

# DATA SHEET

## Three Phase Induction Motor - Squirrel Cage



Customer							
Product line		: NEMA Premium Efficiency Three-Phase		Product code :		14275000	
				Catalog # :		05012ST3QIE365TC-W22	
Frame		: 364/5TC		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>		: 782 lb	
Protection degree		: IP55		Moment of inertia (J)		: 32.4 sq.ft.lb	
Design		: B					
Output [HP]	50	40	40	40	50	50	50
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]	57.4	57.7	55.5	53.5	70.5	66.4	64.8
L. R. Amperes [A]	367	358	377	396	345	365	389
LRC [A]	6.4x(Code G)	6.2x(Code G)	6.8x(Code H)	7.4x(Code J)	4.9x(Code E)	5.5x(Code F)	6.0x(Code F)
No load current [A]	20.0	19.8	21.1	22.1	19.8	21.1	22.1
Rated speed [RPM]	1180	980	980	985	970	975	980
Slip [%]	1.67	2.00	2.00	1.50	3.00	2.50	2.00
Rated torque [ft.lb]	223	214	214	213	271	269	268
Locked rotor torque [%]	200	200	229	250	160	180	200
Breakdown torque [%]	240	240	260	290	190	210	229
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	32s (cold)	27s (cold)	27s (cold)	27s (cold)	27s (cold)	27s (cold)	27s (cold)
	18s (hot)	15s (hot)	15s (hot)	15s (hot)	15s (hot)	15s (hot)	15s (hot)
Noise level <sup>2</sup>	66.0 dB(A)	63.0 dB(A)	63.0 dB(A)	63.0 dB(A)	63.0 dB(A)	63.0 dB(A)	63.0 dB(A)
Efficiency (%)	25%	93.4	92.5	92.7	92.6	93.5	93.3
	50%	93.6	92.7	92.7	92.6	93.0	93.0
	75%	94.1	92.8	93.1	93.1	92.4	93.0
	100%	94.1	92.9	92.9	92.9	91.7	92.4
Power Factor	25%	0.49	0.48	0.45	0.41	0.53	0.51
	50%	0.74	0.72	0.70	0.66	0.77	0.77
	75%	0.83	0.82	0.81	0.79	0.84	0.83
	100%	0.86	0.85	0.84	0.84	0.87	0.87
Bearing type	Drive end		Non drive end		Foundation loads		
	: 6314 C3		: 6314 C3		Max. traction : 1718 lb		
	: Inpro/Seal		: Inpro/Seal		Max. compression : 2500 lb		
	: 17000 h		: 17000 h				
	: 27 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



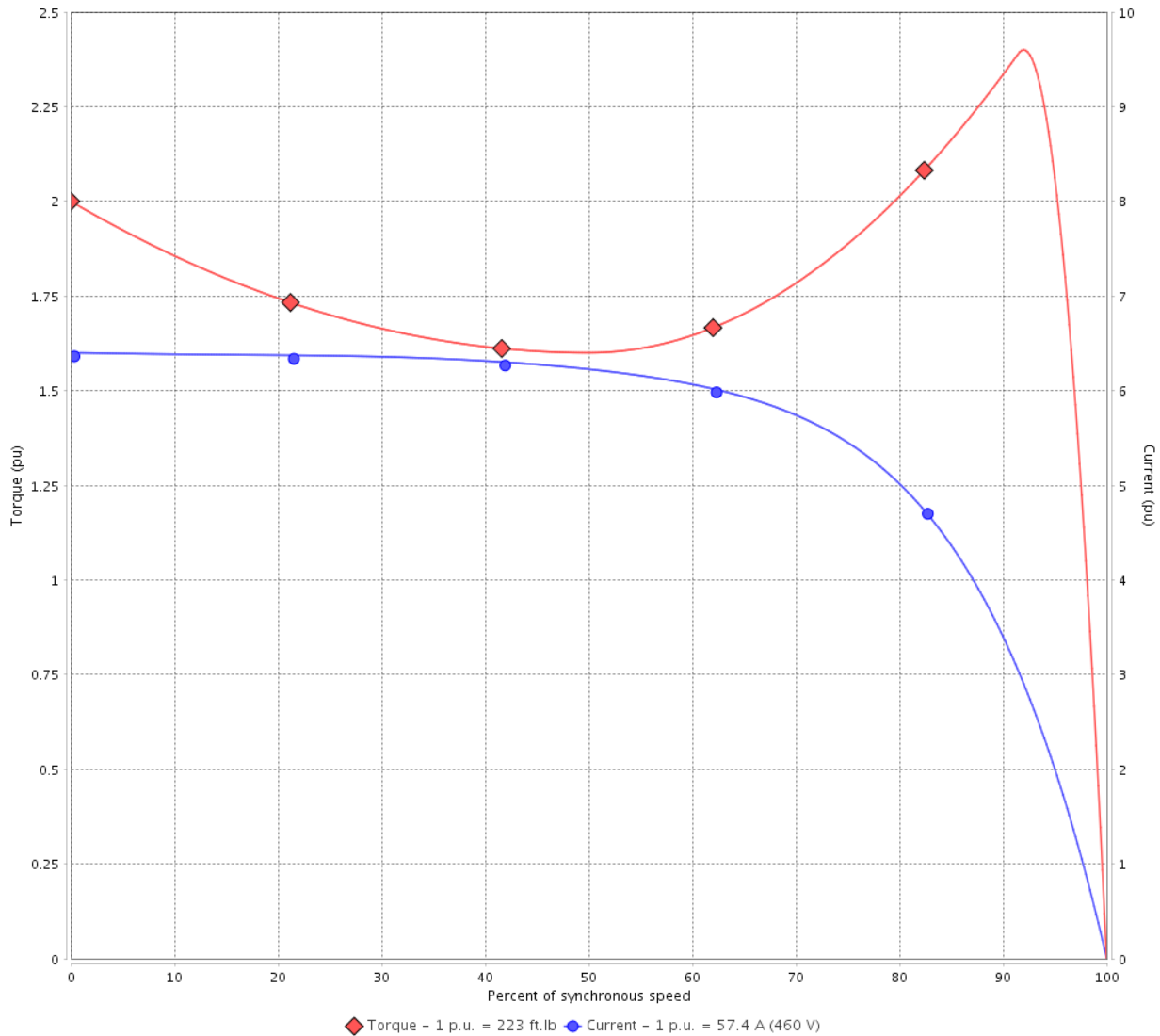
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 14275000

Catalog # : 05012ST3QIE365TC-W22

TORQUE AND CURRENT VS SPEED CURVE



Performance : 460 V 60 Hz 6P

Rated current	: 57.4 A	Moment of inertia (J)	: 32.4 sq.ft.lb
LRC	: 6.4	Duty cycle	: Cont.(S1)
Rated torque	: 223 ft.lb	Insulation class	: F
Locked rotor torque	: 200 %	Service factor	: 1.25
Breakdown torque	: 240 %	Temperature rise	: 80 K
Rated speed	: 1180 rpm	Design	: B

Locked rotor time : 32s (cold) 18s (hot)

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# TORQUE AND CURRENT VS SPEED CURVE



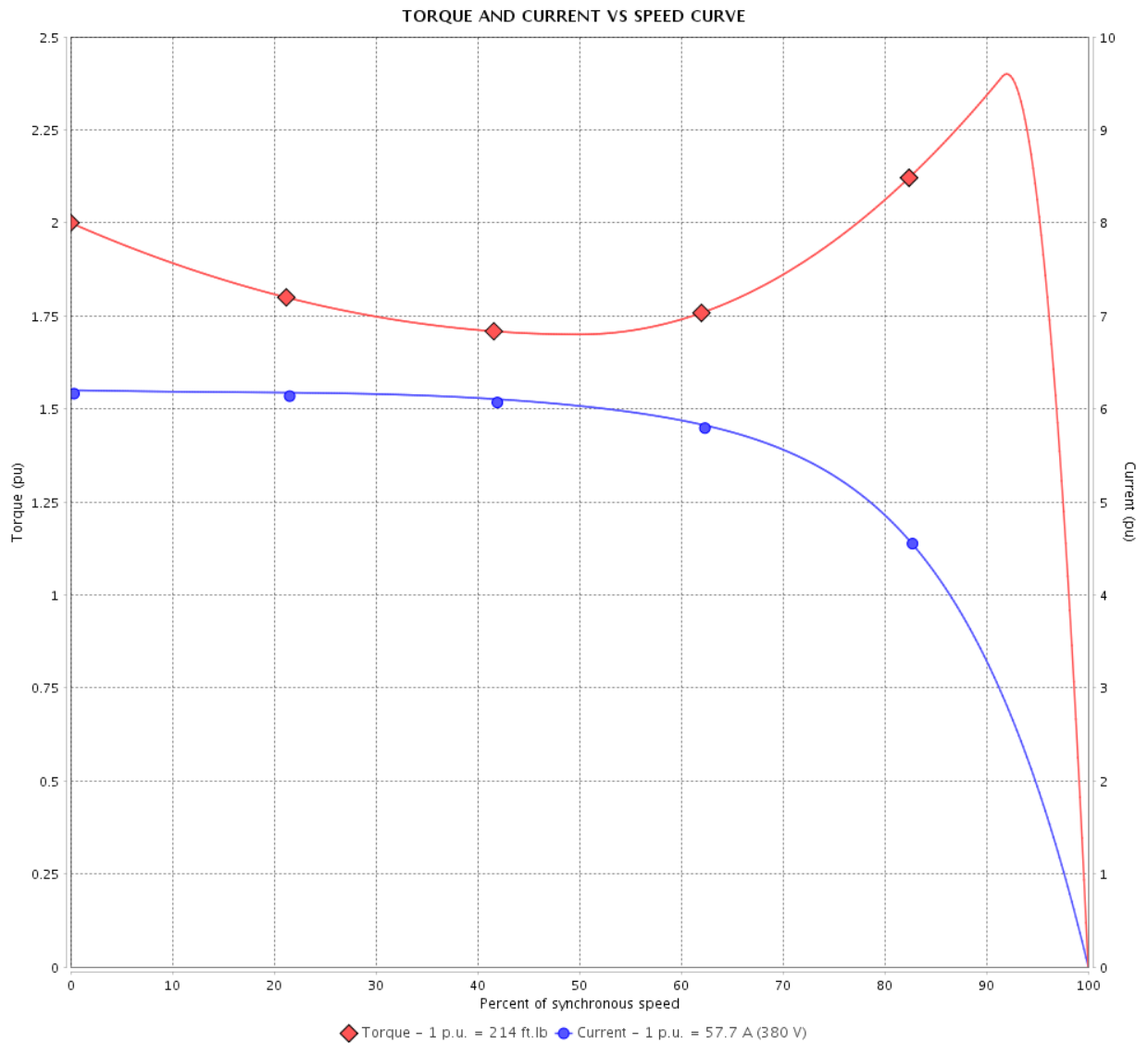
## Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 14275000

Catalog # : 05012ST3QIE365TC-W22



Performance : 380 V 50 Hz 6P IE3

Rated current	: 57.7 A	Moment of inertia (J)	: 32.4 sq.ft.lb
LRC	: 6.2	Duty cycle	: Cont.(S1)
Rated torque	: 214 ft.lb	Insulation class	: F
Locked rotor torque	: 200 %	Service factor	: 1.00
Breakdown torque	: 240 %	Temperature rise	: 80 K
Rated speed	: 980 rpm	Design	: B

Locked rotor time : 27s (cold) 15s (hot)

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# TORQUE AND CURRENT VS SPEED CURVE

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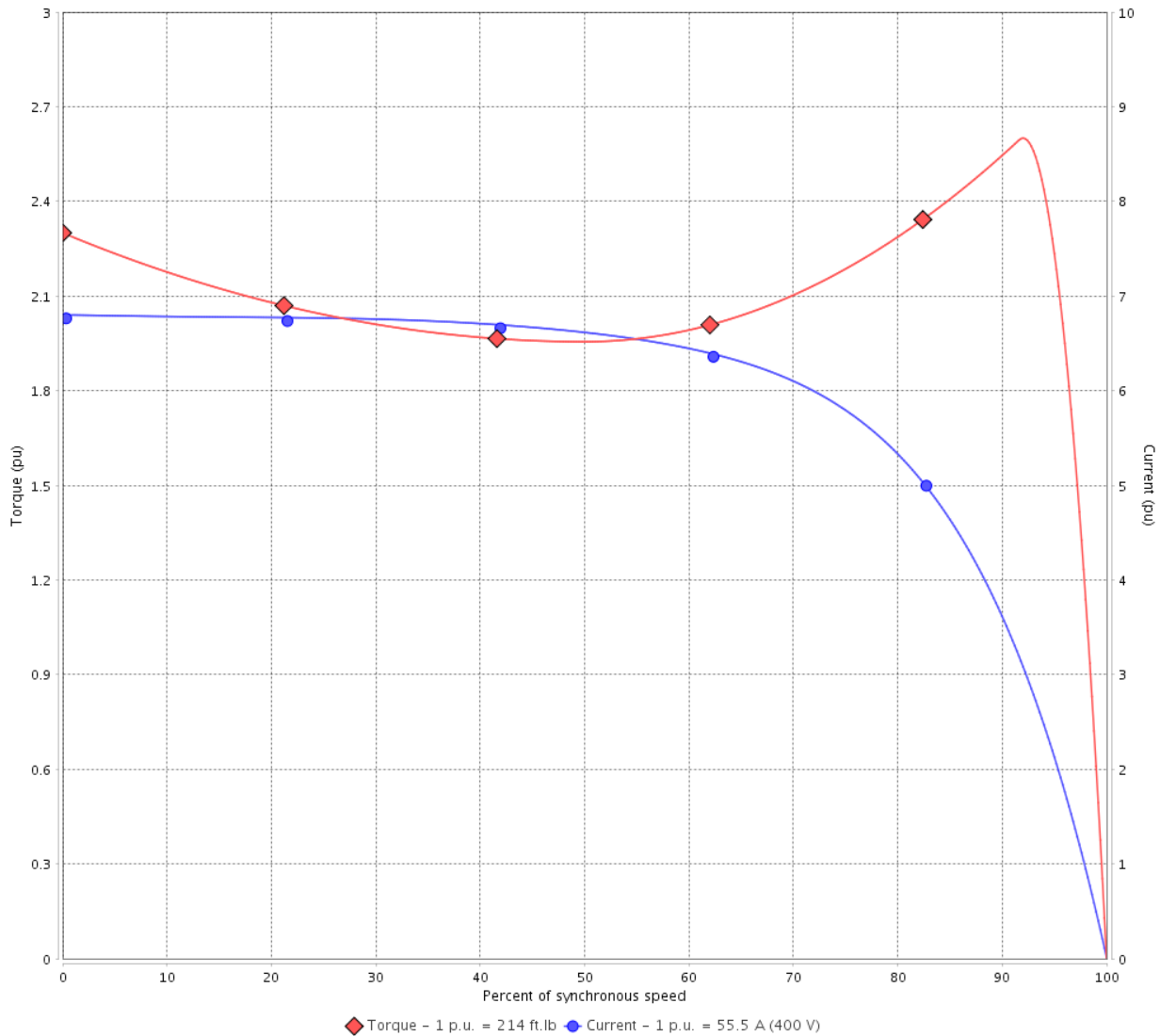
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TORQUE AND CURRENT VS SPEED CURVE



Performance : 400 V 50 Hz 6P IE3

Rated current	: 55.5 A	Moment of inertia (J)	: 32.4 sq.ft.lb
LRC	: 6.8	Duty cycle	: Cont.(S1)
Rated torque	: 214 ft.lb	Insulation class	: F
Locked rotor torque	: 229 %	Service factor	: 1.00
Breakdown torque	: 260 %	Temperature rise	: 80 K
Rated speed	: 980 rpm	Design	: B

Locked rotor time : 27s (cold) 15s (hot)

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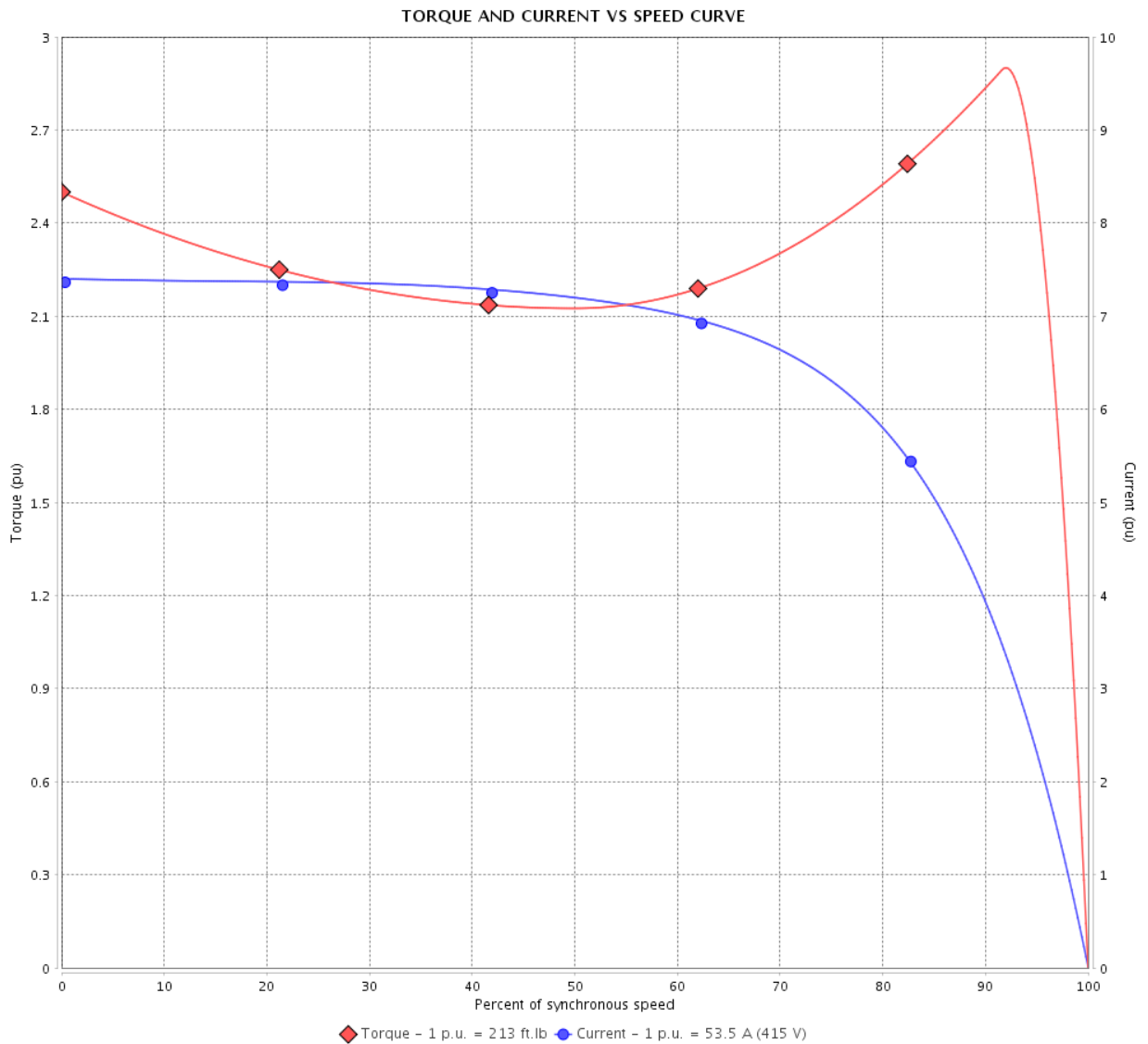
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Catalog # : 05012ST3QIE365TC-W22



Performance : 415 V 50 Hz 6P IE3

Rated current	: 53.5 A	Moment of inertia (J)	: 32.4 sq.ft.lb
LRC	: 7.4	Duty cycle	: Cont.(S1)
Rated torque	: 213 ft.lb	Insulation class	: F
Locked rotor torque	: 250 %	Service factor	: 1.00
Breakdown torque	: 290 %	Temperature rise	: 80 K
Rated speed	: 985 rpm	Design	: B

Locked rotor time : 27s (cold) 15s (hot)

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# TORQUE AND CURRENT VS SPEED CURVE

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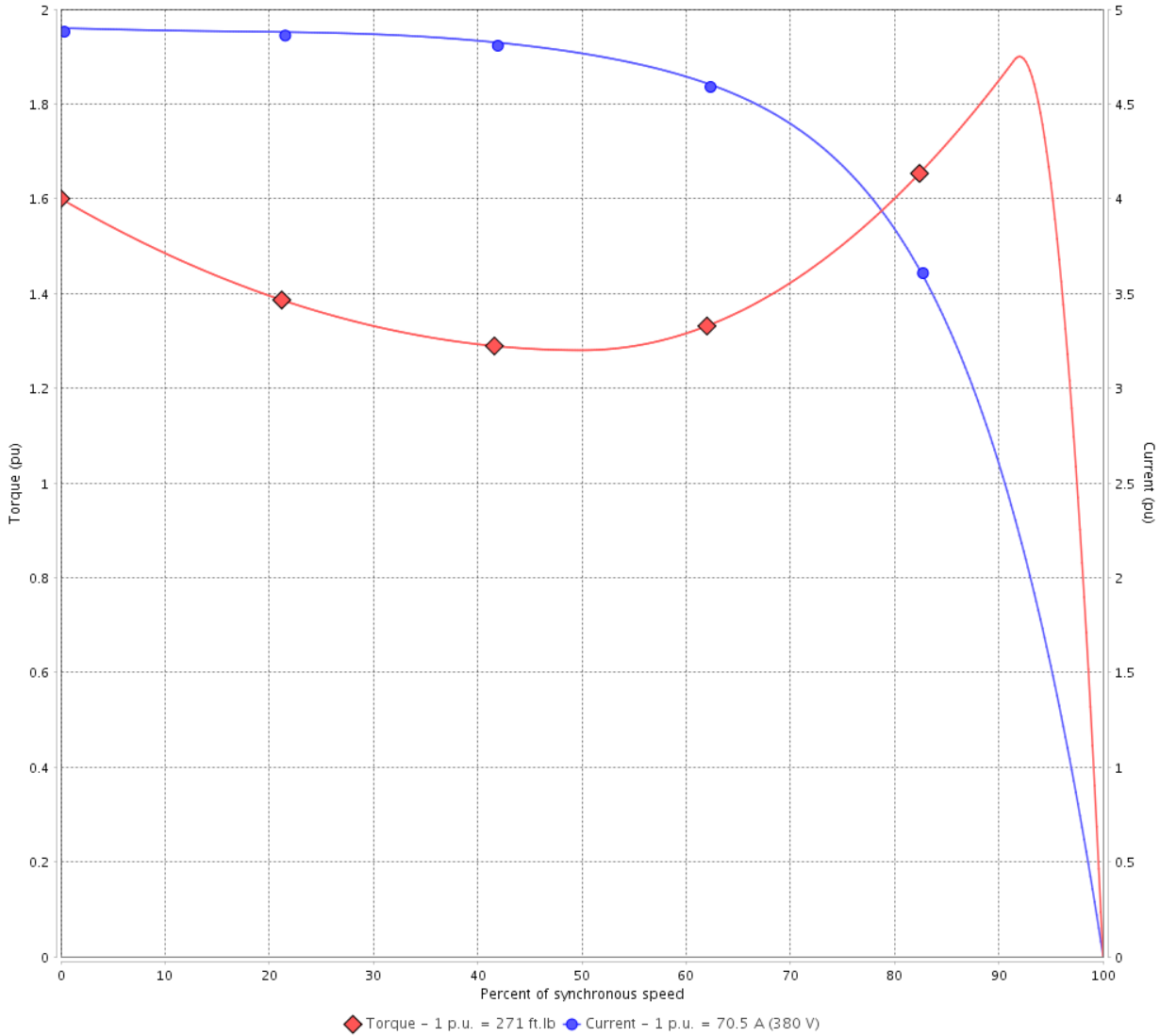
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TORQUE AND CURRENT VS SPEED CURVE



Performance : 380 V 50 Hz 6P IE1

Rated current	: 70.5 A	Moment of inertia (J)	: 32.4 sq.ft.lb
LRC	: 4.9	Duty cycle	: Cont.(S1)
Rated torque	: 271 ft.lb	Insulation class	: F
Locked rotor torque	: 160 %	Service factor	: 1.00
Breakdown torque	: 190 %	Temperature rise	: 105 K
Rated speed	: 970 rpm	Design	: B

Locked rotor time : 27s (cold) 15s (hot)

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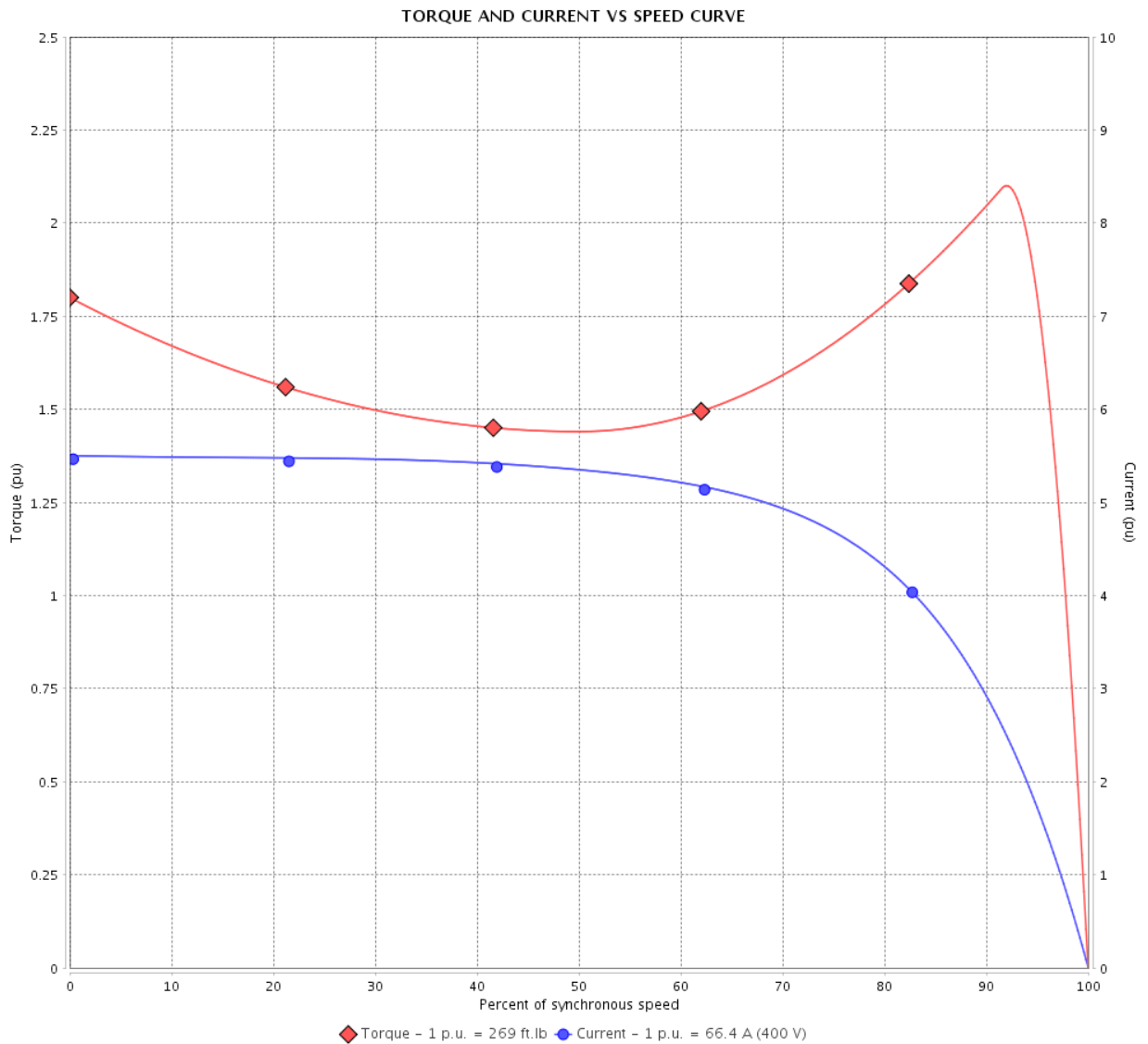
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Customer :

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Product code : 14275000

Catalog # : 05012ST3QIE365TC-W22



Performance : 400 V 50 Hz 6P IE2

Rated current	: 66.4 A	Moment of inertia (J)	: 32.4 sq.ft.lb
LRC	: 5.5	Duty cycle	: Cont.(S1)
Rated torque	: 269 ft.lb	Insulation class	: F
Locked rotor torque	: 180 %	Service factor	: 1.00
Breakdown torque	: 210 %	Temperature rise	: 80 K
Rated speed	: 975 rpm	Design	: B

Locked rotor time : 27s (cold) 15s (hot)

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# TORQUE AND CURRENT VS SPEED CURVE

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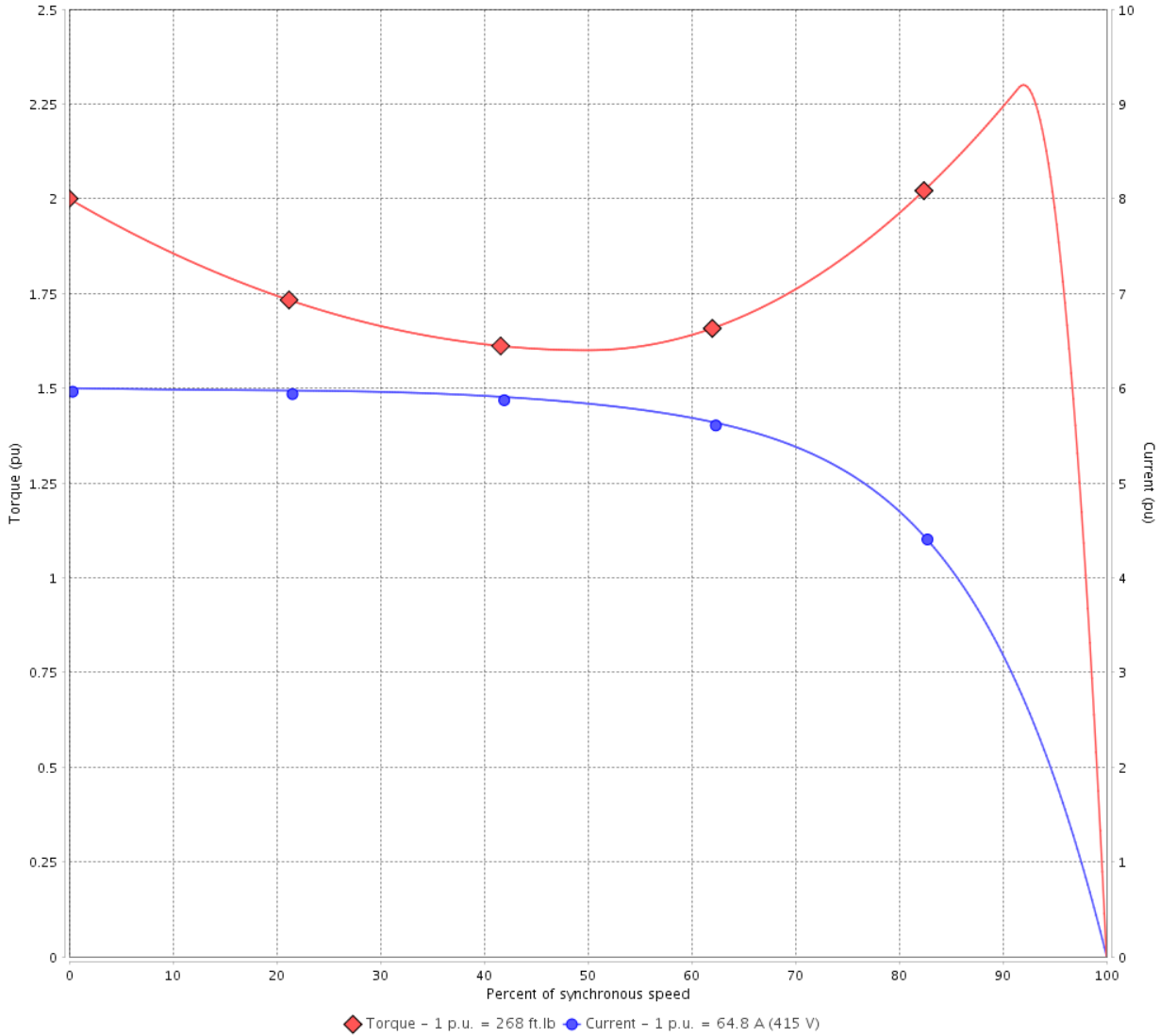
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TORQUE AND CURRENT VS SPEED CURVE



Performance : 415 V 50 Hz 6P IE2

Rated current	: 64.8 A	Moment of inertia (J)	: 32.4 sq.ft.lb
LRC	: 6.0	Duty cycle	: Cont.(S1)
Rated torque	: 268 ft.lb	Insulation class	: F
Locked rotor torque	: 200 %	Service factor	: 1.00
Breakdown torque	: 229 %	Temperature rise	: 80 K
Rated speed	: 980 rpm	Design	: B

Locked rotor time : 27s (cold) 15s (hot)

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# LOAD PERFORMANCE CURVE

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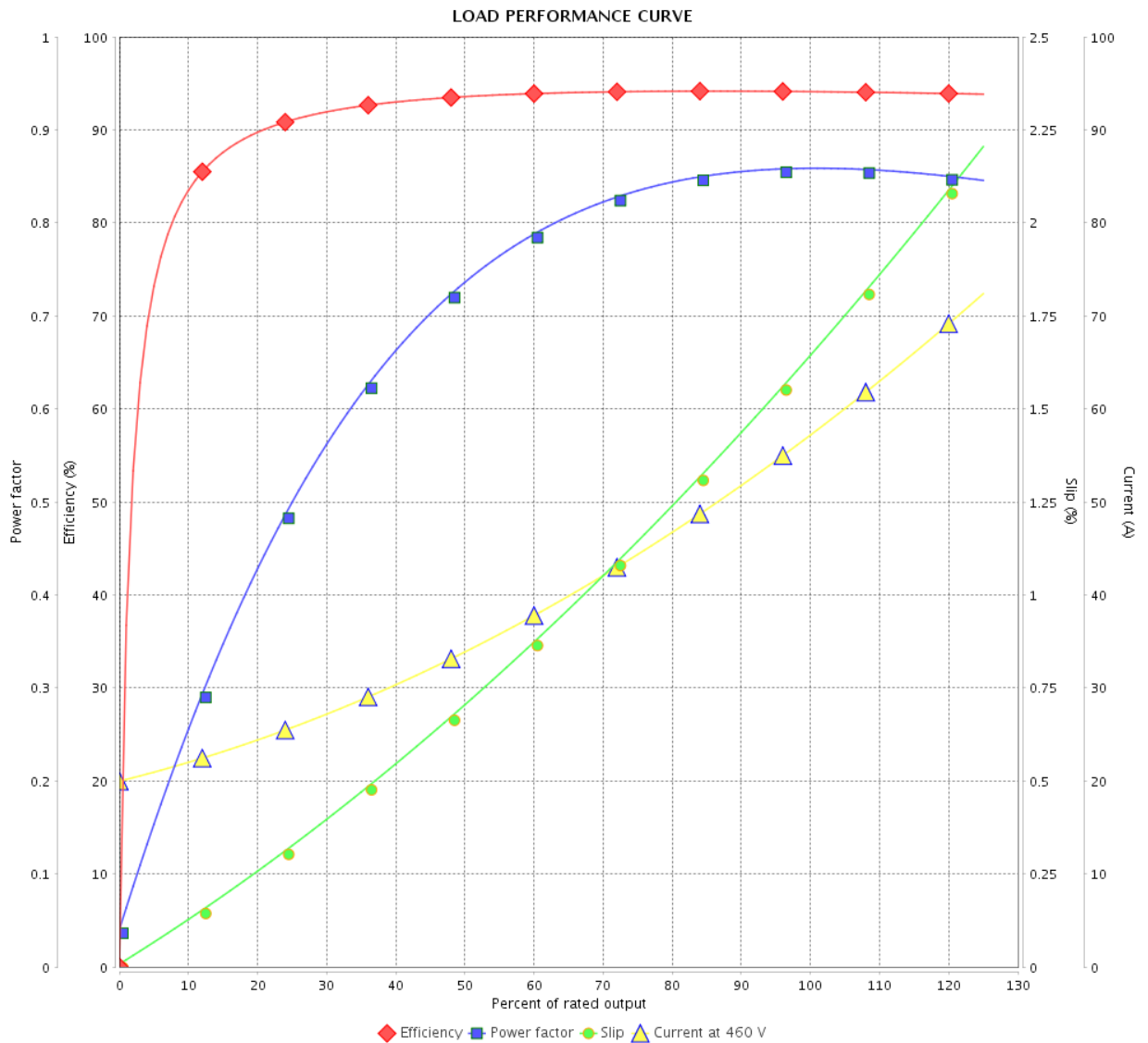


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Product code : 14275000

Catalog # : 05012ST3QIE365TC-W22



Performance : 460 V 60 Hz 6P

Rated current : 57.4 A  
 LRC : 6.4  
 Rated torque : 223 ft.lb  
 Locked rotor torque : 200 %  
 Breakdown torque : 240 %  
 Rated speed : 1180 rpm

Moment of inertia (J) : 32.4 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.25  
 Temperature rise : 80 K  
 Design : B

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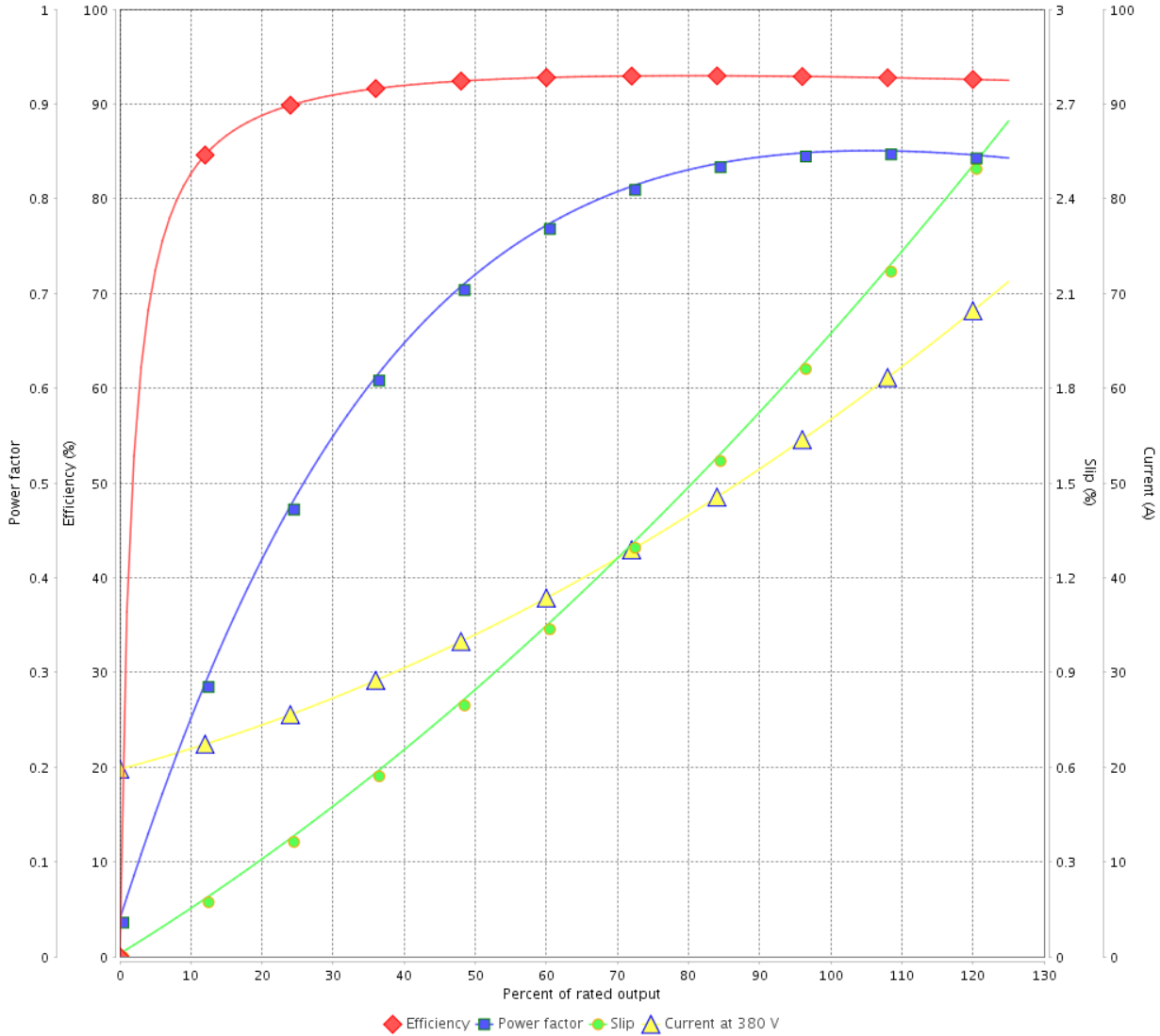
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LOAD PERFORMANCE CURVE



Performance : 380 V 50 Hz 6P IE3

Rated current : 57.7 A  
 LRC : 6.2  
 Rated torque : 214 ft.lb  
 Locked rotor torque : 200 %  
 Breakdown torque : 240 %  
 Rated speed : 980 rpm

Moment of inertia (J) : 32.4 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 80 K  
 Design : B

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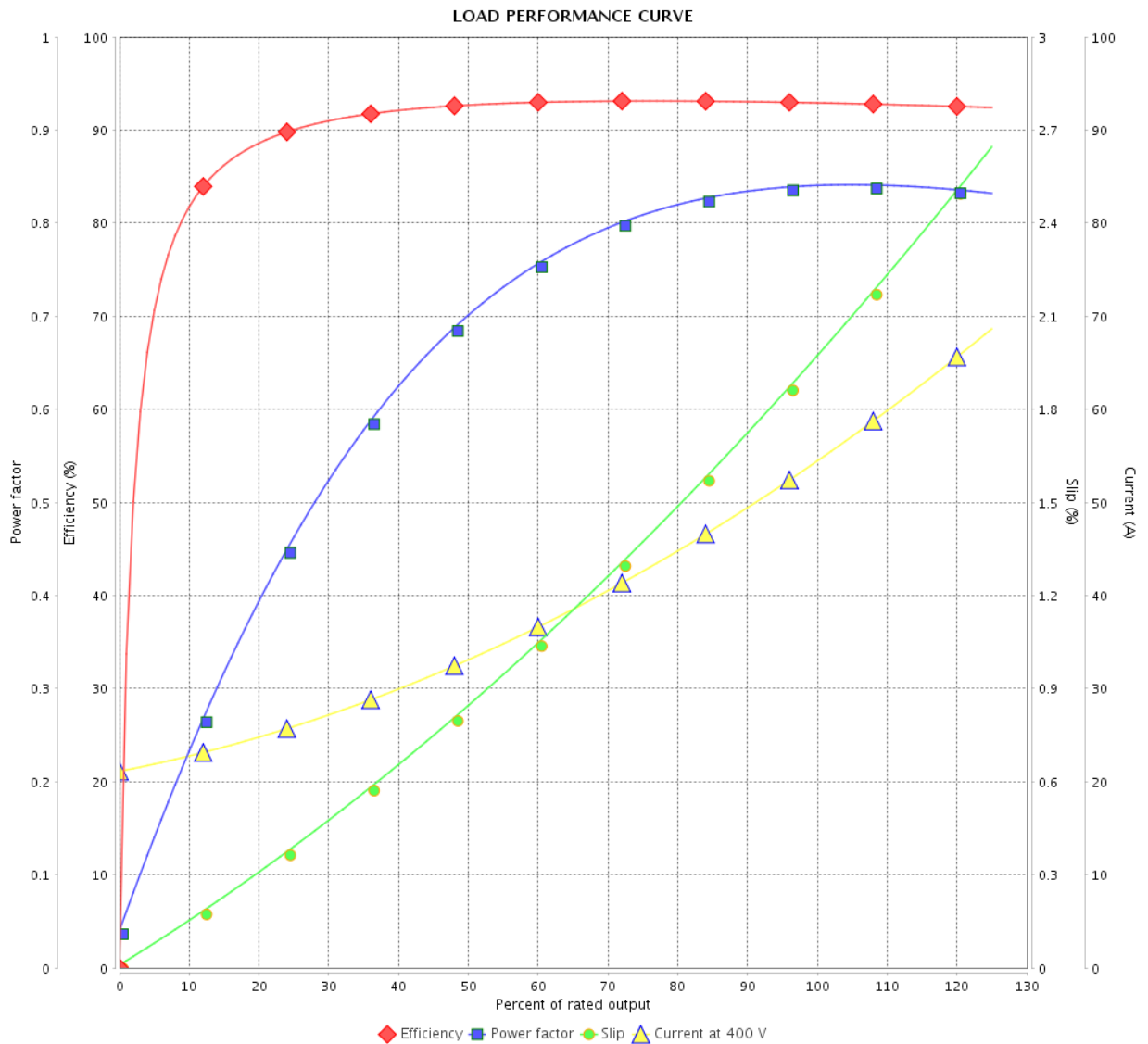


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Performance : 400 V 50 Hz 6P IE3

Rated current : 55.5 A  
 LRC : 6.8  
 Rated torque : 214 ft.lb  
 Locked rotor torque : 229 %  
 Breakdown torque : 260 %  
 Rated speed : 980 rpm

Moment of inertia (J) : 32.4 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 80 K  
 Design : B

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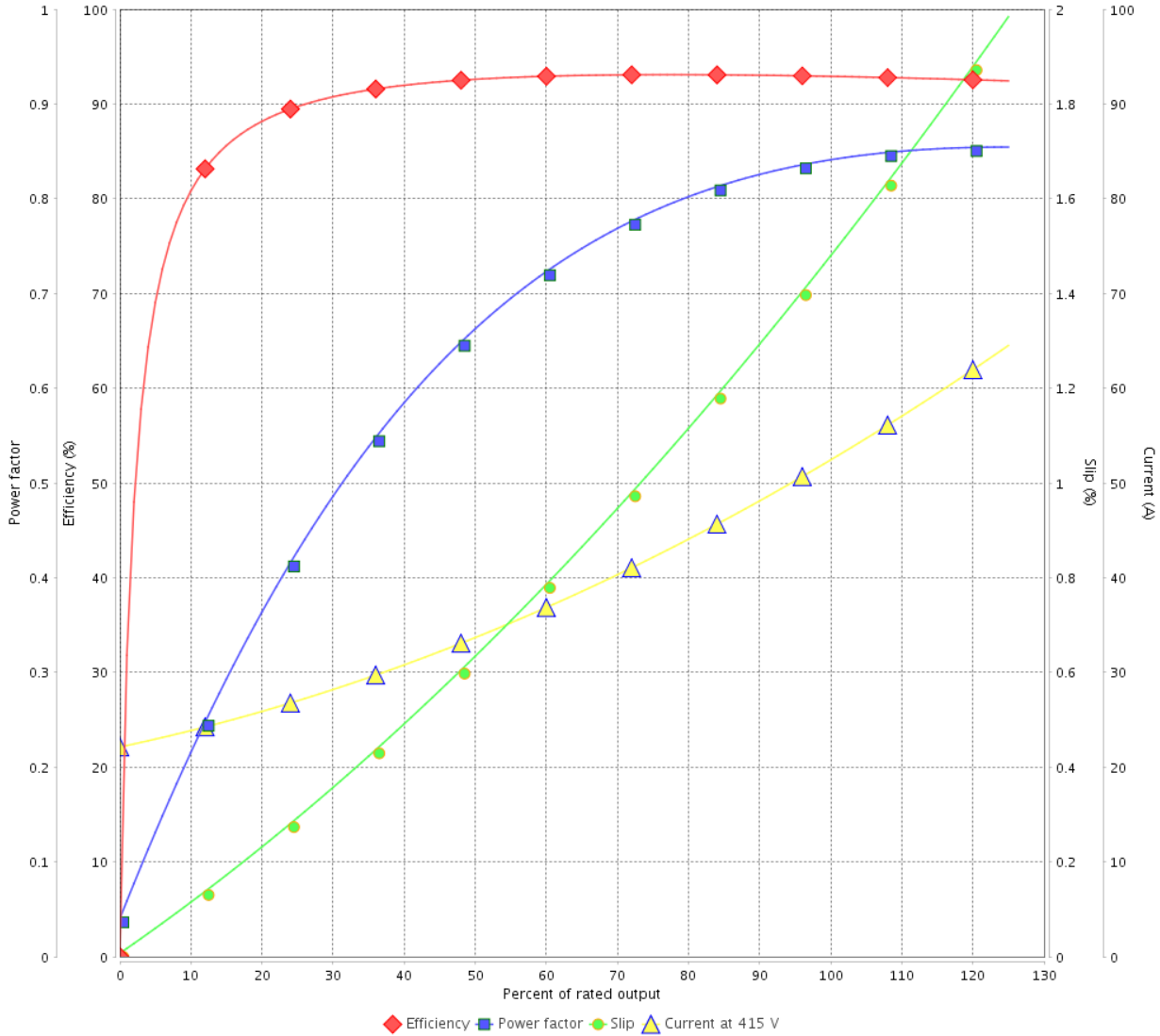
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LOAD PERFORMANCE CURVE



Performance : 415 V 50 Hz 6P IE3

Rated current : 53.5 A  
 LRC : 7.4  
 Rated torque : 213 ft.lb  
 Locked rotor torque : 250 %  
 Breakdown torque : 290 %  
 Rated speed : 985 rpm

Moment of inertia (J) : 32.4 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 80 K  
 Design : B

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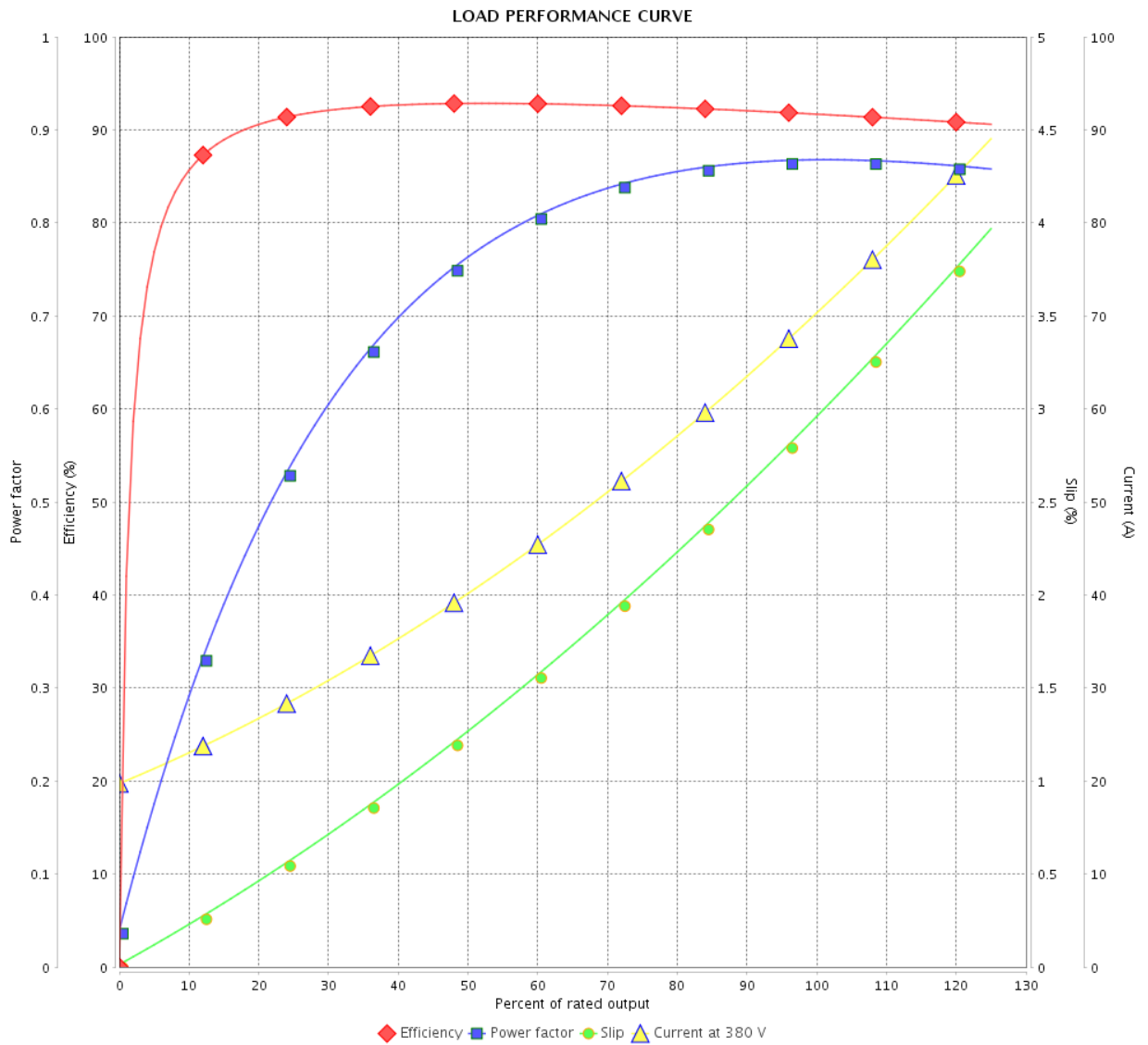


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Product line : NEMA Premium Efficiency Three-Phase

Product code : 14275000

Catalog # : 05012ST3QIE365TC-W22



Performance : 380 V 50 Hz 6P IE1

Rated current : 70.5 A  
 LRC : 4.9  
 Rated torque : 271 ft.lb  
 Locked rotor torque : 160 %  
 Breakdown torque : 190 %  
 Rated speed : 970 rpm

Moment of inertia (J) : 32.4 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 105 K  
 Design : B

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Three Phase Induction Motor - Squirrel Cage



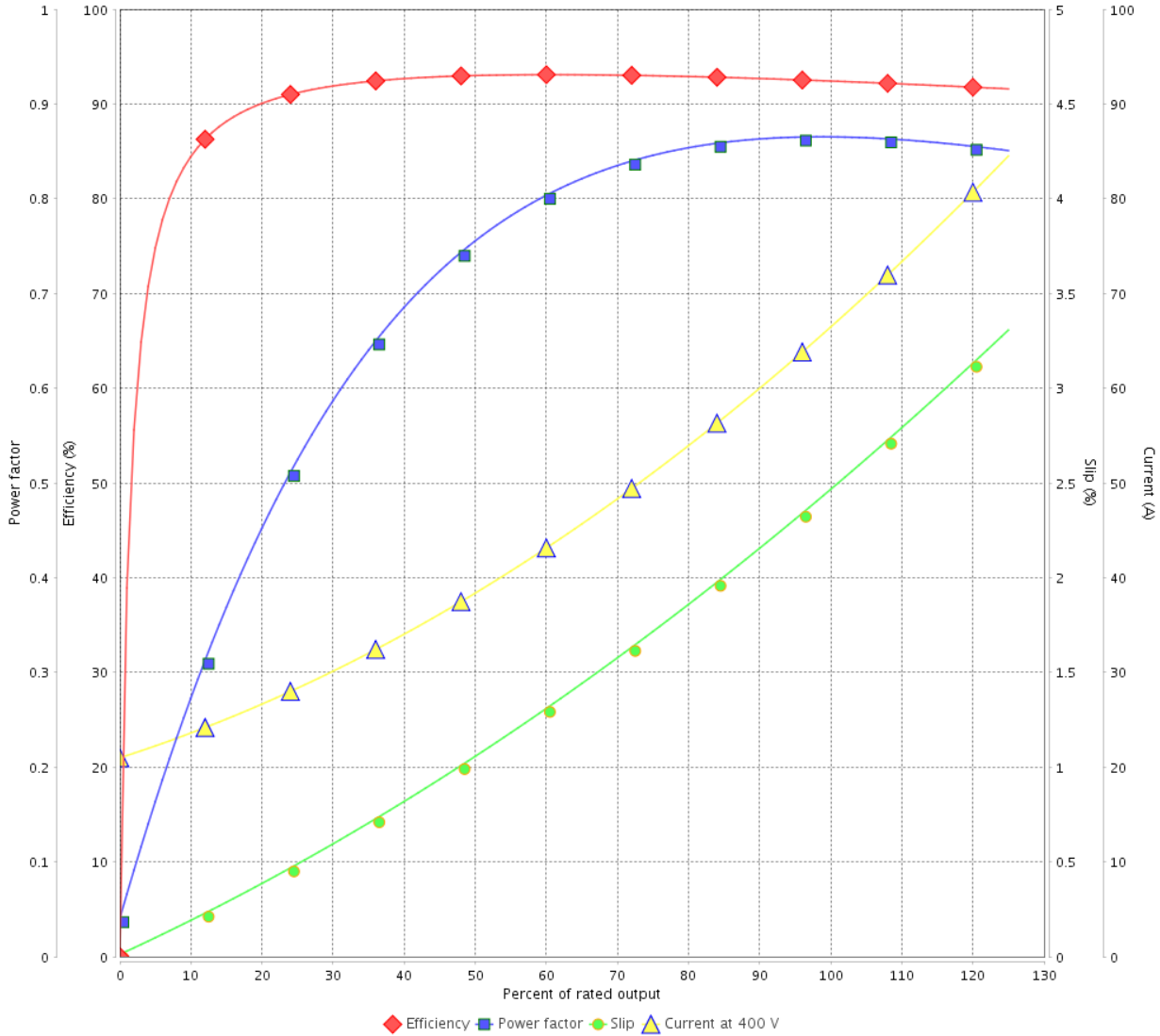
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Performance : 400 V 50 Hz 6P IE2

Rated current : 66.4 A  
 LRC : 5.5  
 Rated torque : 269 ft.lb  
 Locked rotor torque : 180 %  
 Breakdown torque : 210 %  
 Rated speed : 975 rpm

Moment of inertia (J) : 32.4 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

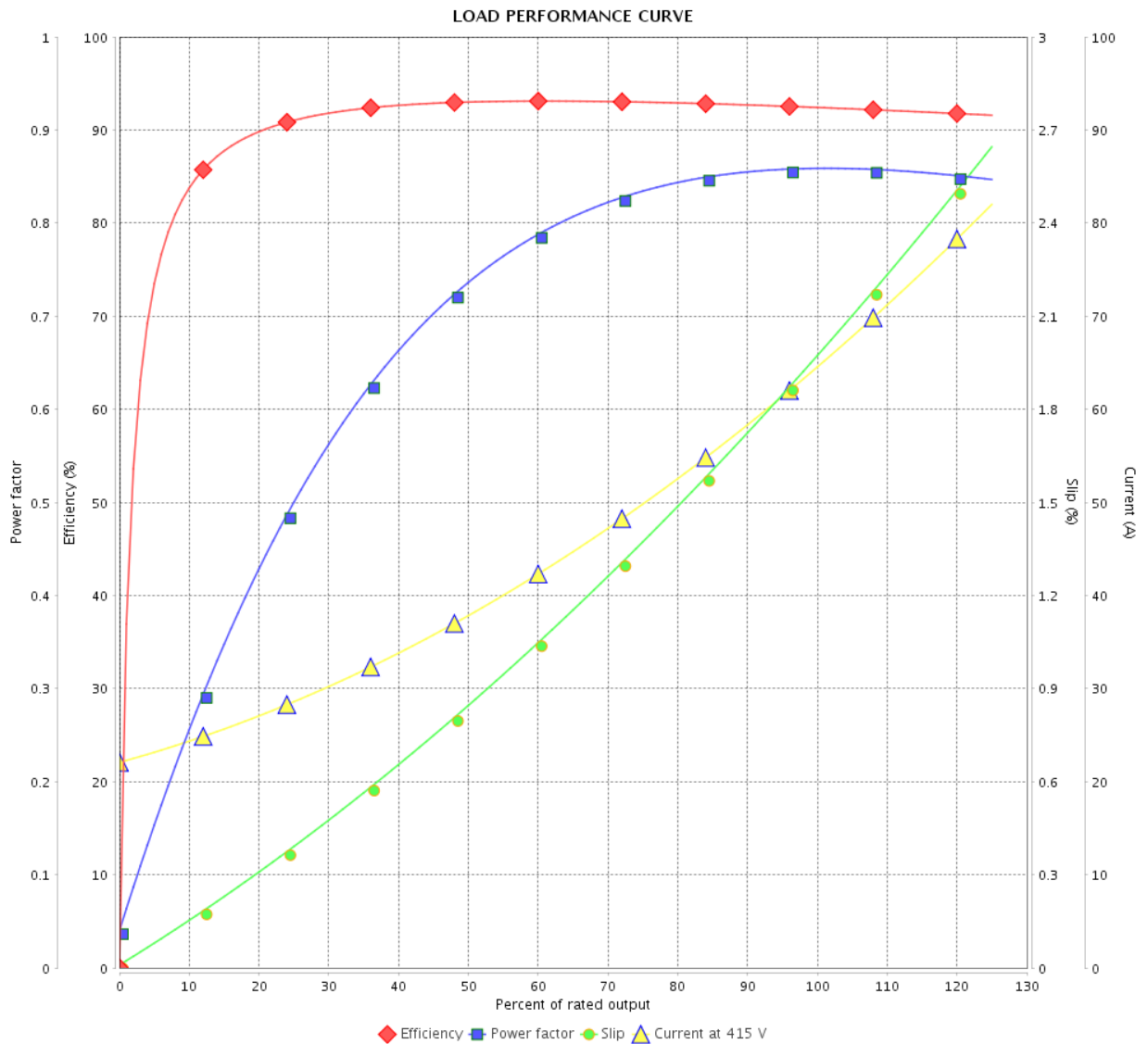


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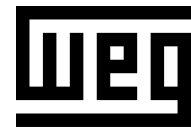
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Rated current : 64.8 A  
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 Breakdown torque : 229 %  
 Rated speed : 980 rpm

Moment of inertia (J) : 32.4 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

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LRC	: 6.4	Duty cycle	: Cont.(S1)
Rated torque	: 223 ft.lb	Insulation class	: F
Locked rotor torque	: 200 %	Service factor	: 1.25
Breakdown torque	: 240 %	Temperature rise	: 80 K
Rated speed	: 1180 rpm	Design	: B

Heating constant

Cooling constant

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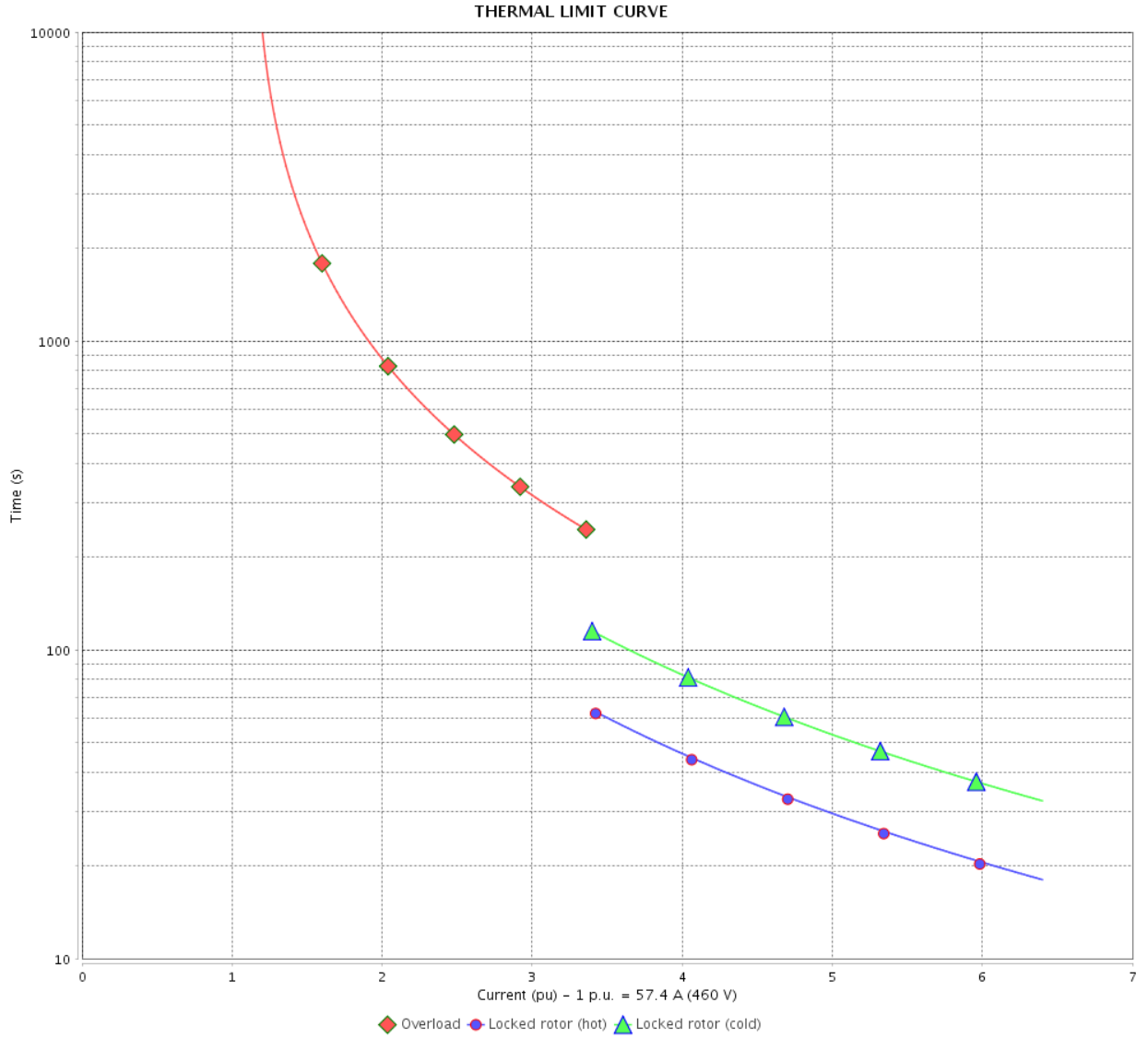


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Three Phase Induction Motor - Squirrel Cage



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## Three Phase Induction Motor - Squirrel Cage

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Performance : 380 V 50 Hz 6P IE3

Rated current	: 57.7 A	Moment of inertia (J)	: 32.4 sq.ft.lb
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Rated torque	: 214 ft.lb	Insulation class	: F
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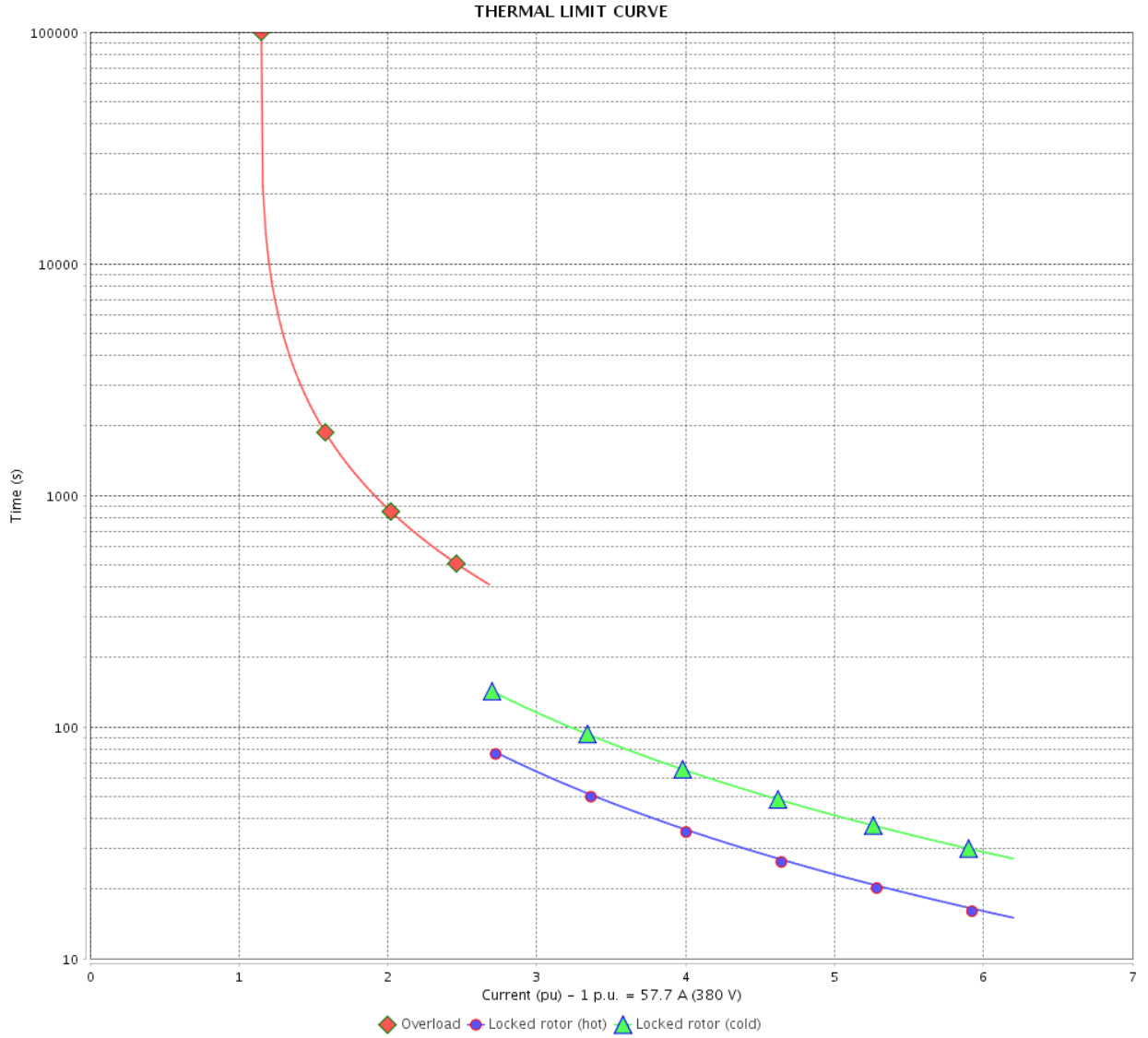
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Three Phase Induction Motor - Squirrel Cage



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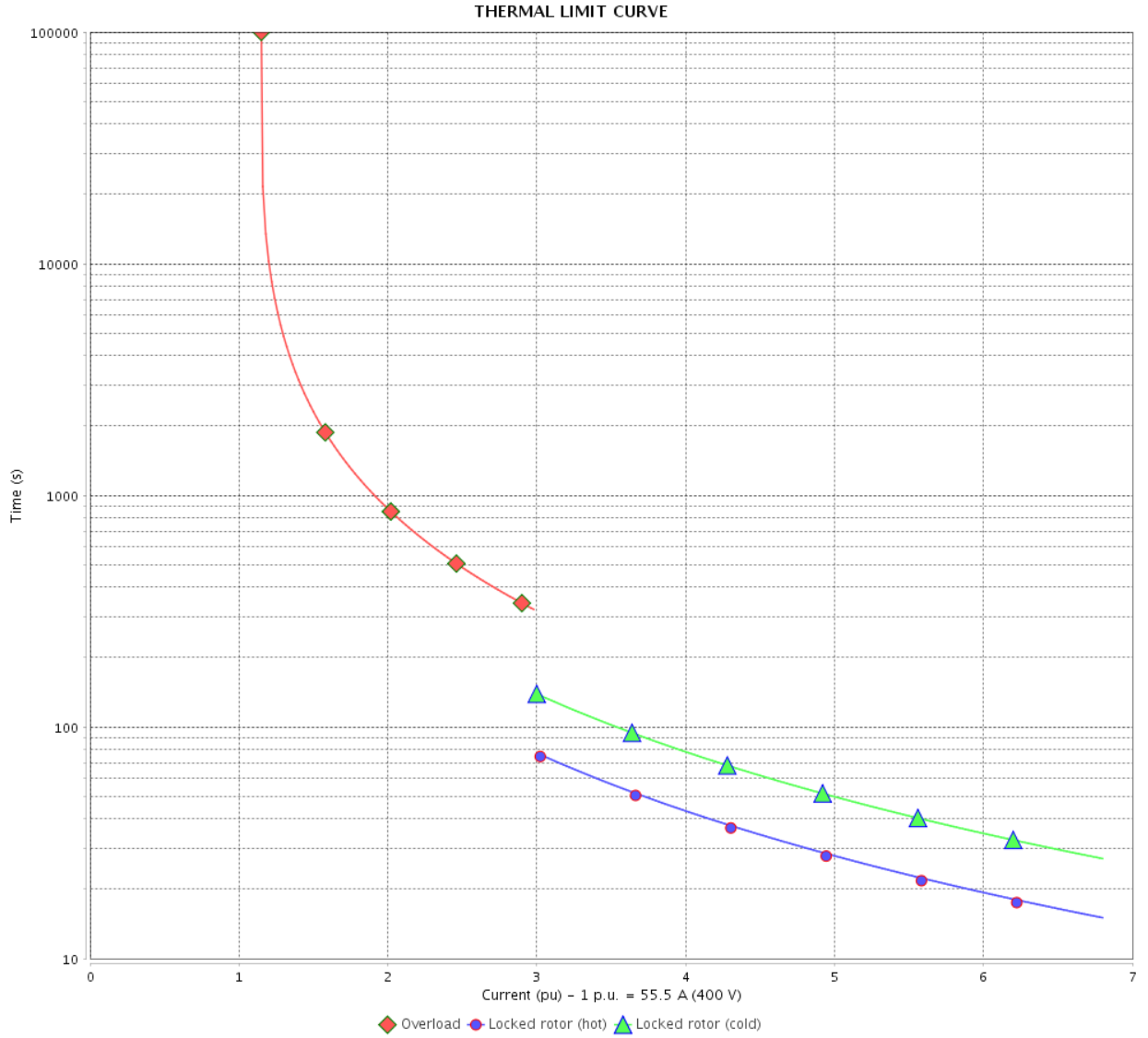
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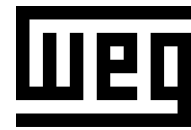


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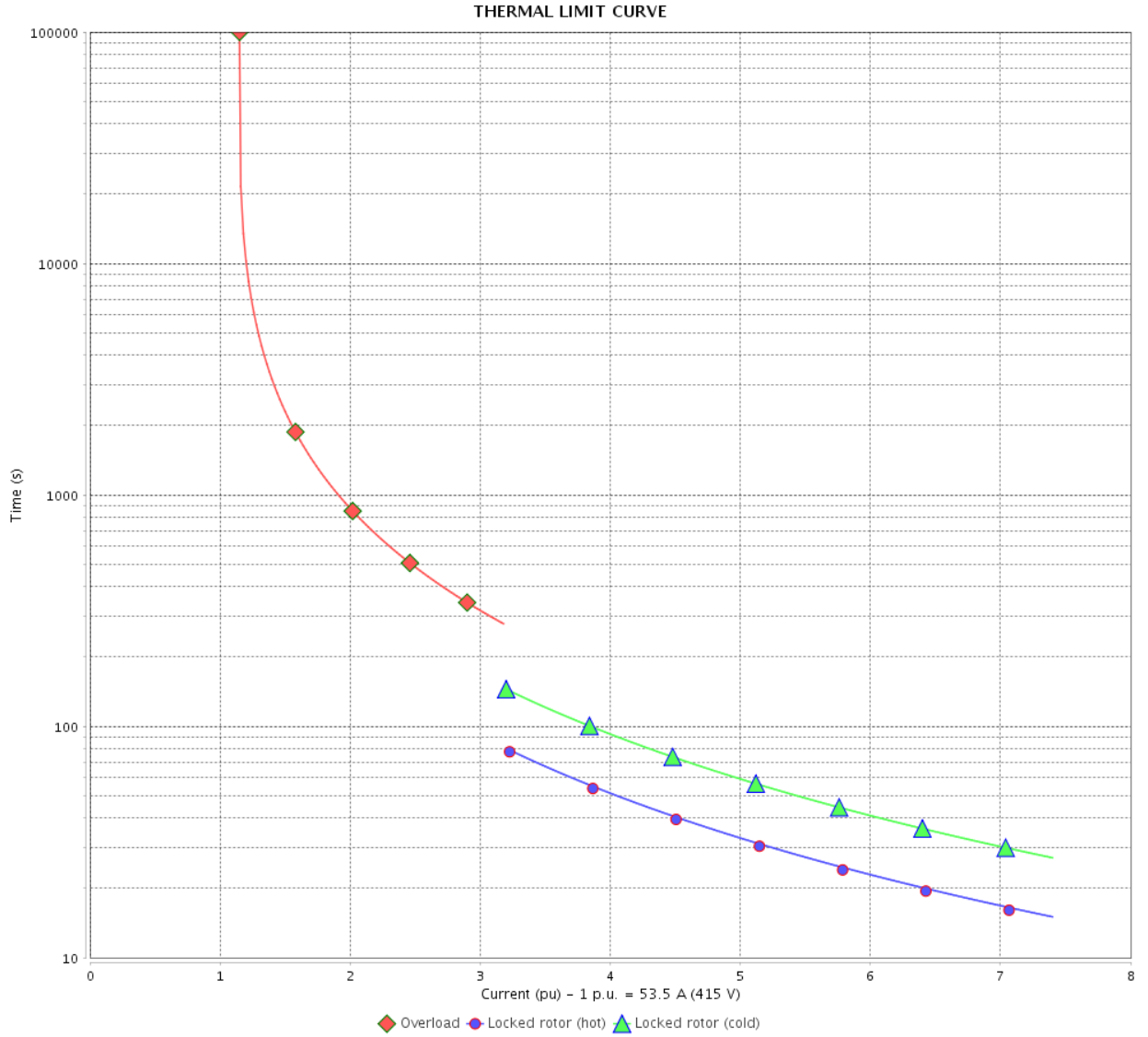
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Rated speed : 970 rpm	Design : B

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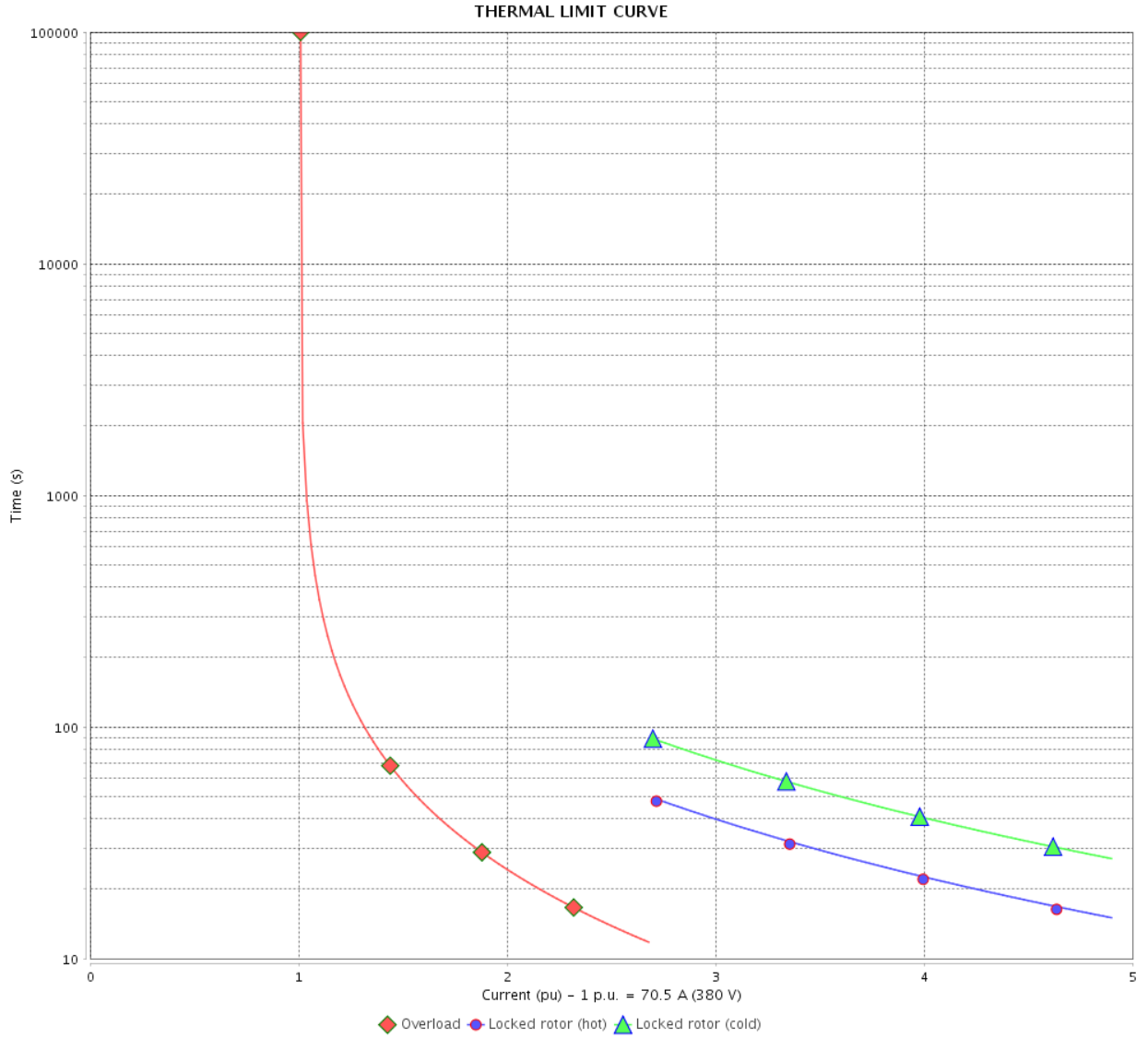


# THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



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



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Performed by				
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 : 14275000  
 Catalog # : 05012ST3QIE365TC-W22

Performance : 400 V 50 Hz 6P IE2

Rated current : 66.4 A	Moment of inertia (J) : 32.4 sq.ft.lb
LRC : 5.5	Duty cycle : Cont.(S1)
Rated torque : 269 ft.lb	Insulation class : F
Locked rotor torque : 180 %	Service factor : 1.00
Breakdown torque : 210 %	Temperature rise : 80 K
Rated speed : 975 rpm	Design : B

Heating constant

Cooling constant

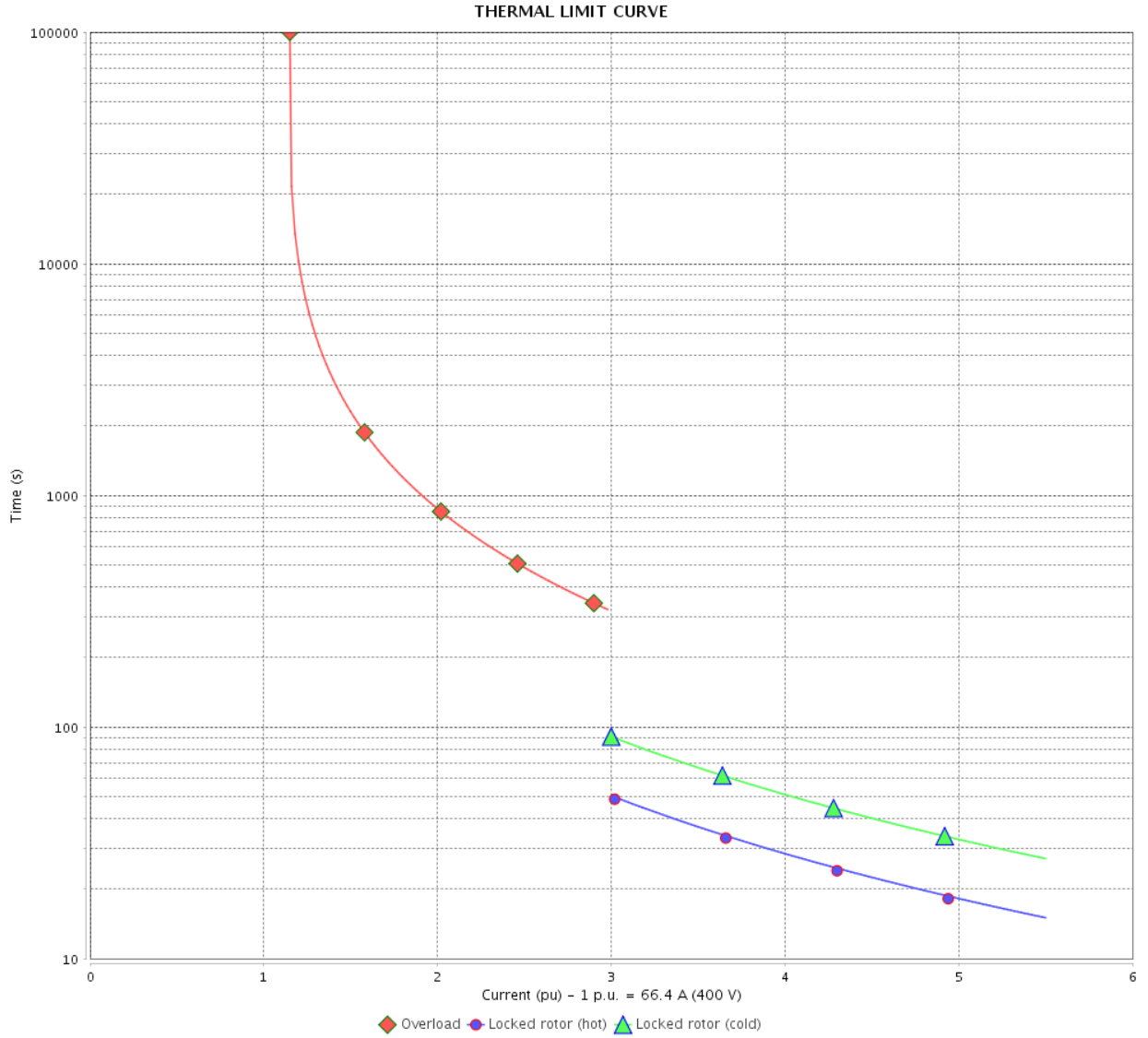
Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page 26 / 36	Revision
Checked by				
Date	12/04/2022			

# THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



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



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Checked by				
Date				

# THERMAL LIMIT CURVE

## Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : NEMA Premium Efficiency Three-Phase  
Product code : 14275000  
Catalog # : 05012ST3QIE365TC-W22

Performance : 415 V 50 Hz 6P IE2

Rated current	: 64.8 A	Moment of inertia (J)	: 32.4 sq.ft.lb
LRC	: 6.0	Duty cycle	: Cont.(S1)
Rated torque	: 268 ft.lb	Insulation class	: F
Locked rotor torque	: 200 %	Service factor	: 1.00
Breakdown torque	: 229 %	Temperature rise	: 80 K
Rated speed	: 980 rpm	Design	: B

Heating constant

Cooling constant

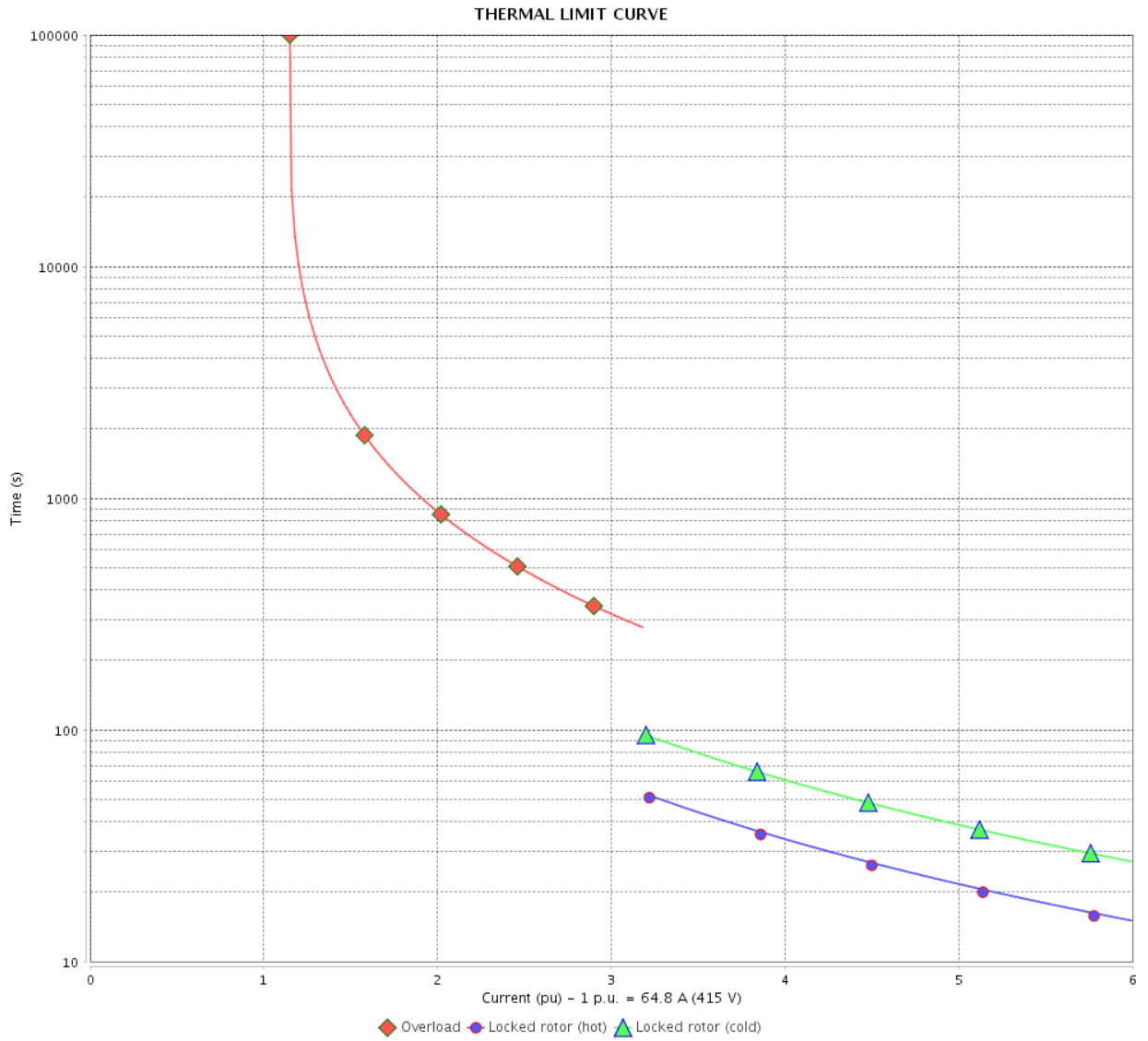
Rev.	Changes Summary	Performed	Checked	Date
Performed by				
Checked by			Page	Revision
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# THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



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



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Performed by				
Checked by				
Date				
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# VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage



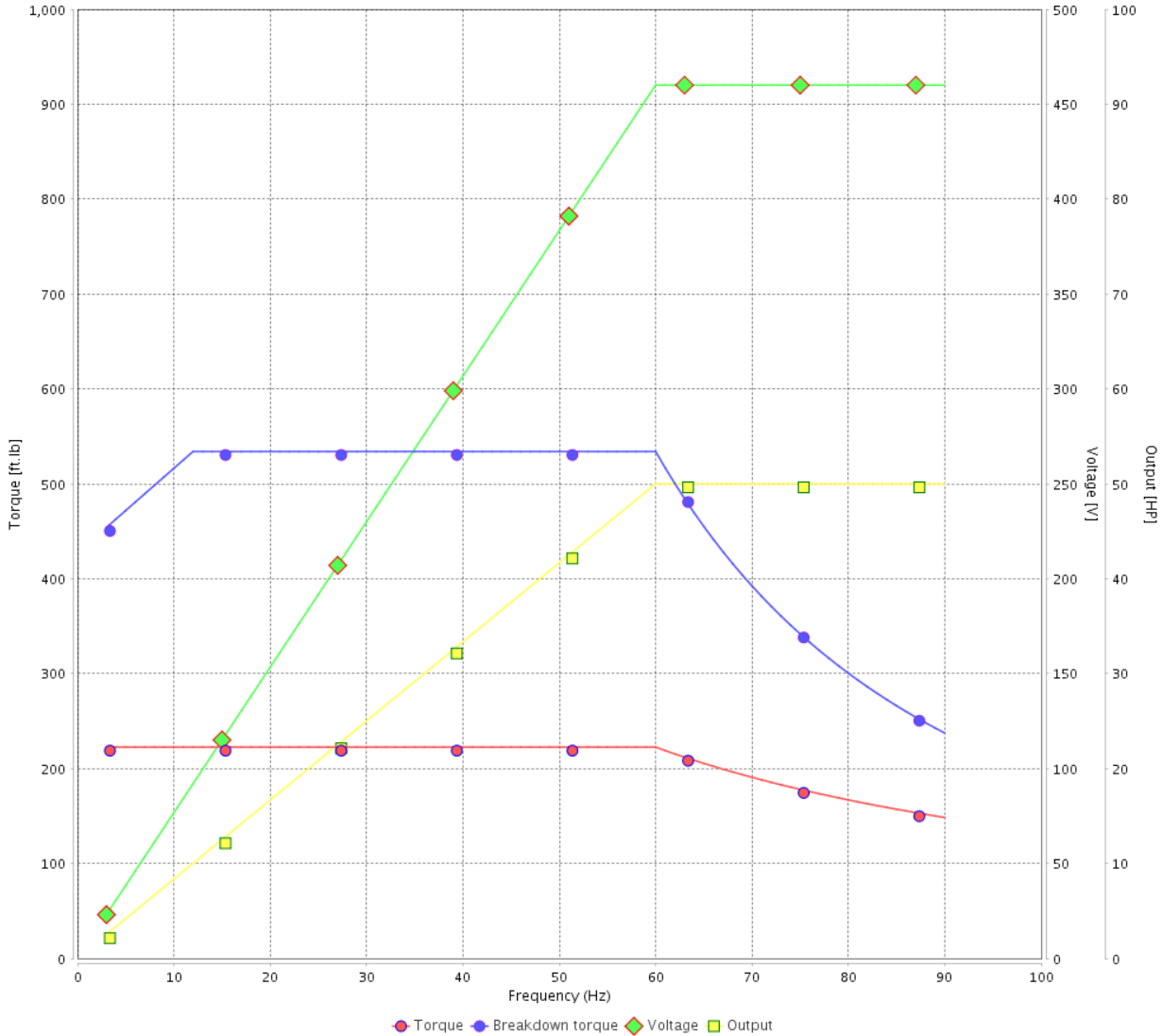
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 14275000

Catalog # : 05012ST3QIE365TC-W22

VFD OPERATION CURVE



Performance : 460 V 60 Hz 6P

Rated current	: 57.4 A	Moment of inertia (J)	: 32.4 sq.ft.lb
LRC	: 6.4	Duty cycle	: Cont.(S1)
Rated torque	: 223 ft.lb	Insulation class	: F
Locked rotor torque	: 200 %	Service factor	: 1.25
Breakdown torque	: 240 %	Temperature rise	: 80 K
Rated speed	: 1180 rpm	Design	: B

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Date	12/04/2022			

# VFD OPERATION CURVE

## Three Phase Induction Motor - Squirrel Cage

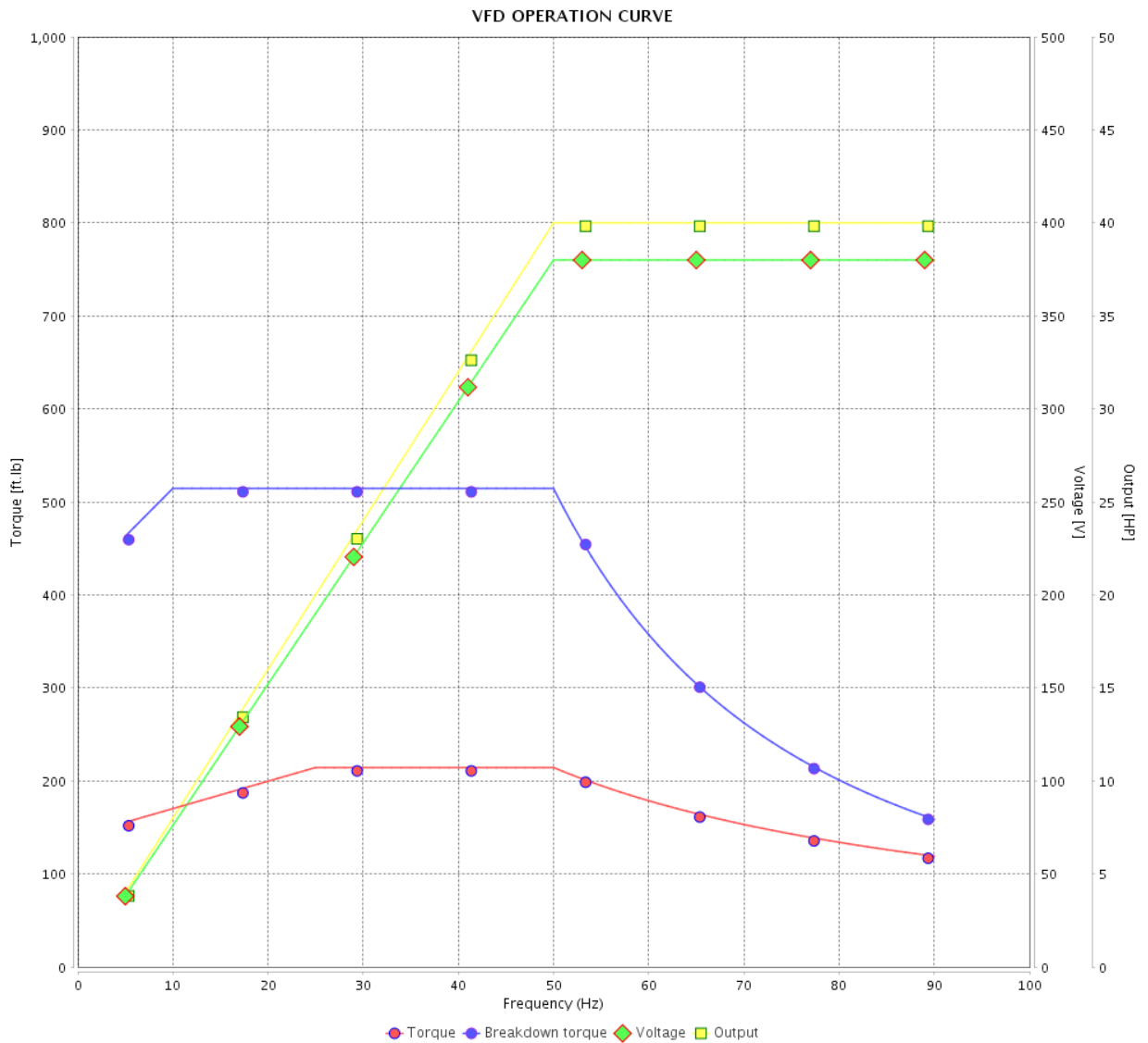


Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 14275000

Catalog # : 05012ST3QIE365TC-W22



Performance : 380 V 50 Hz 6P IE3

Rated current : 57.7 A  
 LRC : 6.2  
 Rated torque : 214 ft.lb  
 Locked rotor torque : 200 %  
 Breakdown torque : 240 %  
 Rated speed : 980 rpm

Moment of inertia (J) : 32.4 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



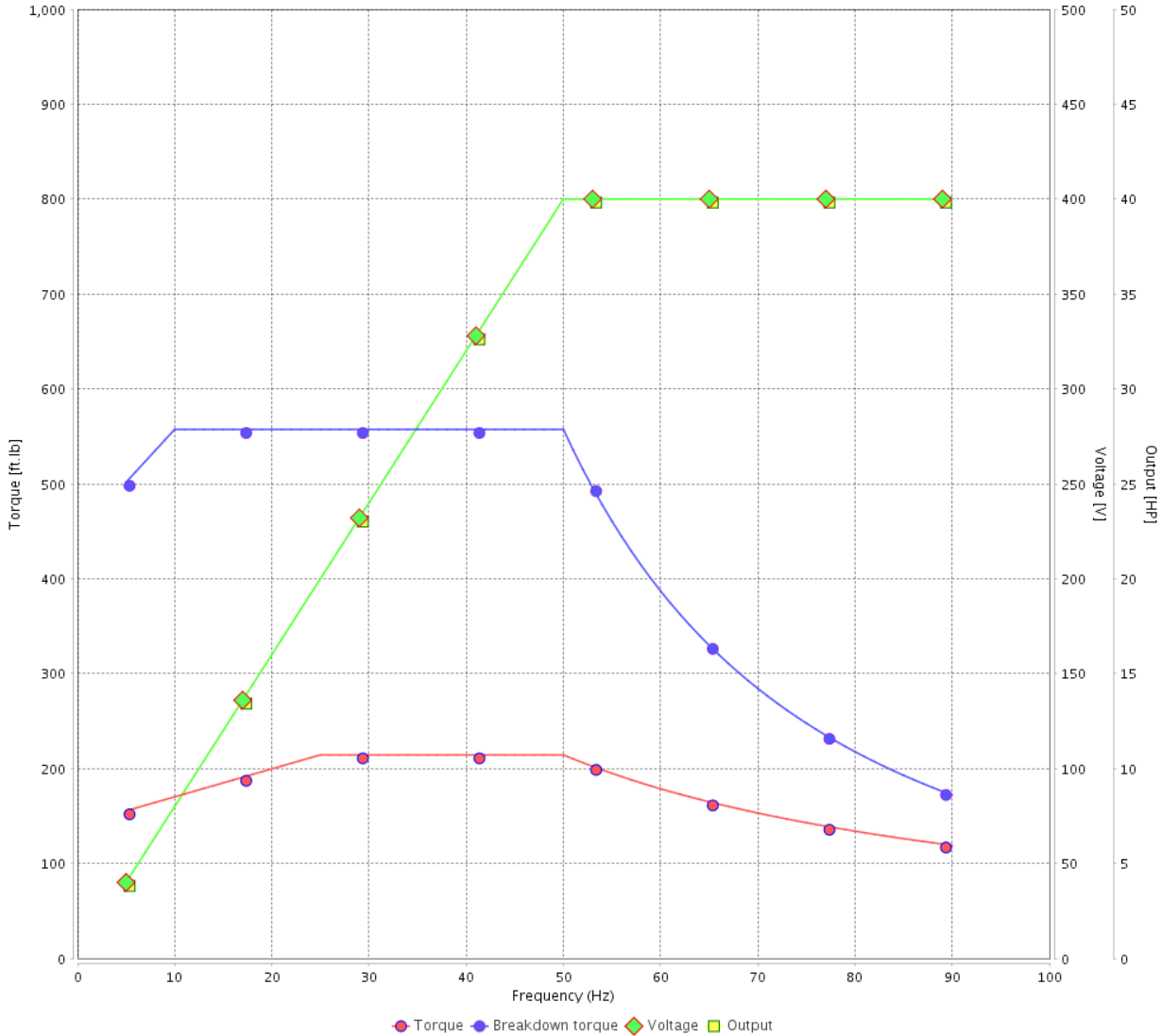
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 14275000

Catalog # : 05012ST3QIE365TC-W22

VFD OPERATION CURVE



Performance : 400 V 50 Hz 6P IE3

Rated current	: 55.5 A	Moment of inertia (J)	: 32.4 sq.ft.lb
LRC	: 6.8	Duty cycle	: Cont.(S1)
Rated torque	: 214 ft.lb	Insulation class	: F
Locked rotor torque	: 229 %	Service factor	: 1.00
Breakdown torque	: 260 %	Temperature rise	: 80 K
Rated speed	: 980 rpm	Design	: B

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# VFD OPERATION CURVE

## Three Phase Induction Motor - Squirrel Cage

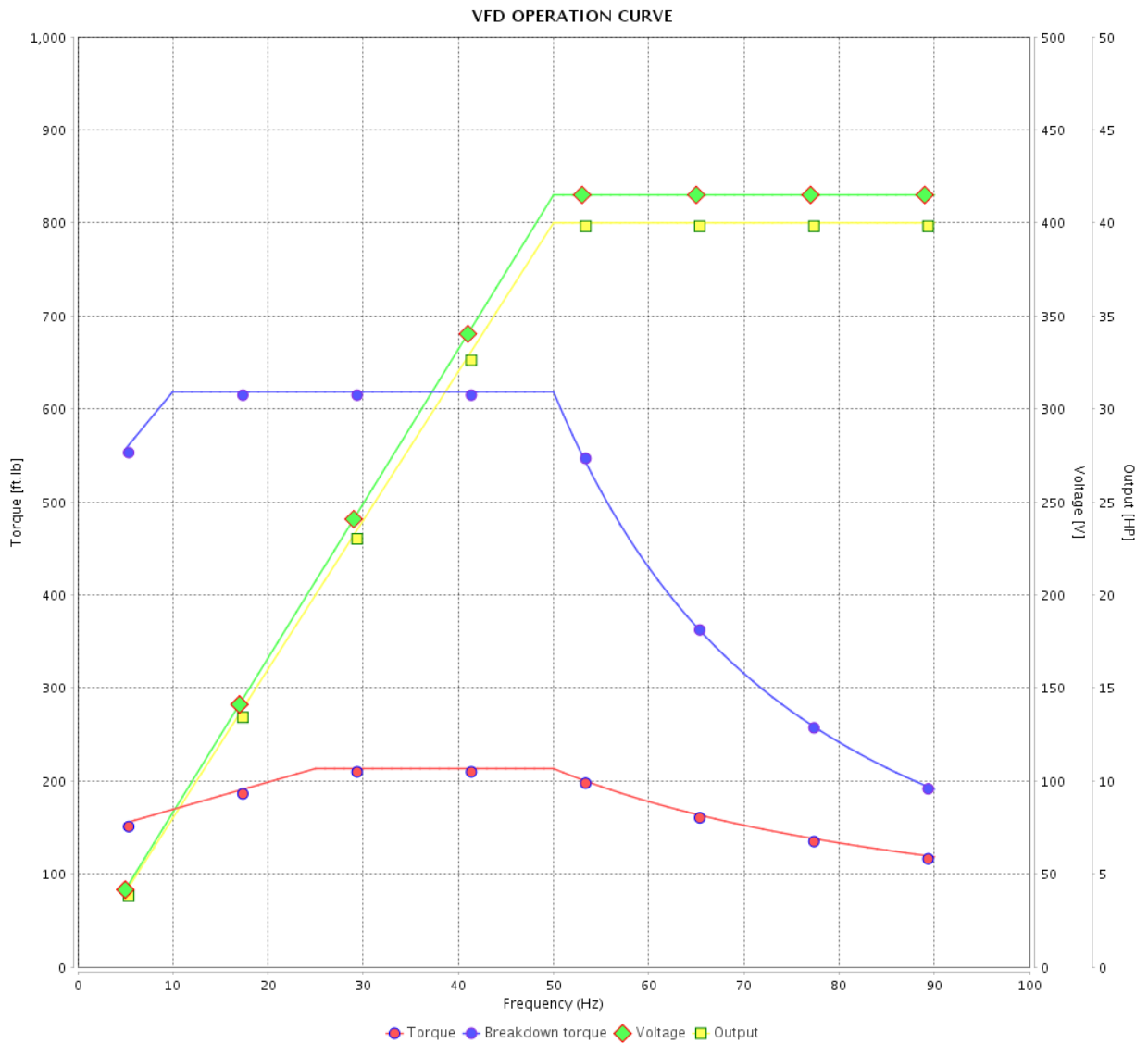


Customer : \_\_\_\_\_

Product line : NEMA Premium Efficiency Three-Phase

Product code : 14275000

Catalog # : 05012ST3QIE365TC-W22



Performance : 415 V 50 Hz 6P IE3

Rated current : 53.5 A  
 LRC : 7.4  
 Rated torque : 213 ft.lb  
 Locked rotor torque : 250 %  
 Breakdown torque : 290 %  
 Rated speed : 985 rpm

Moment of inertia (J) : 32.4 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



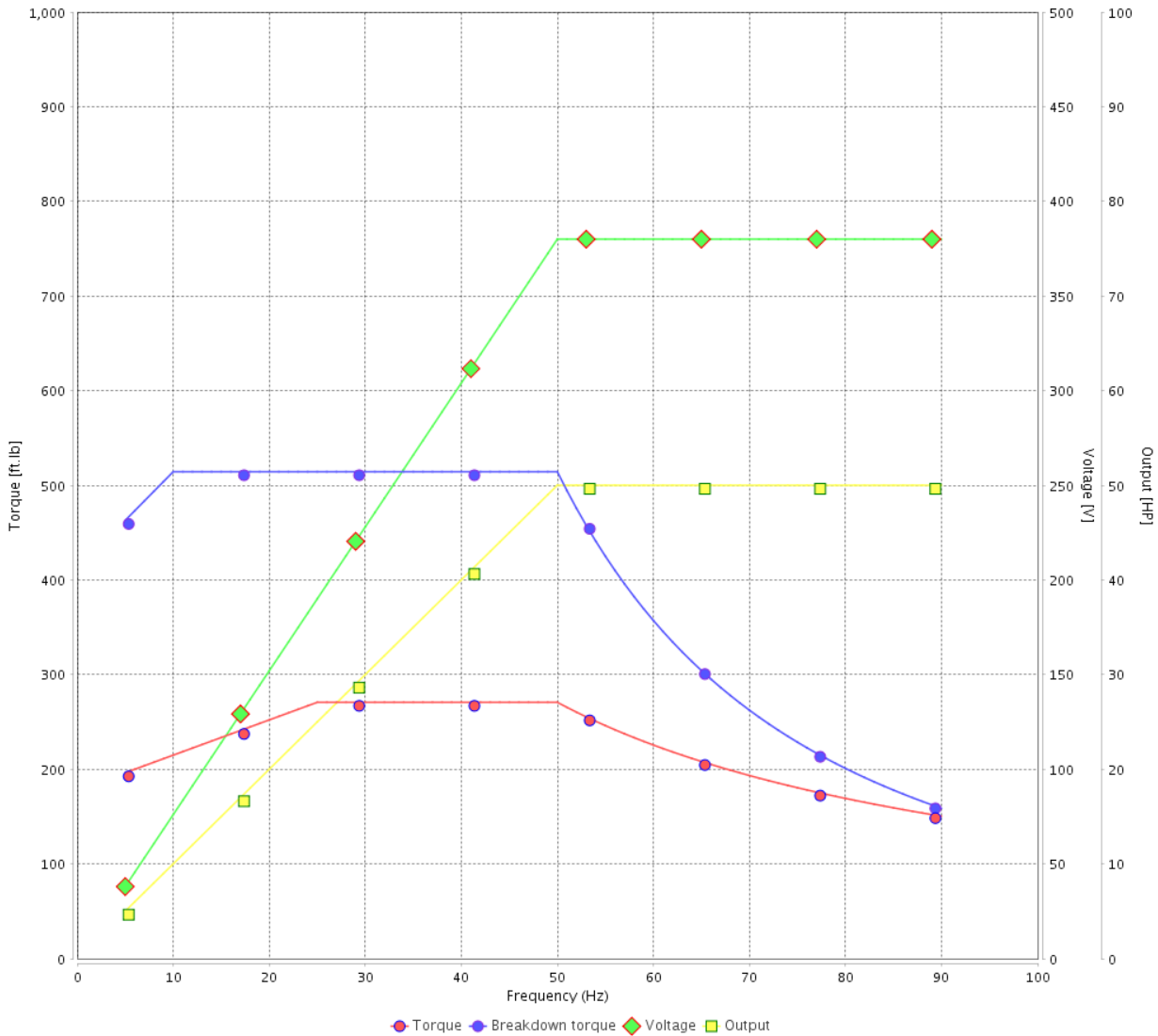
Customer : \_\_\_\_\_

Product line : NEMA Premium Efficiency Three-Phase

Product code : 14275000

Catalog # : 05012ST3QIE365TC-W22

VFD OPERATION CURVE



Performance : 380 V 50 Hz 6P IE1

Rated current : 70.5 A  
 LRC : 4.9  
 Rated torque : 271 ft.lb  
 Locked rotor torque : 160 %  
 Breakdown torque : 190 %  
 Rated speed : 970 rpm

Moment of inertia (J) : 32.4 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 105 K  
 Design : B

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# VFD OPERATION CURVE

## Three Phase Induction Motor - Squirrel Cage

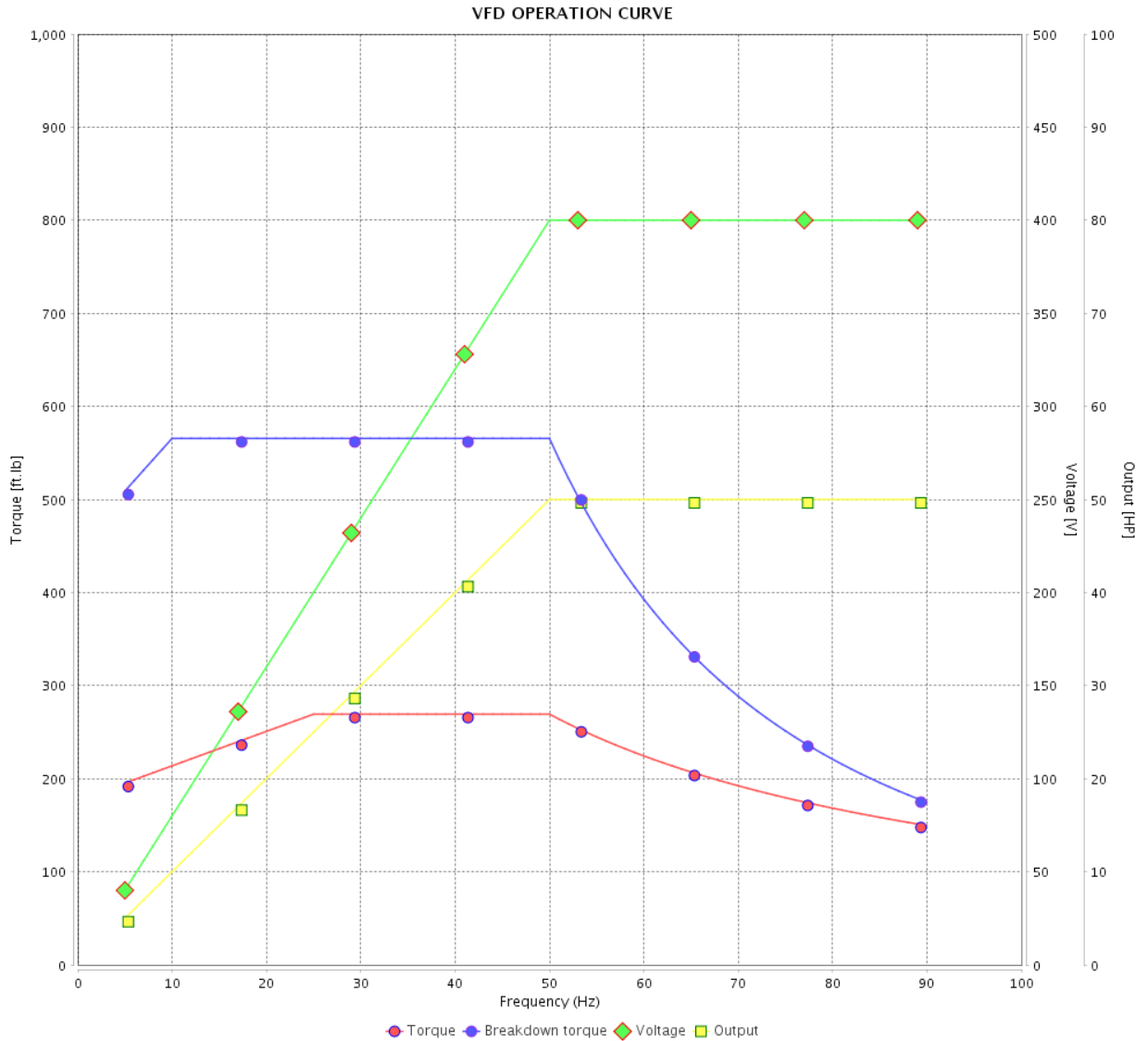


Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 14275000

Catalog # : 05012ST3QIE365TC-W22



Performance : 400 V 50 Hz 6P IE2

Rated current : 66.4 A  
 LRC : 5.5  
 Rated torque : 269 ft.lb  
 Locked rotor torque : 180 %  
 Breakdown torque : 210 %  
 Rated speed : 975 rpm

Moment of inertia (J) : 32.4 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



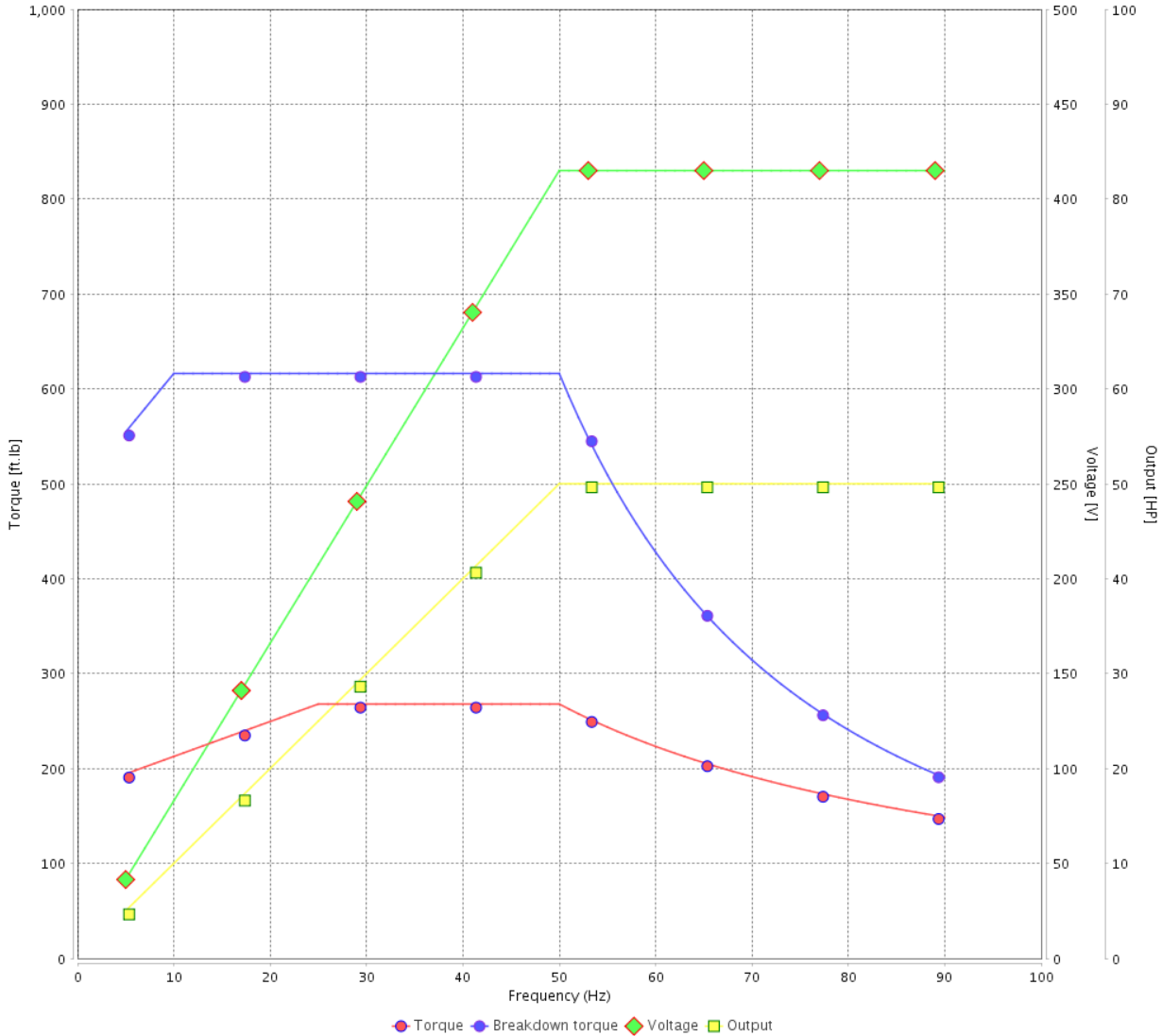
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 14275000

Catalog # : 05012ST3QIE365TC-W22

VFD OPERATION CURVE



Performance : 415 V 50 Hz 6P IE2

Rated current : 64.8 A  
 LRC : 6.0  
 Rated torque : 268 ft.lb  
 Locked rotor torque : 200 %  
 Breakdown torque : 229 %  
 Rated speed : 980 rpm

Moment of inertia (J) : 32.4 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 80 K  
 Design : B

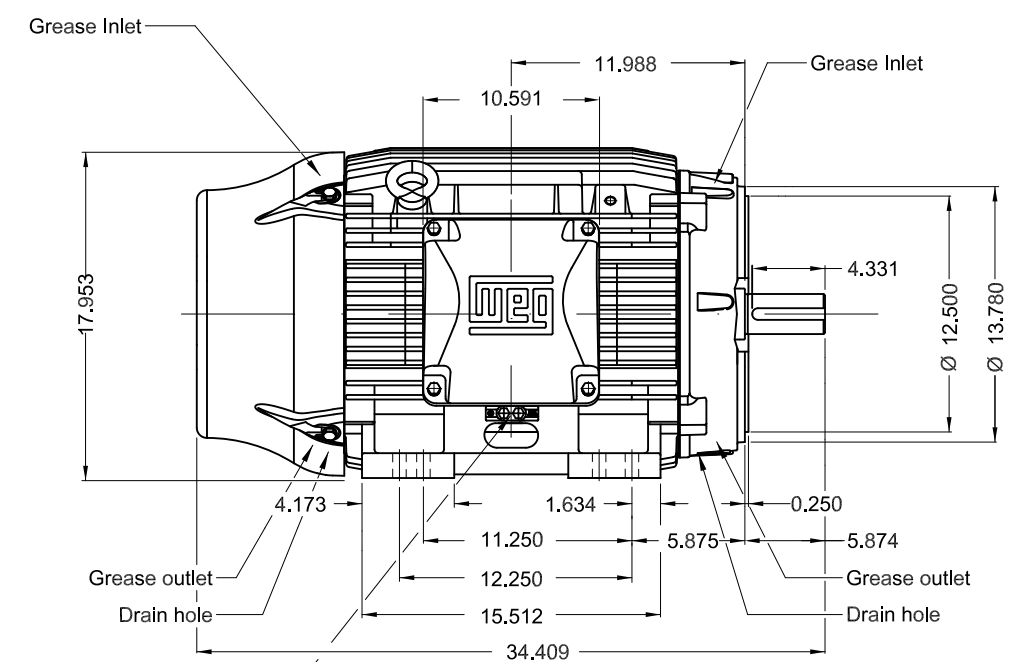
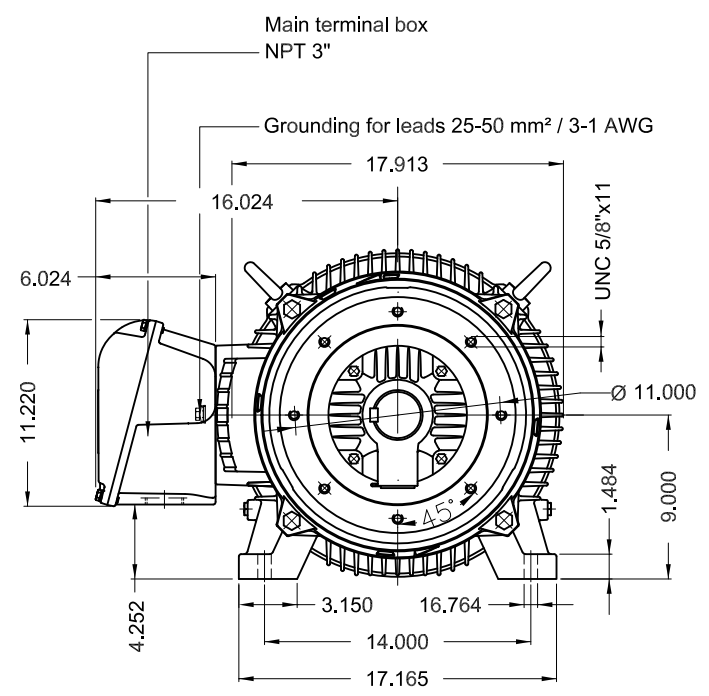
Rev.	Changes Summary	Performed	Checked	Date
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Checked by				
Date	12/04/2022			

1 2 3 4 5 6

A

B

C

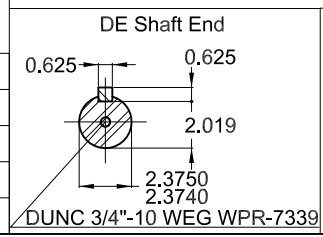


Grounding for leads 25-185 mm² / 3AWG-350MCM

D

E

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



50 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. FRAME 364/5TC IP55 TEFC					
CHECKED							
RELEASED							
REL DT.	WMO	Jaragua do Sul	Product Engineering	SHEET 1 / 1			

**PREVIEW**  
WDD



MADE IN BRAZIL  
14275000



**NEMA**  
Premium  
W22



FOR SAFE AREA  
Mod.TE1BFOXON  
CC029A



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

MODEL 05012ST3QIE365TC-W22

Inverter Duty Motor  
Severe Duty



PH3 60Hz Fr. 364/5TC 1000m.a.s.l. IP55 TEFC 783lb

V 460

A 57.4

HP 50

kW 37

SF 1.25

SFA 71.8

RPM 1180

PF 0.86

AMB 40°C

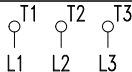
INS cl. F DT80K

NEMA NOM EFF 94.1%

DUTY CONT.

DES B Code G

GUARANT. EFF 93.0%



460V



→ 6314-C3 (27g) 70BC03X30

→ 6314-C3 (27g) 70BC03X30



MOBIL POLYREX EM (17000h)

