

# DATA SHEET

## Three Phase Induction Motor - Squirrel Cage



Customer :					
Product line	: NEMA Premium Efficiency Three-Phase	Product code :	13849696		
		Catalog # :	03009ST3QIE364TC-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>	: 822 lb		
Protection degree	: IP55	Moment of inertia (J)	: 23.5 sq.ft.lb		
Design	: B				
Output [HP]	30	30	30	30	
Poles	8	8	8	8	
Frequency [Hz]	60	50	50	50	
Rated voltage [V]	460	380	400	415	
Rated current [A]	37.0	44.5	42.7	42.0	
L. R. Amperes [A]	229	218	235	248	
LRC [A]	6.2x(Code G)	4.9x(Code E)	5.5x(Code F)	5.9x(Code G)	
No load current [A]	18.0	17.8	19.0	20.0	
Rated speed [RPM]	880	725	725	730	
Slip [%]	2.22	3.33	3.33	2.67	
Rated torque [ft.lb]	179	219	217	216	
Locked rotor torque [%]	170	140	160	170	
Breakdown torque [%]	240	190	210	229	
Service factor	1.25	1.00	1.00	1.00	
Temperature rise	80 K	105 K	105 K	105 K	
Locked rotor time	36s (cold) 20s (hot)	27s (cold) 15s (hot)	27s (cold) 15s (hot)	27s (cold) 15s (hot)	
Noise level <sup>2</sup>	60.0 dB(A)	56.0 dB(A)	56.0 dB(A)	56.0 dB(A)	
Efficiency (%)	25%	92.2	91.9	91.9	91.6
	50%	92.4	91.7	91.7	91.7
	75%	92.4	91.0	91.0	91.0
	100%	92.4	90.6	90.6	91.0
Power Factor	25%	0.38	0.44	0.40	0.38
	50%	0.63	0.70	0.66	0.63
	75%	0.74	0.79	0.76	0.75
	100%	0.80	0.83	0.82	0.80
Bearing type	: <u>Drive end</u> 6314 C3 <u>Non drive end</u> 6314 C3	Foundation loads			
Sealing	: Inpro/Seal Inpro/Seal	Max. traction	: 1288 lb		
Lubrication interval	: 20000 h 20000 h	Max. compression	: 2110 lb		
Lubricant amount	: 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



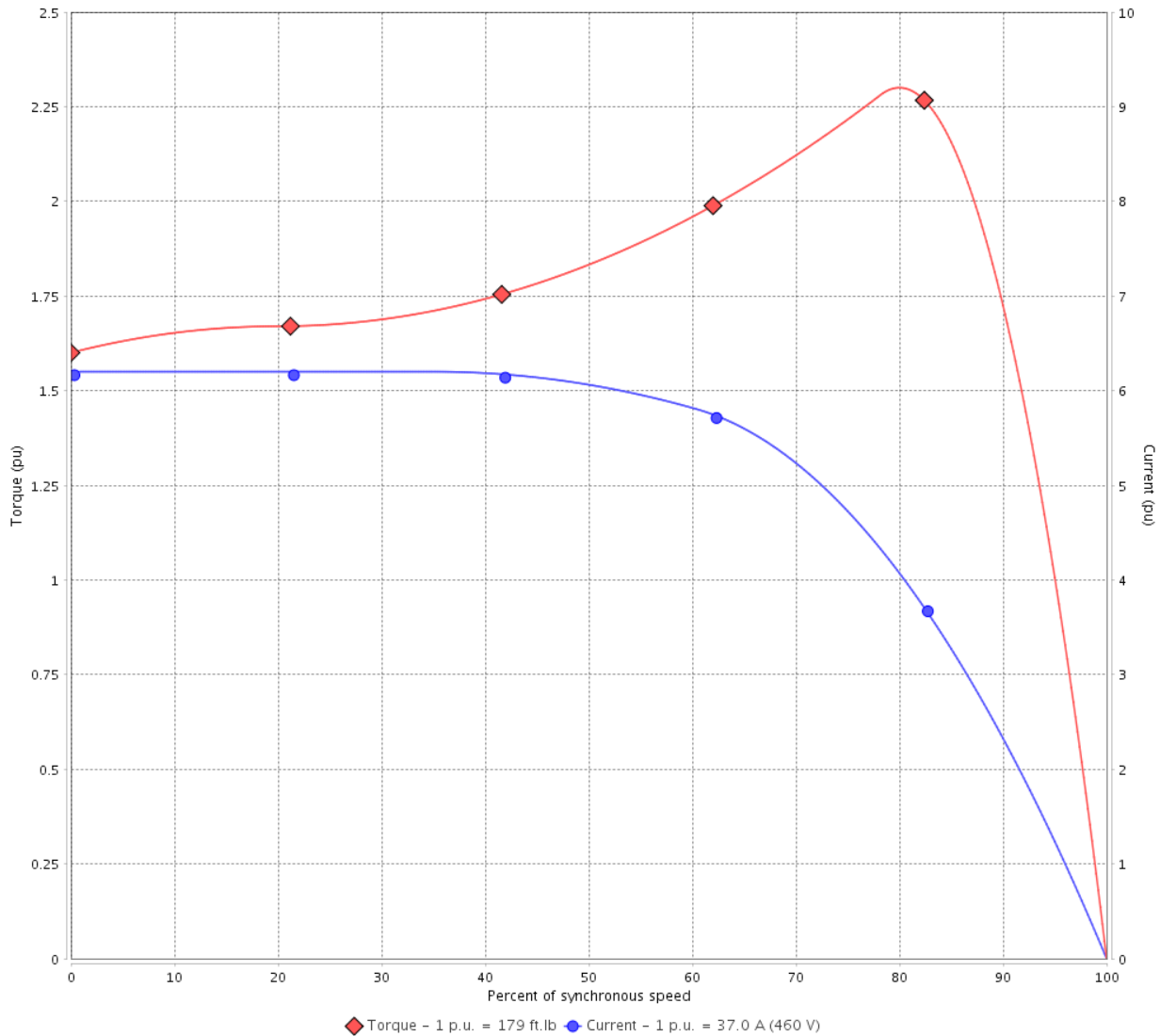
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 13849696

Catalog # : 03009ST3QIE364TC-W22

TORQUE AND CURRENT VS SPEED CURVE



Performance : 460 V 60 Hz 8P

Rated current	: 37.0 A	Moment of inertia (J)	: 23.5 sq.ft.lb
LRC	: 6.2	Duty cycle	: Cont.(S1)
Rated torque	: 179 ft.lb	Insulation class	: F
Locked rotor torque	: 170 %	Service factor	: 1.25
Breakdown torque	: 240 %	Temperature rise	: 80 K
Rated speed	: 880 rpm	Design	: B

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

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# TORQUE AND CURRENT VS SPEED CURVE



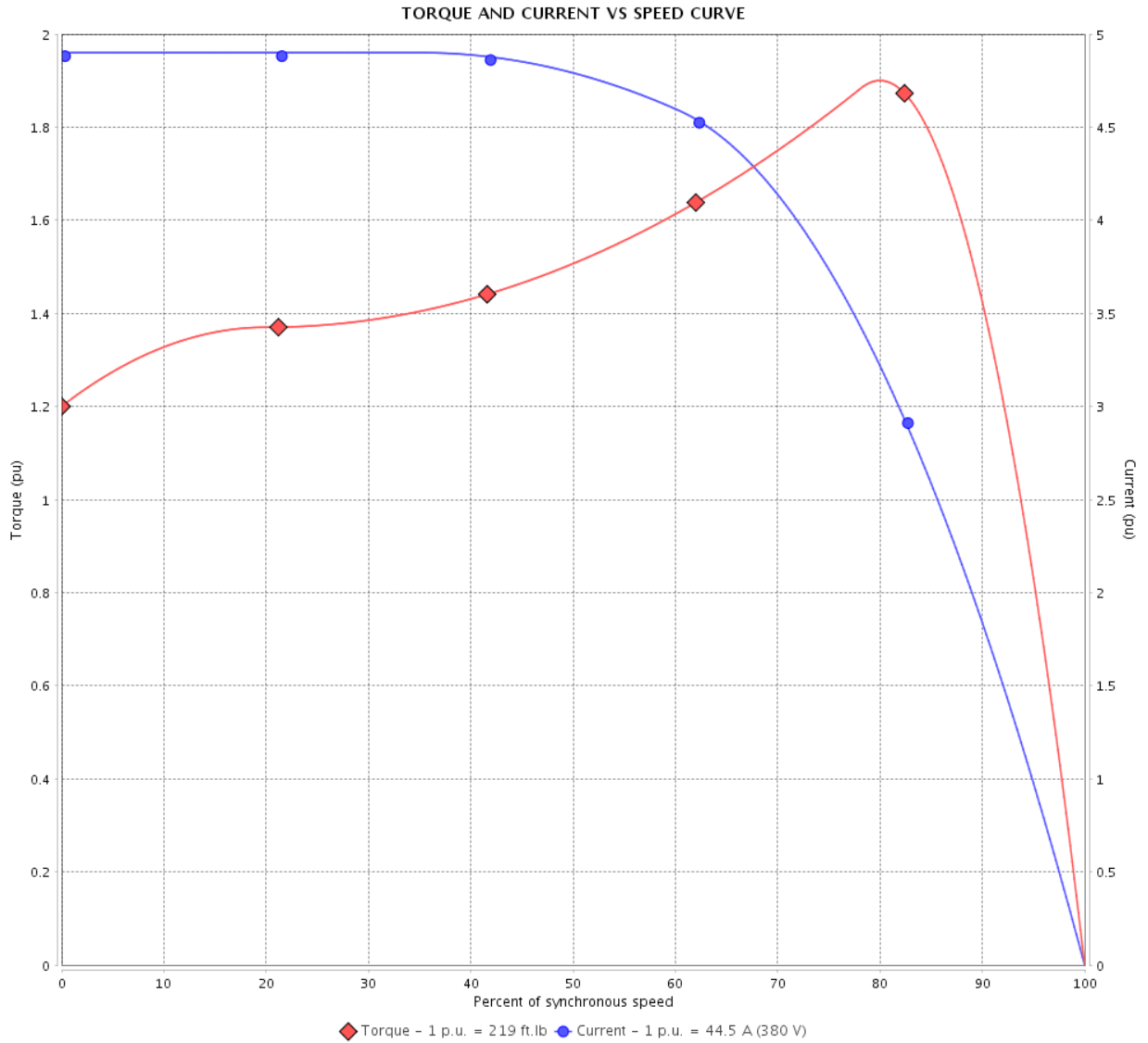
## Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 13849696

Catalog # : 03009ST3QIE364TC-W22



Performance : 380 V 50 Hz 8P IE3

Rated current	: 44.5 A	Moment of inertia (J)	: 23.5 sq.ft.lb
LRC	: 4.9	Duty cycle	: Cont.(S1)
Rated torque	: 219 ft.lb	Insulation class	: F
Locked rotor torque	: 140 %	Service factor	: 1.00
Breakdown torque	: 190 %	Temperature rise	: 105 K
Rated speed	: 725 rpm	Design	: B

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

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# TORQUE AND CURRENT VS SPEED CURVE

Three Phase Induction Motor - Squirrel Cage



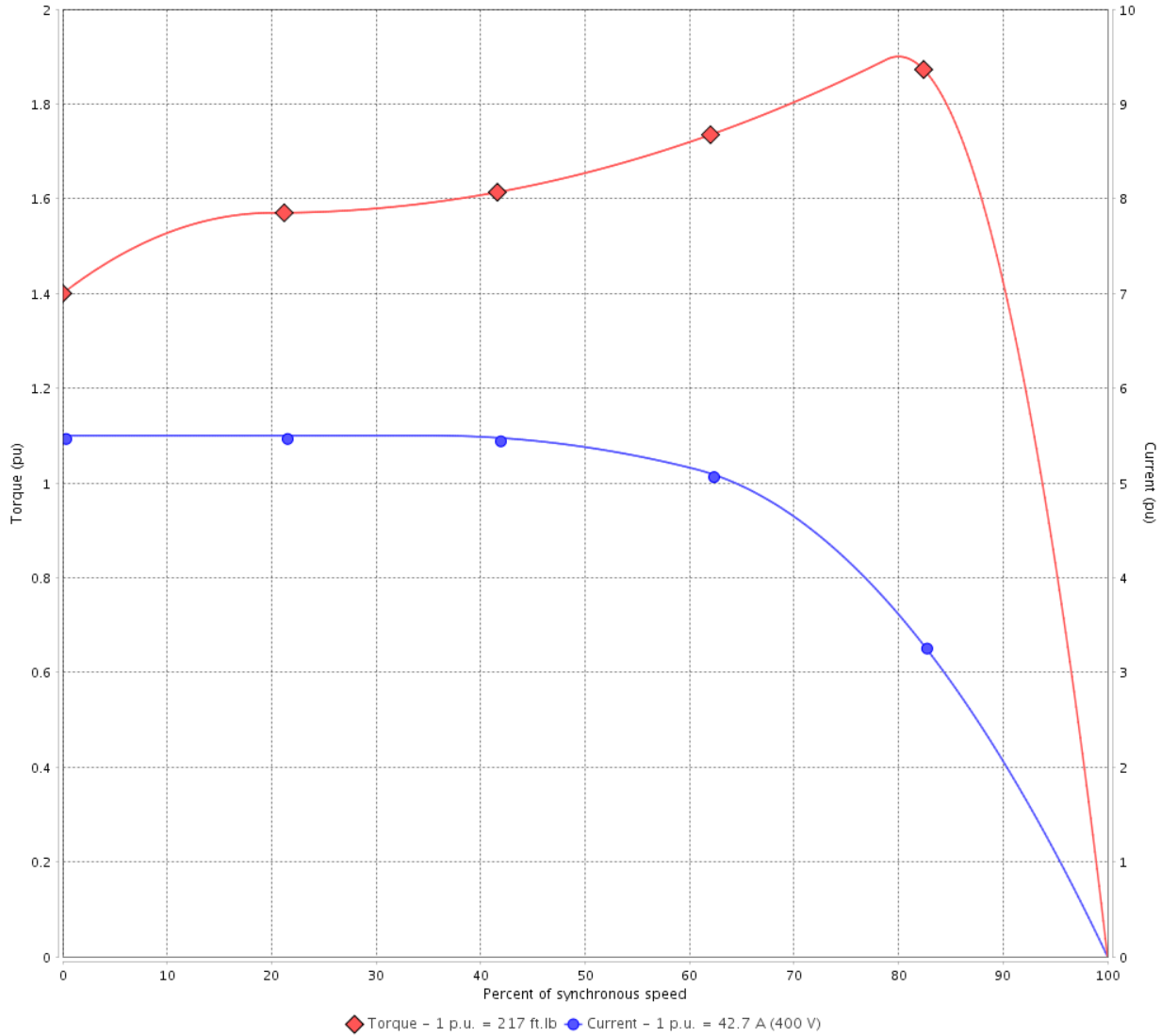
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 13849696

Catalog # : 03009ST3QIE364TC-W22

TORQUE AND CURRENT VS SPEED CURVE



Performance : 400 V 50 Hz 8P IE3

Rated current	: 42.7 A	Moment of inertia (J)	: 23.5 sq.ft.lb
LRC	: 5.5	Duty cycle	: Cont.(S1)
Rated torque	: 217 ft.lb	Insulation class	: F
Locked rotor torque	: 160 %	Service factor	: 1.00
Breakdown torque	: 210 %	Temperature rise	: 105 K
Rated speed	: 725 rpm	Design	: B

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

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# TORQUE AND CURRENT VS SPEED CURVE



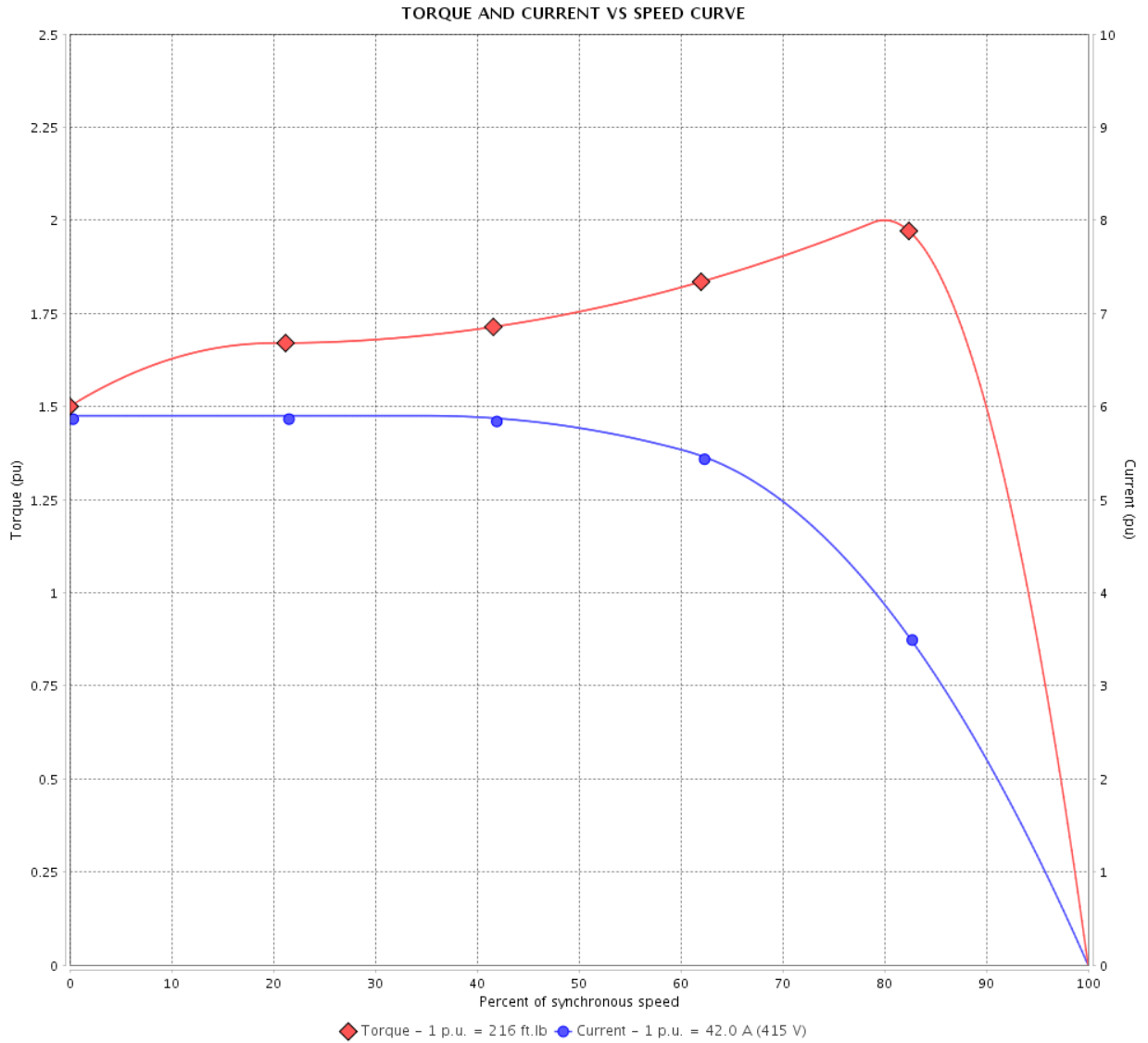
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LRC	: 5.9	Duty cycle	: Cont.(S1)
Rated torque	: 216 ft.lb	Insulation class	: F
Locked rotor torque	: 170 %	Service factor	: 1.00
Breakdown torque	: 229 %	Temperature rise	: 105 K
Rated speed	: 730 rpm	Design	: B

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

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# LOAD PERFORMANCE CURVE

Three Phase Induction Motor - Squirrel Cage

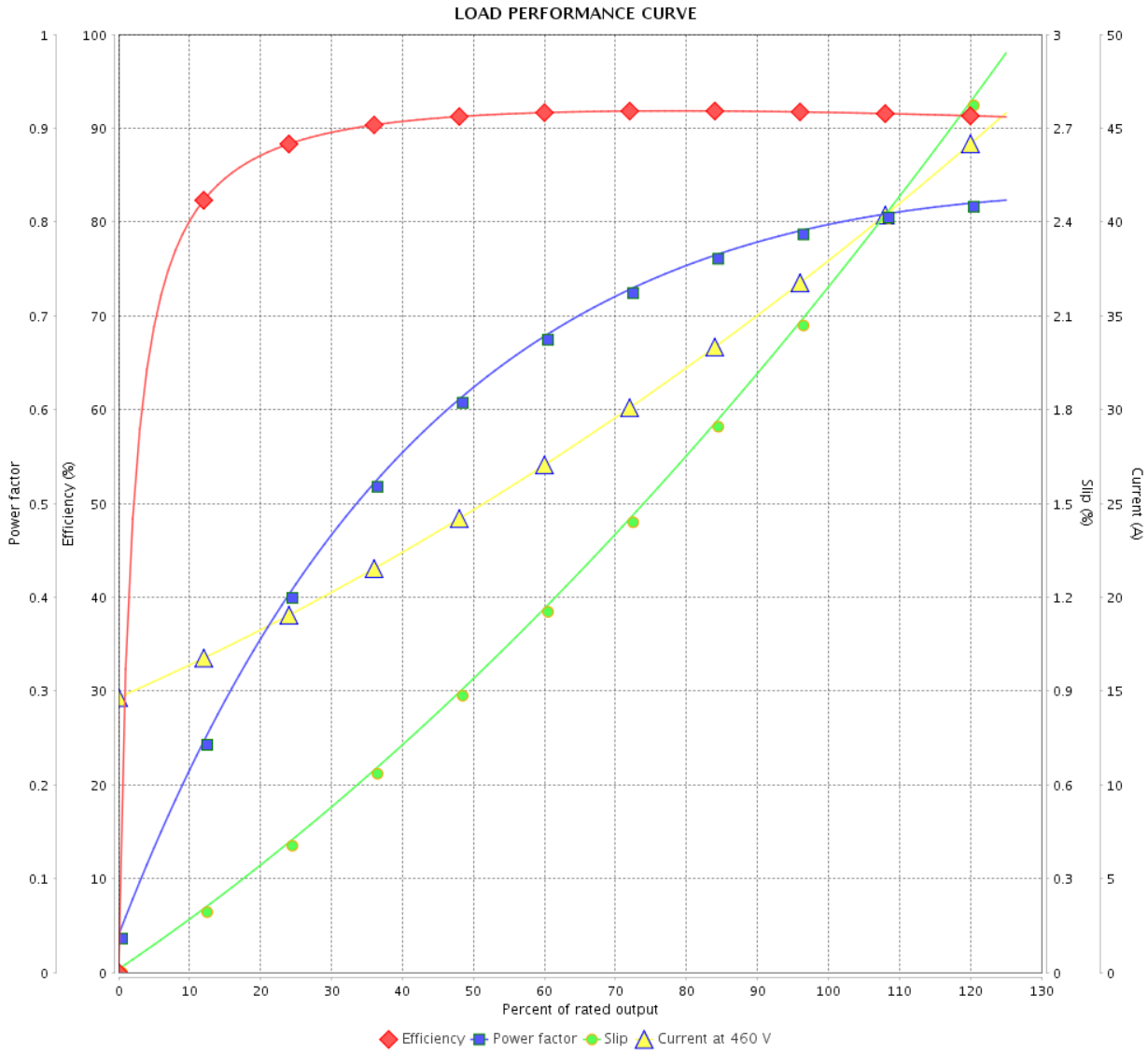


Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 13849696

Catalog # : 03009ST3QIE364TC-W22



Performance : 460 V 60 Hz 8P

Rated current	: 37.0 A	Moment of inertia (J)	: 23.5 sq.ft.lb
LRC	: 6.2	Duty cycle	: Cont.(S1)
Rated torque	: 179 ft.lb	Insulation class	: F
Locked rotor torque	: 170 %	Service factor	: 1.25
Breakdown torque	: 240 %	Temperature rise	: 80 K
Rated speed	: 880 rpm	Design	: B

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# LOAD PERFORMANCE CURVE

## Three Phase Induction Motor - Squirrel Cage

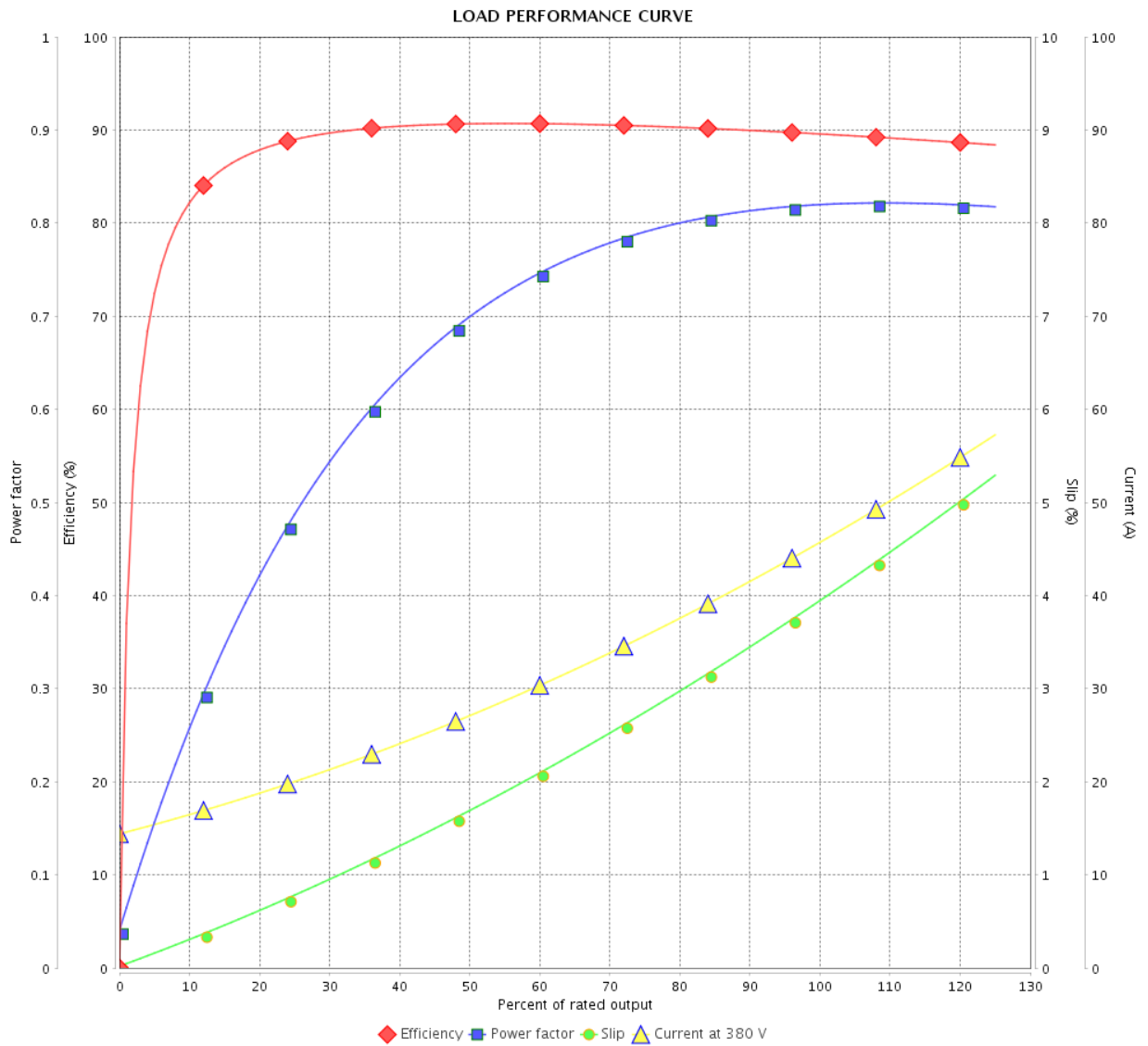


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Catalog # : 03009ST3QIE364TC-W22



Performance : 380 V 50 Hz 8P IE3

Rated current : 44.5 A  
 LRC : 4.9  
 Rated torque : 219 ft.lb  
 Locked rotor torque : 140 %  
 Breakdown torque : 190 %  
 Rated speed : 725 rpm

Moment of inertia (J) : 23.5 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 105 K  
 Design : B

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# LOAD PERFORMANCE CURVE

Three Phase Induction Motor - Squirrel Cage

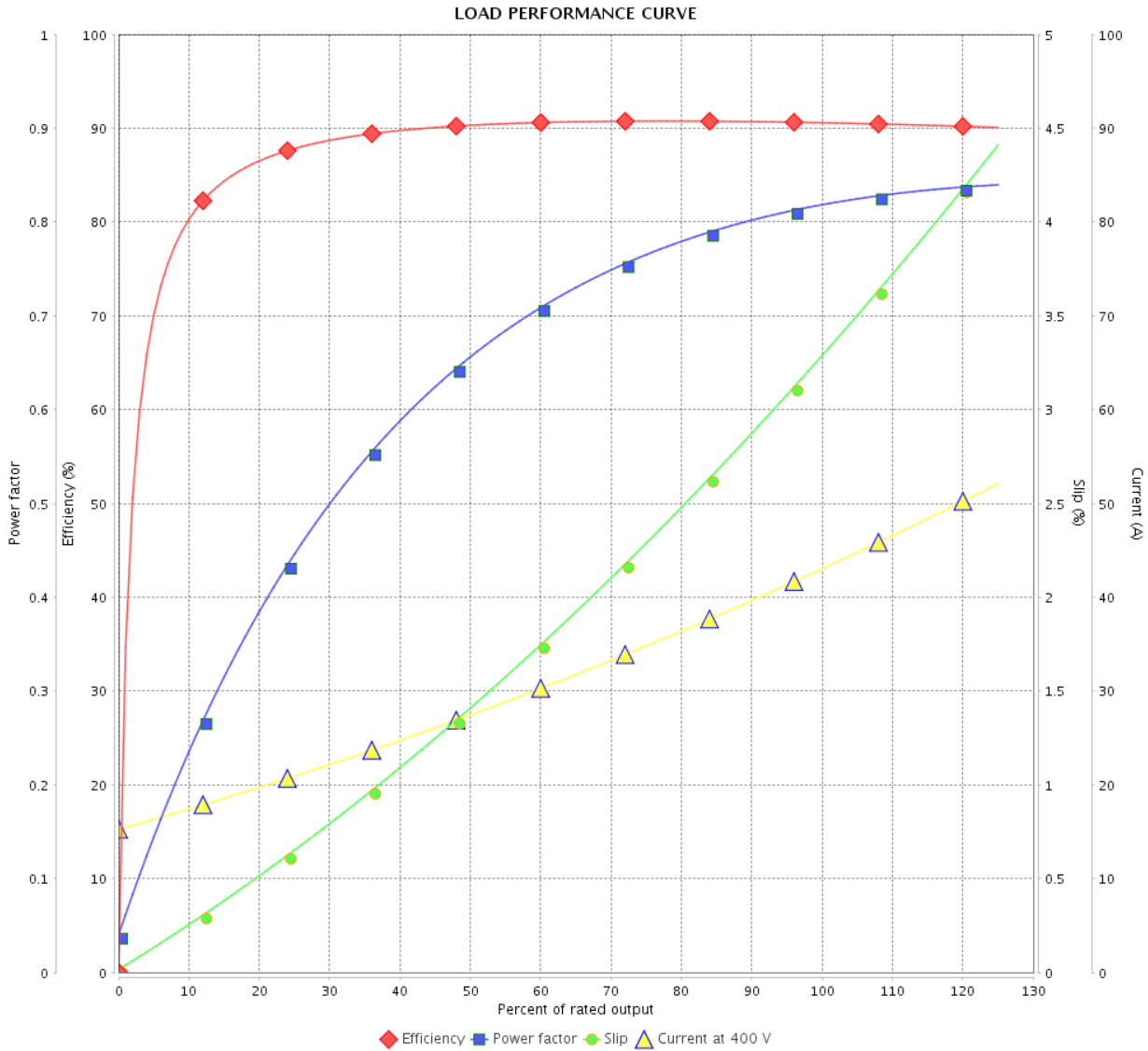


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Catalog # : 03009ST3QIE364TC-W22



Performance : 400 V 50 Hz 8P IE3

Rated current	: 42.7 A	Moment of inertia (J)	: 23.5 sq.ft.lb
LRC	: 5.5	Duty cycle	: Cont.(S1)
Rated torque	: 217 ft.lb	Insulation class	: F
Locked rotor torque	: 160 %	Service factor	: 1.00
Breakdown torque	: 210 %	Temperature rise	: 105 K
Rated speed	: 725 rpm	Design	: B

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# LOAD PERFORMANCE CURVE

## Three Phase Induction Motor - Squirrel Cage

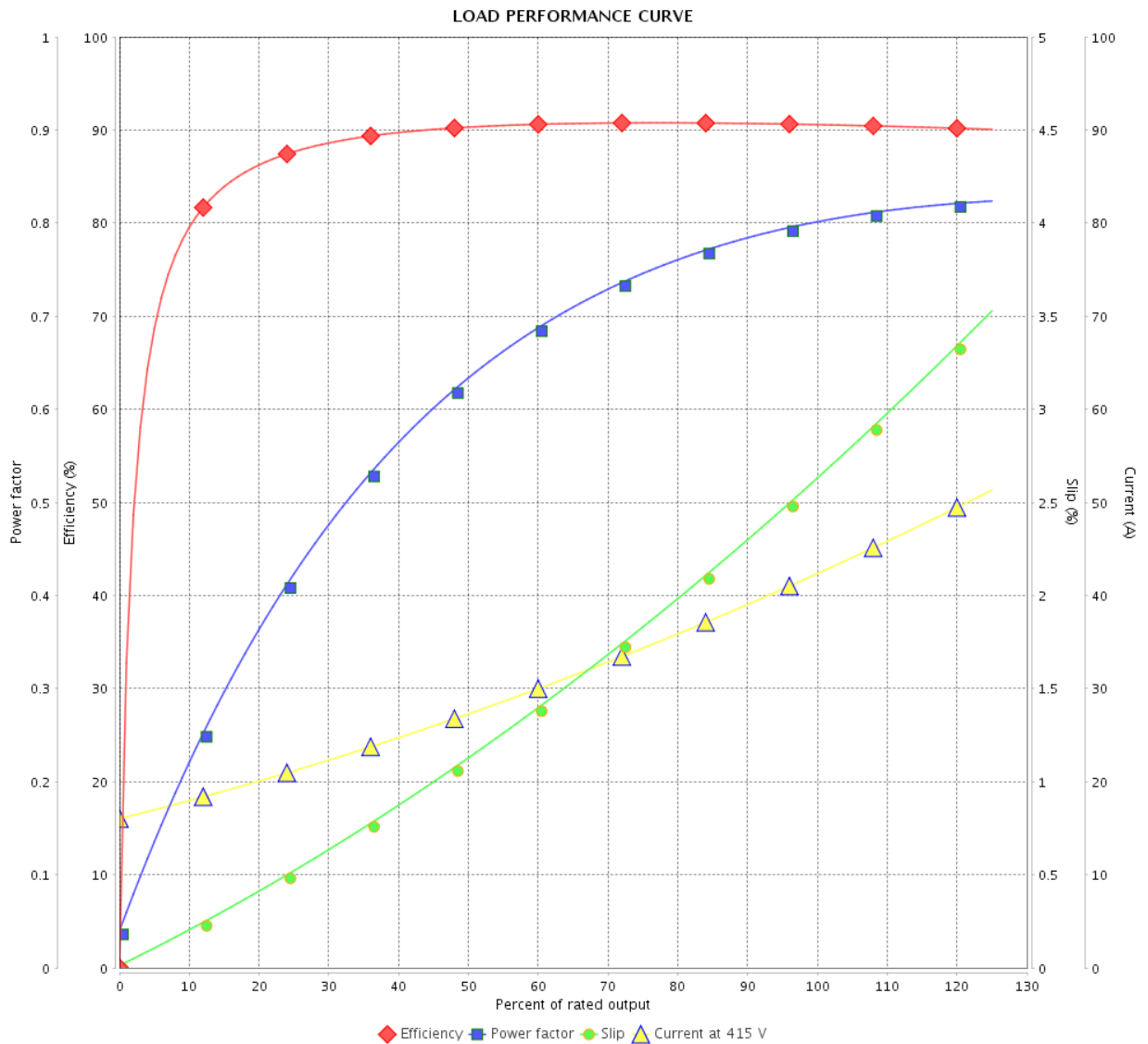


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 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 105 K  
 Design : B

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# THERMAL LIMIT CURVE



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Rated speed	: 880 rpm	Design	: B

Heating constant

Cooling constant

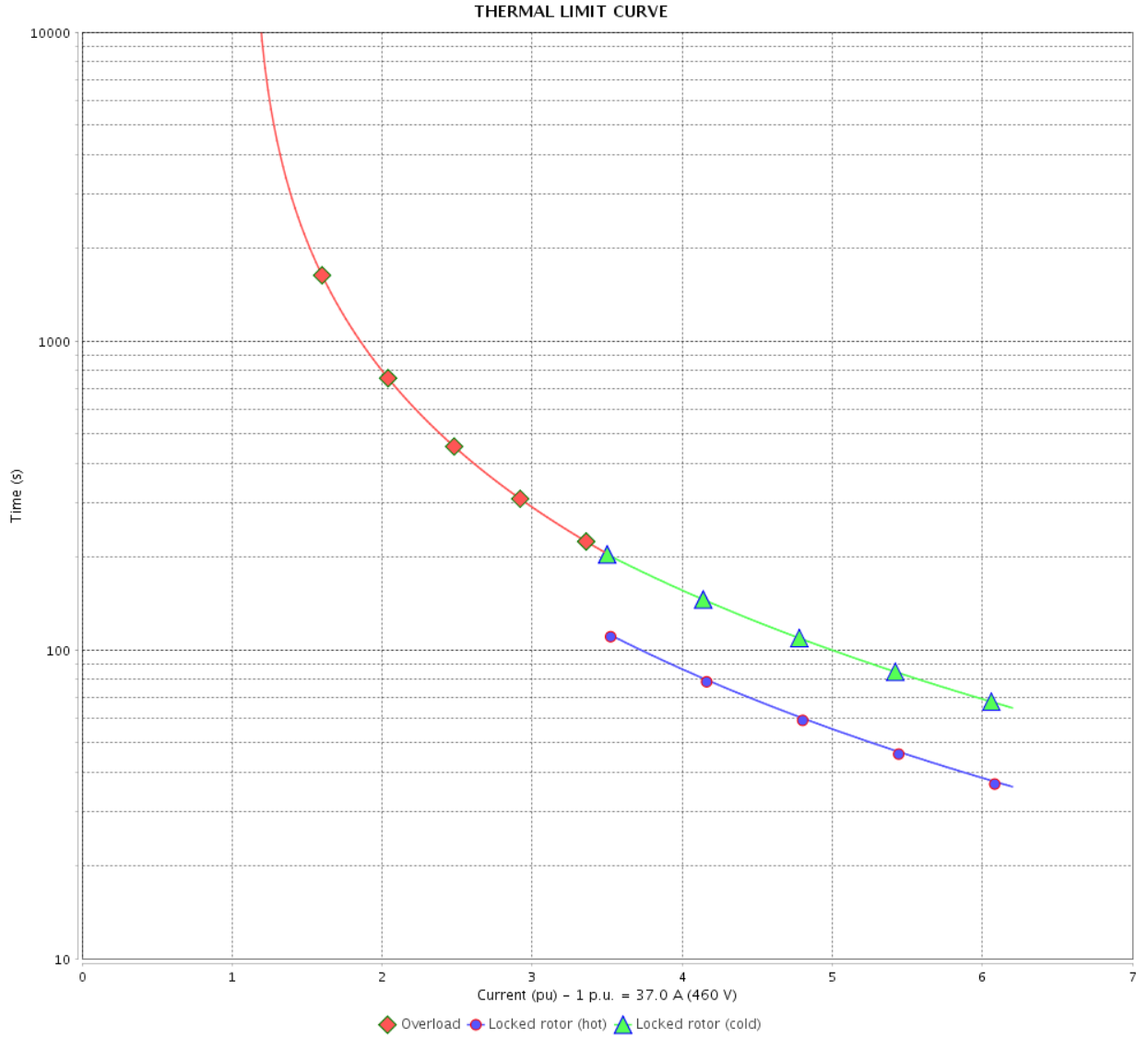
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# THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



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



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Rated current	: 44.5 A	Moment of inertia (J)	: 23.5 sq.ft.lb
LRC	: 4.9	Duty cycle	: Cont.(S1)
Rated torque	: 219 ft.lb	Insulation class	: F
Locked rotor torque	: 140 %	Service factor	: 1.00
Breakdown torque	: 190 %	Temperature rise	: 105 K
Rated speed	: 725 rpm	Design	: B

Heating constant

Cooling constant

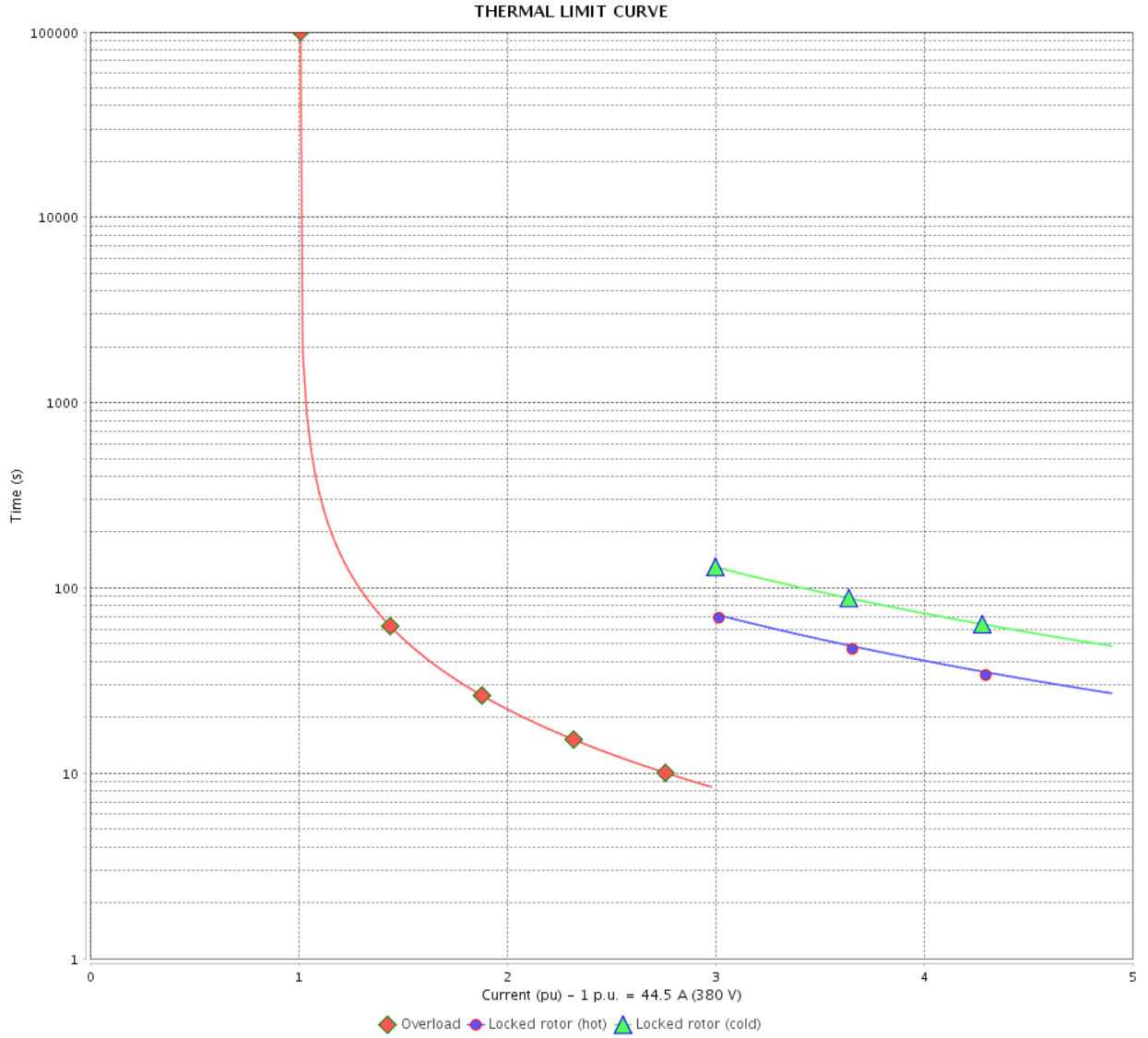
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Three Phase Induction Motor - Squirrel Cage



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Rated current	: 42.7 A	Moment of inertia (J)	: 23.5 sq.ft.lb
LRC	: 5.5	Duty cycle	: Cont.(S1)
Rated torque	: 217 ft.lb	Insulation class	: F
Locked rotor torque	: 160 %	Service factor	: 1.00
Breakdown torque	: 210 %	Temperature rise	: 105 K
Rated speed	: 725 rpm	Design	: B

Heating constant

Cooling constant

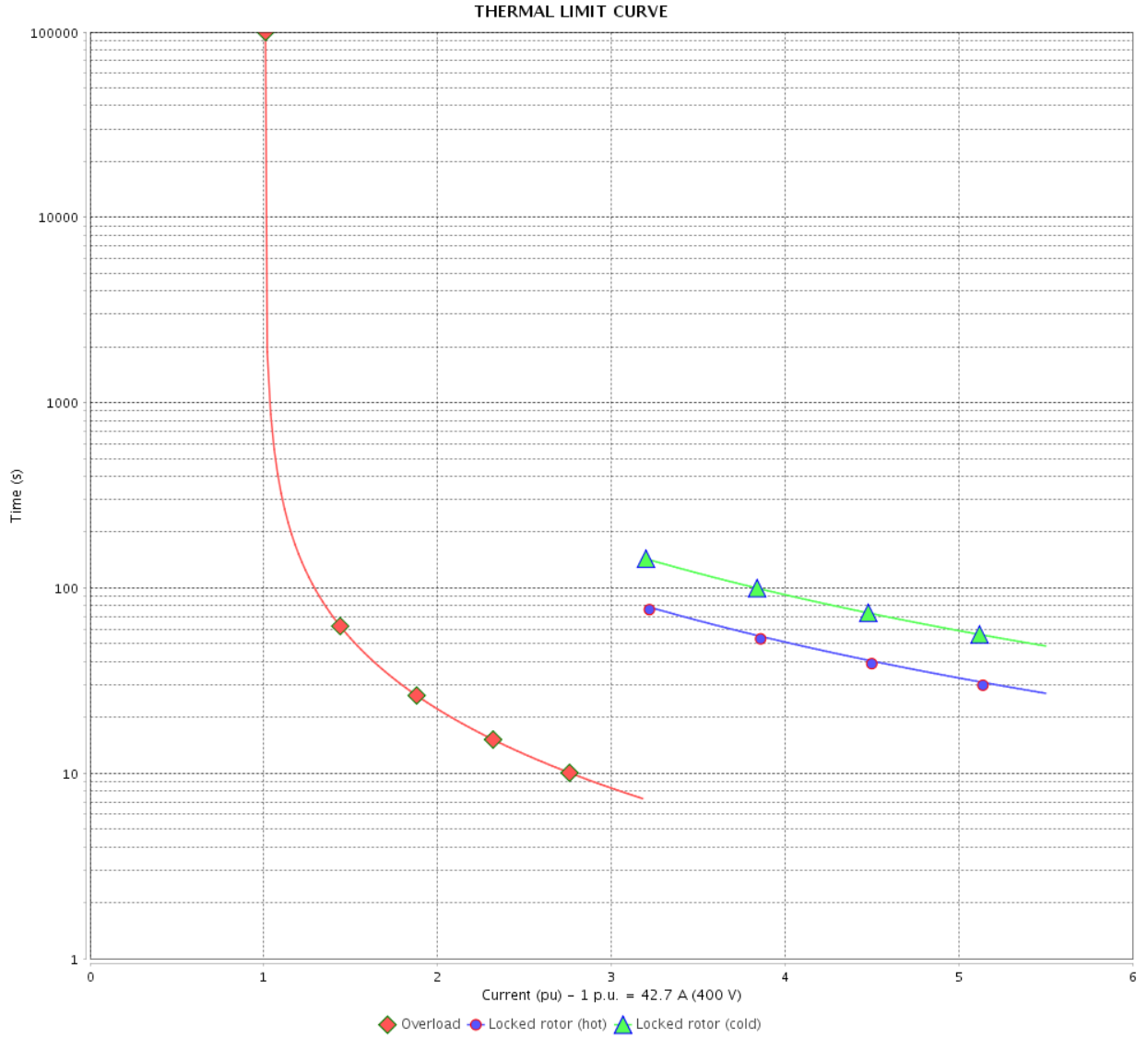
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LRC	: 5.9	Duty cycle	: Cont.(S1)
Rated torque	: 216 ft.lb	Insulation class	: F
Locked rotor torque	: 170 %	Service factor	: 1.00
Breakdown torque	: 229 %	Temperature rise	: 105 K
Rated speed	: 730 rpm	Design	: B

Heating constant

Cooling constant

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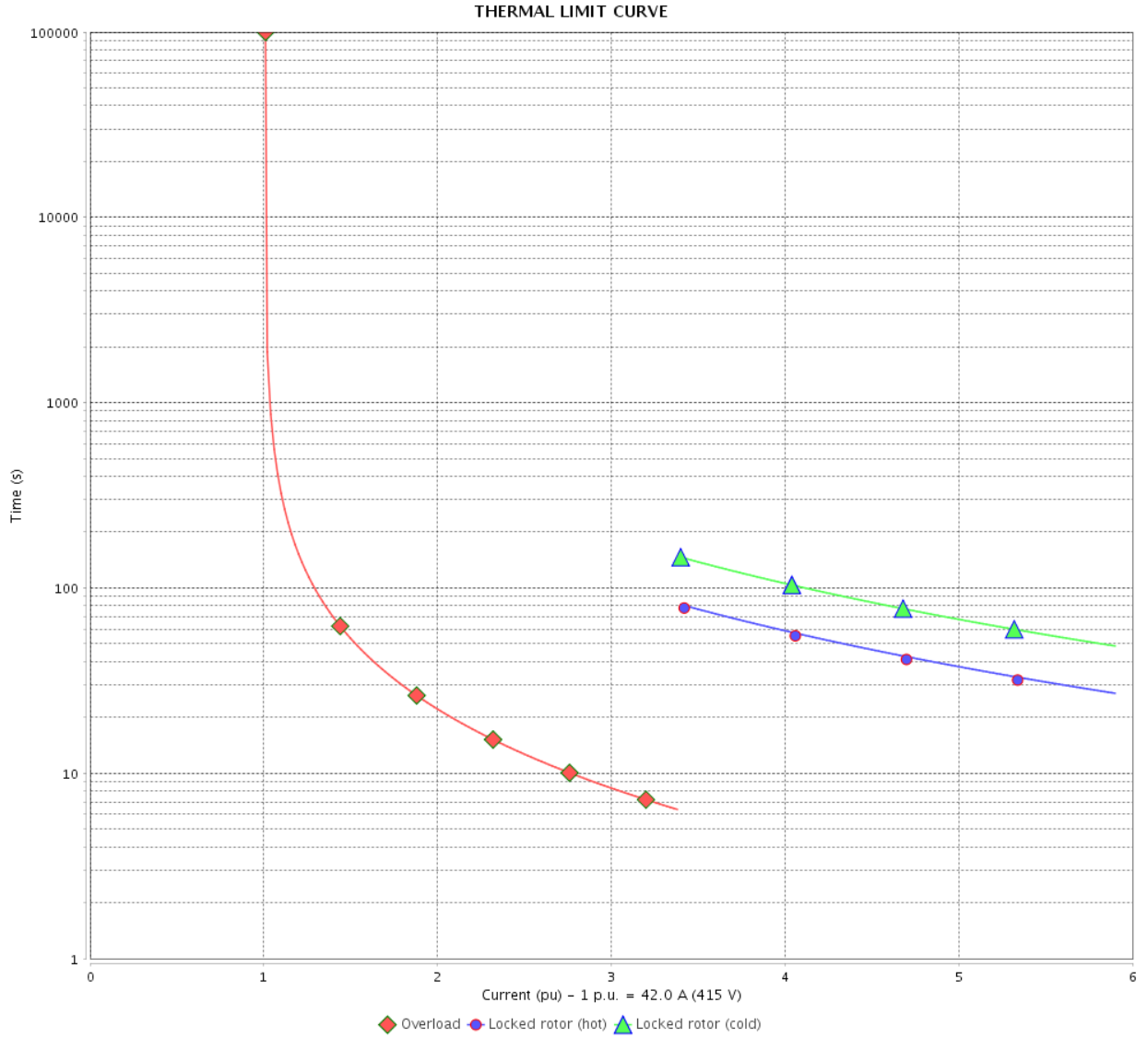


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Three Phase Induction Motor - Squirrel Cage



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# VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage



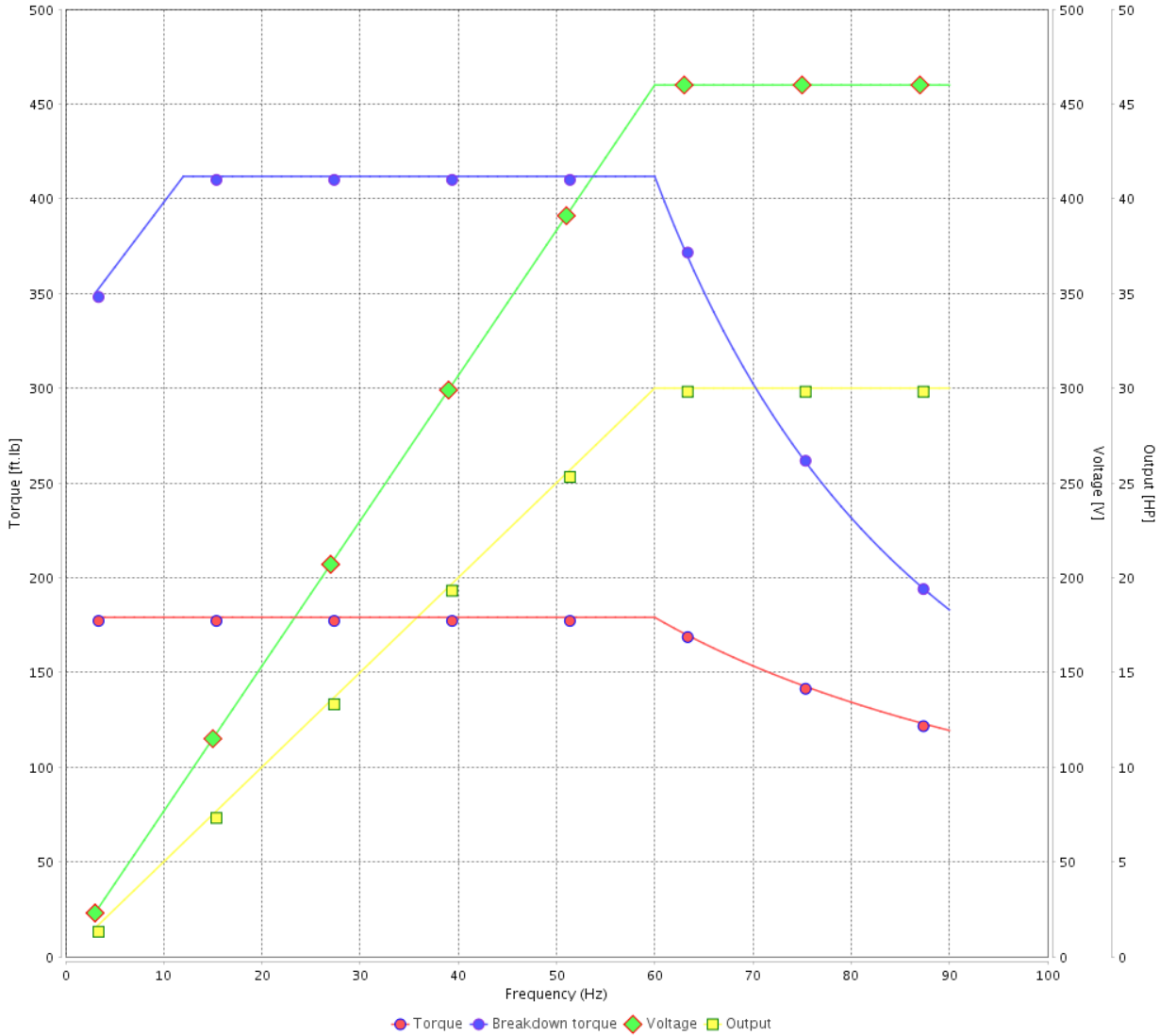
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VFD OPERATION CURVE



Performance : 460 V 60 Hz 8P

Rated current : 37.0 A  
 LRC : 6.2  
 Rated torque : 179 ft.lb  
 Locked rotor torque : 170 %  
 Breakdown torque : 240 %  
 Rated speed : 880 rpm

Moment of inertia (J) : 23.5 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

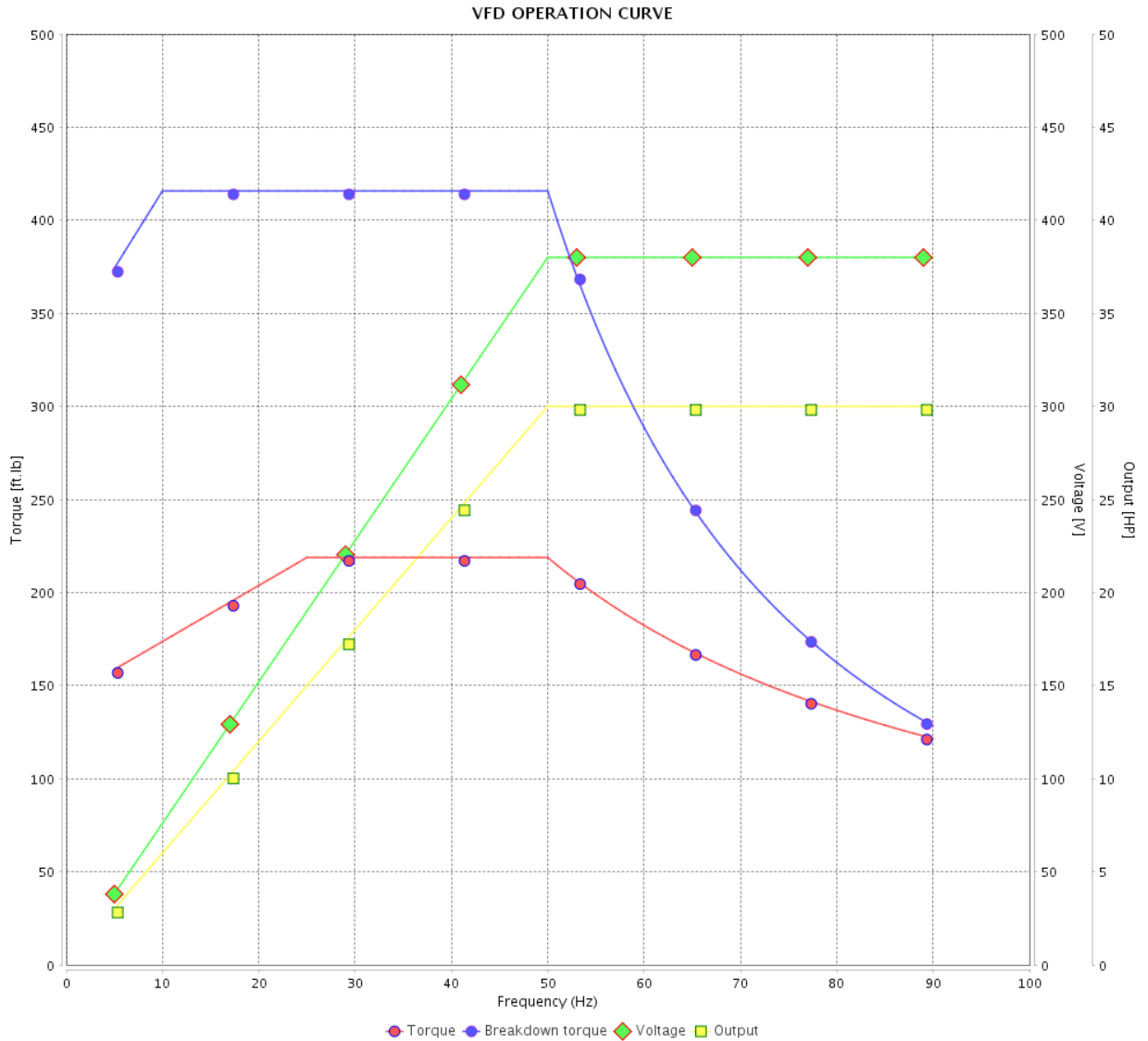


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Performance : 380 V 50 Hz 8P IE3

Rated current : 44.5 A  
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 Locked rotor torque : 140 %  
 Breakdown torque : 190 %  
 Rated speed : 725 rpm

Moment of inertia (J) : 23.5 sq.ft.lb  
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 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



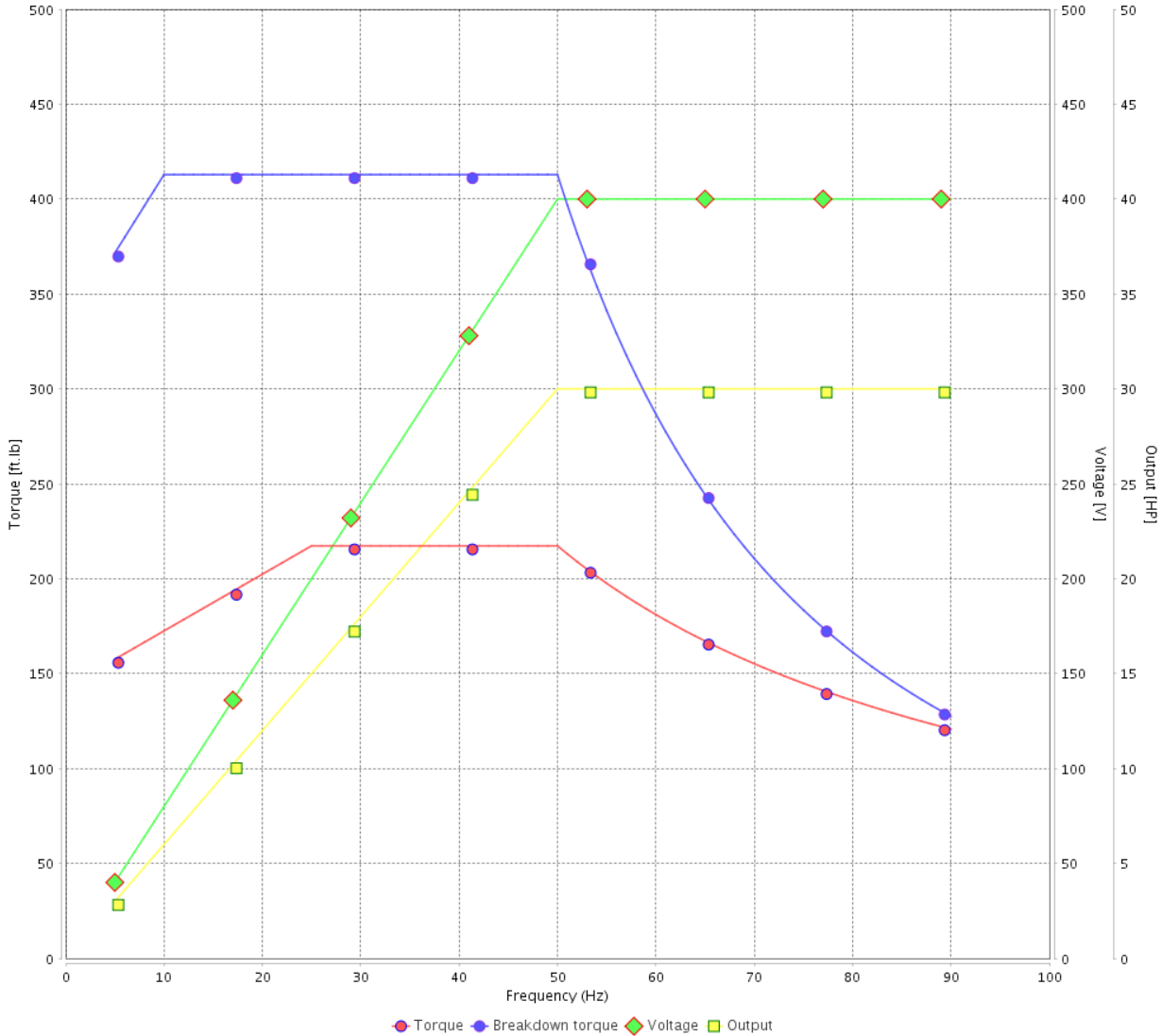
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VFD OPERATION CURVE



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Rated torque	: 217 ft.lb	Insulation class	: F
Locked rotor torque	: 160 %	Service factor	: 1.00
Breakdown torque	: 210 %	Temperature rise	: 105 K
Rated speed	: 725 rpm	Design	: B

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# VFD OPERATION CURVE

## Three Phase Induction Motor - Squirrel Cage

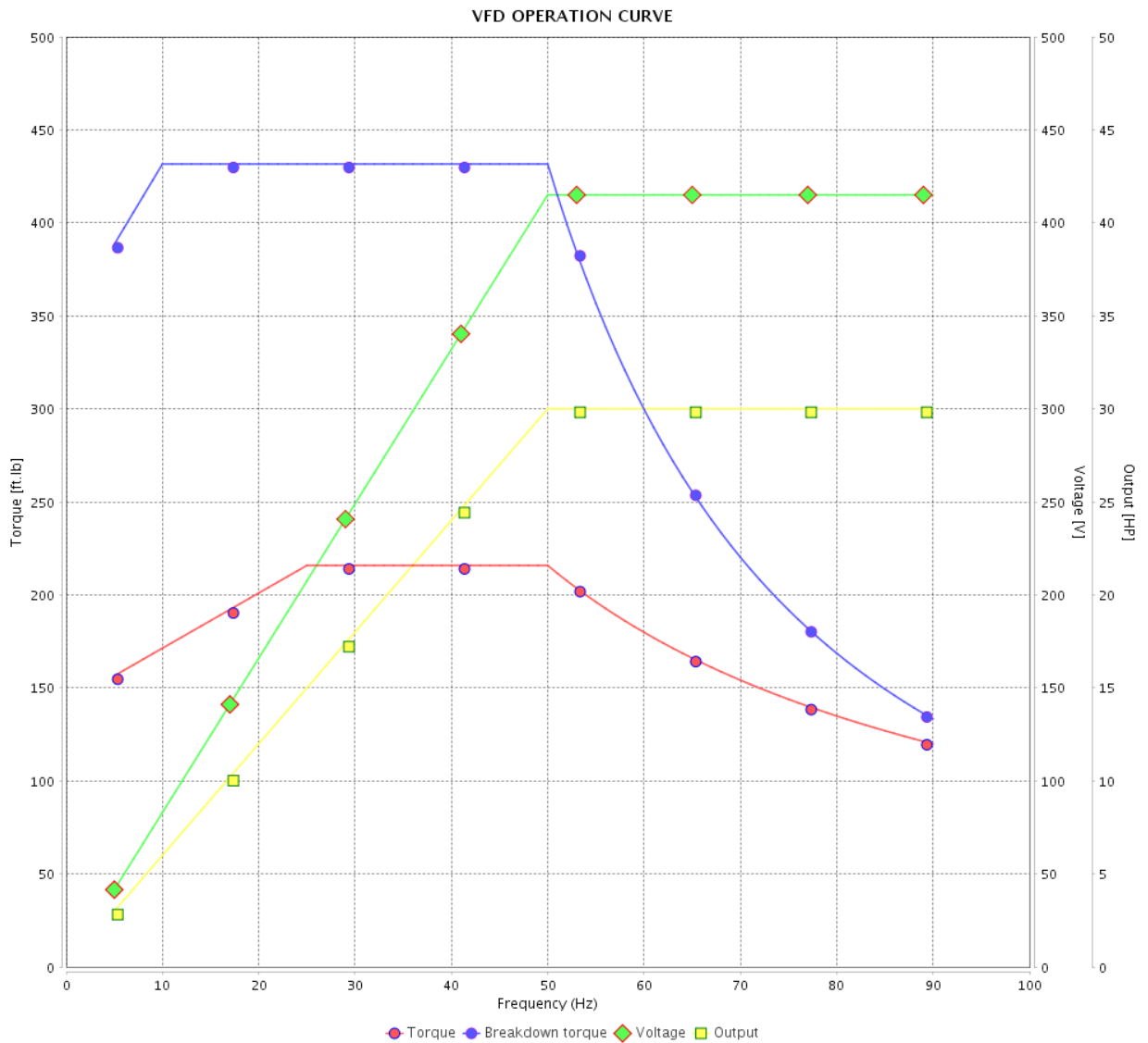


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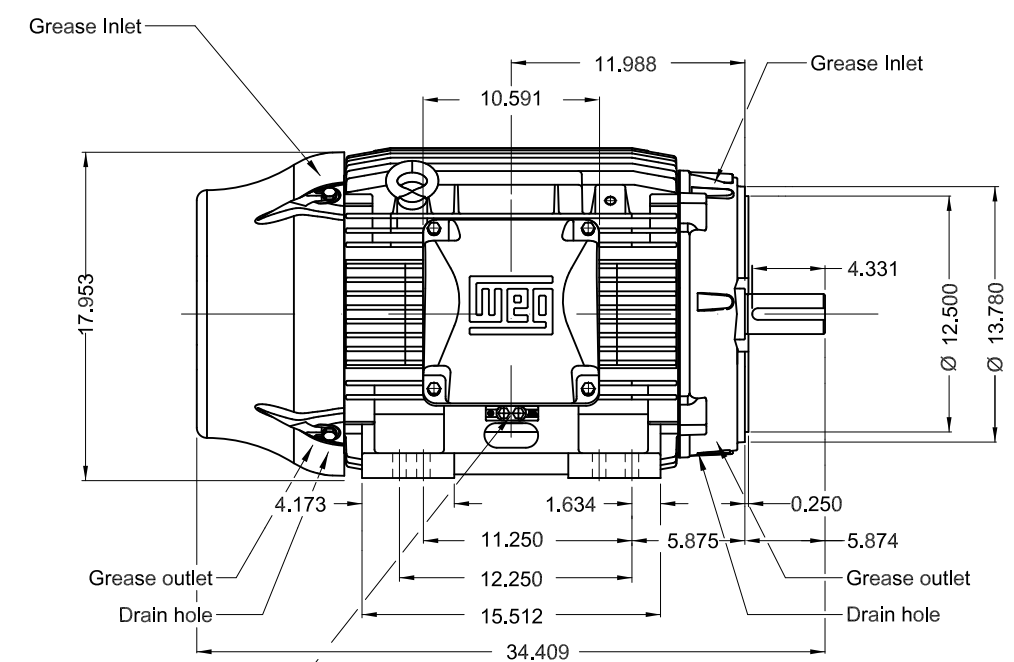
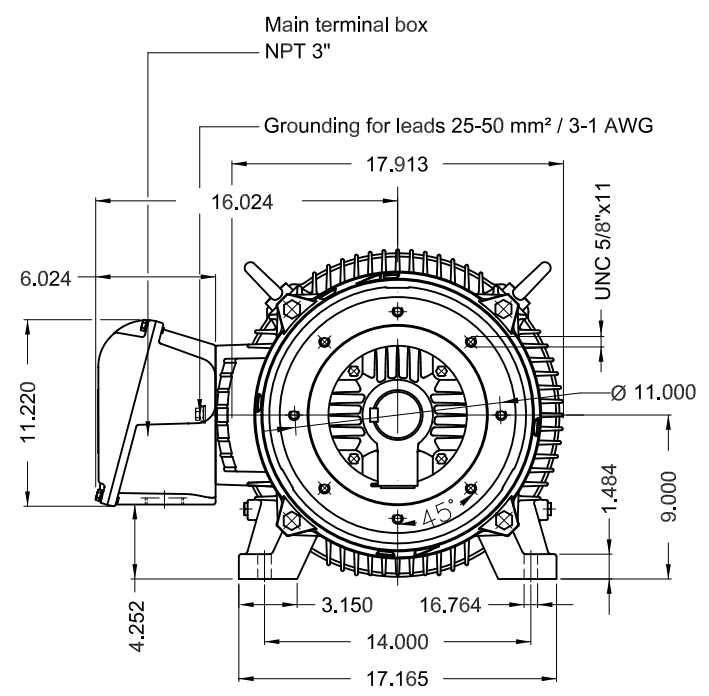
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1 2 3 4 5 6

A

B

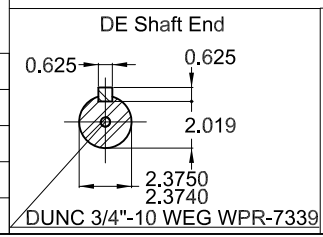
C



D

E

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



30 HP 08 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

