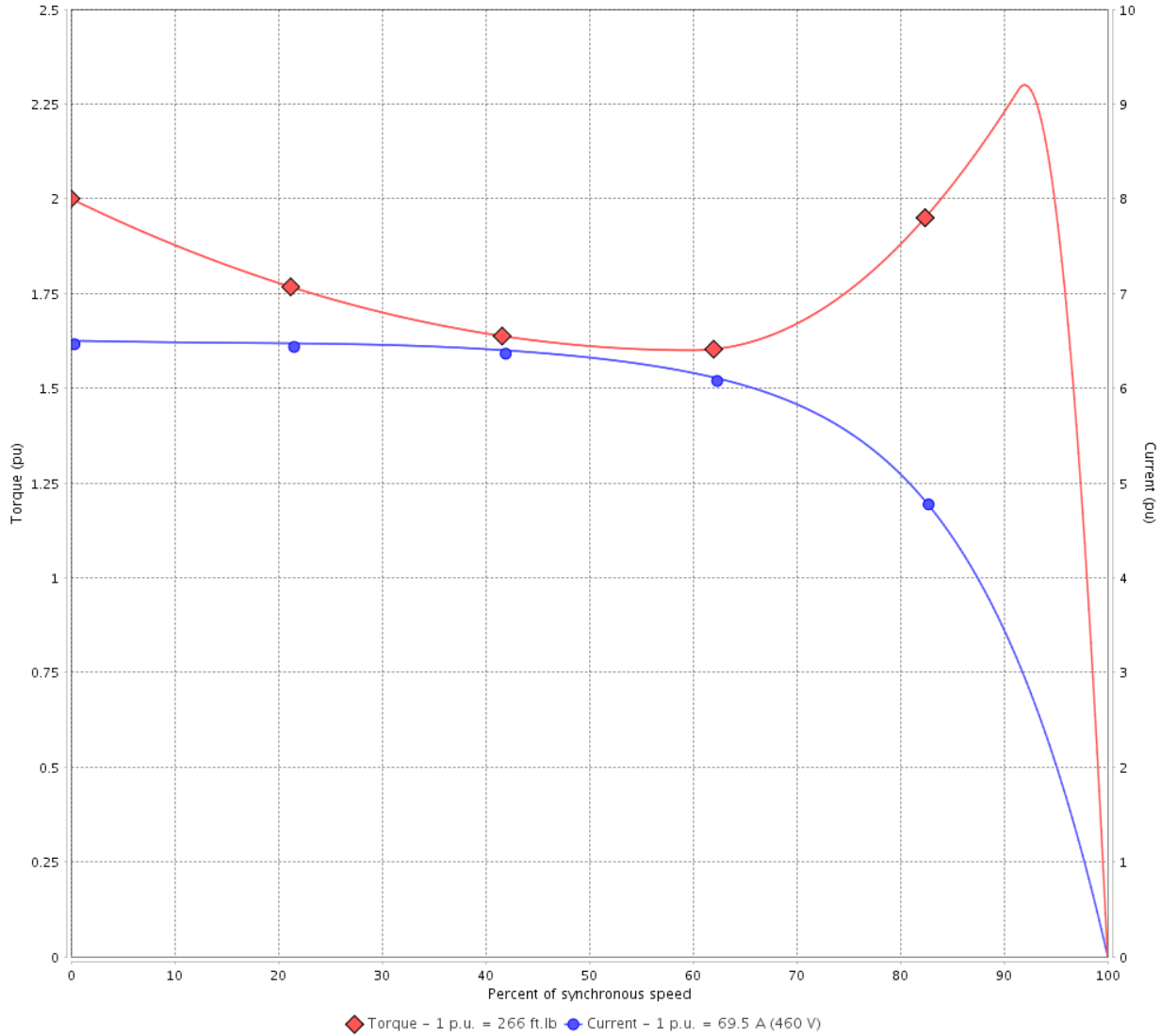
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 14325585

Catalog # : 06012ST3QIE404TC-W22

TORQUE AND CURRENT VS SPEED CURVE



Performance : 460 V 60 Hz 6P

Rated current	: 69.5 A	Moment of inertia (J)	: 36.9 sq.ft.lb
LRC	: 6.5	Duty cycle	: Cont.(S1)
Rated torque	: 266 ft.lb	Insulation class	: F
Locked rotor torque	: 200 %	Service factor	: 1.25
Breakdown torque	: 229 %	Temperature rise	: 80 K
Rated speed	: 1185 rpm	Design	: B

Locked rotor time : 36s (cold) 20s (hot)

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TORQUE AND CURRENT VS SPEED CURVE



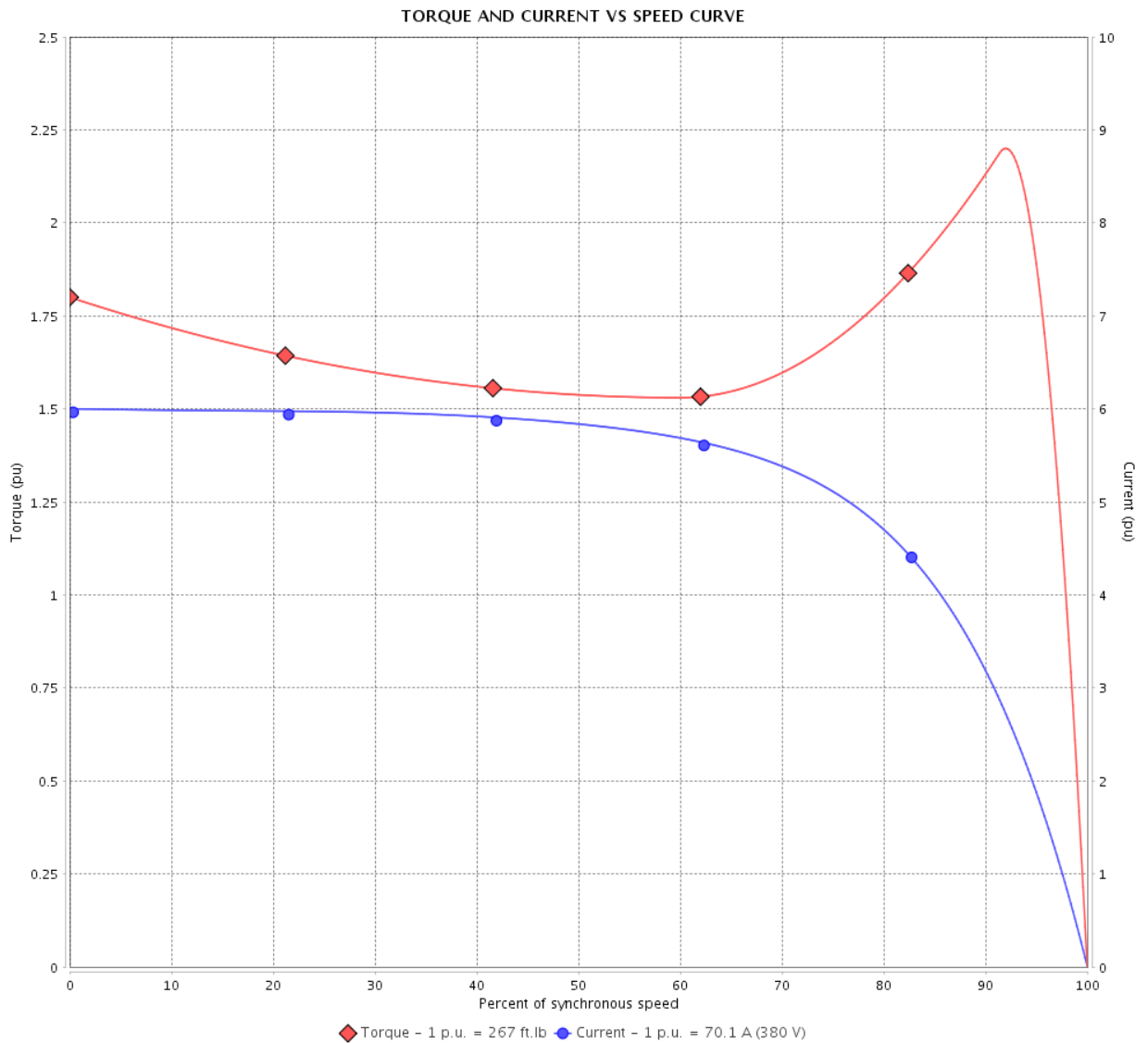
Three Phase Induction Motor - Squirrel Cage

Customer :

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Catalog # : 06012ST3QIE404TC-W22



Performance : 380 V 50 Hz 6P IE3

Rated current	: 70.1 A	Moment of inertia (J)	: 36.9 sq.ft.lb
LRC	: 6.0	Duty cycle	: Cont.(S1)
Rated torque	: 267 ft.lb	Insulation class	: F
Locked rotor torque	: 180 %	Service factor	: 1.00
Breakdown torque	: 220 %	Temperature rise	: 80 K
Rated speed	: 985 rpm	Design	: B

Locked rotor time : 28s (cold) 16s (hot)

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TORQUE AND CURRENT VS SPEED CURVE

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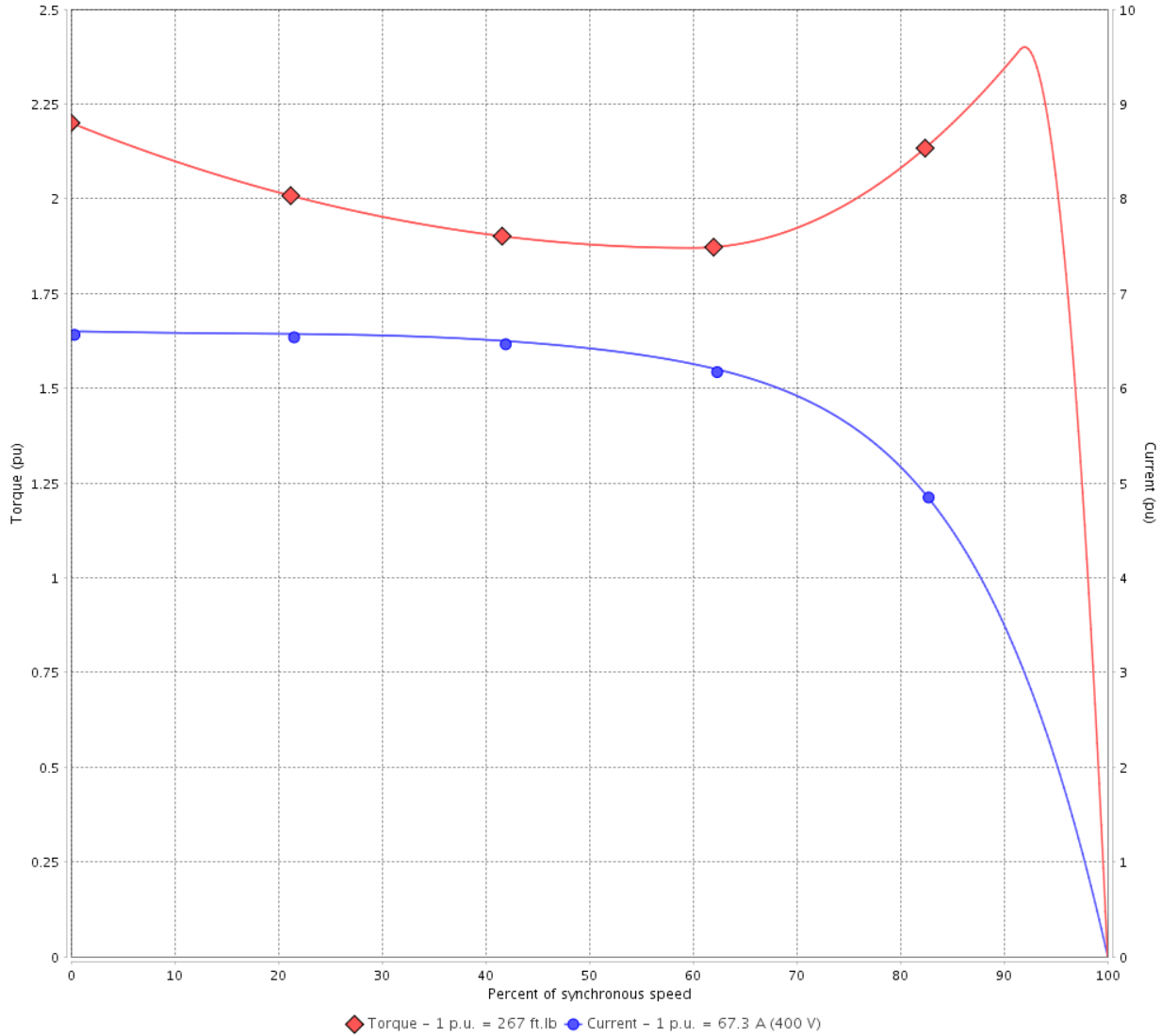
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TORQUE AND CURRENT VS SPEED CURVE



Performance : 400 V 50 Hz 6P IE3

Rated current	: 67.3 A	Moment of inertia (J)	: 36.9 sq.ft.lb
LRC	: 6.6	Duty cycle	: Cont.(S1)
Rated torque	: 267 ft.lb	Insulation class	: F
Locked rotor torque	: 220 %	Service factor	: 1.00
Breakdown torque	: 240 %	Temperature rise	: 80 K
Rated speed	: 985 rpm	Design	: B

Locked rotor time : 28s (cold) 16s (hot)

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TORQUE AND CURRENT VS SPEED CURVE



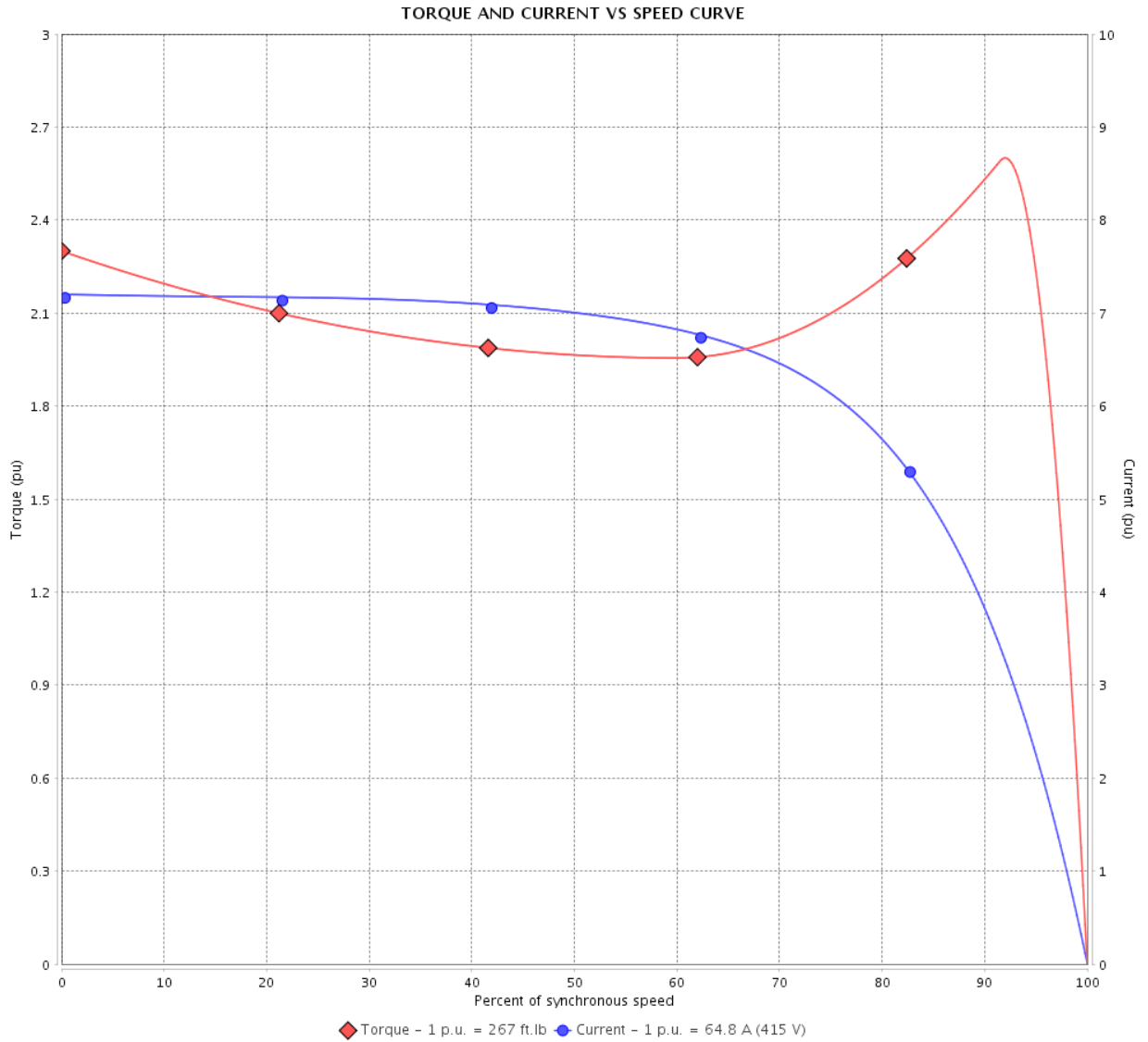
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Catalog # : 06012ST3QIE404TC-W22



Performance : 415 V 50 Hz 6P IE3

Rated current	: 64.8 A	Moment of inertia (J)	: 36.9 sq.ft.lb
LRC	: 7.2	Duty cycle	: Cont.(S1)
Rated torque	: 267 ft.lb	Insulation class	: F
Locked rotor torque	: 229 %	Service factor	: 1.00
Breakdown torque	: 260 %	Temperature rise	: 80 K
Rated speed	: 985 rpm	Design	: B

Locked rotor time : 28s (cold) 16s (hot)

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TORQUE AND CURRENT VS SPEED CURVE

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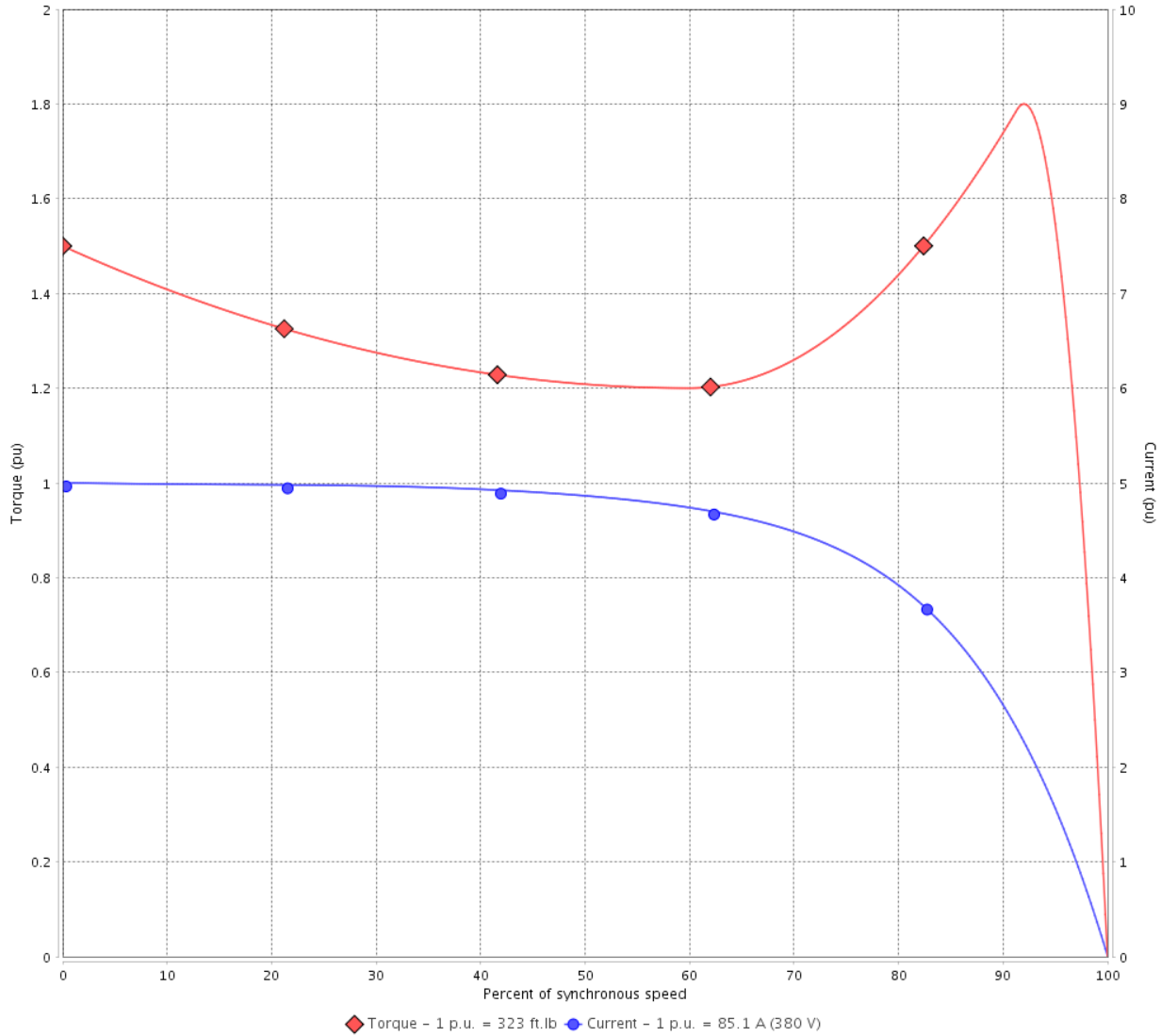
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TORQUE AND CURRENT VS SPEED CURVE



Performance : 380 V 50 Hz 6P IE1

Rated current	: 85.1 A	Moment of inertia (J)	: 36.9 sq.ft.lb
LRC	: 5.0	Duty cycle	: Cont.(S1)
Rated torque	: 323 ft.lb	Insulation class	: F
Locked rotor torque	: 150 %	Service factor	: 1.00
Breakdown torque	: 180 %	Temperature rise	: 105 K
Rated speed	: 975 rpm	Design	: B

Locked rotor time : 28s (cold) 16s (hot)

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TORQUE AND CURRENT VS SPEED CURVE



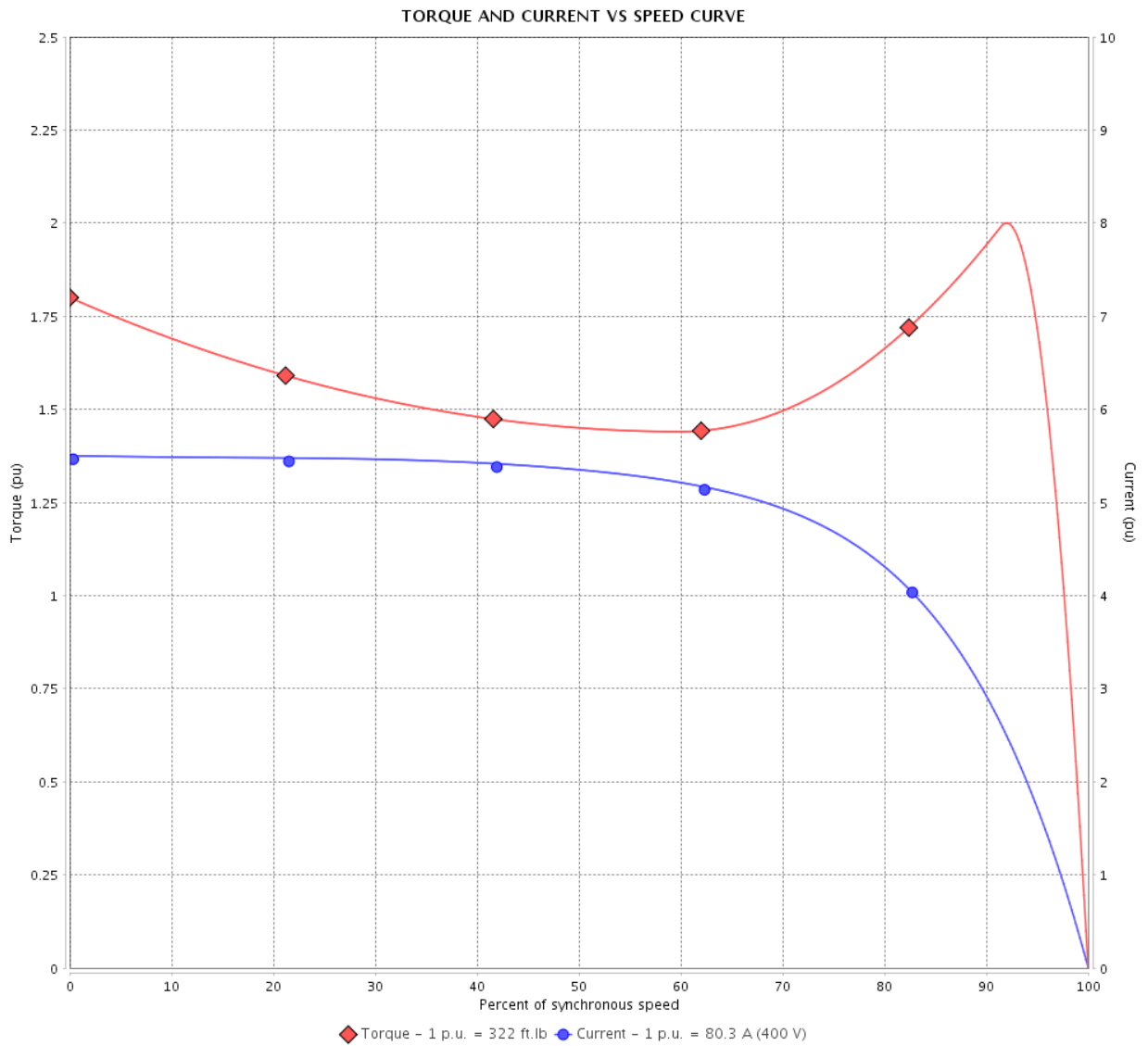
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Product code : 14325585

Catalog # : 06012ST3QIE404TC-W22



Performance : 400 V 50 Hz 6P IE2

Rated current	: 80.3 A	Moment of inertia (J)	: 36.9 sq.ft.lb
LRC	: 5.5	Duty cycle	: Cont.(S1)
Rated torque	: 322 ft.lb	Insulation class	: F
Locked rotor torque	: 180 %	Service factor	: 1.00
Breakdown torque	: 200 %	Temperature rise	: 80 K
Rated speed	: 980 rpm	Design	: B

Locked rotor time : 28s (cold) 16s (hot)

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TORQUE AND CURRENT VS SPEED CURVE

Three Phase Induction Motor - Squirrel Cage



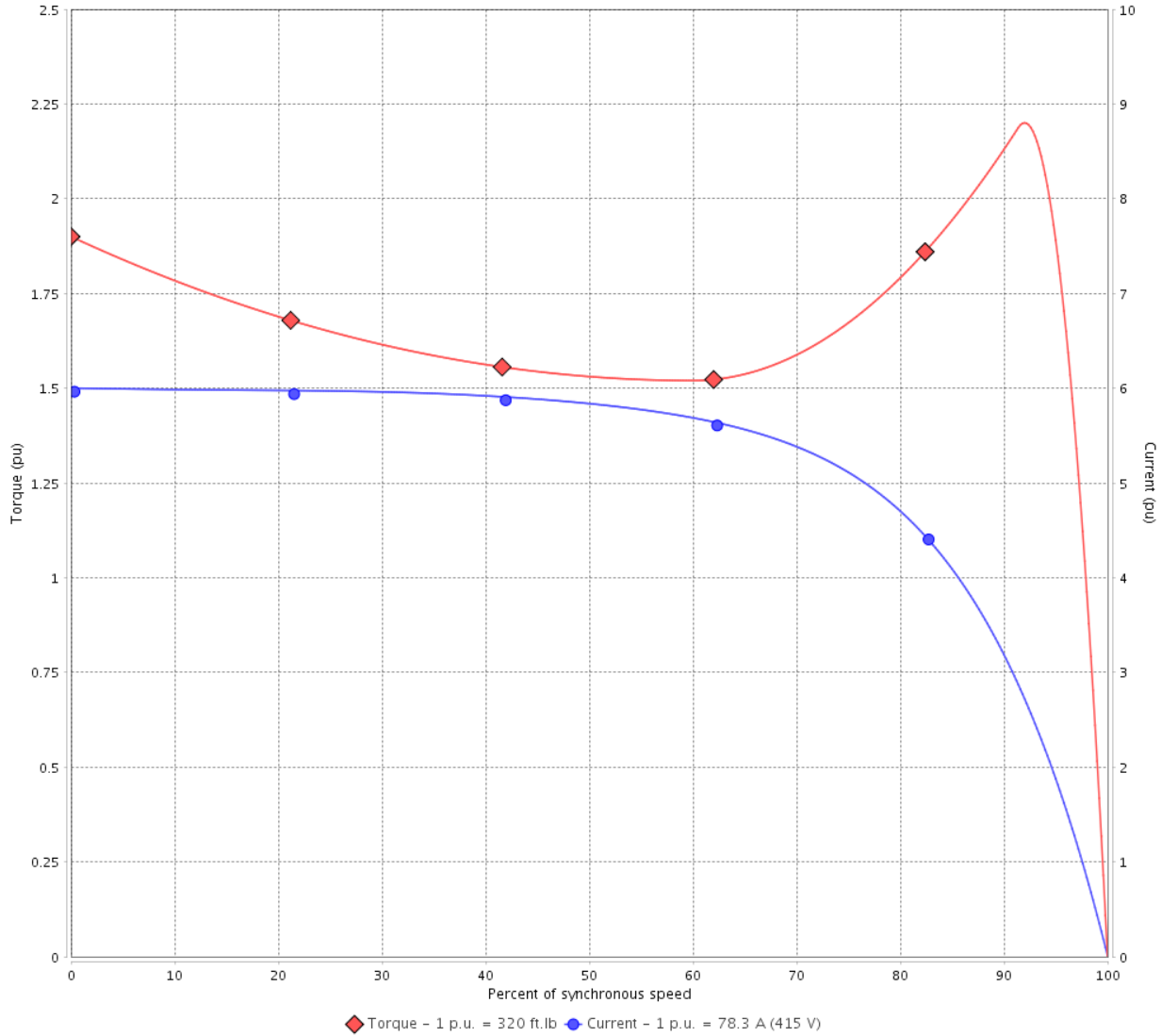
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TORQUE AND CURRENT VS SPEED CURVE



Performance : 415 V 50 Hz 6P IE2

Rated current	: 78.3 A	Moment of inertia (J)	: 36.9 sq.ft.lb
LRC	: 6.0	Duty cycle	: Cont.(S1)
Rated torque	: 320 ft.lb	Insulation class	: F
Locked rotor torque	: 190 %	Service factor	: 1.00
Breakdown torque	: 220 %	Temperature rise	: 80 K
Rated speed	: 985 rpm	Design	: B

Locked rotor time : 28s (cold) 16s (hot)

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Three Phase Induction Motor - Squirrel Cage

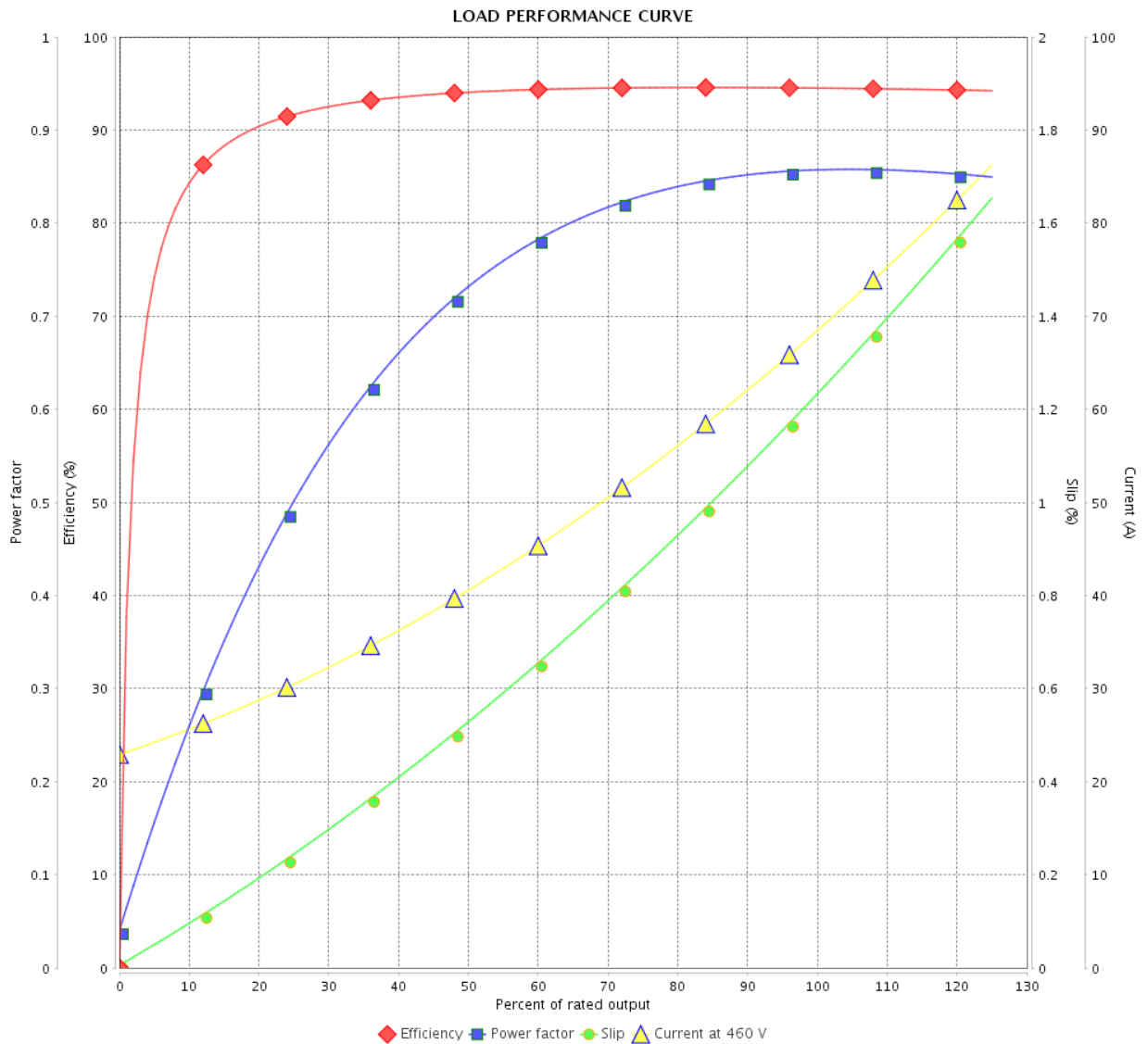


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Catalog # : 06012ST3QIE404TC-W22



Performance : 460 V 60 Hz 6P

Rated current : 69.5 A
 LRC : 6.5
 Rated torque : 266 ft.lb
 Locked rotor torque : 200 %
 Breakdown torque : 229 %
 Rated speed : 1185 rpm

Moment of inertia (J) : 36.9 sq.ft.lb
 Duty cycle : Cont.(S1)
 Insulation class : F
 Service factor : 1.25
 Temperature rise : 80 K
 Design : B

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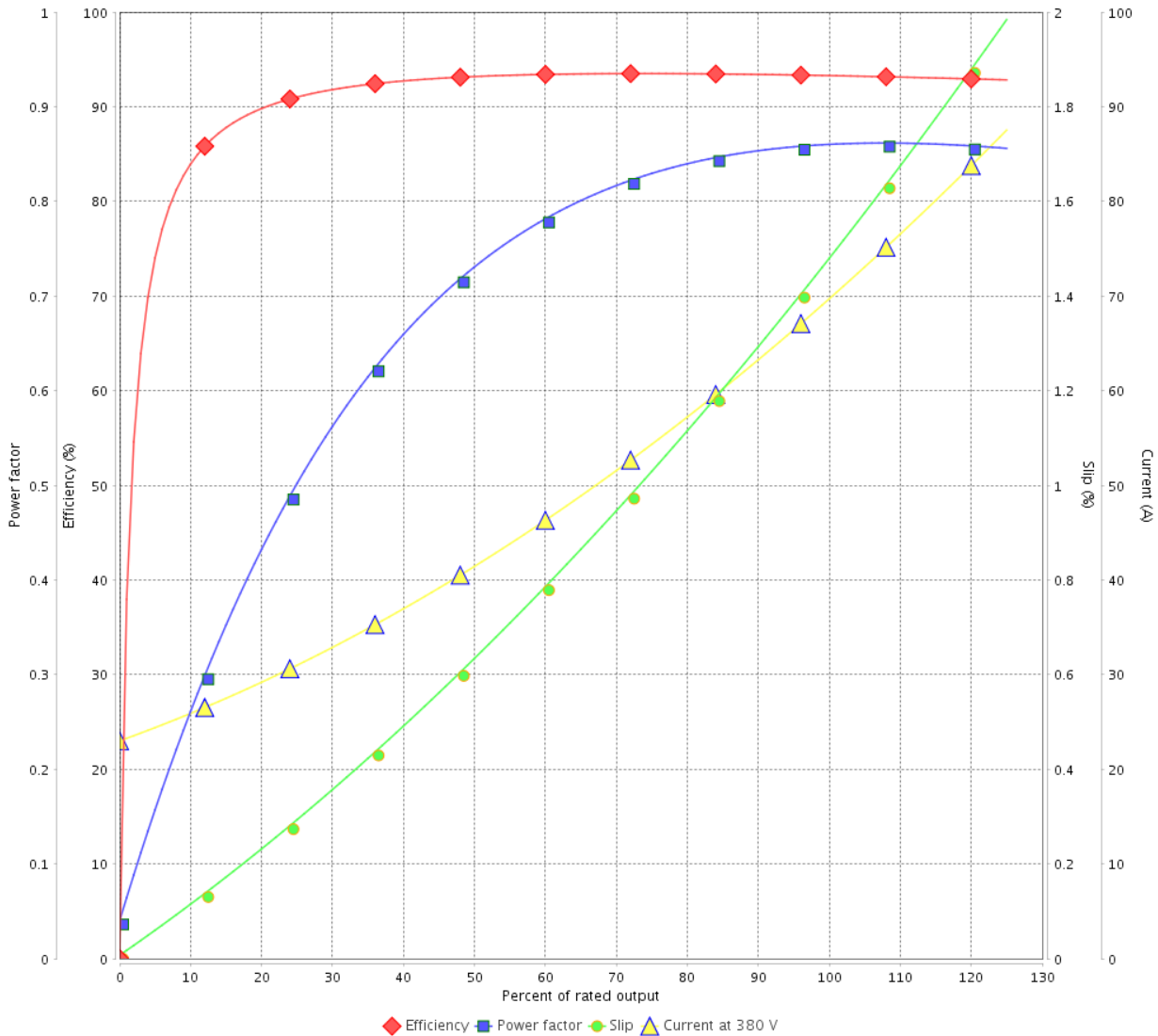
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Performance : 380 V 50 Hz 6P IE3

Rated current : 70.1 A
 LRC : 6.0
 Rated torque : 267 ft.lb
 Locked rotor torque : 180 %
 Breakdown torque : 220 %
 Rated speed : 985 rpm

Moment of inertia (J) : 36.9 sq.ft.lb
 Duty cycle : Cont.(S1)
 Insulation class : F
 Service factor : 1.00
 Temperature rise : 80 K
 Design : B

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Three Phase Induction Motor - Squirrel Cage

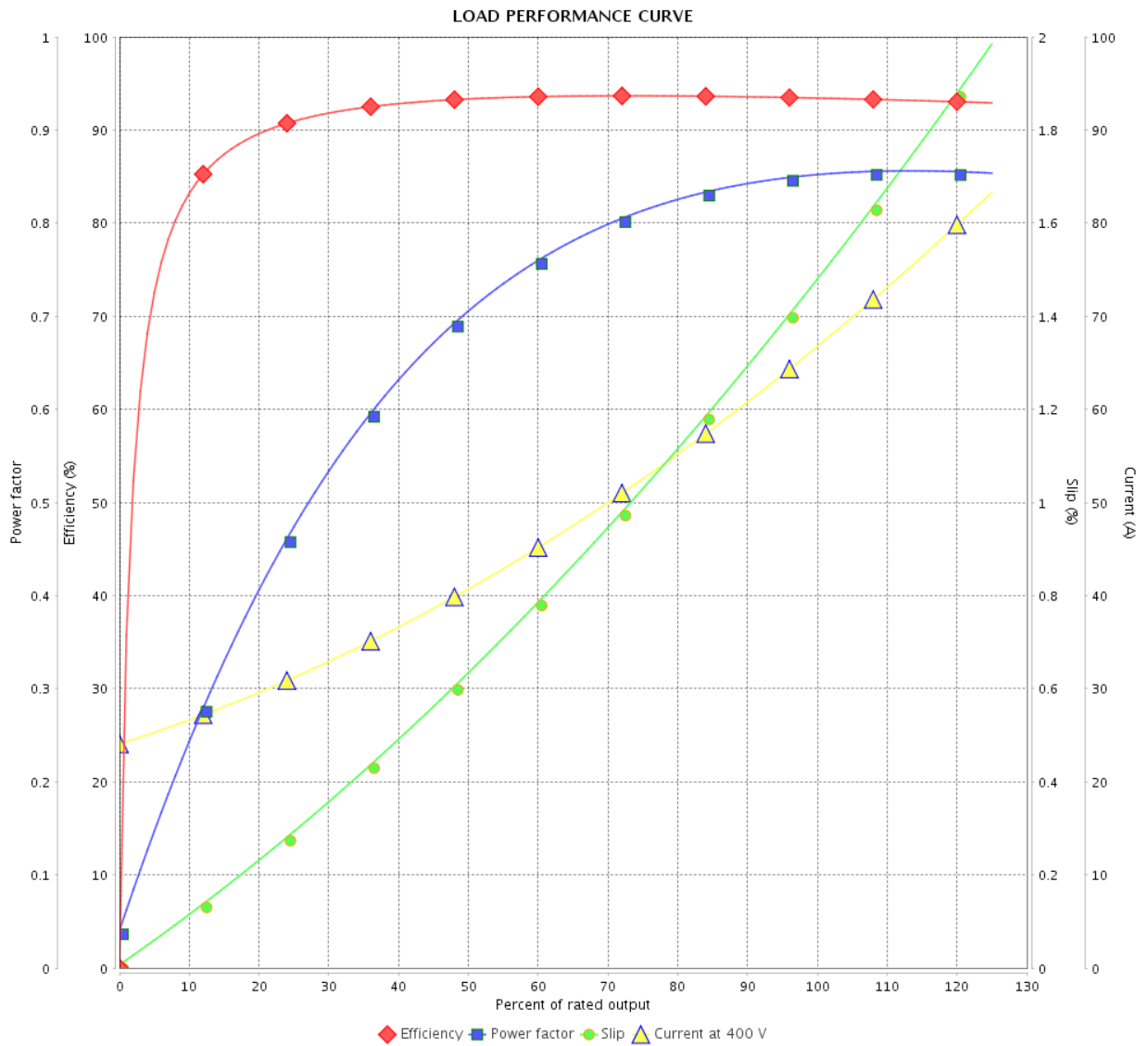


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Performance : 400 V 50 Hz 6P IE3

Rated current : 67.3 A
 LRC : 6.6
 Rated torque : 267 ft.lb
 Locked rotor torque : 220 %
 Breakdown torque : 240 %
 Rated speed : 985 rpm

Moment of inertia (J) : 36.9 sq.ft.lb
 Duty cycle : Cont.(S1)
 Insulation class : F
 Service factor : 1.00
 Temperature rise : 80 K
 Design : B

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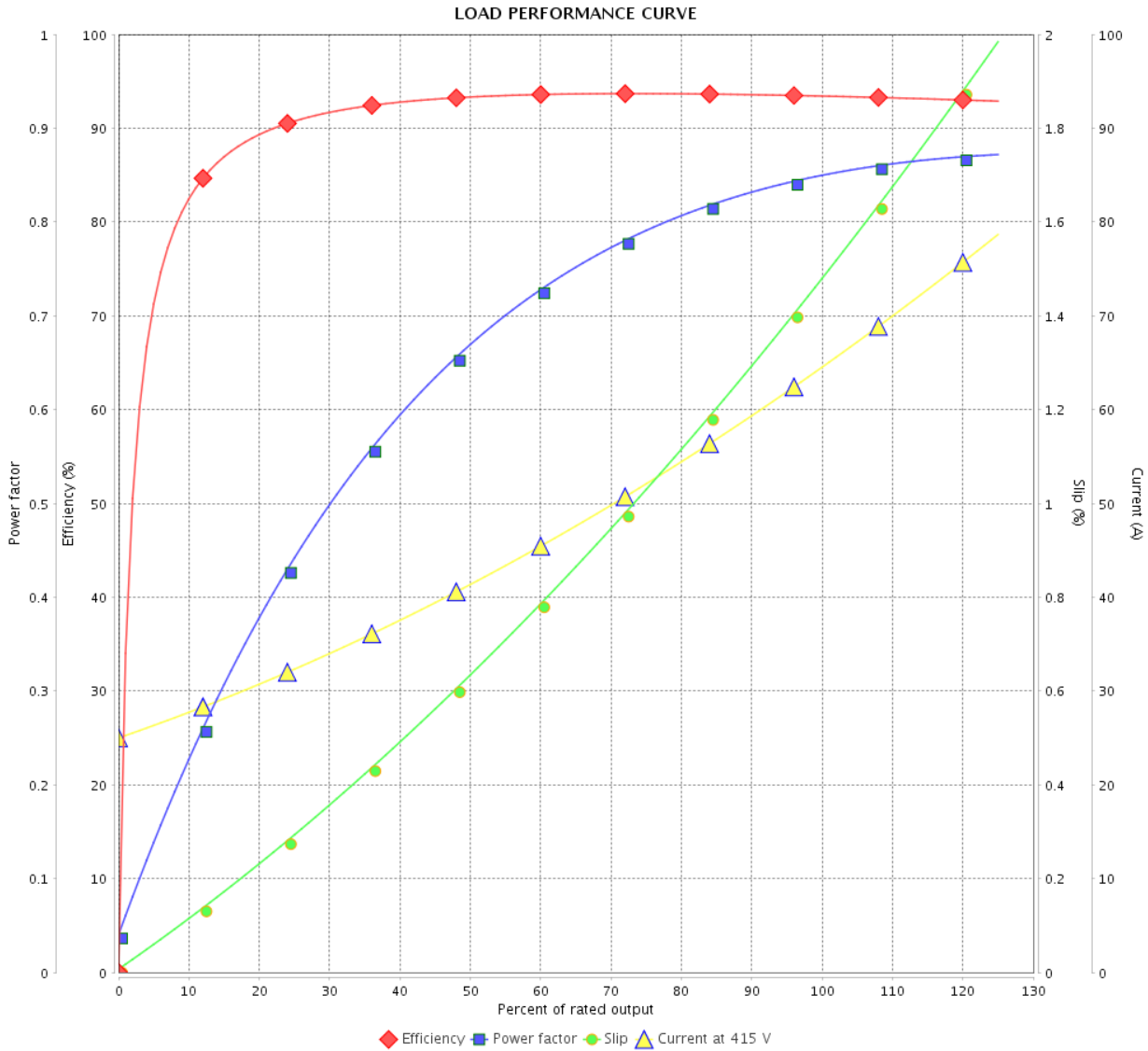


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Performance : 415 V 50 Hz 6P IE3

Rated current : 64.8 A
 LRC : 7.2
 Rated torque : 267 ft.lb
 Locked rotor torque : 229 %
 Breakdown torque : 260 %
 Rated speed : 985 rpm

Moment of inertia (J) : 36.9 sq.ft.lb
 Duty cycle : Cont.(S1)
 Insulation class : F
 Service factor : 1.00
 Temperature rise : 80 K
 Design : B

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Three Phase Induction Motor - Squirrel Cage

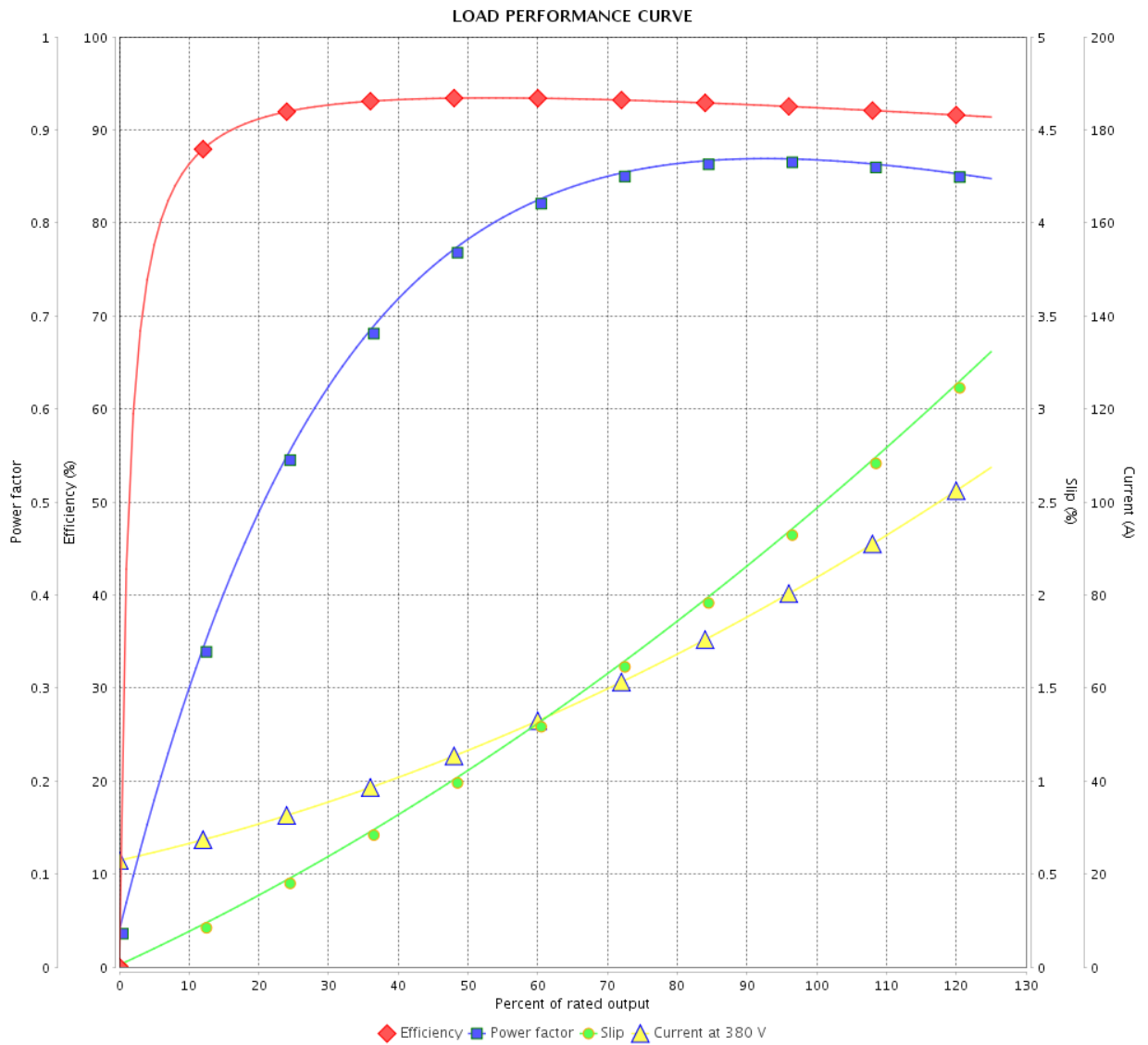


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Product code : 14325585

Catalog # : 06012ST3QIE404TC-W22



Performance : 380 V 50 Hz 6P IE1

Rated current : 85.1 A
 LRC : 5.0
 Rated torque : 323 ft.lb
 Locked rotor torque : 150 %
 Breakdown torque : 180 %
 Rated speed : 975 rpm

Moment of inertia (J) : 36.9 sq.ft.lb
 Duty cycle : Cont.(S1)
 Insulation class : F
 Service factor : 1.00
 Temperature rise : 105 K
 Design : B

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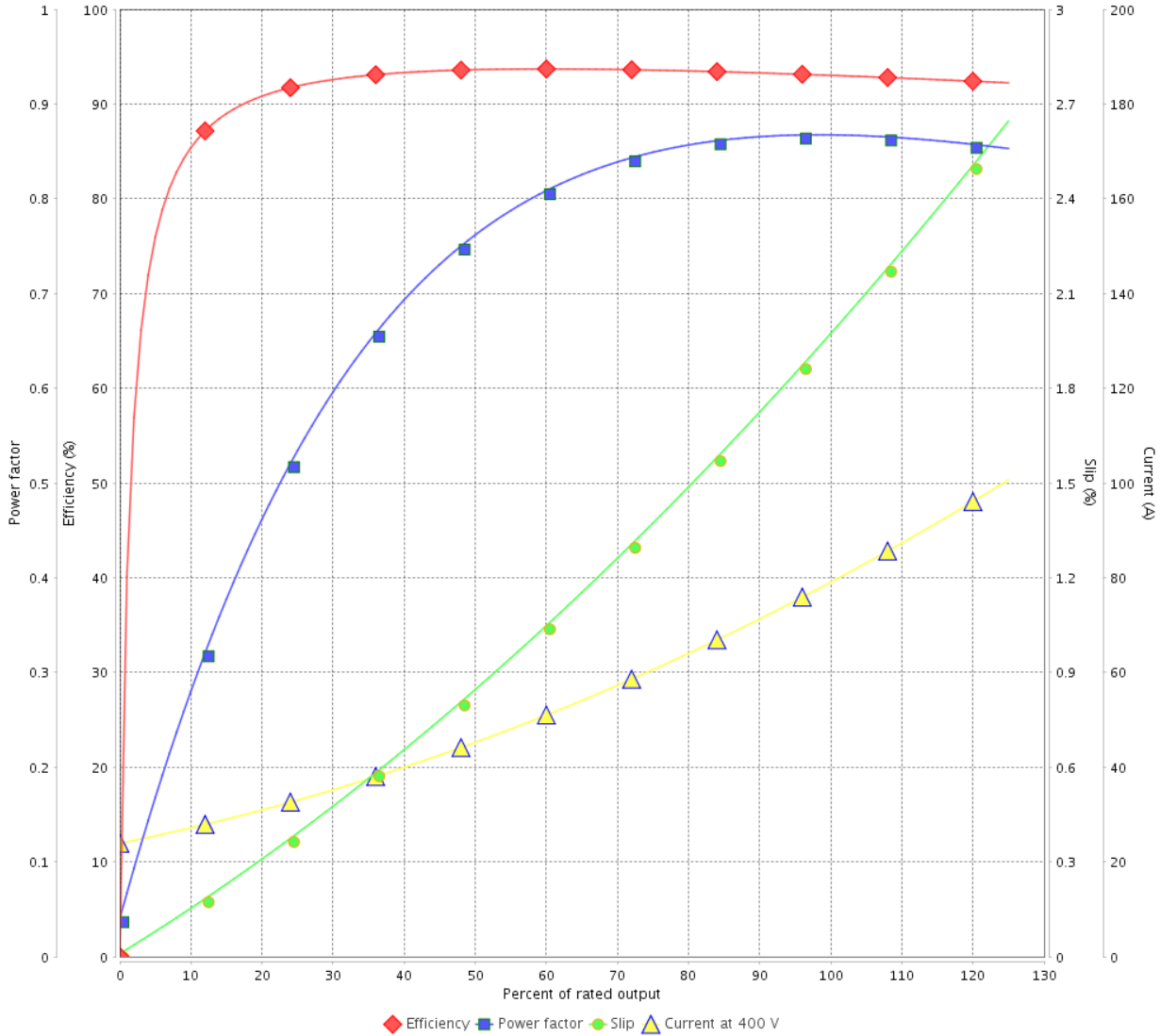
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LOAD PERFORMANCE CURVE



Performance : 400 V 50 Hz 6P IE2

Rated current : 80.3 A
 LRC : 5.5
 Rated torque : 322 ft.lb
 Locked rotor torque : 180 %
 Breakdown torque : 200 %
 Rated speed : 980 rpm

Moment of inertia (J) : 36.9 sq.ft.lb
 Duty cycle : Cont.(S1)
 Insulation class : F
 Service factor : 1.00
 Temperature rise : 80 K
 Design : B

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Three Phase Induction Motor - Squirrel Cage

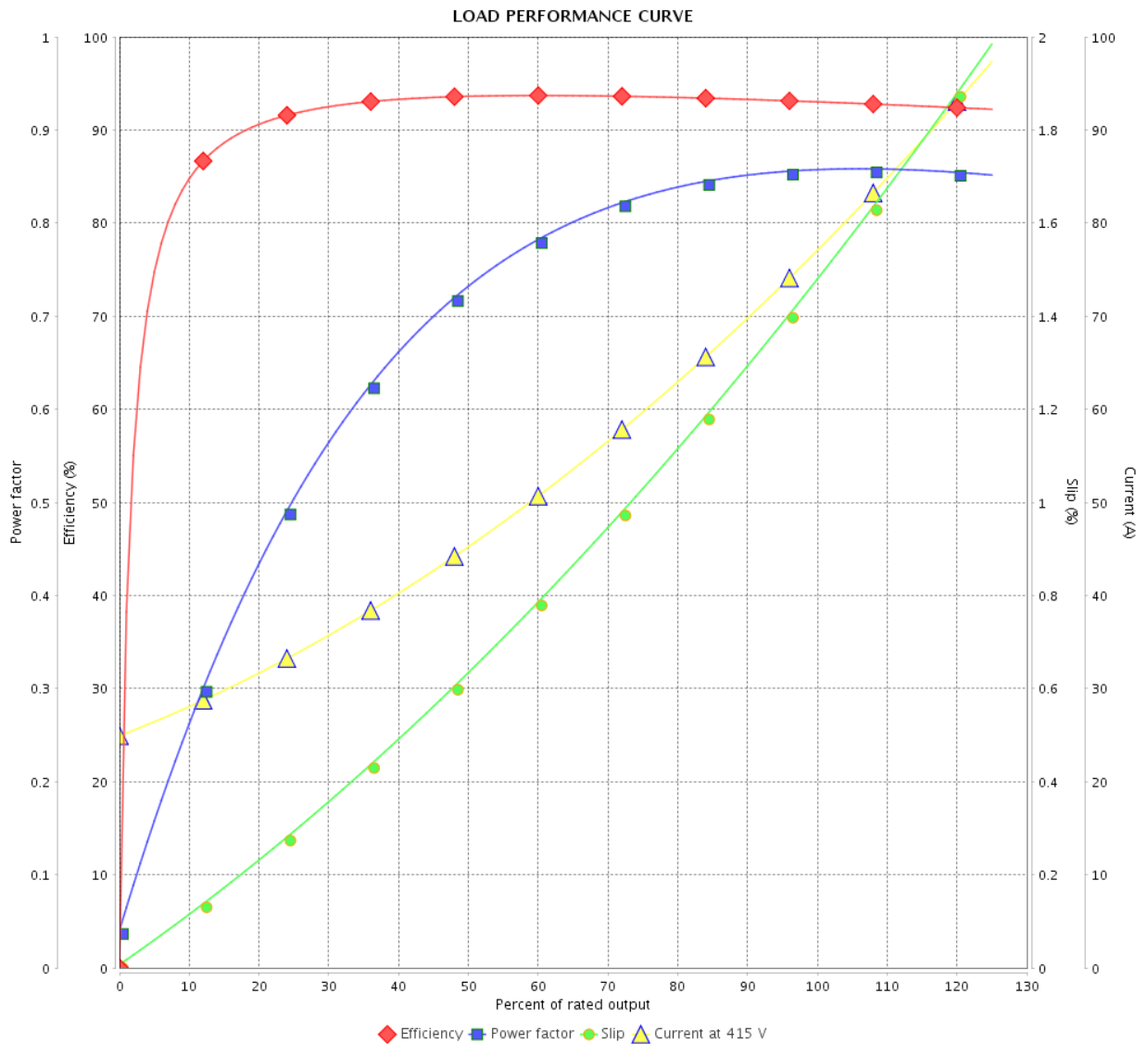


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Performance : 415 V 50 Hz 6P IE2

Rated current : 78.3 A
 LRC : 6.0
 Rated torque : 320 ft.lb
 Locked rotor torque : 190 %
 Breakdown torque : 220 %
 Rated speed : 985 rpm

Moment of inertia (J) : 36.9 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



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Performance : 460 V 60 Hz 6P

Rated current	: 69.5 A	Moment of inertia (J)	: 36.9 sq.ft.lb
LRC	: 6.5	Duty cycle	: Cont.(S1)
Rated torque	: 266 ft.lb	Insulation class	: F
Locked rotor torque	: 200 %	Service factor	: 1.25
Breakdown torque	: 229 %	Temperature rise	: 80 K
Rated speed	: 1185 rpm	Design	: B

Heating constant

Cooling constant

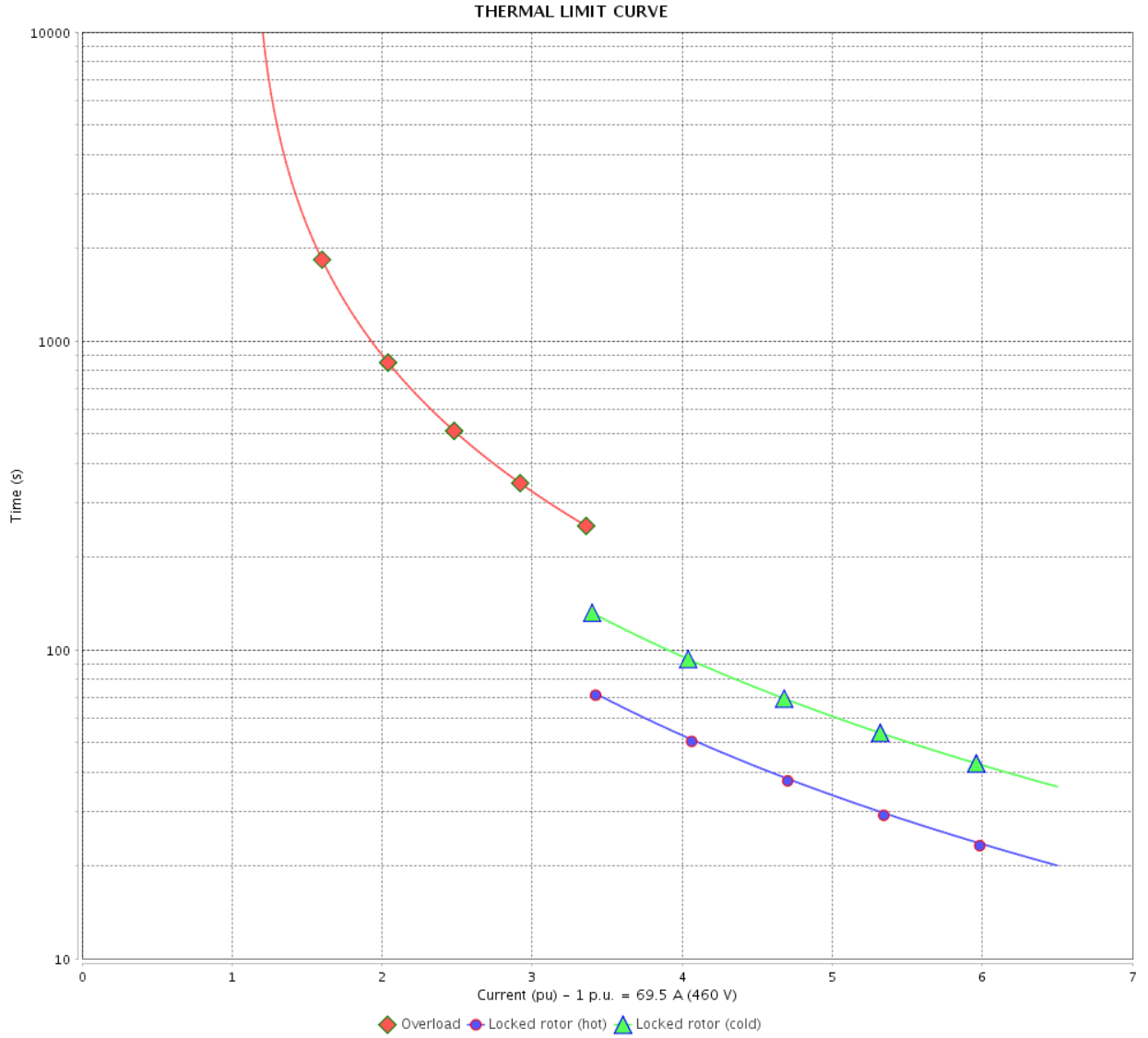
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Three Phase Induction Motor - Squirrel Cage



Customer : _____



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Three Phase Induction Motor - Squirrel Cage

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Performance : 380 V 50 Hz 6P IE3

Rated current : 70.1 A	Moment of inertia (J) : 36.9 sq.ft.lb
LRC : 6.0	Duty cycle : Cont.(S1)
Rated torque : 267 ft.lb	Insulation class : F
Locked rotor torque : 180 %	Service factor : 1.00
Breakdown torque : 220 %	Temperature rise : 80 K
Rated speed : 985 rpm	Design : B

Heating constant

Cooling constant

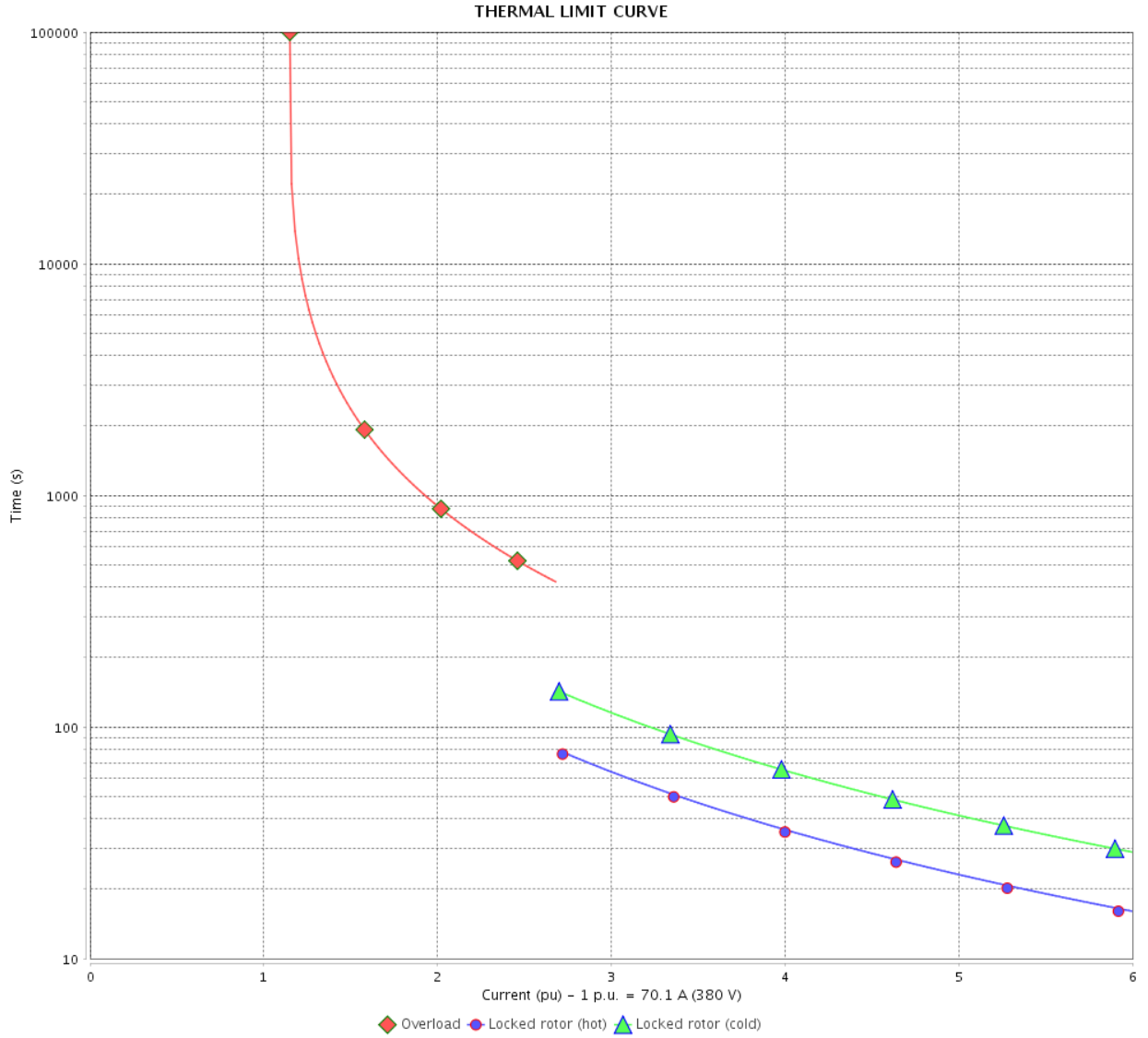
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Rated torque	: 267 ft.lb	Insulation class	: F
Locked rotor torque	: 220 %	Service factor	: 1.00
Breakdown torque	: 240 %	Temperature rise	: 80 K
Rated speed	: 985 rpm	Design	: B

Heating constant

Cooling constant

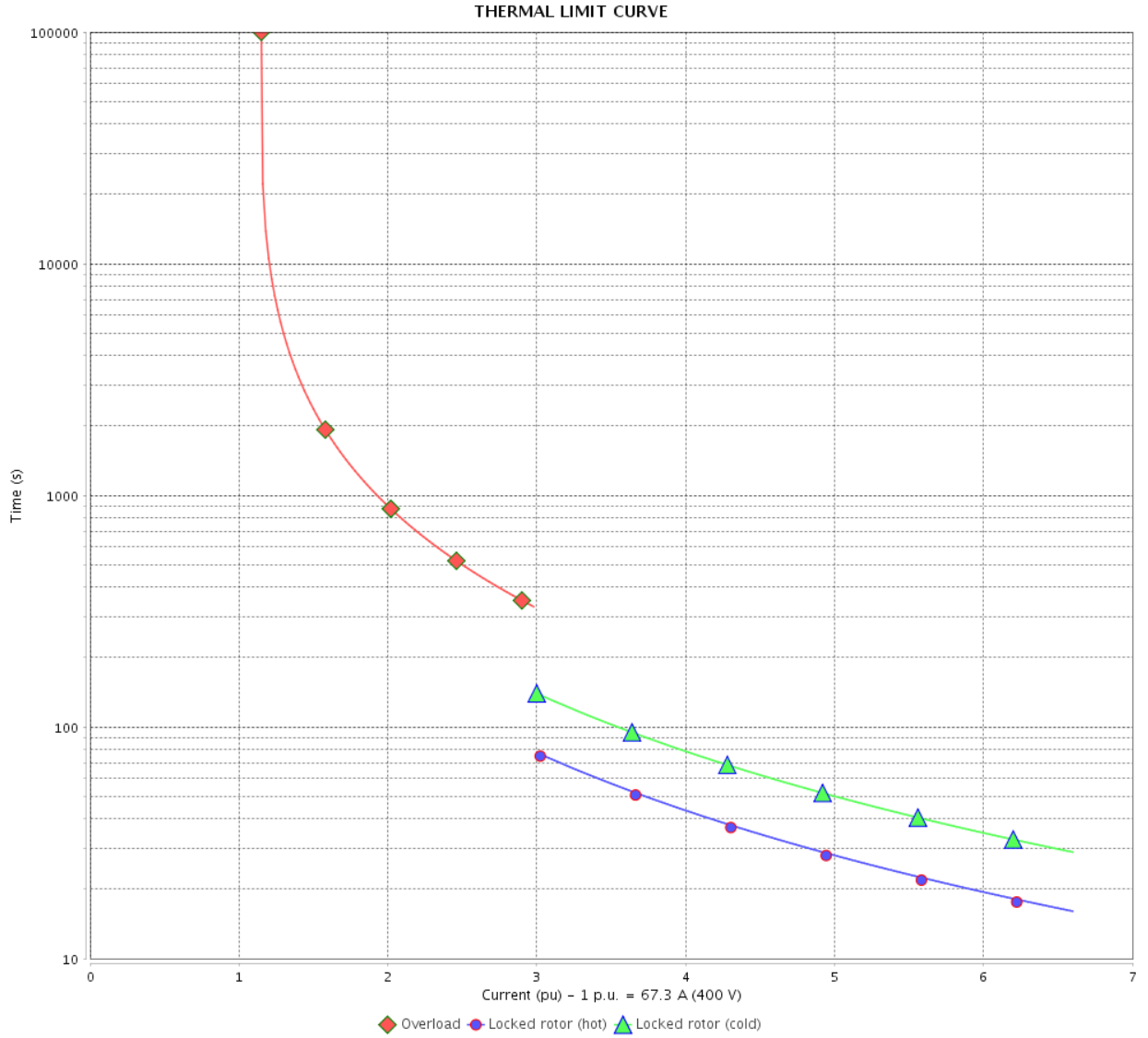
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Rated torque	: 267 ft.lb	Insulation class	: F
Locked rotor torque	: 229 %	Service factor	: 1.00
Breakdown torque	: 260 %	Temperature rise	: 80 K
Rated speed	: 985 rpm	Design	: B

Heating constant

Cooling constant

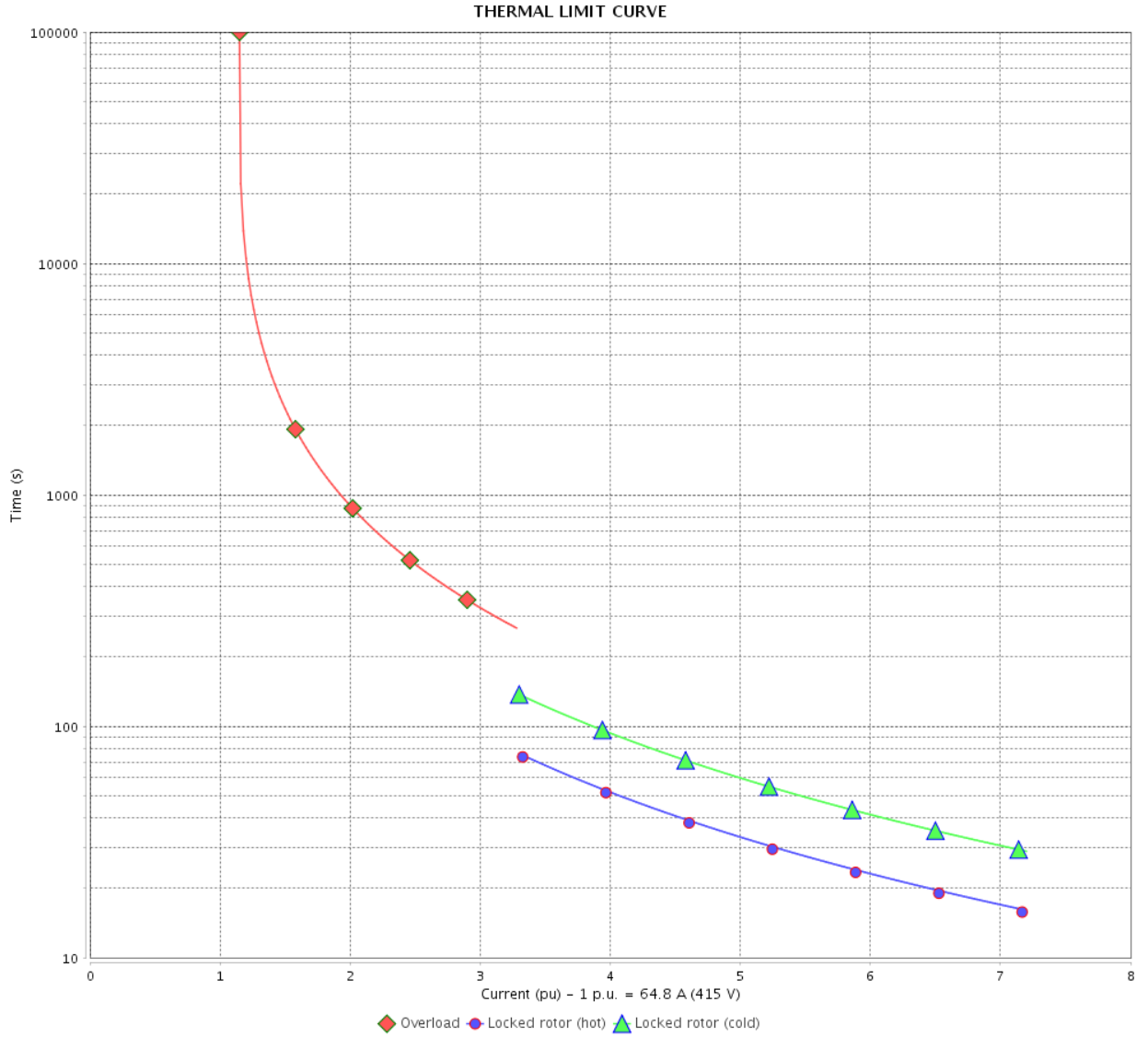
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Rated current : 85.1 A	Moment of inertia (J) : 36.9 sq.ft.lb
LRC : 5.0	Duty cycle : Cont.(S1)
Rated torque : 323 ft.lb	Insulation class : F
Locked rotor torque : 150 %	Service factor : 1.00
Breakdown torque : 180 %	Temperature rise : 105 K
Rated speed : 975 rpm	Design : B

Heating constant

Cooling constant

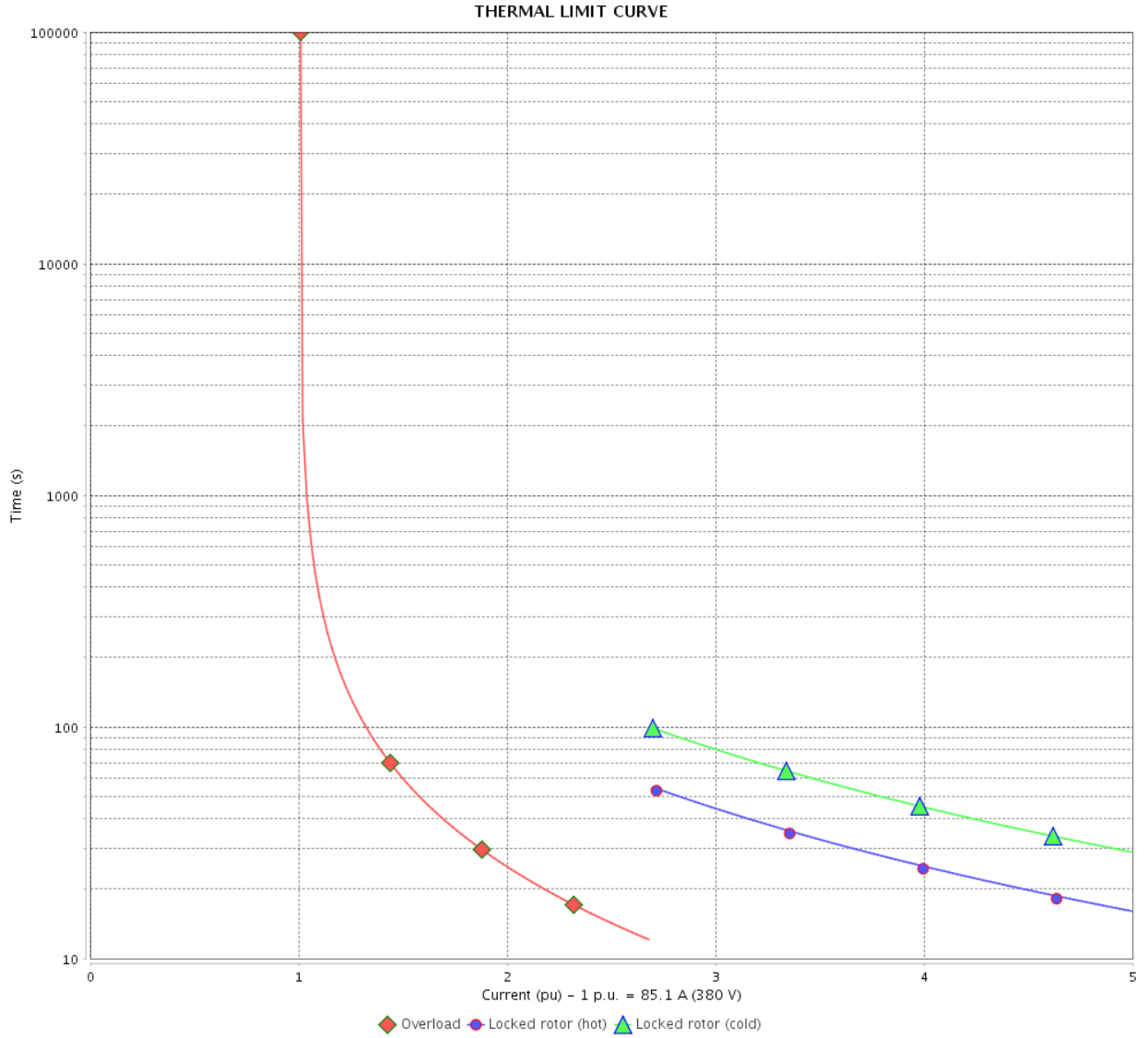
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Performance : 400 V 50 Hz 6P IE2

Rated current	: 80.3 A	Moment of inertia (J)	: 36.9 sq.ft.lb
LRC	: 5.5	Duty cycle	: Cont.(S1)
Rated torque	: 322 ft.lb	Insulation class	: F
Locked rotor torque	: 180 %	Service factor	: 1.00
Breakdown torque	: 200 %	Temperature rise	: 80 K
Rated speed	: 980 rpm	Design	: B

Heating constant

Cooling constant

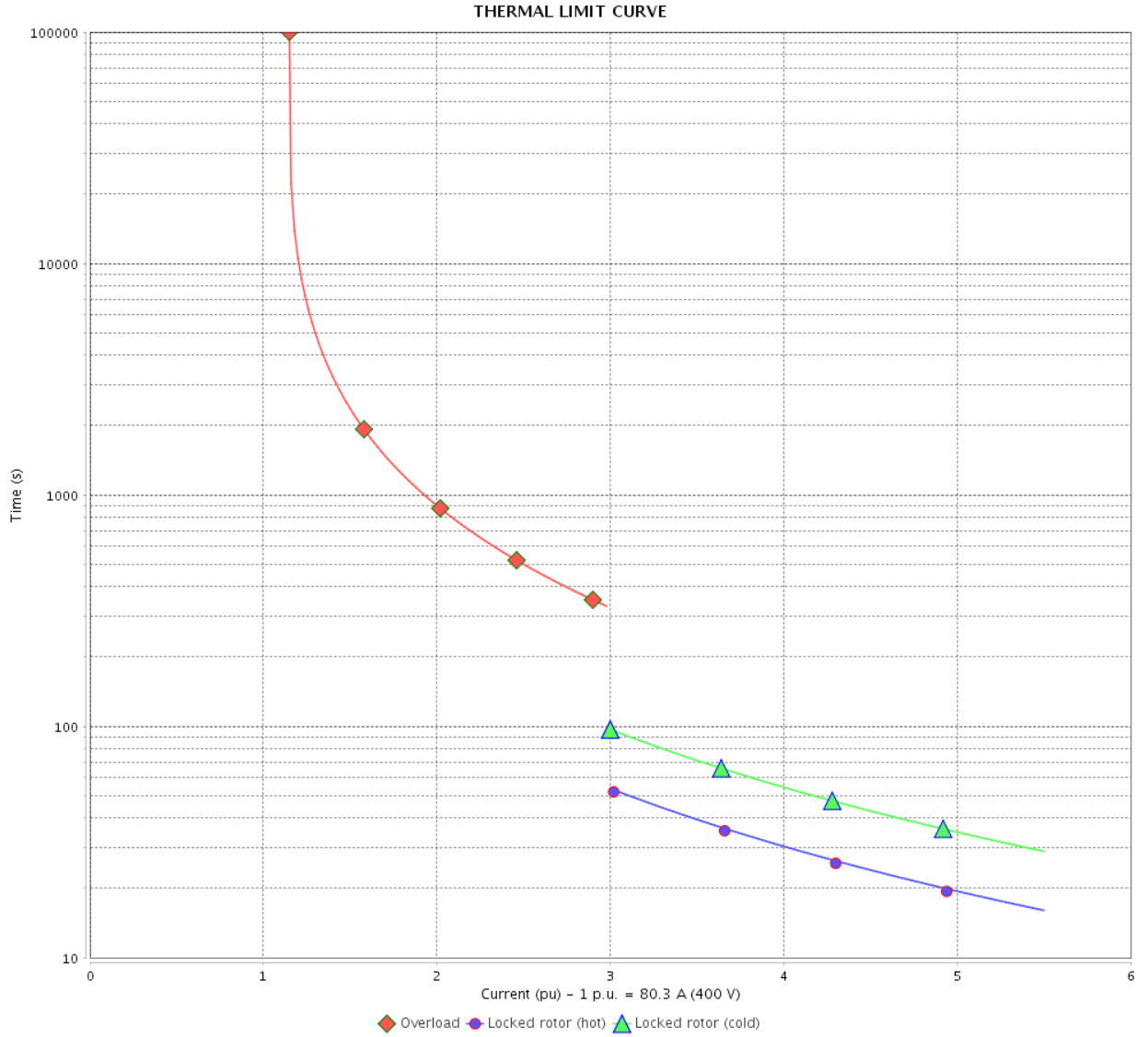
Rev.	Changes Summary	Performed	Checked	Date
Performed by				
Checked by			Page	Revision
Date	12/04/2022		26 / 36	

THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



Customer : _____



Rev.	Changes Summary	Performed	Checked	Date
Performed by		Page		Revision
Checked by		27 / 36		
Date		12/04/2022		

THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 14325585

Catalog # : 06012ST3QIE404TC-W22

Performance : 415 V 50 Hz 6P IE2

Rated current	: 78.3 A	Moment of inertia (J)	: 36.9 sq.ft.lb
LRC	: 6.0	Duty cycle	: Cont.(S1)
Rated torque	: 320 ft.lb	Insulation class	: F
Locked rotor torque	: 190 %	Service factor	: 1.00
Breakdown torque	: 220 %	Temperature rise	: 80 K
Rated speed	: 985 rpm	Design	: B

Heating constant

Cooling constant

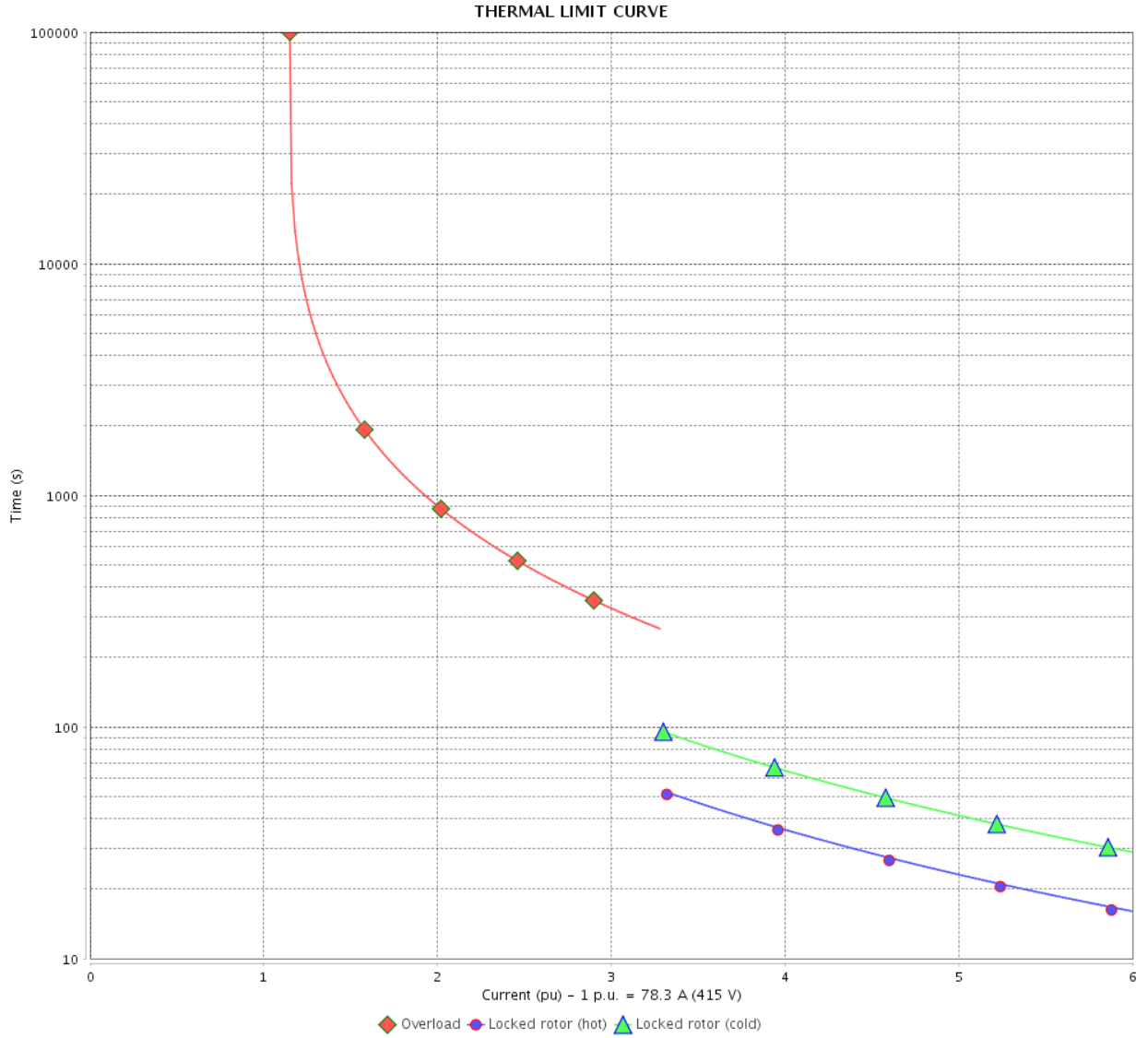
Rev.	Changes Summary	Performed	Checked	Date
Performed by				
Checked by			Page	Revision
Date	12/04/2022		28 / 36	

THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



Customer : _____



Rev.	Changes Summary	Performed	Checked	Date
Performed by				
Checked by				
Date				
			Page	Revision
			29 / 36	

VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage



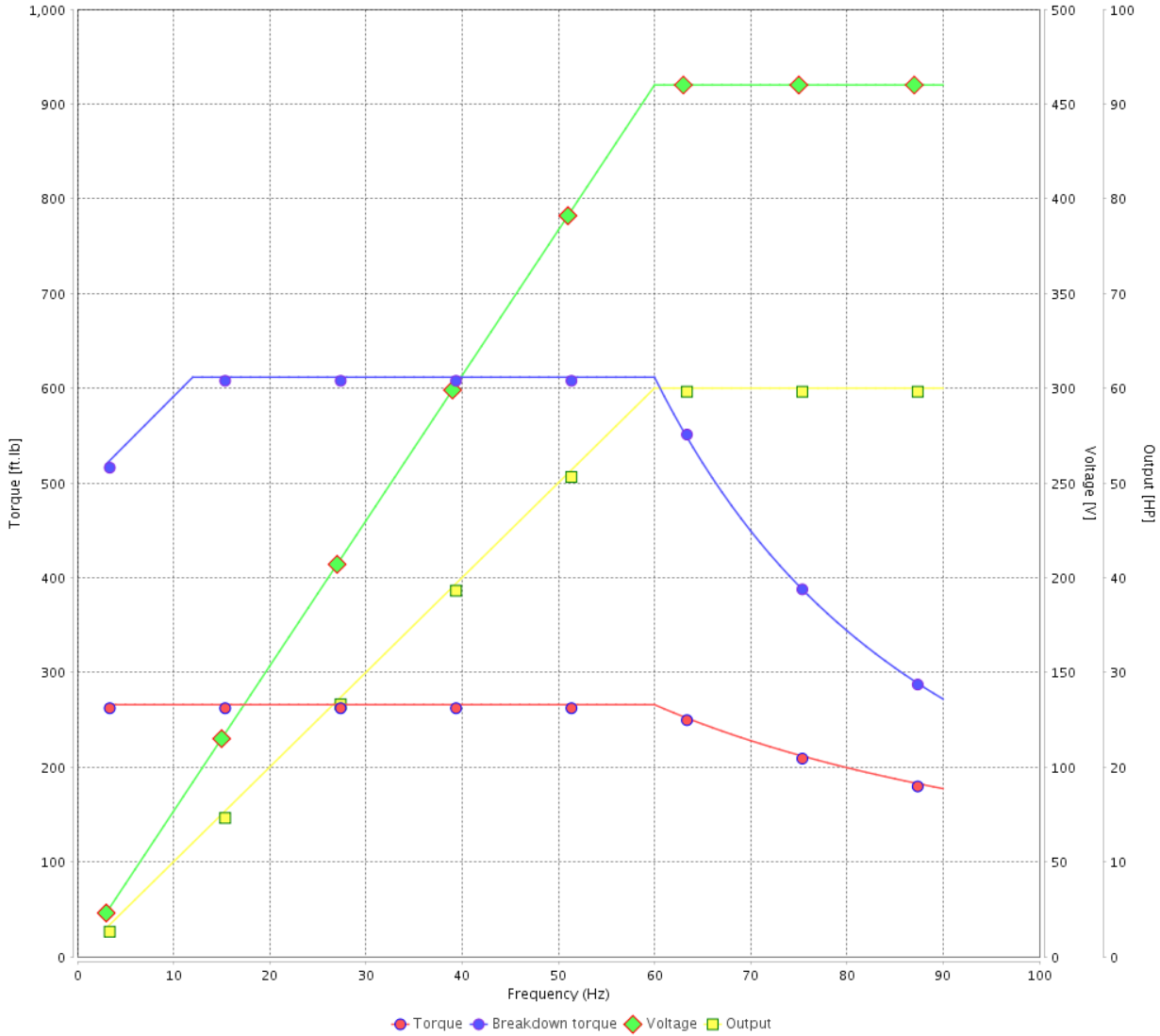
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 14325585

Catalog # : 06012ST3QIE404TC-W22

VFD OPERATION CURVE



Performance : 460 V 60 Hz 6P

Rated current : 69.5 A
 LRC : 6.5
 Rated torque : 266 ft.lb
 Locked rotor torque : 200 %
 Breakdown torque : 229 %
 Rated speed : 1185 rpm

Moment of inertia (J) : 36.9 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
Performed by			Page	Revision
Checked by				
Date				

VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage

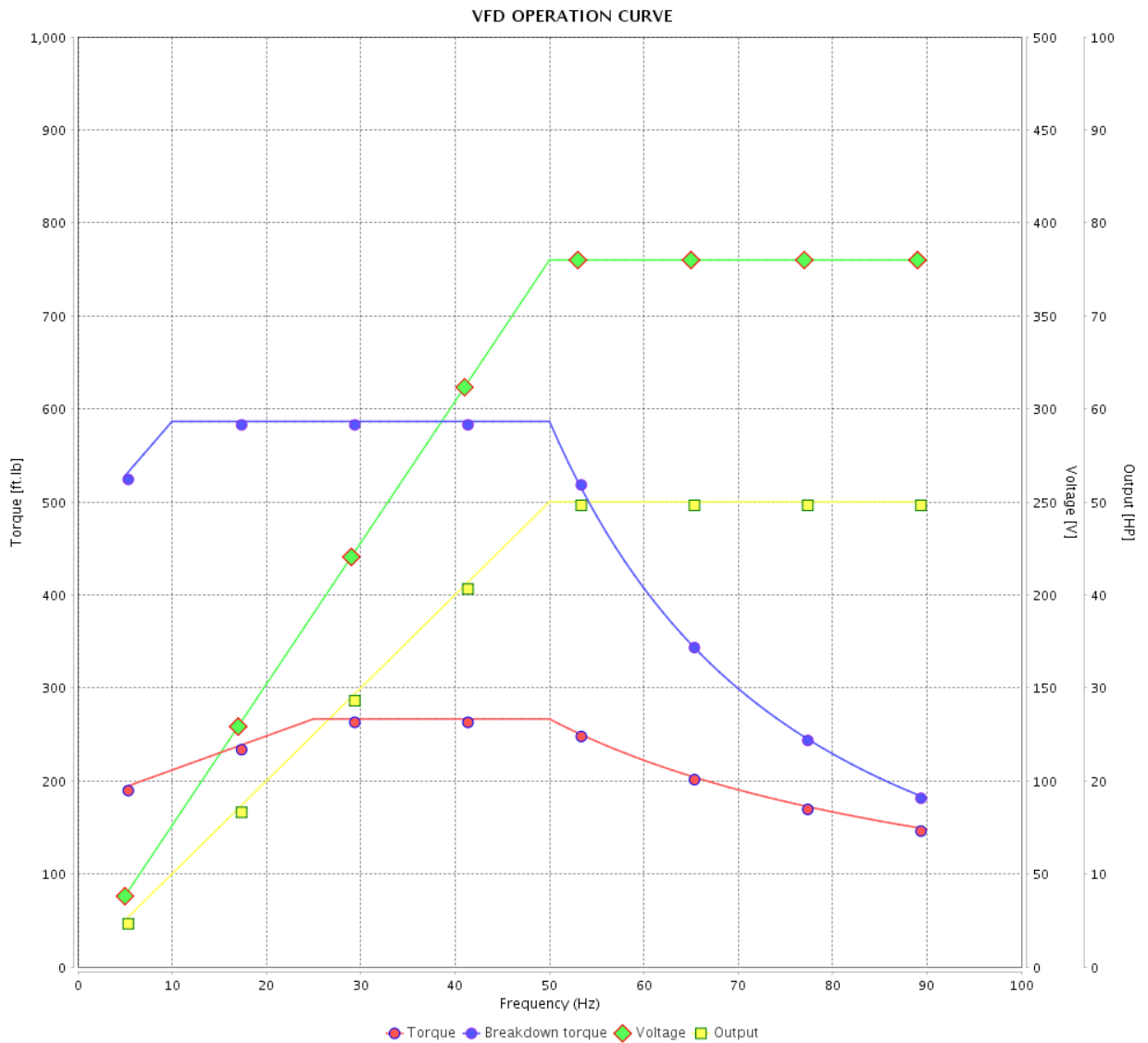


Customer : _____

Product line : NEMA Premium Efficiency Three-Phase

Product code : 14325585

Catalog # : 06012ST3QIE404TC-W22



Performance : 380 V 50 Hz 6P IE3

Rated current : 70.1 A
 LRC : 6.0
 Rated torque : 267 ft.lb
 Locked rotor torque : 180 %
 Breakdown torque : 220 %
 Rated speed : 985 rpm

Moment of inertia (J) : 36.9 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
Performed by			Page 31 / 36	Revision
Checked by				
Date	12/04/2022			

VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage



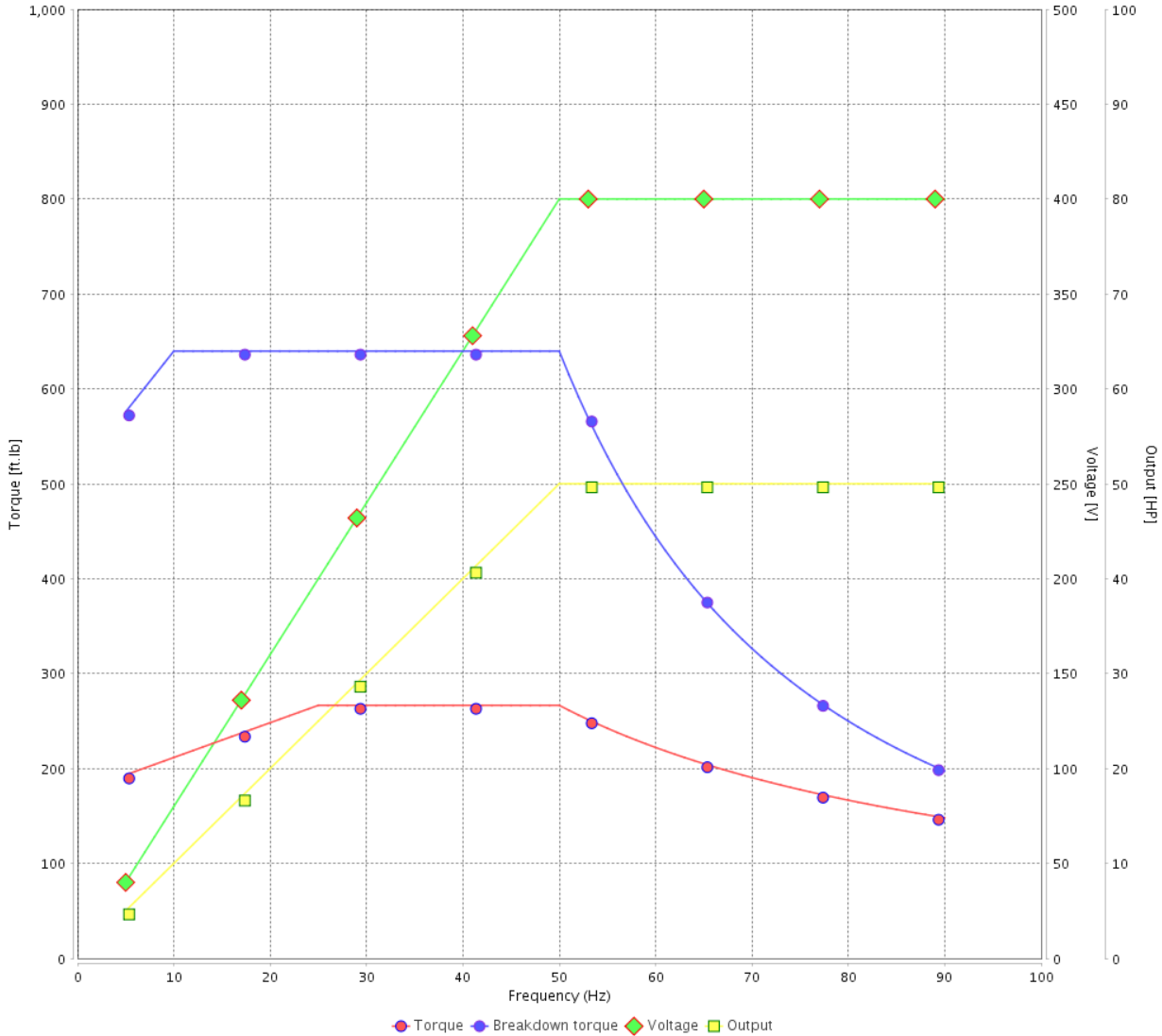
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 14325585

Catalog # : 06012ST3QIE404TC-W22

VFD OPERATION CURVE



Performance : 400 V 50 Hz 6P IE3

Rated current : 67.3 A
 LRC : 6.6
 Rated torque : 267 ft.lb
 Locked rotor torque : 220 %
 Breakdown torque : 240 %
 Rated speed : 985 rpm

Moment of inertia (J) : 36.9 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
Performed by			Page 32 / 36	Revision
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Date	12/04/2022			

VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage

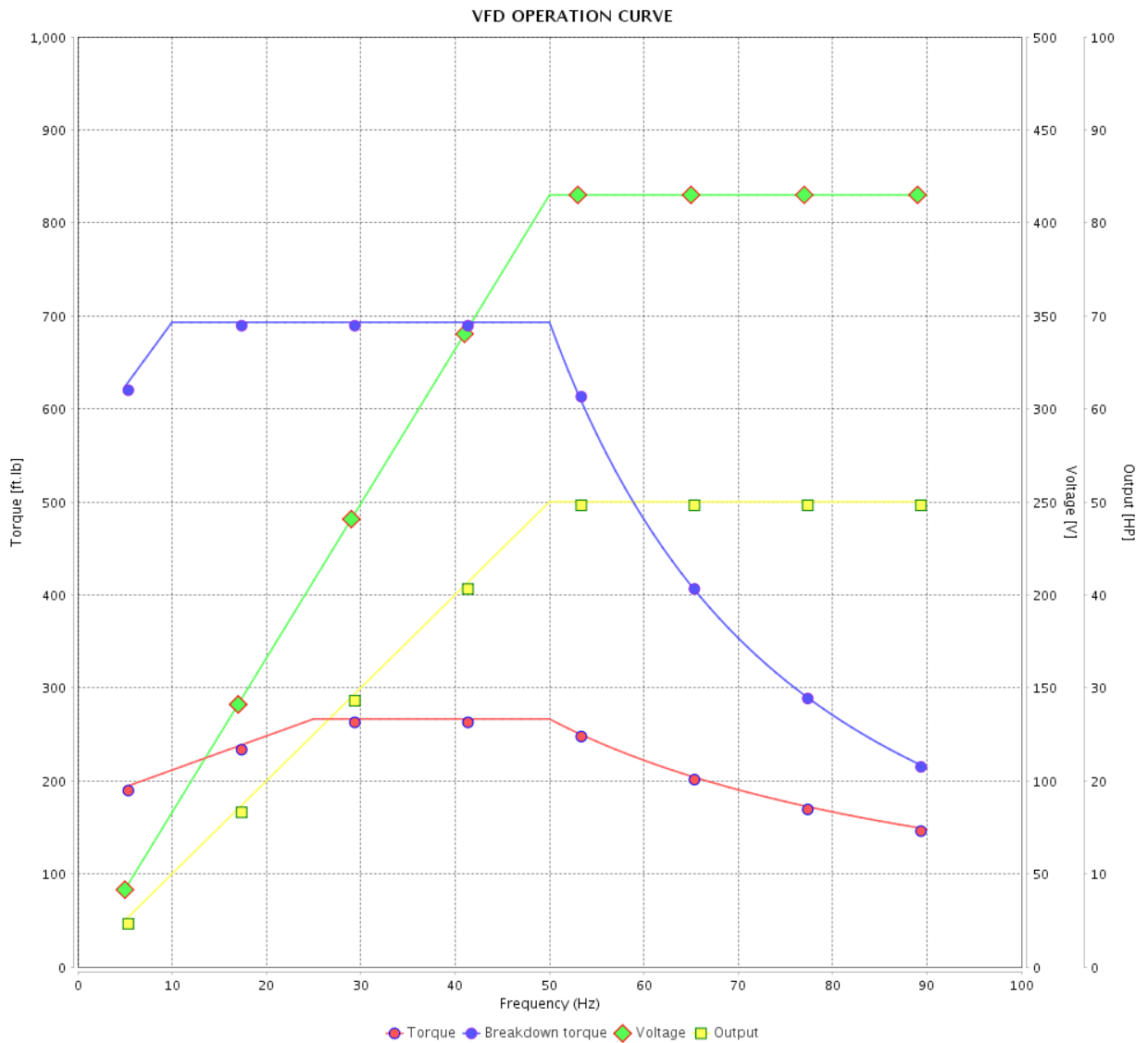


Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 14325585

Catalog # : 06012ST3QIE404TC-W22



Performance : 415 V 50 Hz 6P IE3

Rated current : 64.8 A
 LRC : 7.2
 Rated torque : 267 ft.lb
 Locked rotor torque : 229 %
 Breakdown torque : 260 %
 Rated speed : 985 rpm

Moment of inertia (J) : 36.9 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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VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage



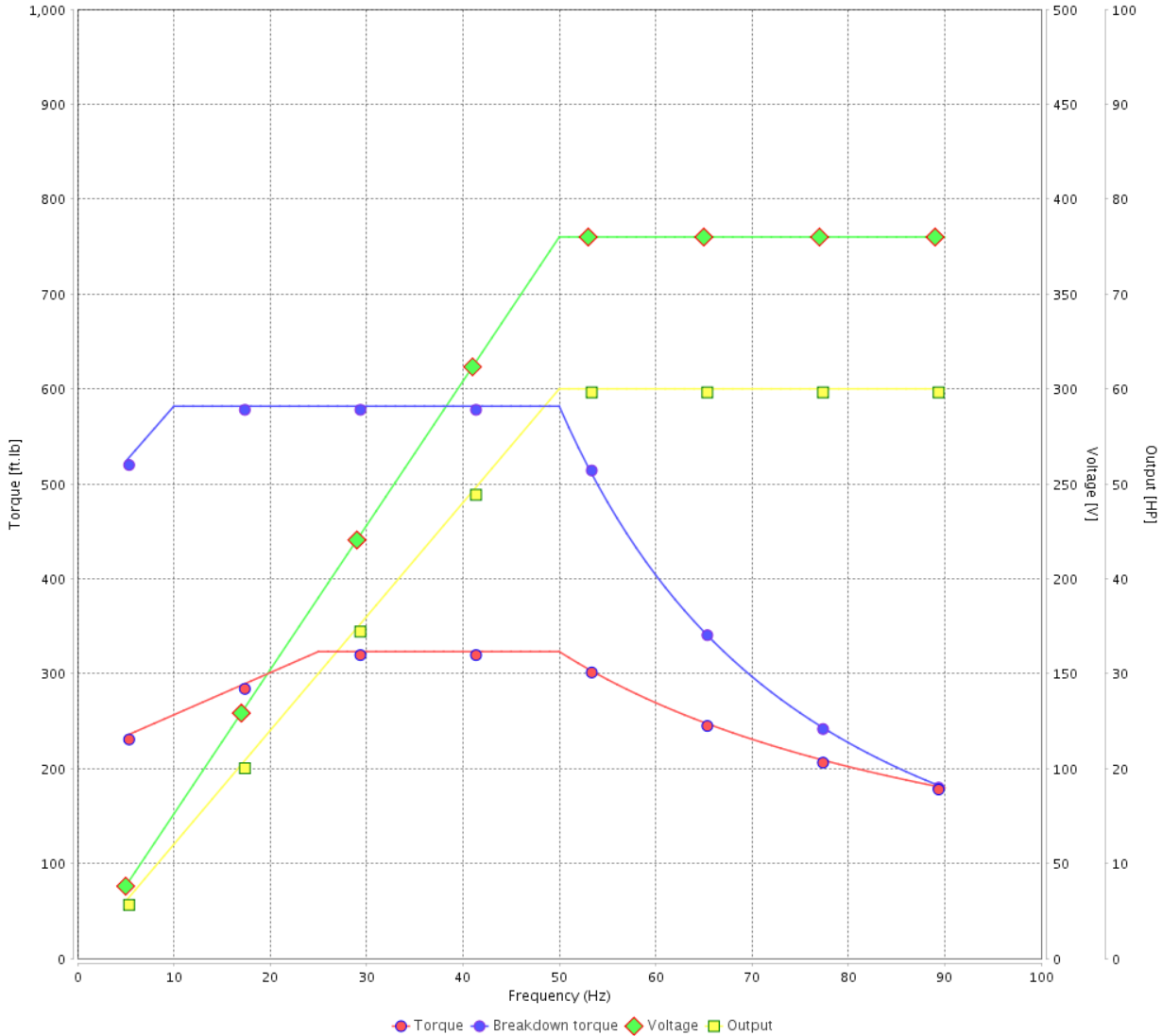
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 14325585

Catalog # : 06012ST3QIE404TC-W22

VFD OPERATION CURVE



Performance : 380 V 50 Hz 6P IE1

Rated current : 85.1 A
 LRC : 5.0
 Rated torque : 323 ft.lb
 Locked rotor torque : 150 %
 Breakdown torque : 180 %
 Rated speed : 975 rpm

Moment of inertia (J) : 36.9 sq.ft.lb
 Duty cycle : Cont.(S1)
 Insulation class : F
 Service factor : 1.00
 Temperature rise : 105 K
 Design : B

Rev.	Changes Summary	Performed	Checked	Date
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VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage

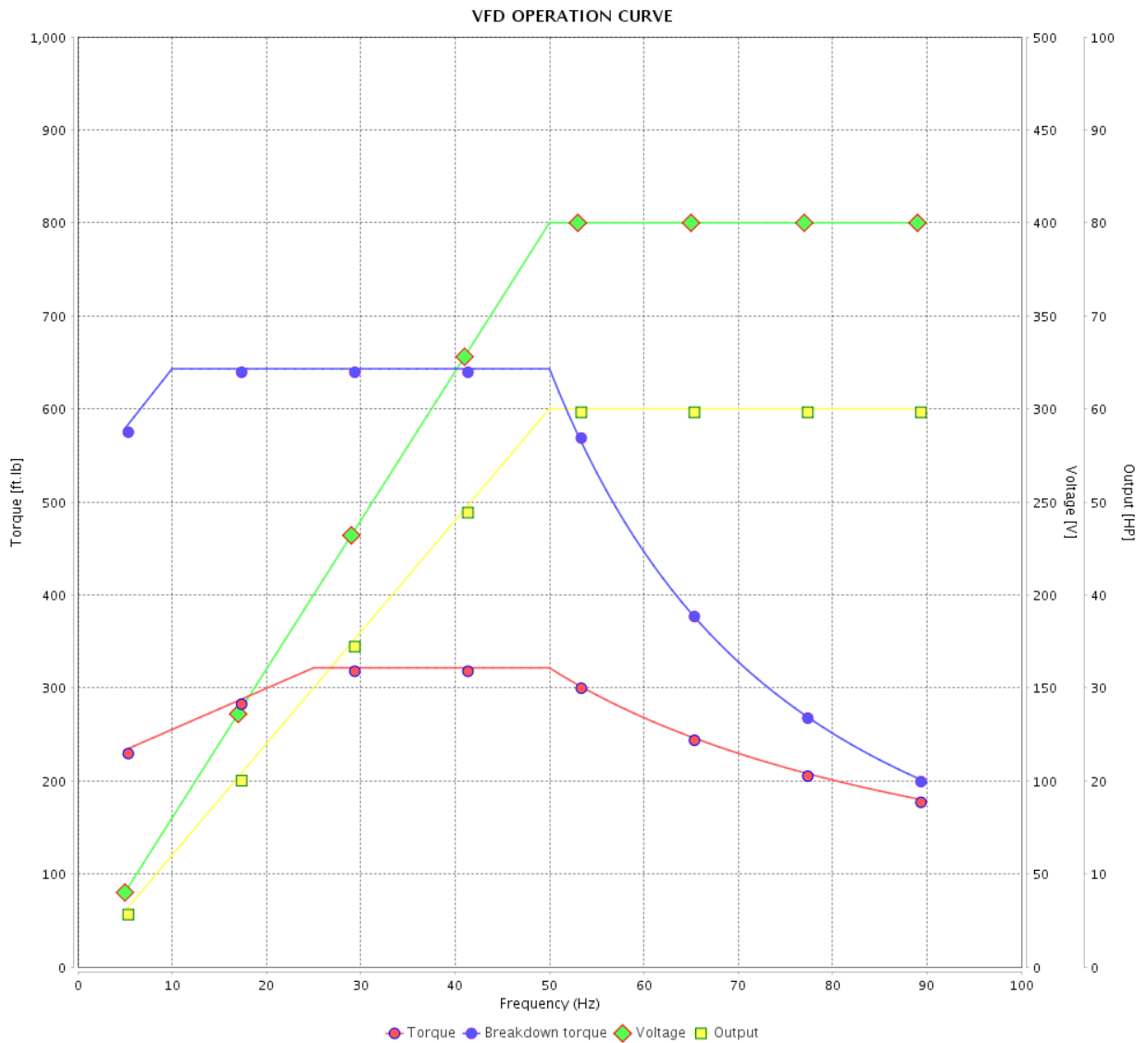


Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 14325585

Catalog # : 06012ST3QIE404TC-W22



Performance : 400 V 50 Hz 6P IE2

Rated current : 80.3 A
 LRC : 5.5
 Rated torque : 322 ft.lb
 Locked rotor torque : 180 %
 Breakdown torque : 200 %
 Rated speed : 980 rpm

Moment of inertia (J) : 36.9 sq.ft.lb
 Duty cycle : Cont.(S1)
 Insulation class : F
 Service factor : 1.00
 Temperature rise : 80 K
 Design : B

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Performed by		Page		Revision
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Date	12/04/2022			

VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage



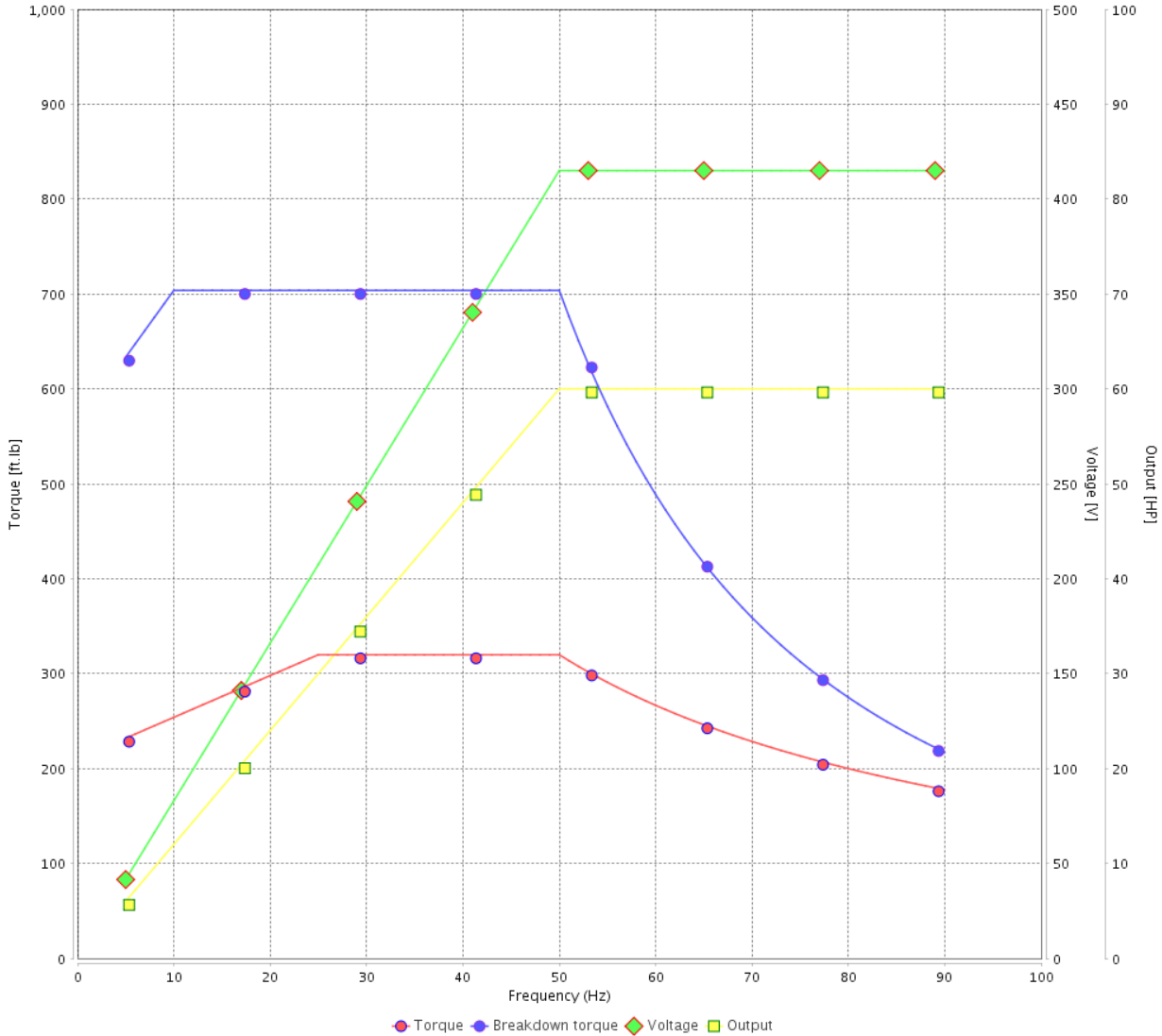
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 14325585

Catalog # : 06012ST3QIE404TC-W22

VFD OPERATION CURVE



Performance : 415 V 50 Hz 6P IE2

Rated current	: 78.3 A	Moment of inertia (J)	: 36.9 sq.ft.lb
LRC	: 6.0	Duty cycle	: Cont.(S1)
Rated torque	: 320 ft.lb	Insulation class	: F
Locked rotor torque	: 190 %	Service factor	: 1.00
Breakdown torque	: 220 %	Temperature rise	: 80 K
Rated speed	: 985 rpm	Design	: B

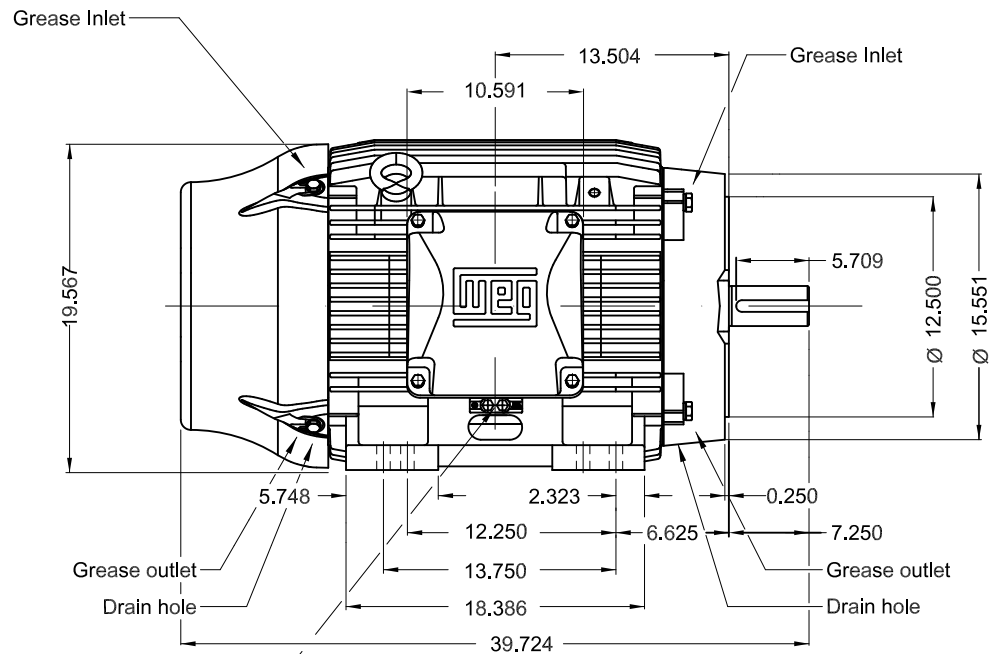
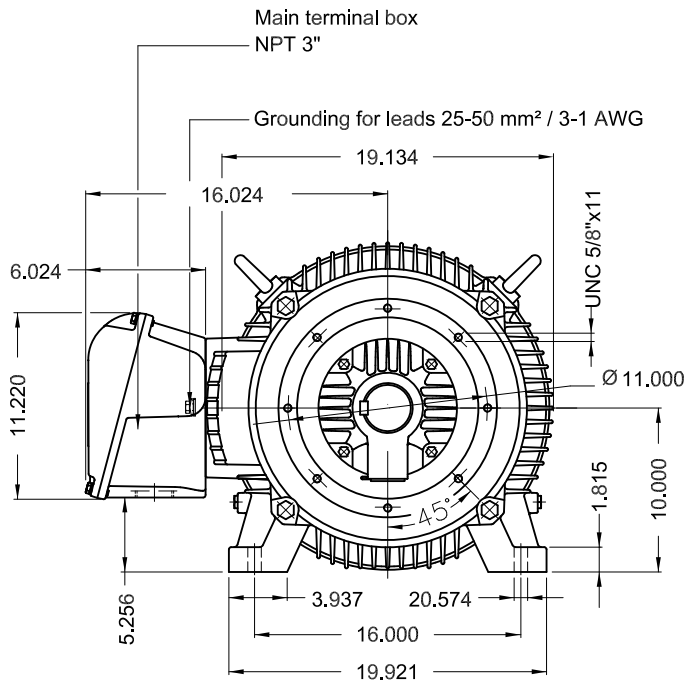
Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page 36 / 36	Revision
Checked by				
Date	12/04/2022			

1 2 3 4 5 6

A

B

C

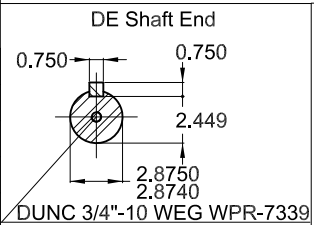


Grounding for leads 25-185 mm² / 3AWG-350MCM

D

E

Without vertical jackscrews
 Color RAL 5009
 Painting plan 202E
 Mounting NEMA F-1
 Mounting B34R(D)



60 HP 06 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 404/5TC IP55 TEFC					
RELEASED							
REL DT.	WMO	Jaragua do Sul	Product Engineering	SHEET	1 / 1		

PREVIEW
WDD

