

# DATA SHEET



## Three Phase Induction Motor - Squirrel Cage

Customer							
Product line	: NEMA Premium Efficiency Three-Phase	Product code	: 12447129				
		Catalog #	: 04018ET3E324TC-W22				
Frame	: 324/6TC	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>	: 590 lb				
Protection degree	: IP55	Moment of inertia (J)	: 9.16 sq.ft.lb				
Design	: B						
Output [HP]	40	30	30	30	40	40	40
Poles	4	4	4	4	4	4	4
Frequency [Hz]	60	50	50	50	50	50	50
Rated voltage [V]	230/460	380	400	415	380	400	415
Rated current [A]	94.2/47.1	42.8	41.6	41.1	57.4	54.1	52.8
L. R. Amperes [A]	575/287	282	304	316	287	303	317
LRC [A]	6.1x(Code G)	6.6x(Code G)	7.3x(Code H)	7.7x(Code J)	5.0x(Code E)	5.6x(Code F)	6.0x(Code G)
No load current [A]	34.0/17.0	16.8	17.3	18.6	16.8	17.3	18.6
Rated speed [RPM]	1770	1475	1480	1480	1460	1465	1470
Slip [%]	1.67	1.67	1.33	1.33	2.67	2.33	2.00
Rated torque [ft.lb]	119	107	106	106	144	143	143
Locked rotor torque [%]	229	240	270	280	170	190	210
Breakdown torque [%]	240	260	290	310	180	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	105 K	80 K
Locked rotor time	36s (cold) 20s (hot)	25s (cold) 14s (hot)	27s (cold) 15s (hot)	27s (cold) 15s (hot)	25s (cold) 14s (hot)	27s (cold) 15s (hot)	27s (cold) 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%						
	50%	93.6	92.9	92.4	91.7	93.6	93.0
	75%	94.1	93.1	93.0	92.6	93.0	93.0
	100%	94.1	93.0	93.2	93.1	92.4	93.0
Power Factor	25%						
	50%	0.72	0.68	0.64	0.62	0.78	0.72
	75%	0.80	0.78	0.75	0.73	0.84	0.80
	100%	0.85	0.84	0.82	0.80	0.86	0.85
Bearing type	: 6312 C3	6212 C3	Foundation loads				
Sealing	: V'Ring	V'Ring	Max. traction	: 966 lb			
Lubrication interval	: 20000 h	20000 h	Max. compression	: 1556 lb			
Lubricant amount	: 21 g	13 g					
Lubricant type	: Mobil Polyrex EM						
Notes							
USABLE @208V 104A SF 1.15 SFA 120A							
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



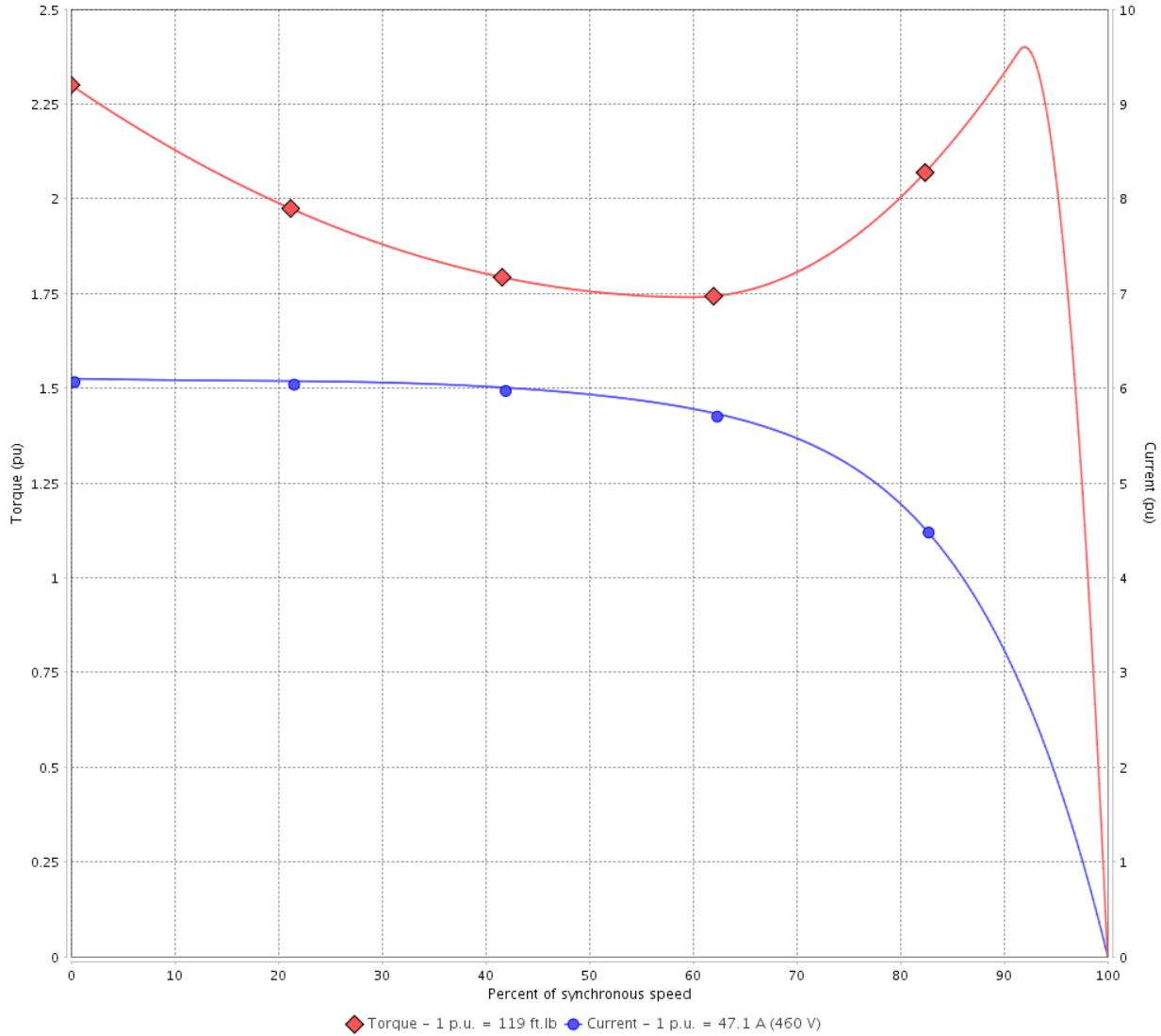
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12447129

Catalog # : 04018ET3E324TC-W22

TORQUE AND CURRENT VS SPEED CURVE



Performance : 230/460 V 60 Hz 4P

Rated current	: 94.2/47.1 A	Moment of inertia (J)	: 9.16 sq.ft.lb
LRC	: 6.1	Duty cycle	: Cont.(S1)
Rated torque	: 119 ft.lb	Insulation class	: F
Locked rotor torque	: 229 %	Service factor	: 1.25
Breakdown torque	: 240 %	Temperature rise	: 80 K
Rated speed	: 1770 rpm	Design	: B

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

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# TORQUE AND CURRENT VS SPEED CURVE



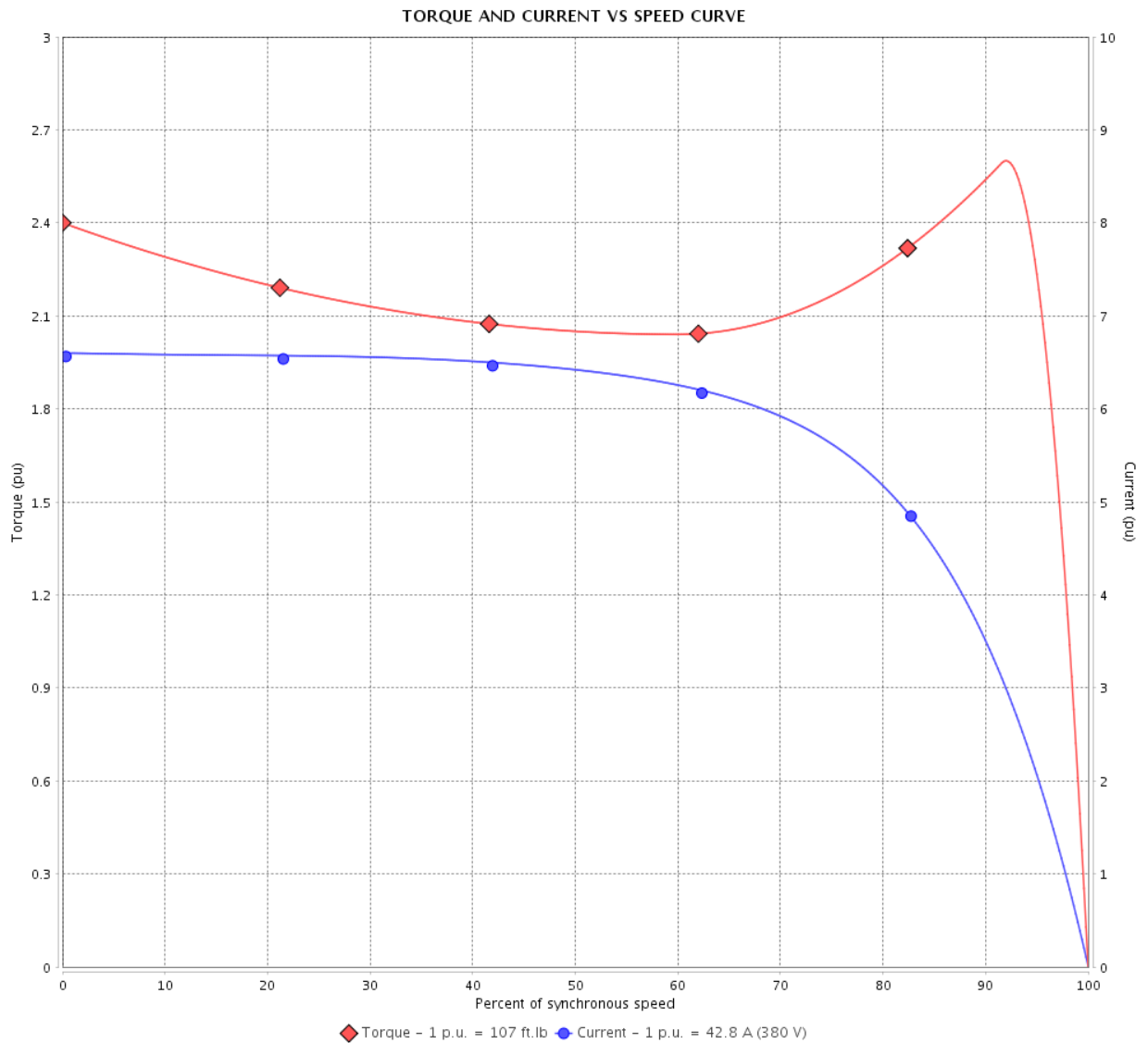
## Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12447129

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Performance : 380 V 50 Hz 4P IE3

Rated current	: 42.8 A	Moment of inertia (J)	: 9.16 sq.ft.lb
LRC	: 6.6	Duty cycle	: Cont.(S1)
Rated torque	: 107 ft.lb	Insulation class	: F
Locked rotor torque	: 240 %	Service factor	: 1.00
Breakdown torque	: 260 %	Temperature rise	: 80 K
Rated speed	: 1475 rpm	Design	: B

Locked rotor time : 25s (cold) 14s (hot)

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# TORQUE AND CURRENT VS SPEED CURVE

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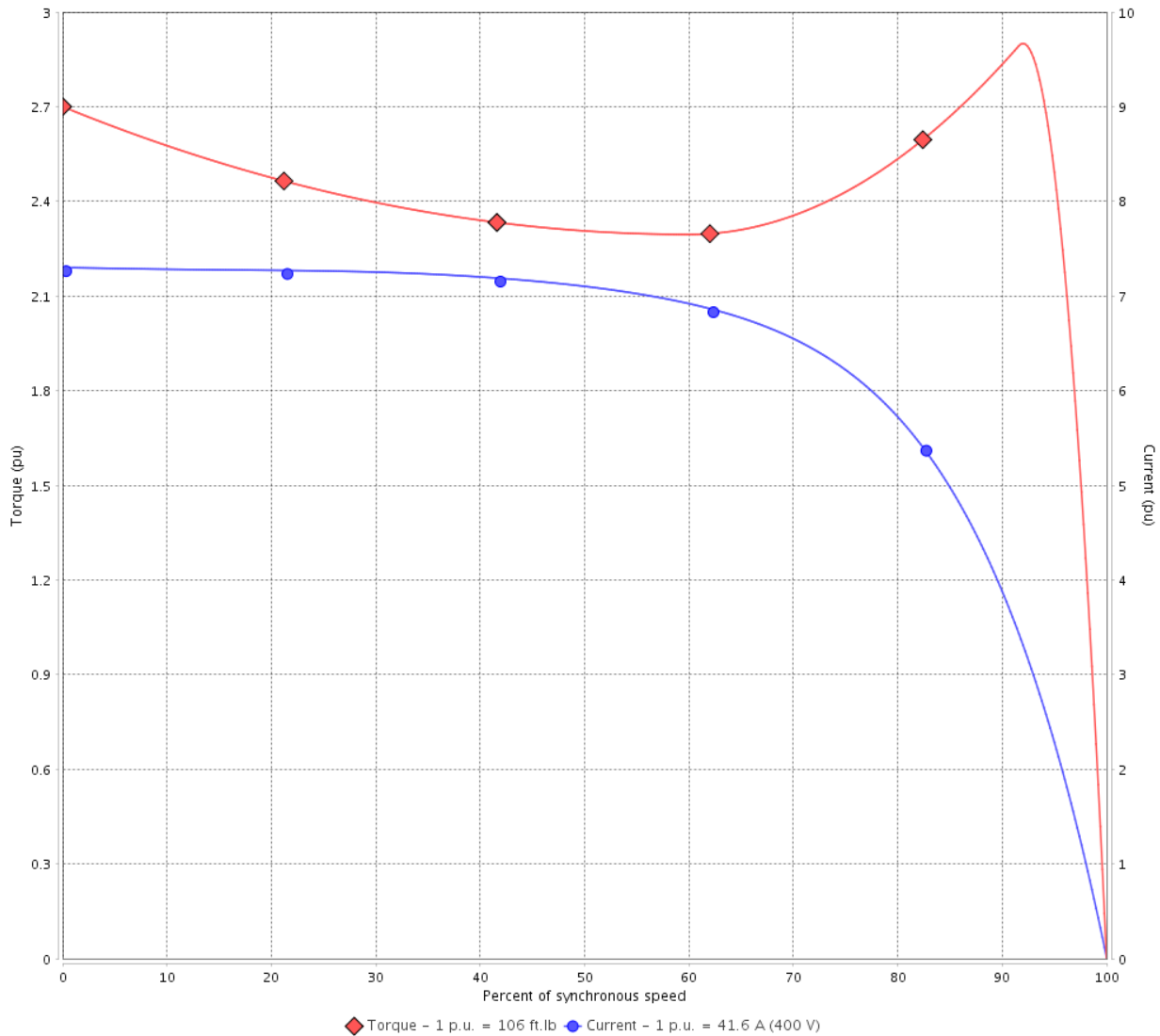
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TORQUE AND CURRENT VS SPEED CURVE



Performance : 400 V 50 Hz 4P IE3

Rated current	: 41.6 A	Moment of inertia (J)	: 9.16 sq.ft.lb
LRC	: 7.3	Duty cycle	: Cont.(S1)
Rated torque	: 106 ft.lb	Insulation class	: F
Locked rotor torque	: 270 %	Service factor	: 1.00
Breakdown torque	: 290 %	Temperature rise	: 80 K
Rated speed	: 1480 rpm	Design	: B

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

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# TORQUE AND CURRENT VS SPEED CURVE



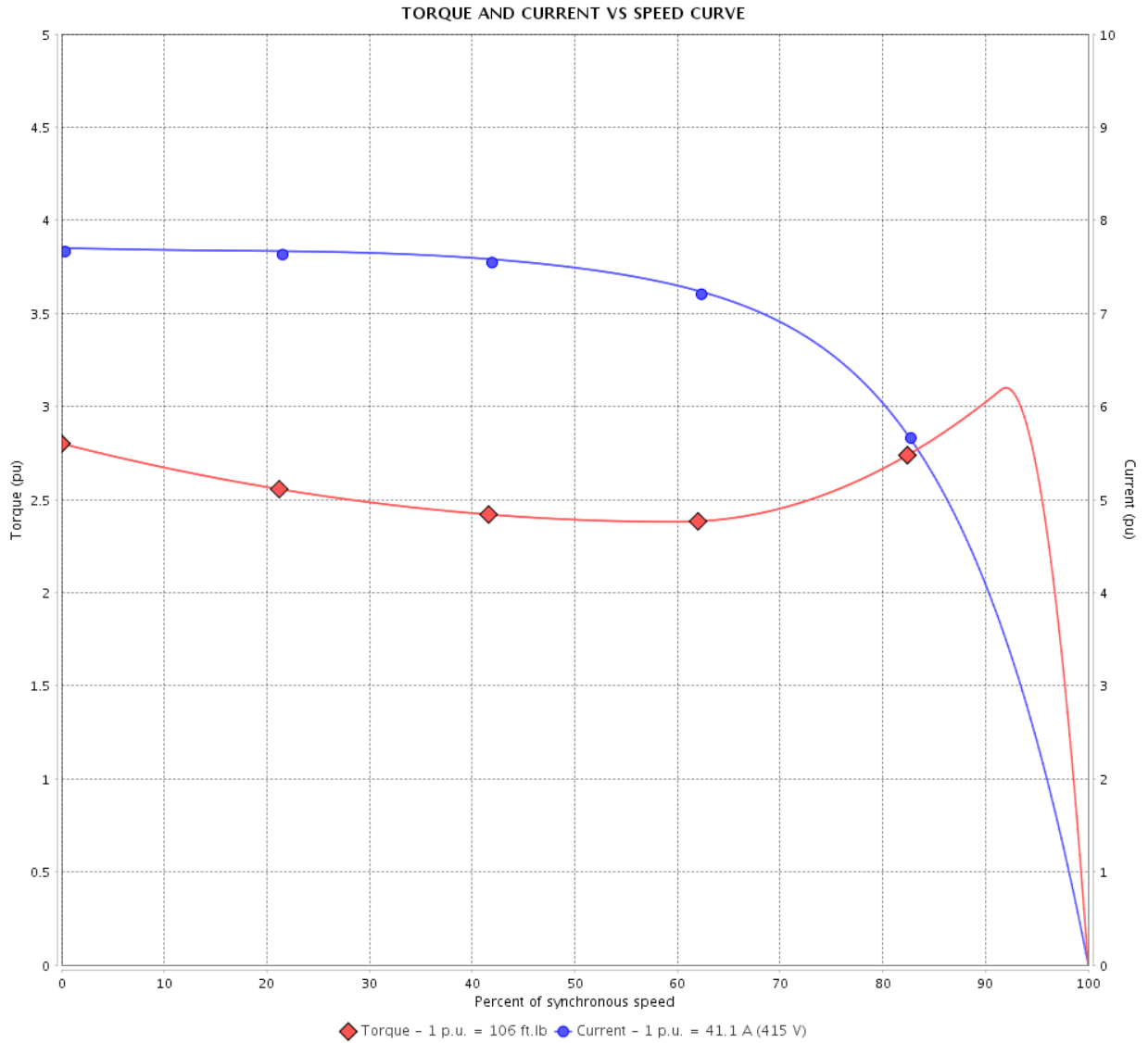
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Performance : 415 V 50 Hz 4P IE3

Rated current	: 41.1 A	Moment of inertia (J)	: 9.16 sq.ft.lb
LRC	: 7.7	Duty cycle	: Cont.(S1)
Rated torque	: 106 ft.lb	Insulation class	: F
Locked rotor torque	: 280 %	Service factor	: 1.00
Breakdown torque	: 310 %	Temperature rise	: 80 K
Rated speed	: 1480 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



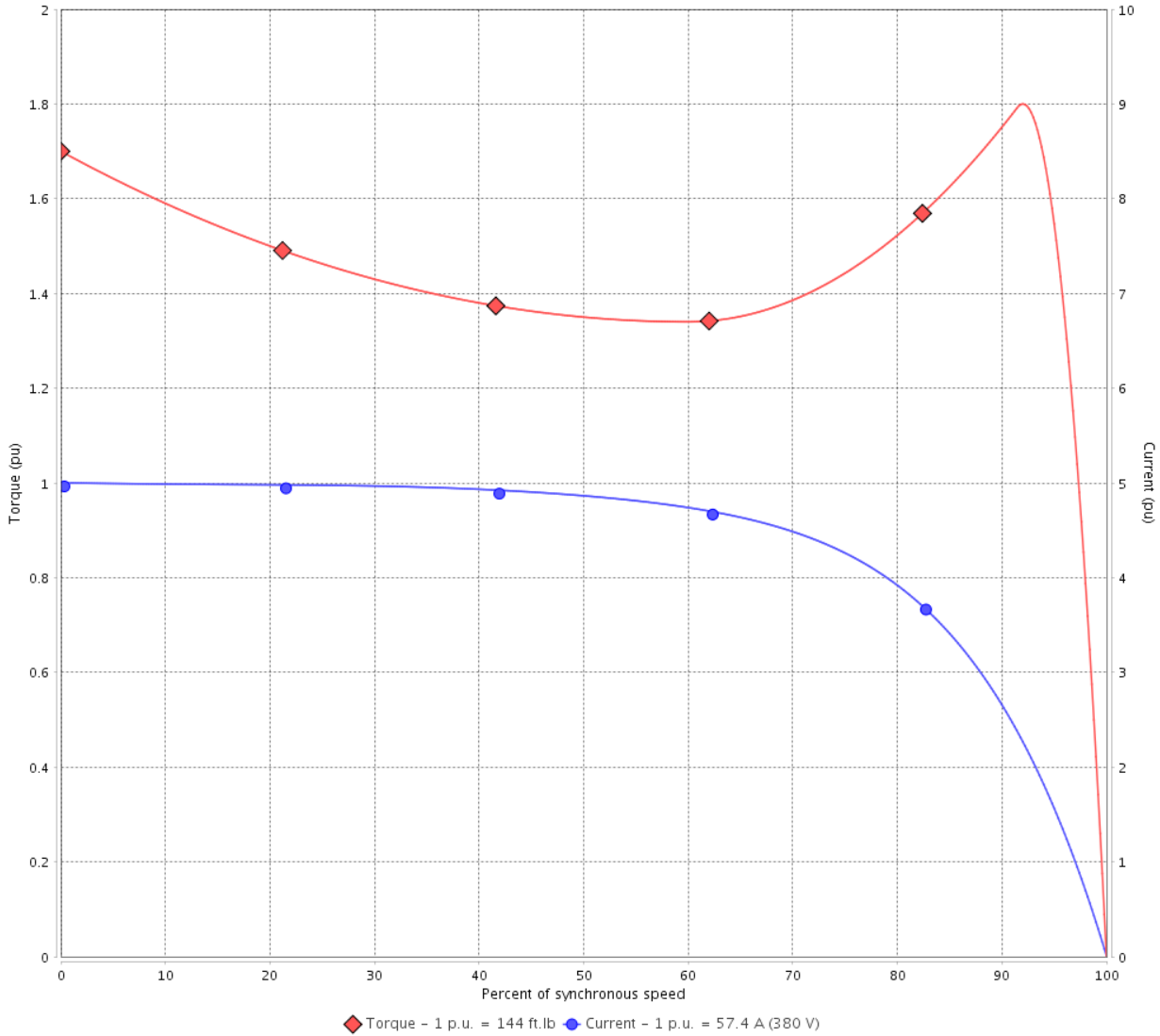
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Catalog # : 04018ET3E324TC-W22

TORQUE AND CURRENT VS SPEED CURVE



Performance : 380 V 50 Hz 4P IE2

Rated current	: 57.4 A	Moment of inertia (J)	: 9.16 sq.ft.lb
LRC	: 5.0	Duty cycle	: Cont.(S1)
Rated torque	: 144 ft.lb	Insulation class	: F
Locked rotor torque	: 170 %	Service factor	: 1.00
Breakdown torque	: 180 %	Temperature rise	: 105 K
Rated speed	: 1460 rpm	Design	: B

Locked rotor time : 25s (cold) 14s (hot)

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# TORQUE AND CURRENT VS SPEED CURVE



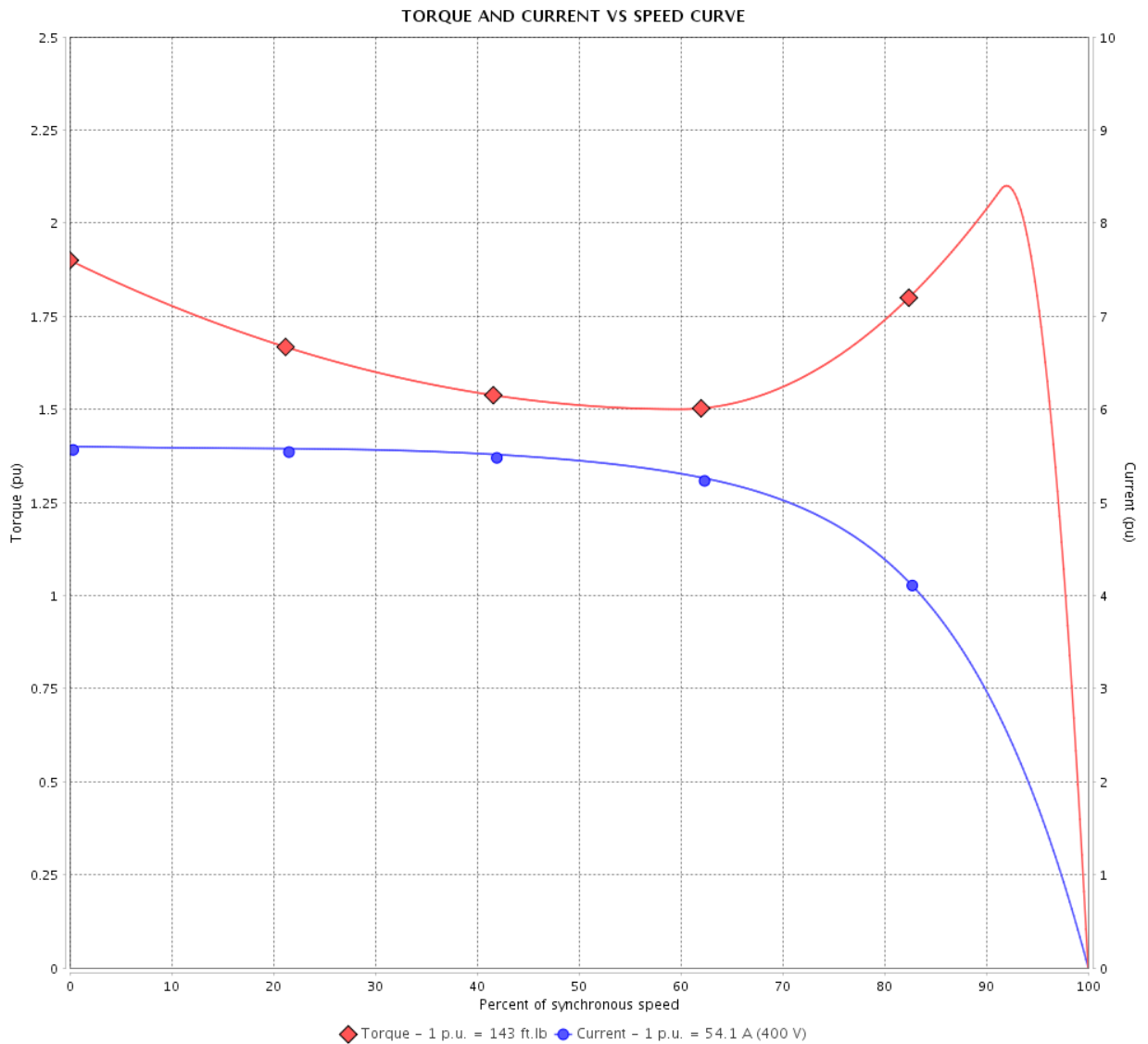
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Performance : 400 V 50 Hz 4P IE2

Rated current	: 54.1 A	Moment of inertia (J)	: 9.16 sq.ft.lb
LRC	: 5.6	Duty cycle	: Cont.(S1)
Rated torque	: 143 ft.lb	Insulation class	: F
Locked rotor torque	: 190 %	Service factor	: 1.00
Breakdown torque	: 210 %	Temperature rise	: 105 K
Rated speed	: 1465 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



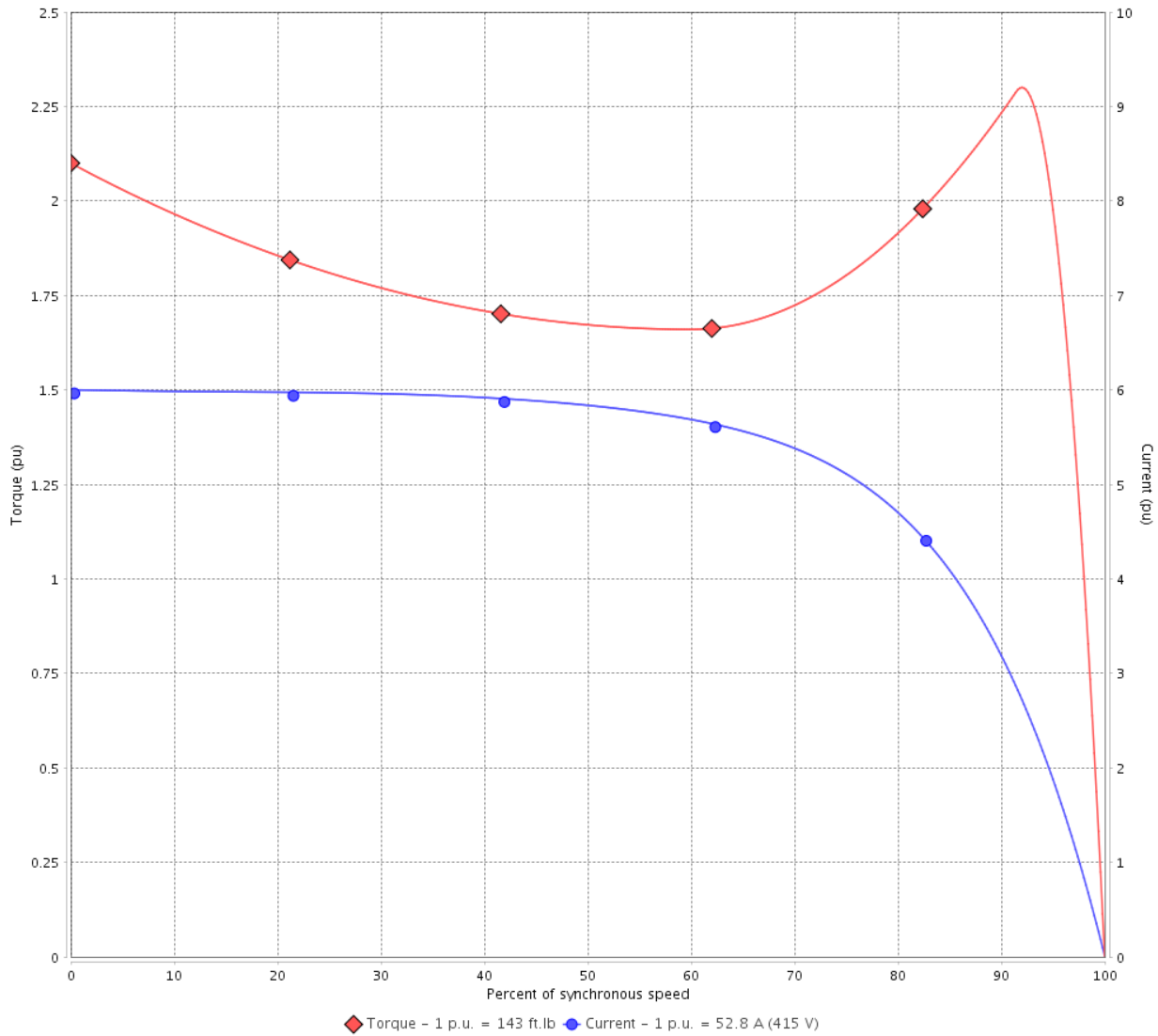
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Product code : 12447129

Catalog # : 04018ET3E324TC-W22

TORQUE AND CURRENT VS SPEED CURVE



Performance : 415 V 50 Hz 4P IE2

Rated current	: 52.8 A	Moment of inertia (J)	: 9.16 sq.ft.lb
LRC	: 6.0	Duty cycle	: Cont.(S1)
Rated torque	: 143 ft.lb	Insulation class	: F
Locked rotor torque	: 210 %	Service factor	: 1.00
Breakdown torque	: 229 %	Temperature rise	: 80 K
Rated speed	: 1470 rpm	Design	: B

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

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# LOAD PERFORMANCE CURVE

## Three Phase Induction Motor - Squirrel Cage

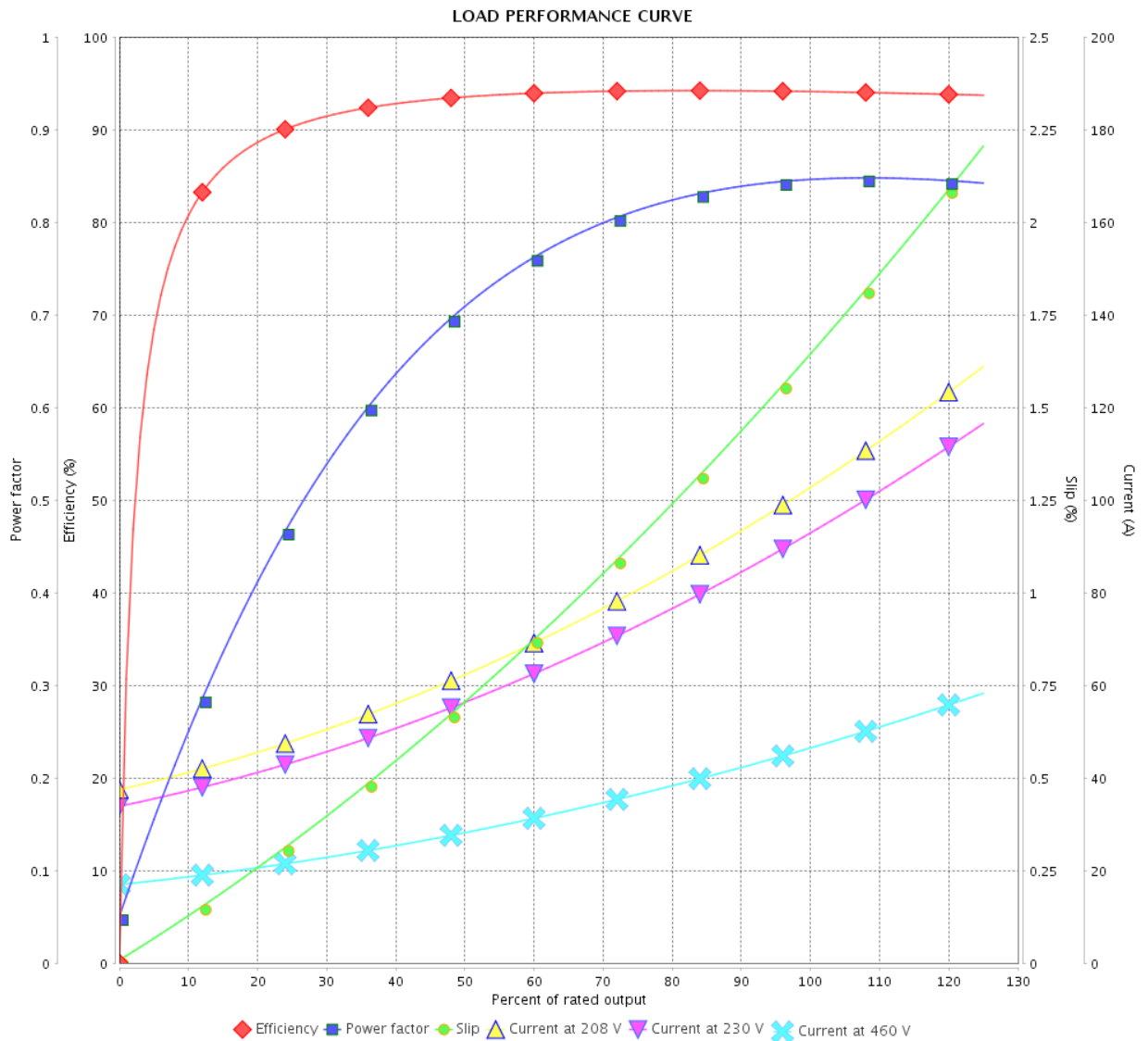


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Catalog # : 04018ET3E324TC-W22



Performance : 230/460 V 60 Hz 4P

Rated current : 94.2/47.1 A  
 LRC : 6.1  
 Rated torque : 119 ft.lb  
 Locked rotor torque : 229 %  
 Breakdown torque : 240 %  
 Rated speed : 1770 rpm

Moment of inertia (J) : 9.16 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.25  
 Temperature rise : 80 K  
 Design : B

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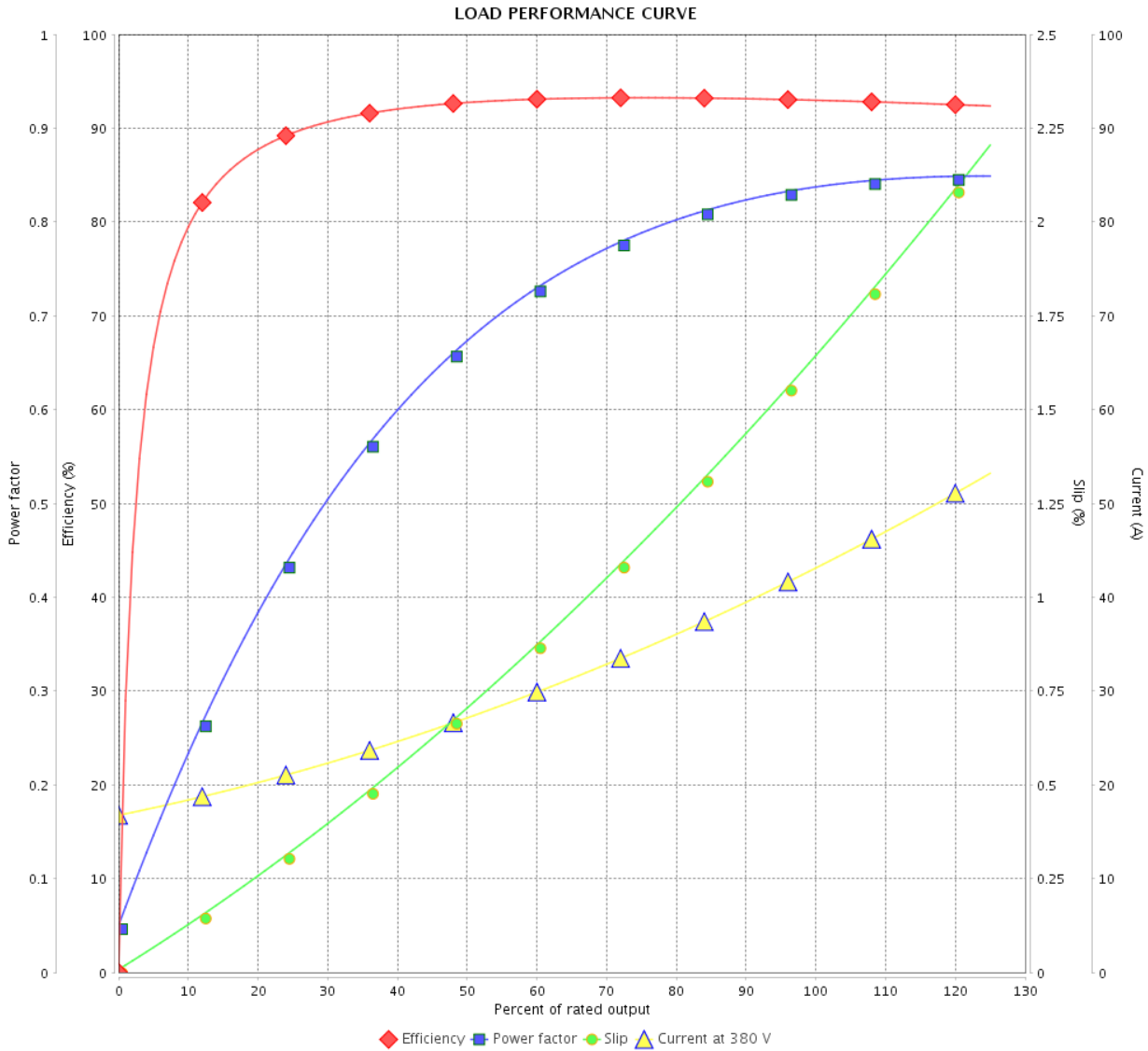


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Performance : 380 V 50 Hz 4P IE3

Rated current : 42.8 A  
 LRC : 6.6  
 Rated torque : 107 ft.lb  
 Locked rotor torque : 240 %  
 Breakdown torque : 260 %  
 Rated speed : 1475 rpm

Moment of inertia (J) : 9.16 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 80 K  
 Design : B

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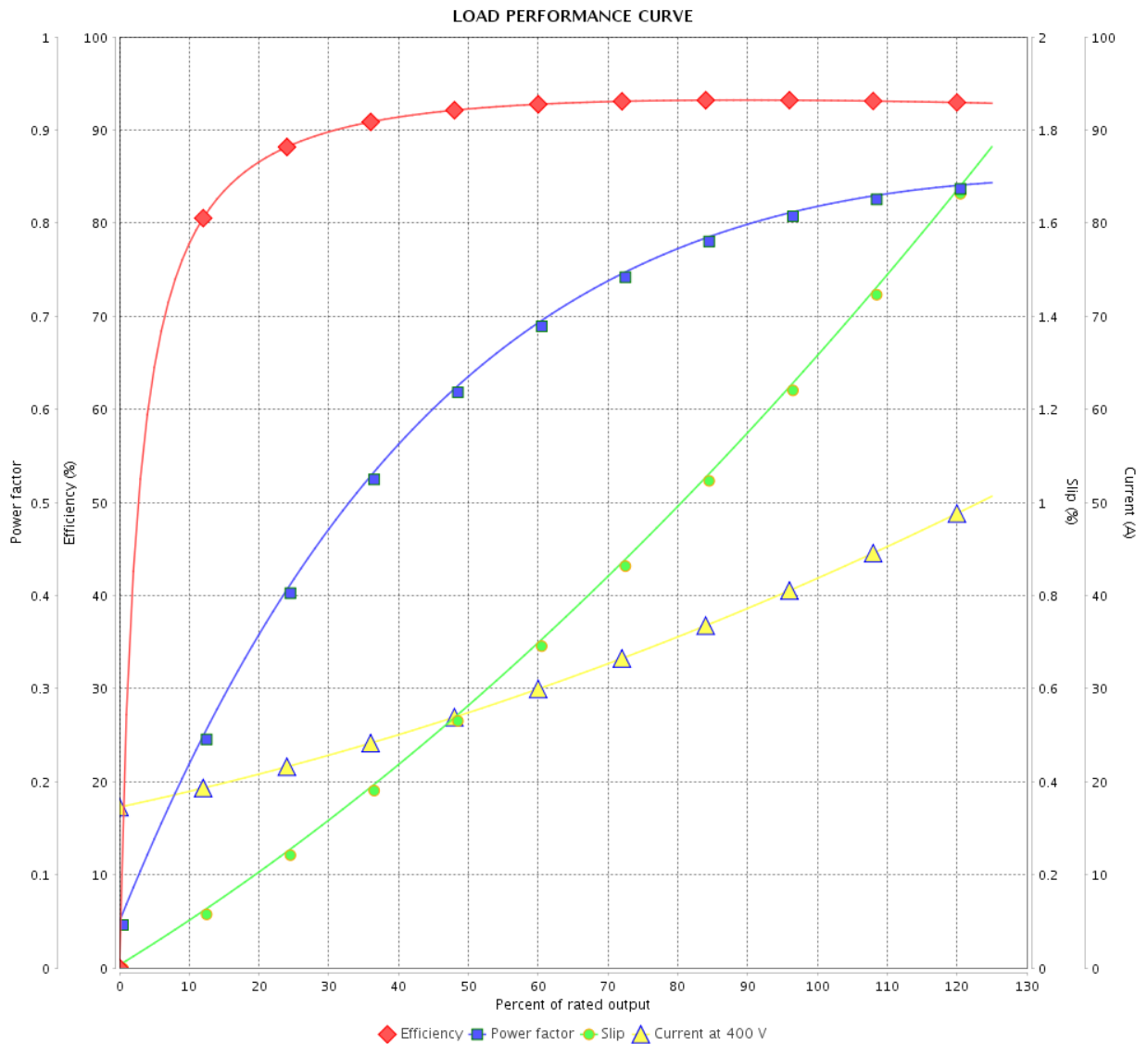


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Performance : 400 V 50 Hz 4P IE3

Rated current : 41.6 A  
 LRC : 7.3  
 Rated torque : 106 ft.lb  
 Locked rotor torque : 270 %  
 Breakdown torque : 290 %  
 Rated speed : 1480 rpm

Moment of inertia (J) : 9.16 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 80 K  
 Design : B

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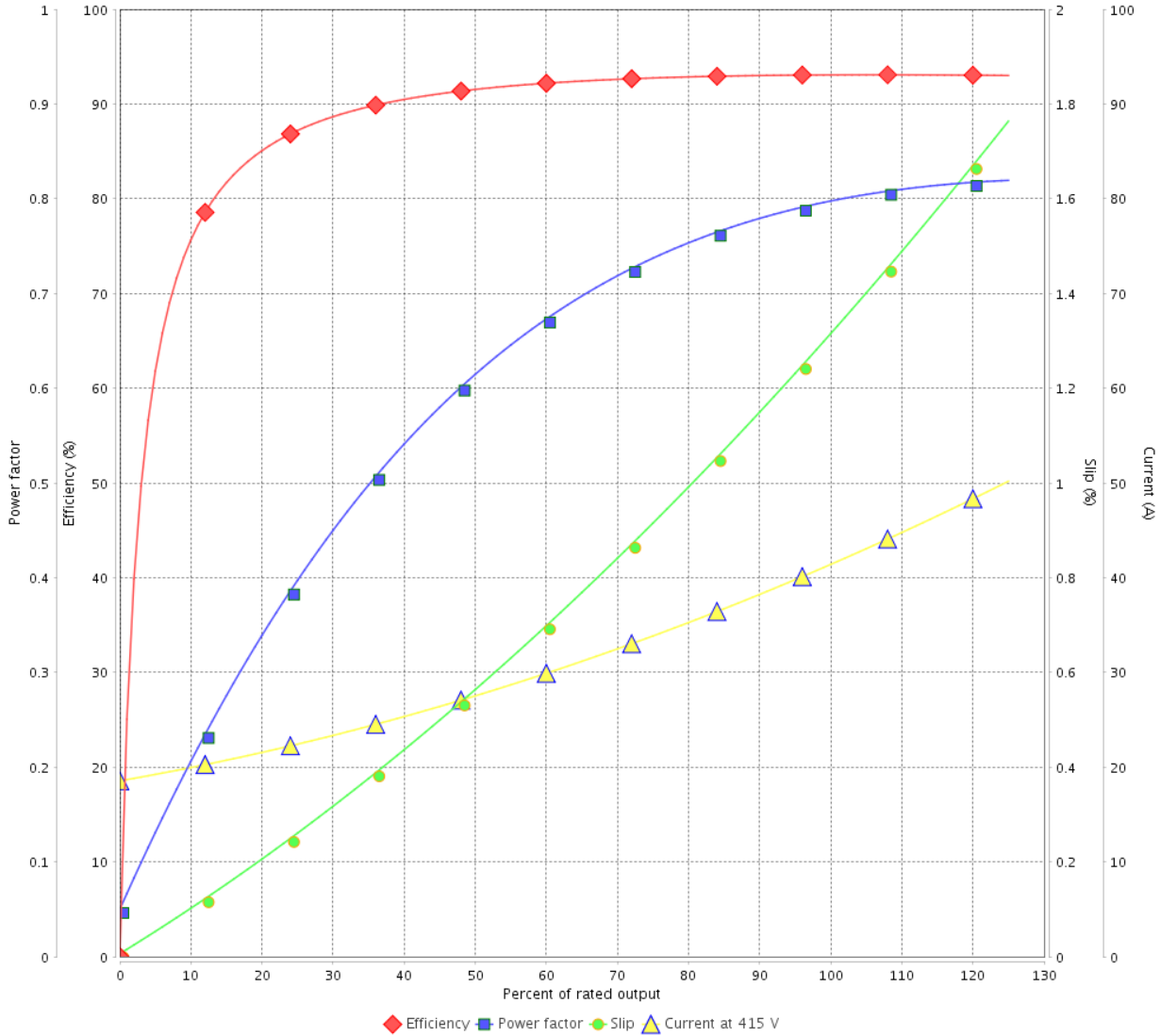
Customer : \_\_\_\_\_

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LOAD PERFORMANCE CURVE



Performance : 415 V 50 Hz 4P IE3

Rated current : 41.1 A  
 LRC : 7.7  
 Rated torque : 106 ft.lb  
 Locked rotor torque : 280 %  
 Breakdown torque : 310 %  
 Rated speed : 1480 rpm

Moment of inertia (J) : 9.16 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 80 K  
 Design : B

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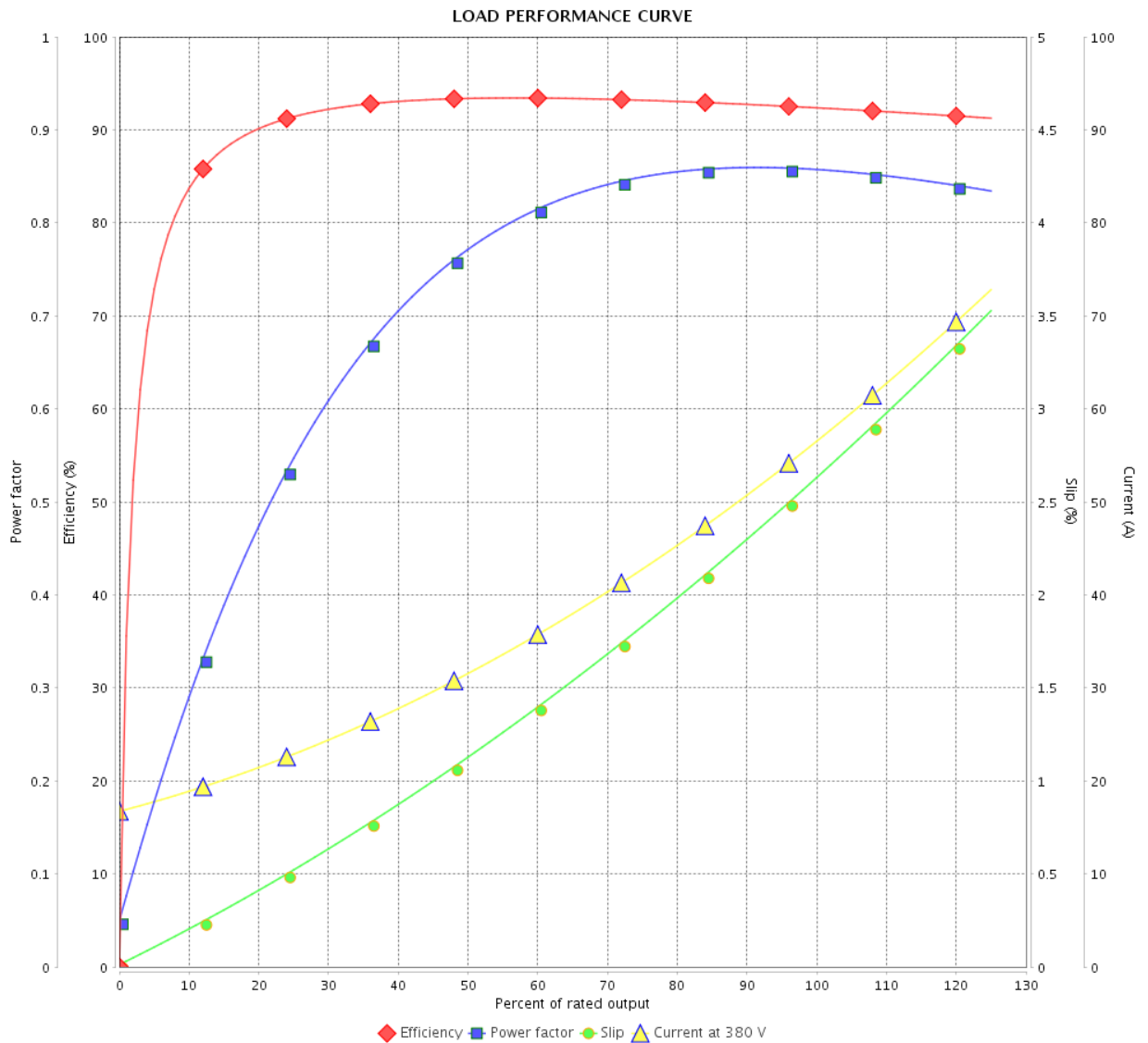


Customer :

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Catalog # : 04018ET3E324TC-W22



Performance : 380 V 50 Hz 4P IE2

Rated current : 57.4 A  
 LRC : 5.0  
 Rated torque : 144 ft.lb  
 Locked rotor torque : 170 %  
 Breakdown torque : 180 %  
 Rated speed : 1460 rpm

Moment of inertia (J) : 9.16 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



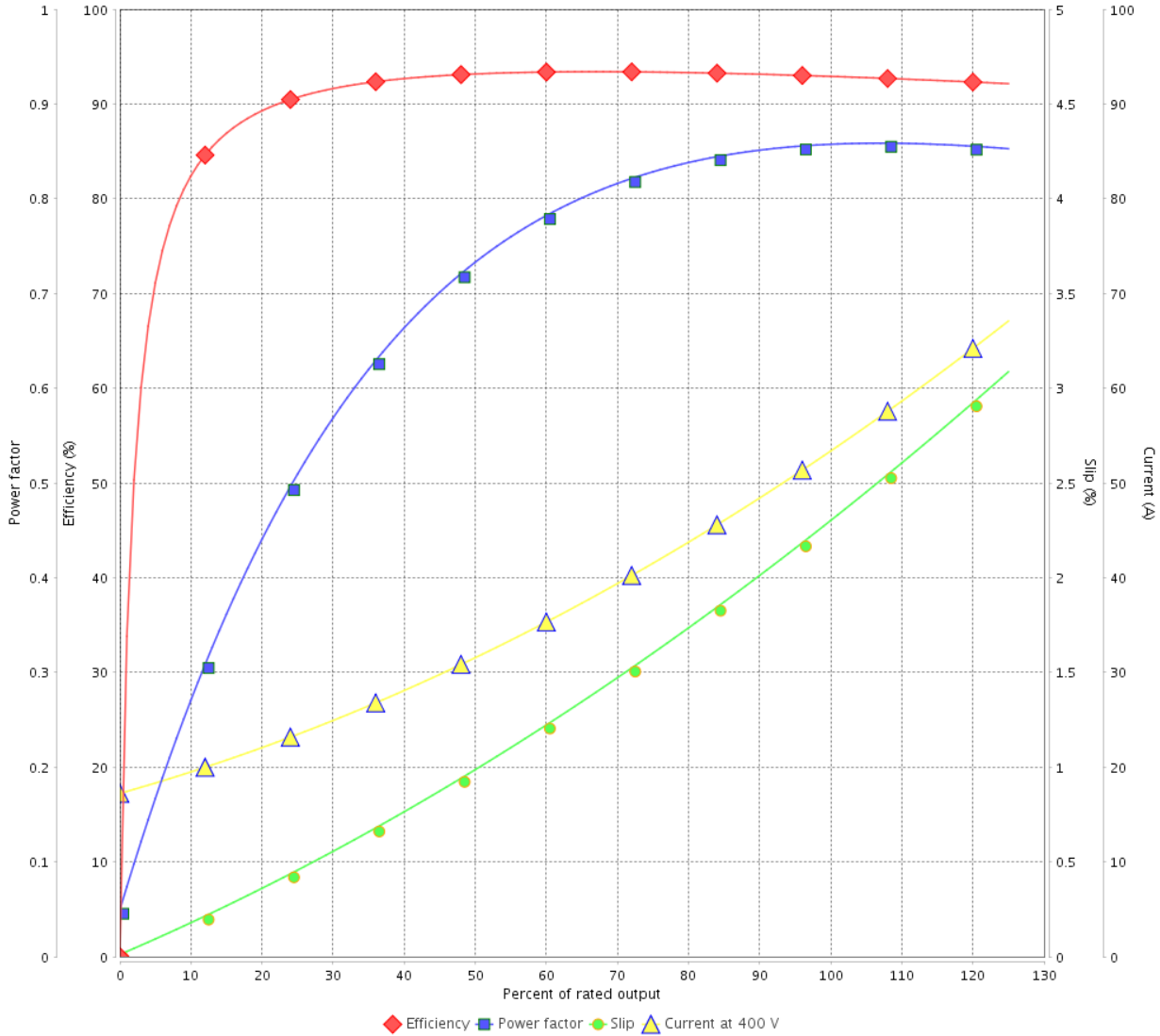
Customer :

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LOAD PERFORMANCE CURVE



Performance : 400 V 50 Hz 4P IE2

Rated current : 54.1 A  
 LRC : 5.6  
 Rated torque : 143 ft.lb  
 Locked rotor torque : 190 %  
 Breakdown torque : 210 %  
 Rated speed : 1465 rpm

Moment of inertia (J) : 9.16 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

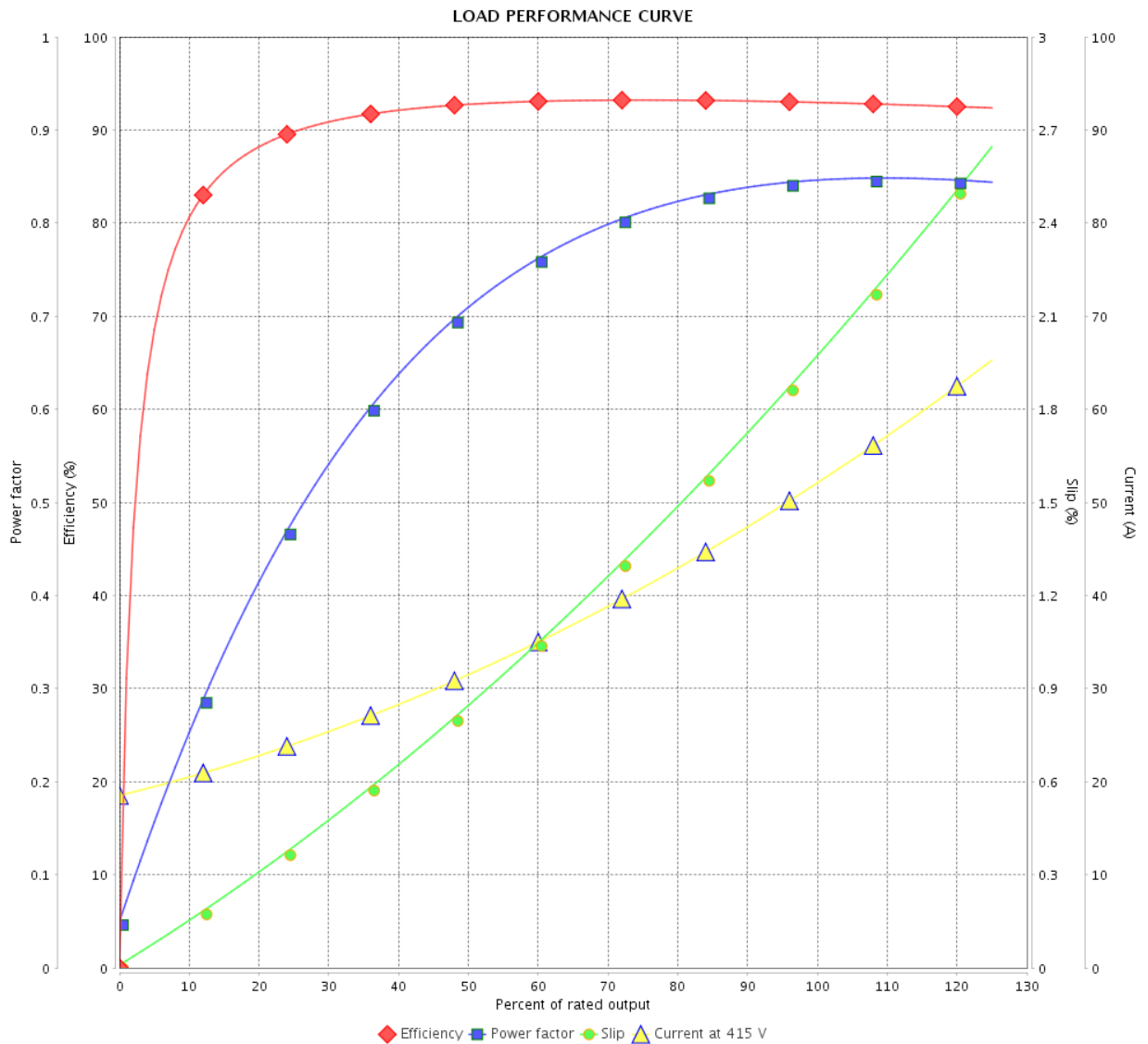


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Performance : 415 V 50 Hz 4P IE2

Rated current : 52.8 A  
 LRC : 6.0  
 Rated torque : 143 ft.lb  
 Locked rotor torque : 210 %  
 Breakdown torque : 229 %  
 Rated speed : 1470 rpm

Moment of inertia (J) : 9.16 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 :

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Performance : 230/460 V 60 Hz 4P

Rated current : 94.2/47.1 A	Moment of inertia (J) : 9.16 sq.ft.lb
LRC : 6.1	Duty cycle : Cont.(S1)
Rated torque : 119 ft.lb	Insulation class : F
Locked rotor torque : 229 %	Service factor : 1.25
Breakdown torque : 240 %	Temperature rise : 80 K
Rated speed : 1770 rpm	Design : B

Heating constant

Cooling constant

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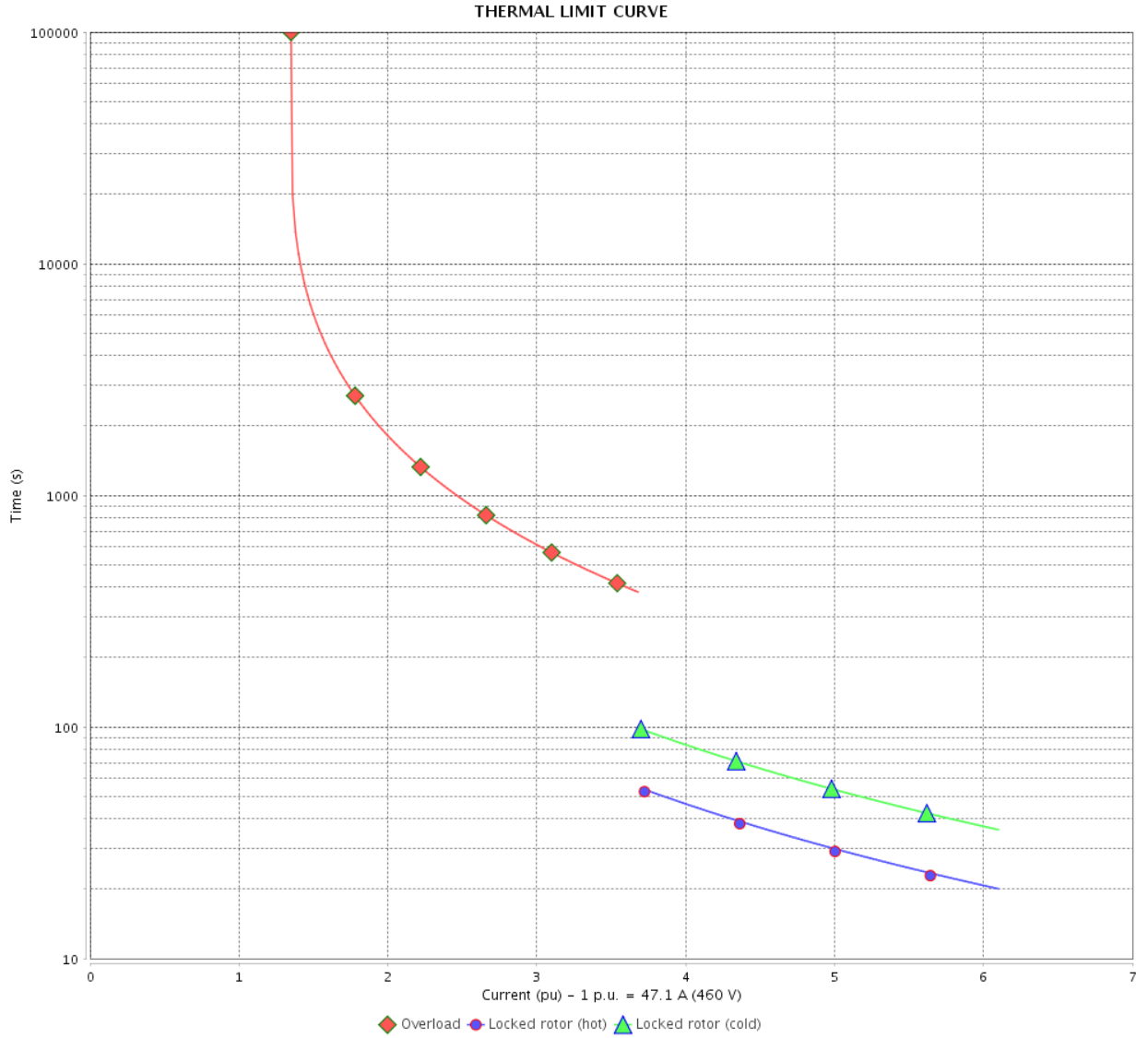


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Three Phase Induction Motor - Squirrel Cage



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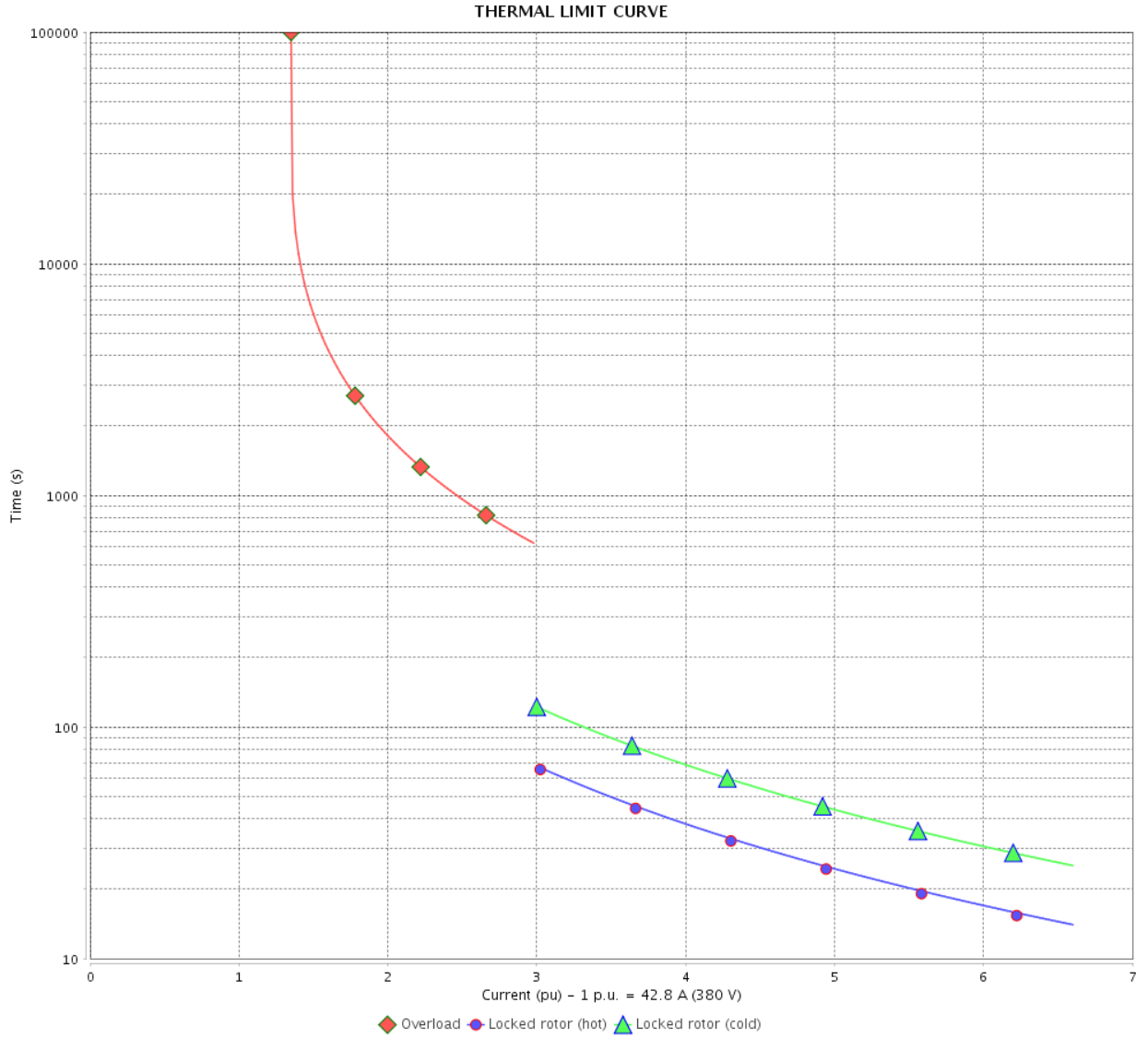
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# THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



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Rated current	: 41.6 A	Moment of inertia (J)	: 9.16 sq.ft.lb
LRC	: 7.3	Duty cycle	: Cont.(S1)
Rated torque	: 106 ft.lb	Insulation class	: F
Locked rotor torque	: 270 %	Service factor	: 1.00
Breakdown torque	: 290 %	Temperature rise	: 80 K
Rated speed	: 1480 rpm	Design	: B

Heating constant

Cooling constant

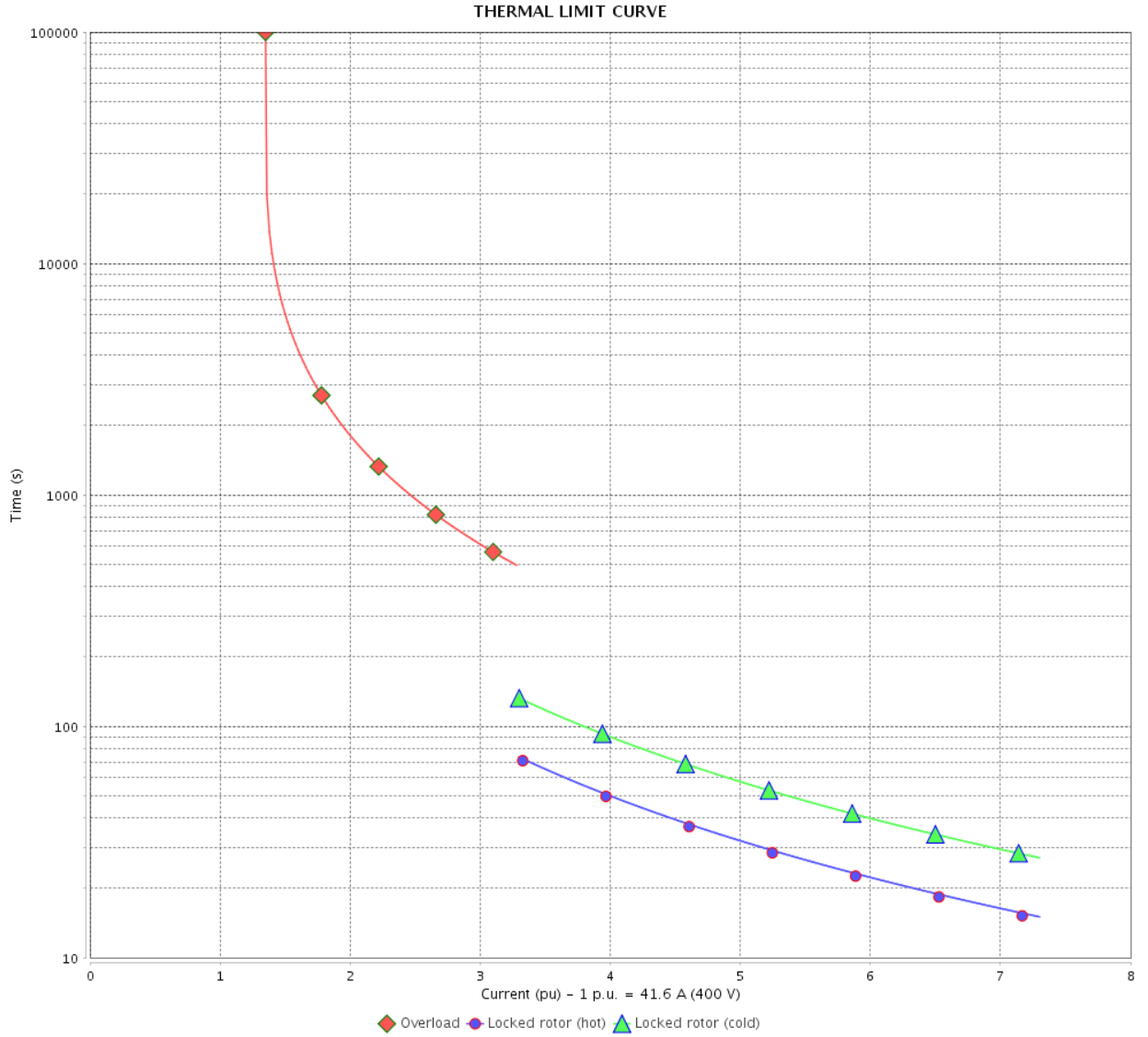
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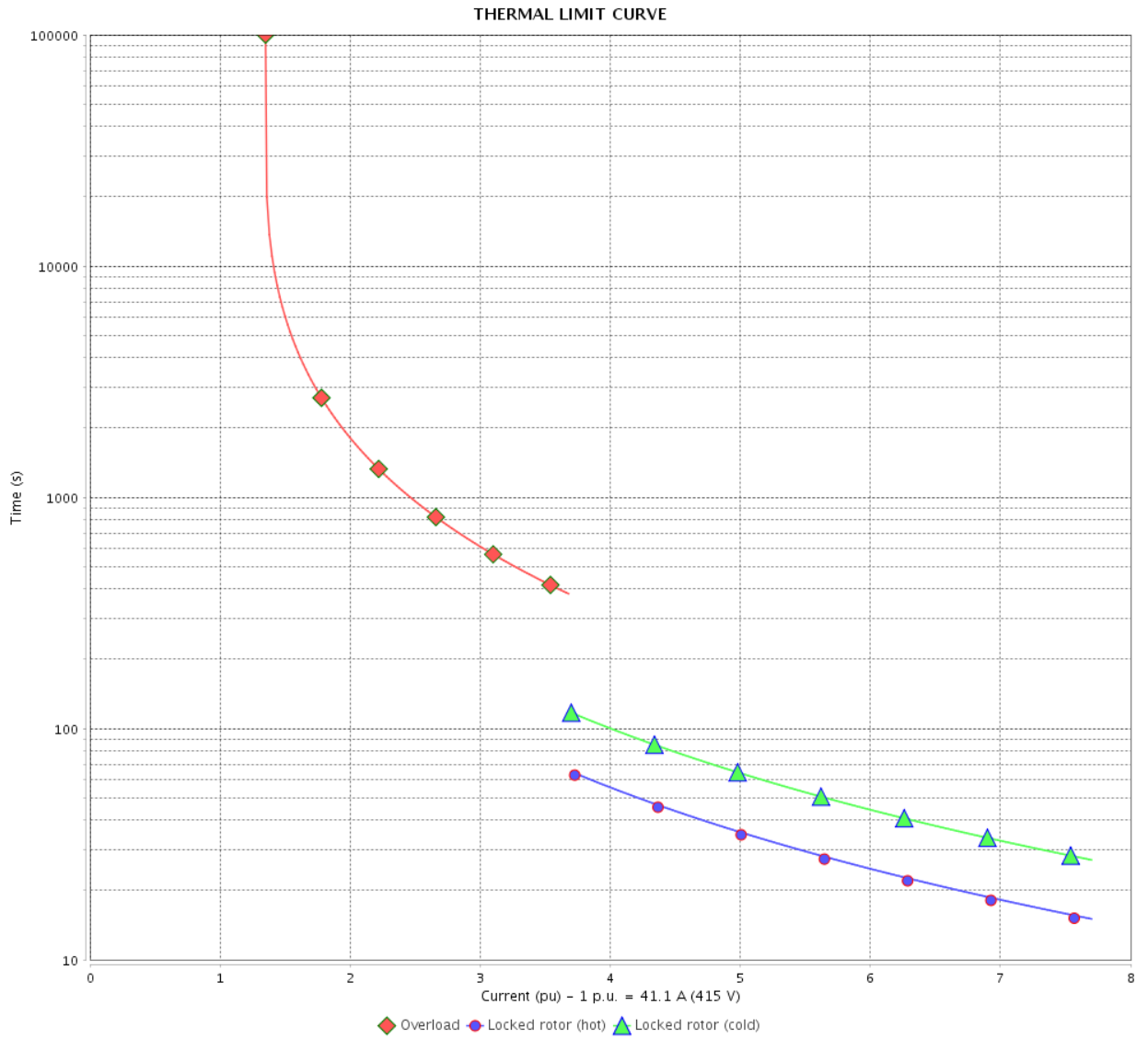
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Breakdown torque	: 180 %	Temperature rise	: 105 K
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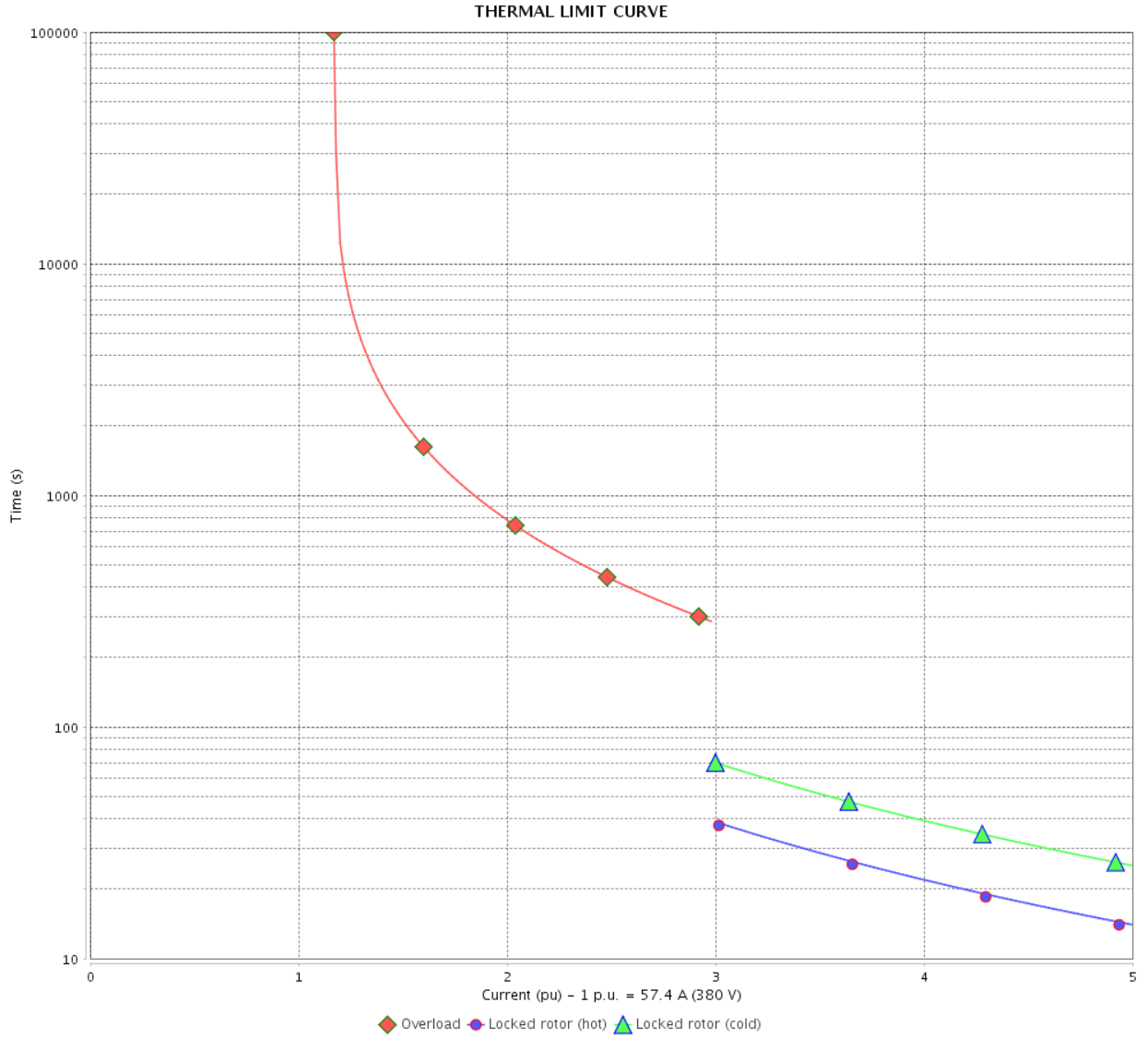


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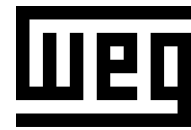


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Performance : 400 V 50 Hz 4P IE2

Rated current : 54.1 A	Moment of inertia (J) : 9.16 sq.ft.lb
LRC : 5.6	Duty cycle : Cont.(S1)
Rated torque : 143 ft.lb	Insulation class : F
Locked rotor torque : 190 %	Service factor : 1.00
Breakdown torque : 210 %	Temperature rise : 105 K
Rated speed : 1465 rpm	Design : B

Heating constant

Cooling constant

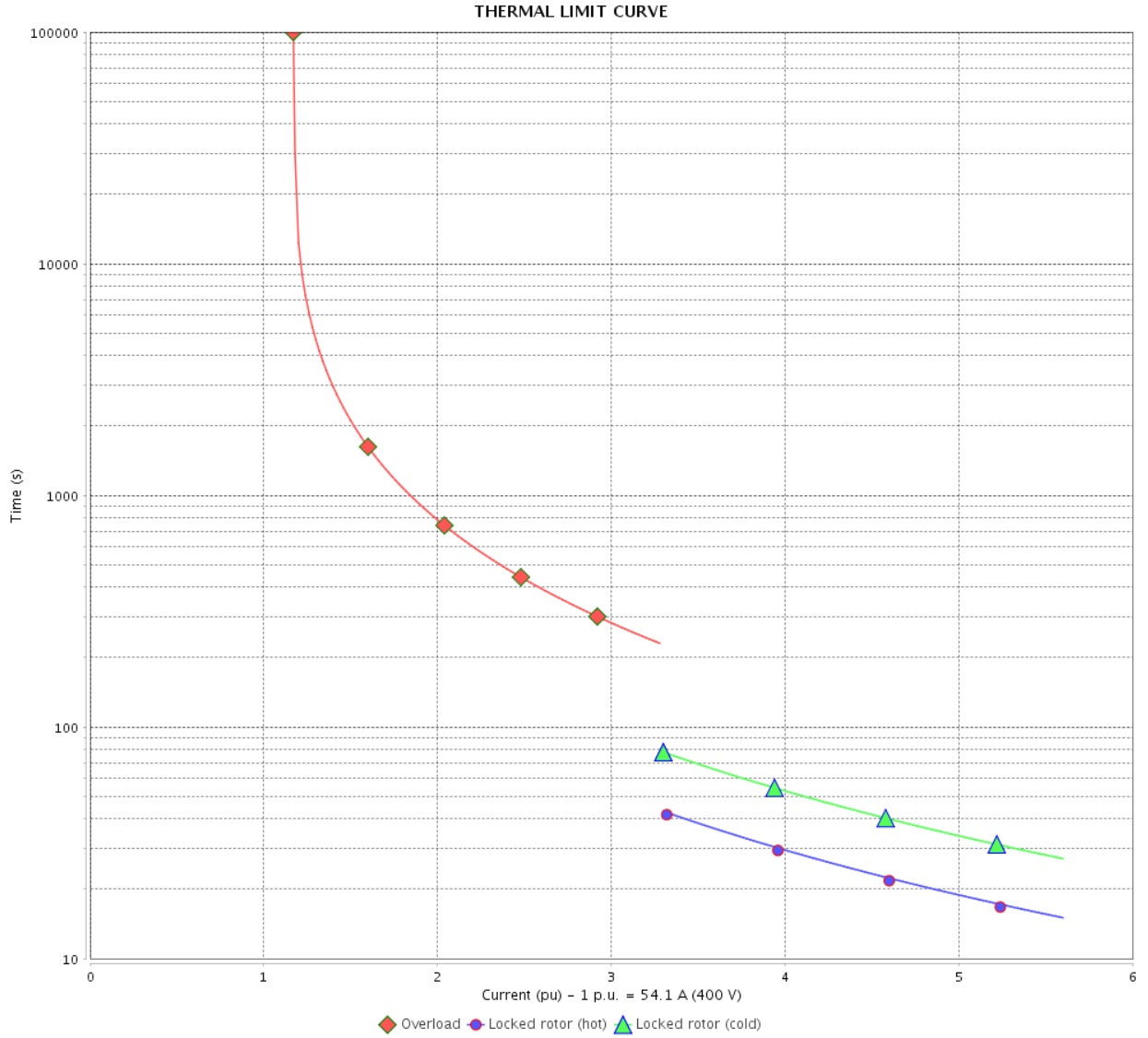
Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page 26 / 36	Revision
Checked by				
Date	12/04/2022			

# THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



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



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 : 12447129  
 Catalog # : 04018ET3E324TC-W22

Performance : 415 V 50 Hz 4P IE2

Rated current : 52.8 A	Moment of inertia (J) : 9.16 sq.ft.lb
LRC : 6.0	Duty cycle : Cont.(S1)
Rated torque : 143 ft.lb	Insulation class : F
Locked rotor torque : 210 %	Service factor : 1.00
Breakdown torque : 229 %	Temperature rise : 80 K
Rated speed : 1470 rpm	Design : B

Heating constant

Cooling constant

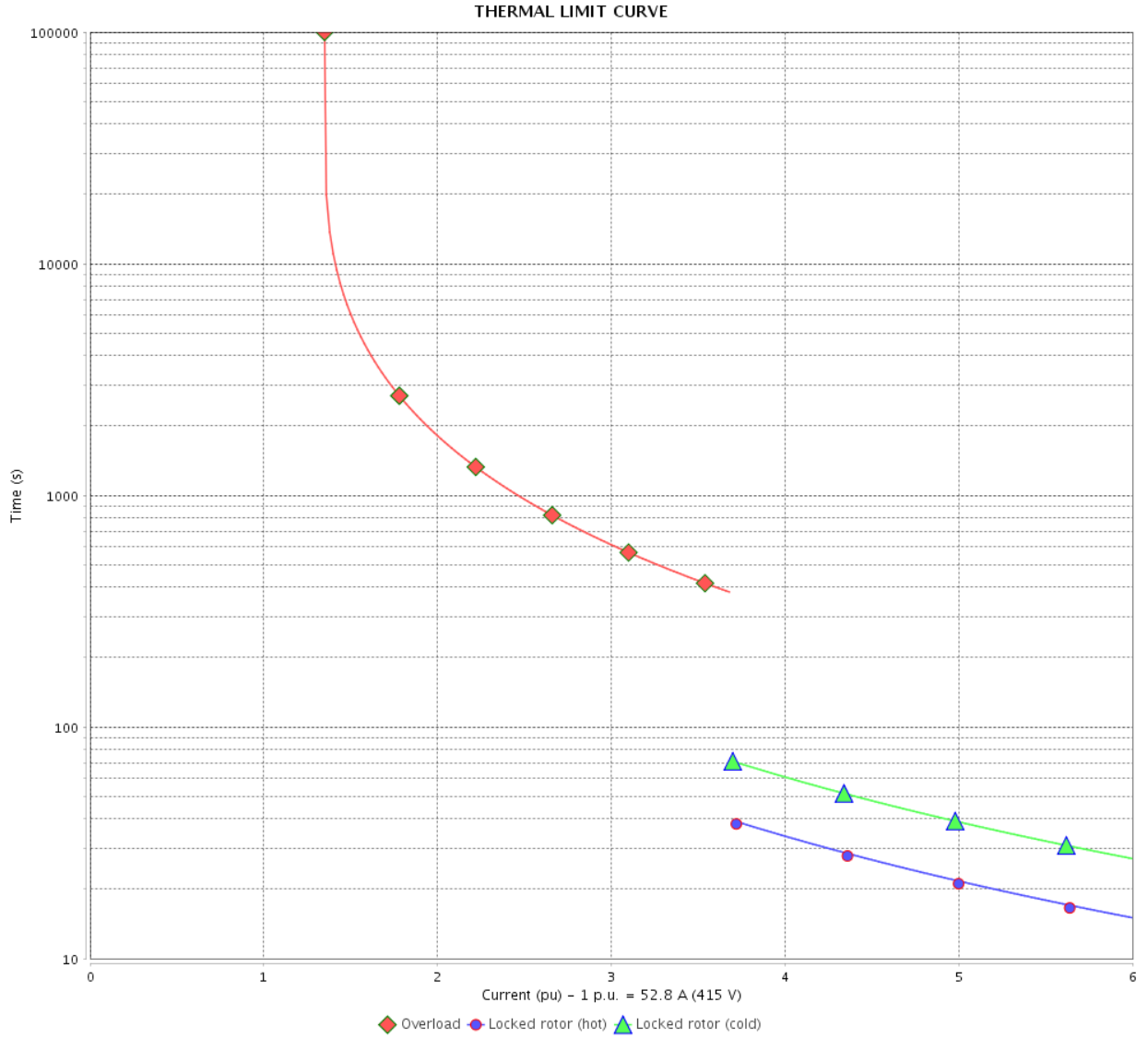
Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page 28 / 36	Revision
Checked by				
Date	12/04/2022			

# THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



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



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

# VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage

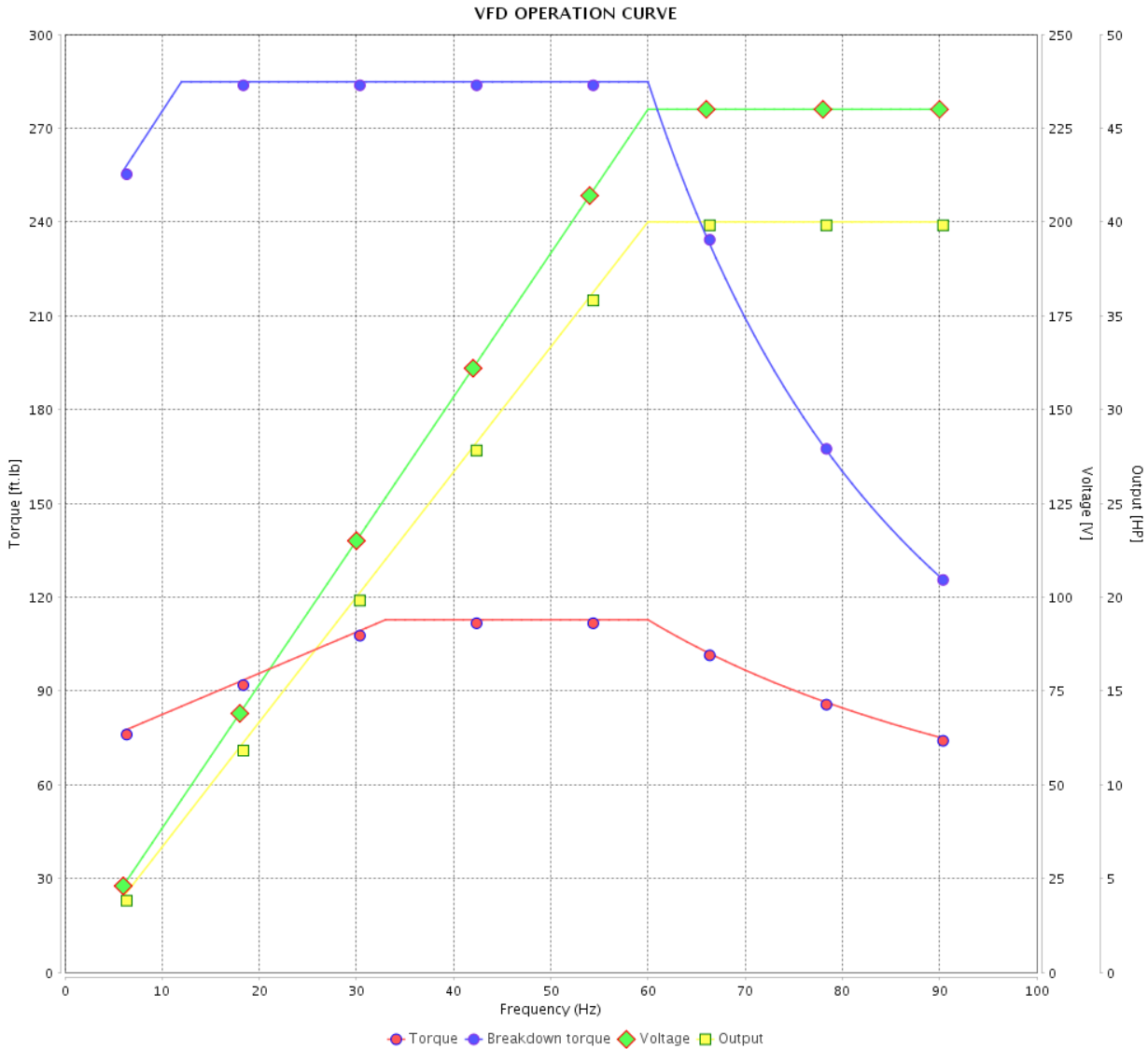


Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12447129

Catalog # : 04018ET3E324TC-W22



Performance : 230/460 V 60 Hz 4P

Rated current : 94.2/47.1 A  
 LRC : 6.1  
 Rated torque : 119 ft.lb  
 Locked rotor torque : 229 %  
 Breakdown torque : 240 %  
 Rated speed : 1770 rpm

Moment of inertia (J) : 9.16 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 30 / 36	Revision
Checked by				
Date	12/04/2022			

# VFD OPERATION CURVE

## Three Phase Induction Motor - Squirrel Cage

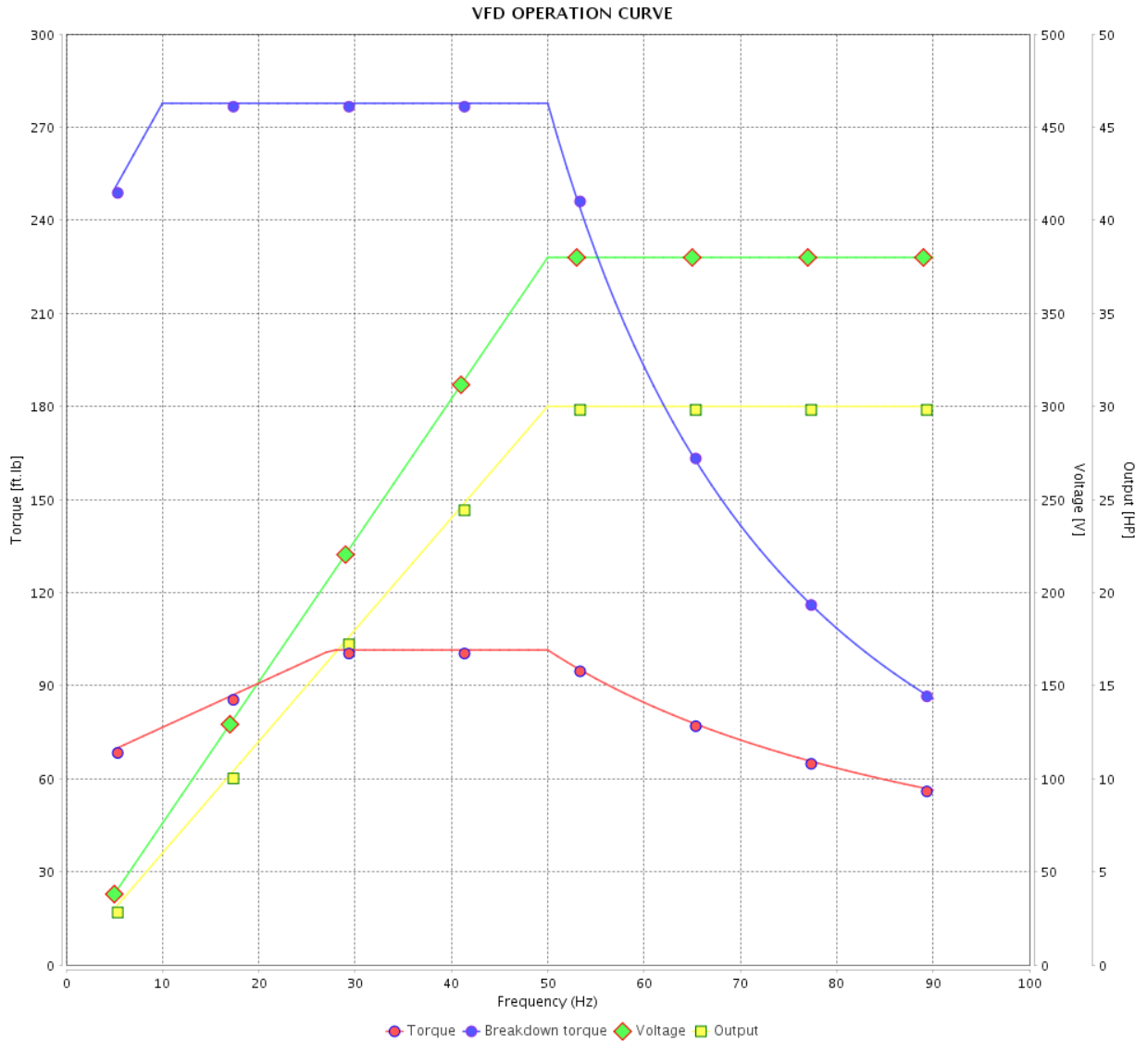


Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12447129

Catalog # : 04018ET3E324TC-W22



Performance : 380 V 50 Hz 4P IE3

Rated current : 42.8 A  
 LRC : 6.6  
 Rated torque : 107 ft.lb  
 Locked rotor torque : 240 %  
 Breakdown torque : 260 %  
 Rated speed : 1475 rpm

Moment of inertia (J) : 9.16 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 31 / 36	Revision
Checked by				
Date	12/04/2022			

# VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage



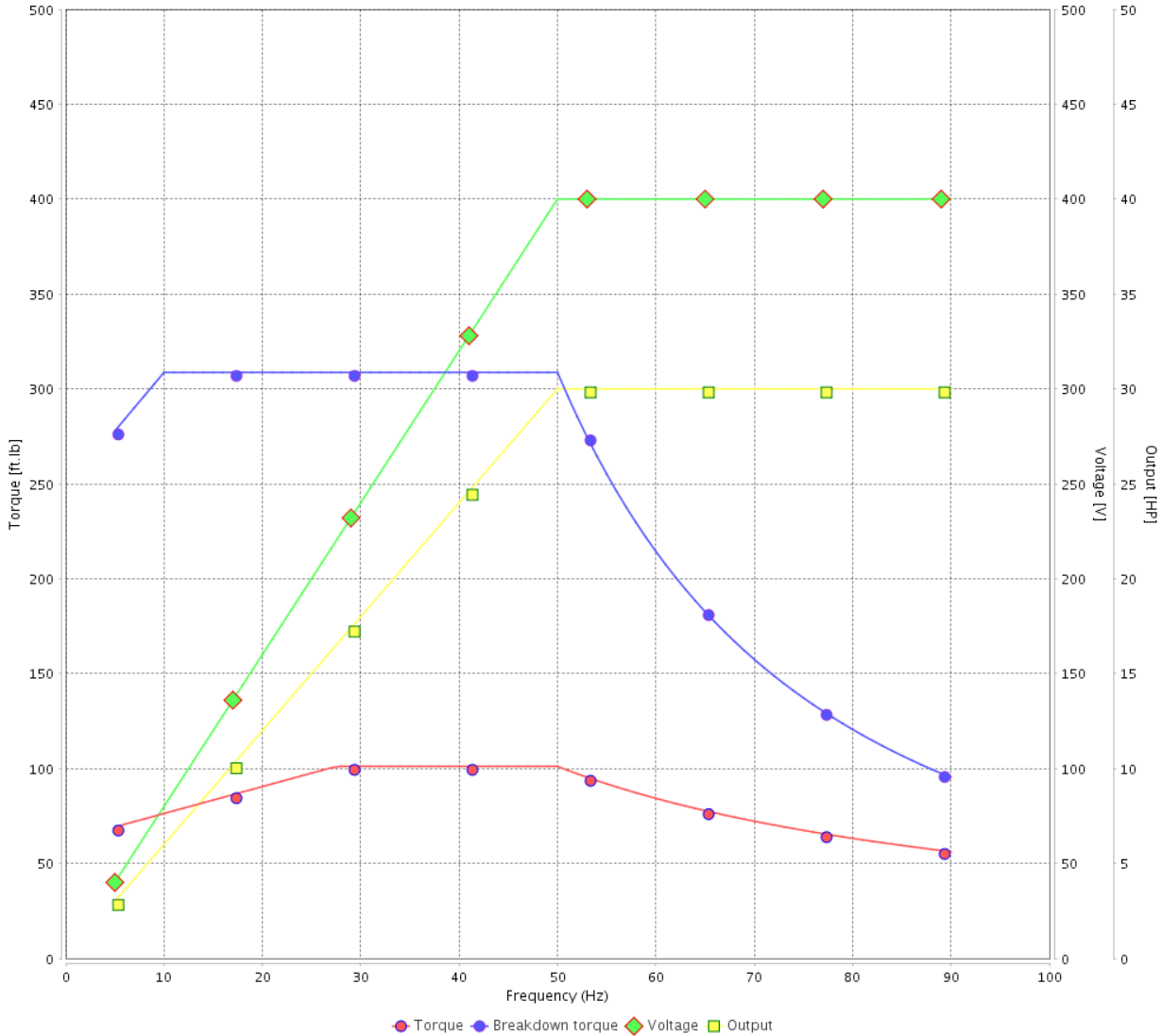
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12447129

Catalog # : 04018ET3E324TC-W22

VFD OPERATION CURVE



Performance : 400 V 50 Hz 4P IE3

Rated current	: 41.6 A	Moment of inertia (J)	: 9.16 sq.ft.lb
LRC	: 7.3	Duty cycle	: Cont.(S1)
Rated torque	: 106 ft.lb	Insulation class	: F
Locked rotor torque	: 270 %	Service factor	: 1.00
Breakdown torque	: 290 %	Temperature rise	: 80 K
Rated speed	: 1480 rpm	Design	: B

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# VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage

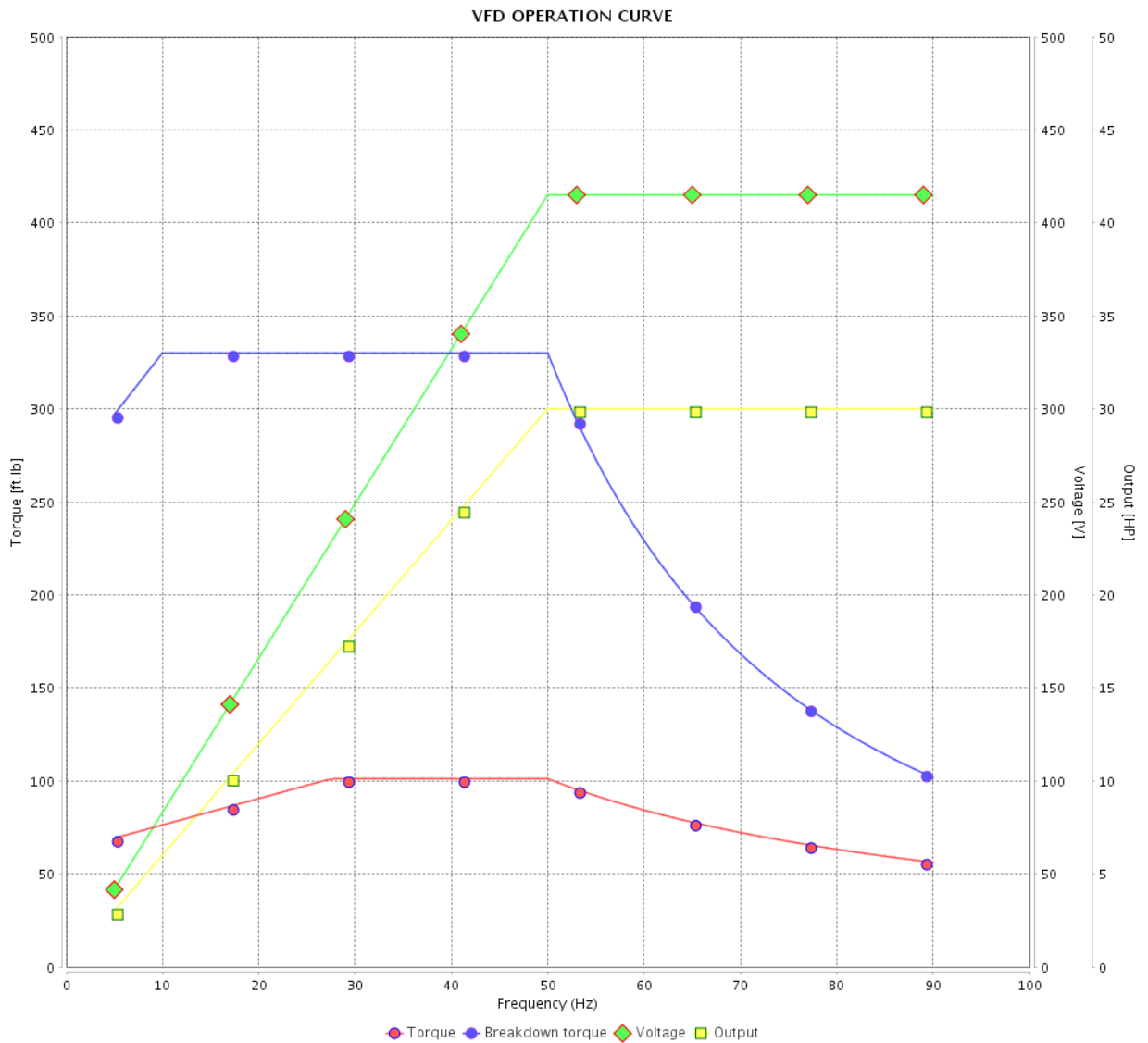


Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12447129

Catalog # : 04018ET3E324TC-W22



Performance : 415 V 50 Hz 4P IE3

Rated current : 41.1 A  
 LRC : 7.7  
 Rated torque : 106 ft.lb  
 Locked rotor torque : 280 %  
 Breakdown torque : 310 %  
 Rated speed : 1480 rpm

Moment of inertia (J) : 9.16 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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Date	12/04/2022			

# VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage

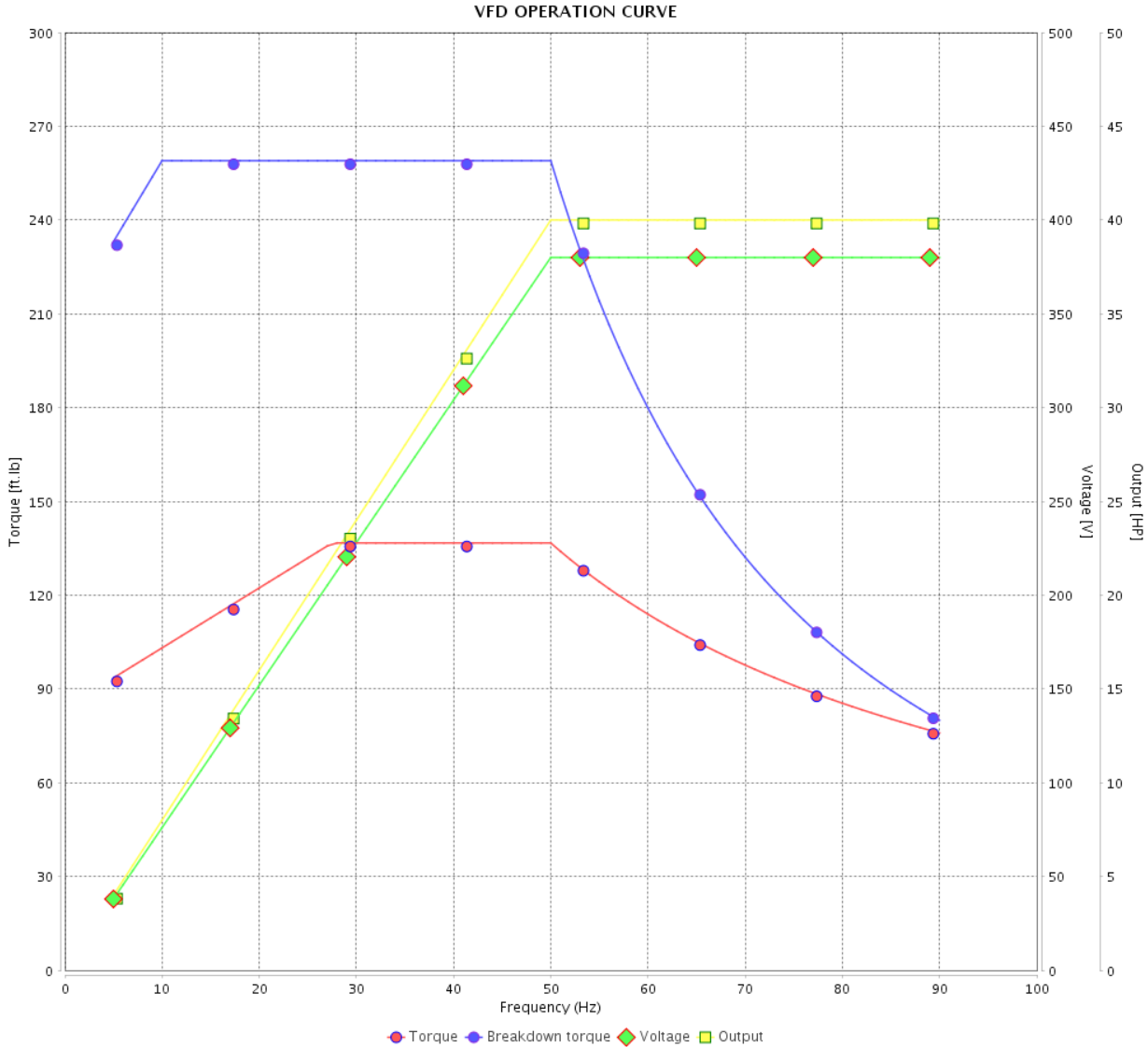


Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12447129

Catalog # : 04018ET3E324TC-W22



Performance : 380 V 50 Hz 4P IE2

Rated current	: 57.4 A	Moment of inertia (J)	: 9.16 sq.ft.lb
LRC	: 5.0	Duty cycle	: Cont.(S1)
Rated torque	: 144 ft.lb	Insulation class	: F
Locked rotor torque	: 170 %	Service factor	: 1.00
Breakdown torque	: 180 %	Temperature rise	: 105 K
Rated speed	: 1460 rpm	Design	: B

Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page 34 / 36	Revision
Checked by				
Date	12/04/2022			

# VFD OPERATION CURVE

## Three Phase Induction Motor - Squirrel Cage

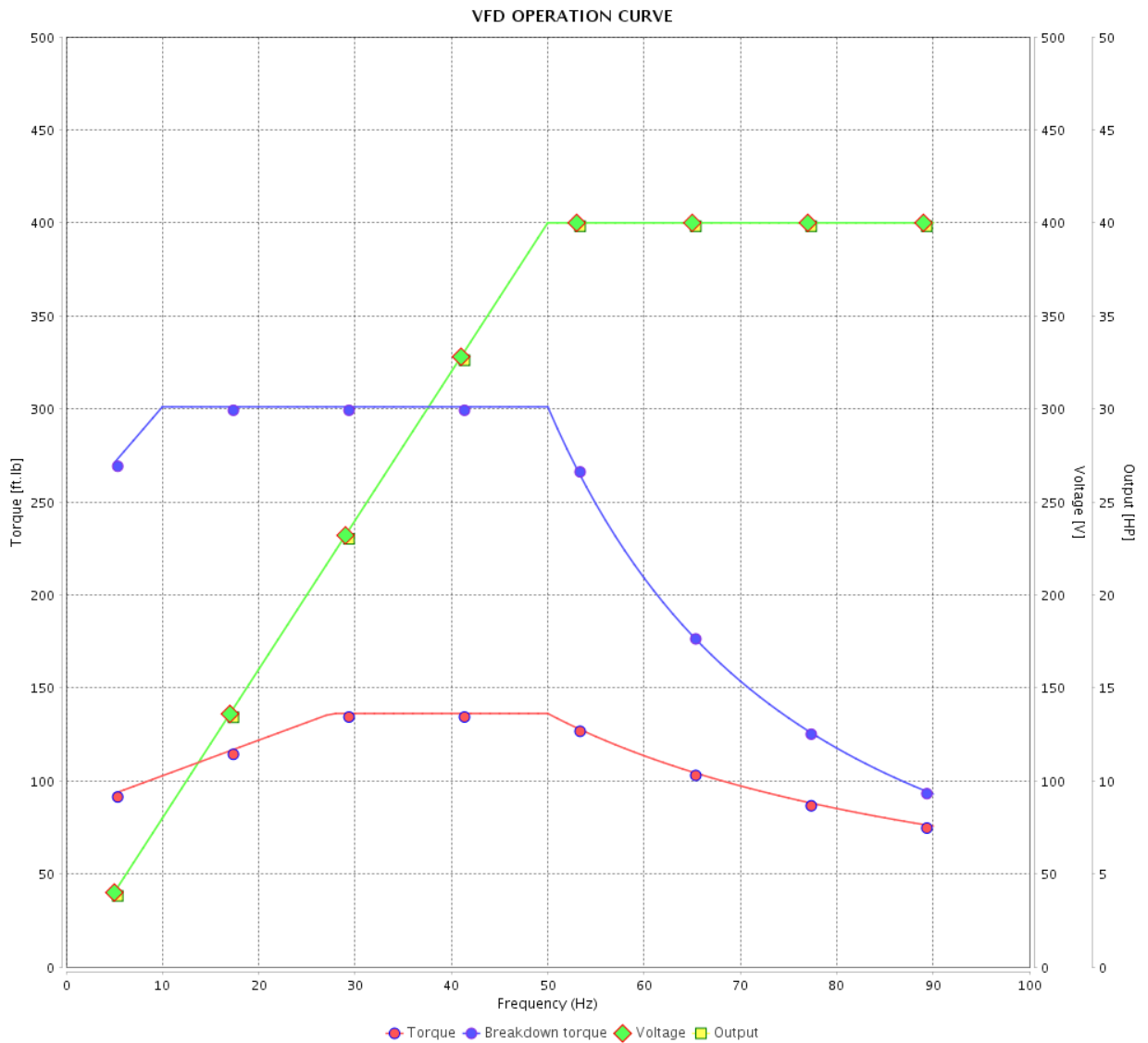


Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12447129

Catalog # : 04018ET3E324TC-W22



Performance : 400 V 50 Hz 4P IE2

Rated current : 54.1 A  
 LRC : 5.6  
 Rated torque : 143 ft.lb  
 Locked rotor torque : 190 %  
 Breakdown torque : 210 %  
 Rated speed : 1465 rpm

Moment of inertia (J) : 9.16 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
Performed by		Page		Revision
Checked by		35 / 36		
Date	12/04/2022			

# VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage



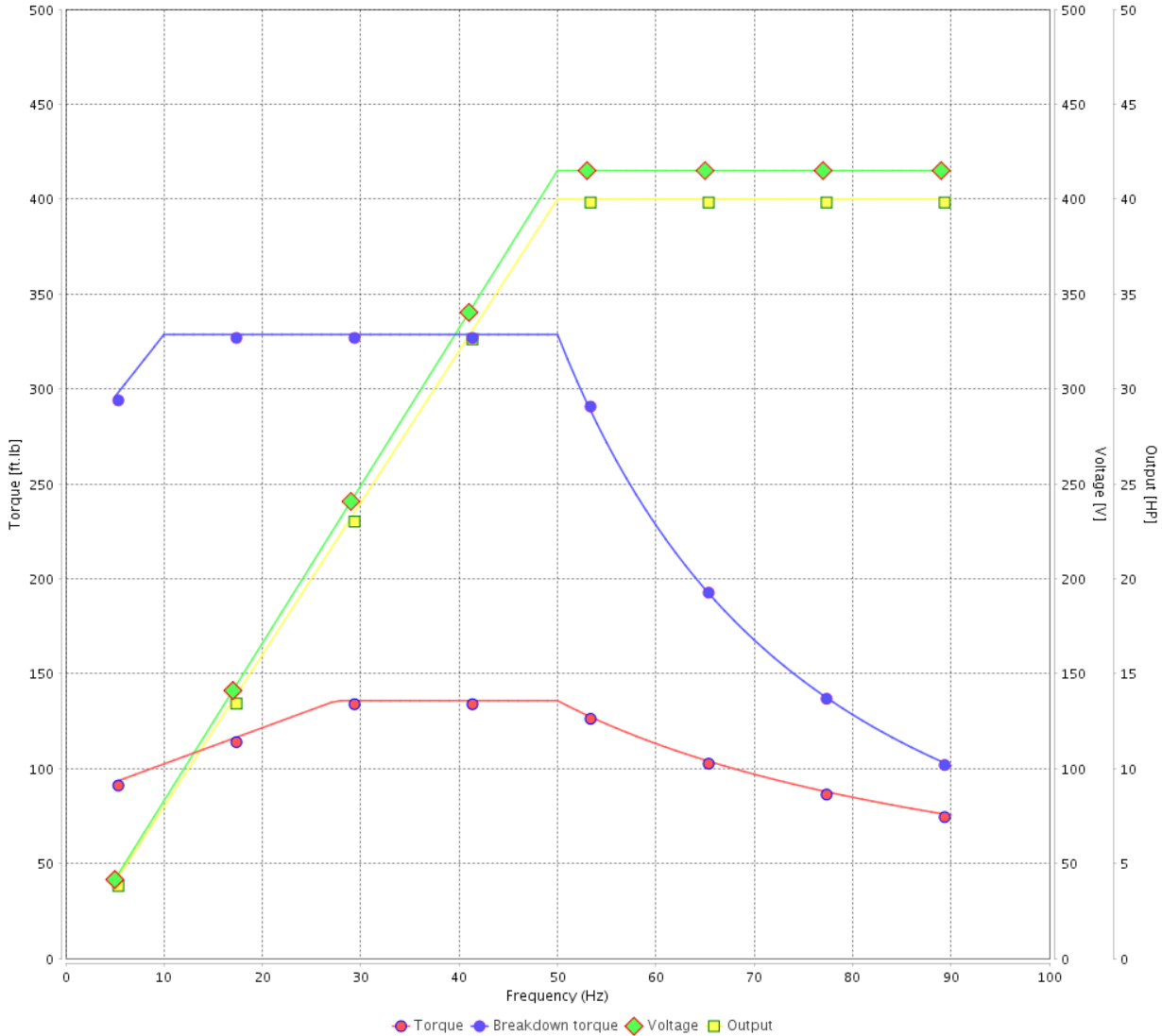
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12447129

Catalog # : 04018ET3E324TC-W22

VFD OPERATION CURVE



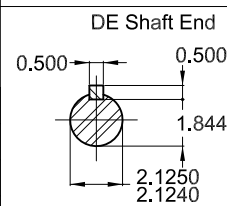
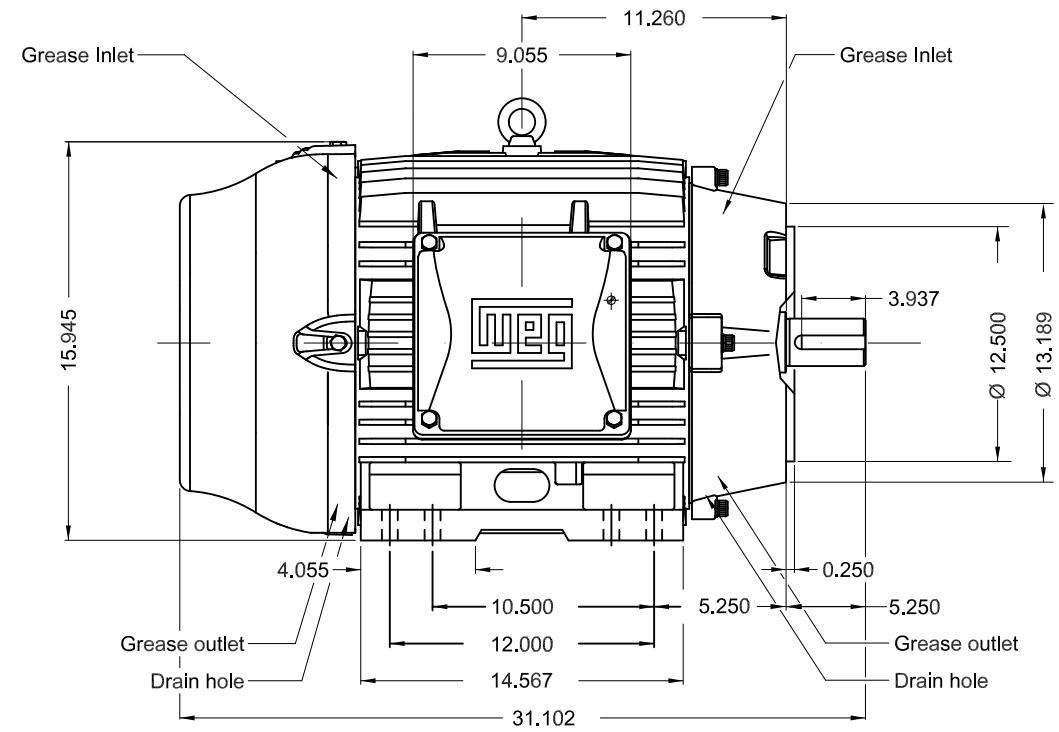
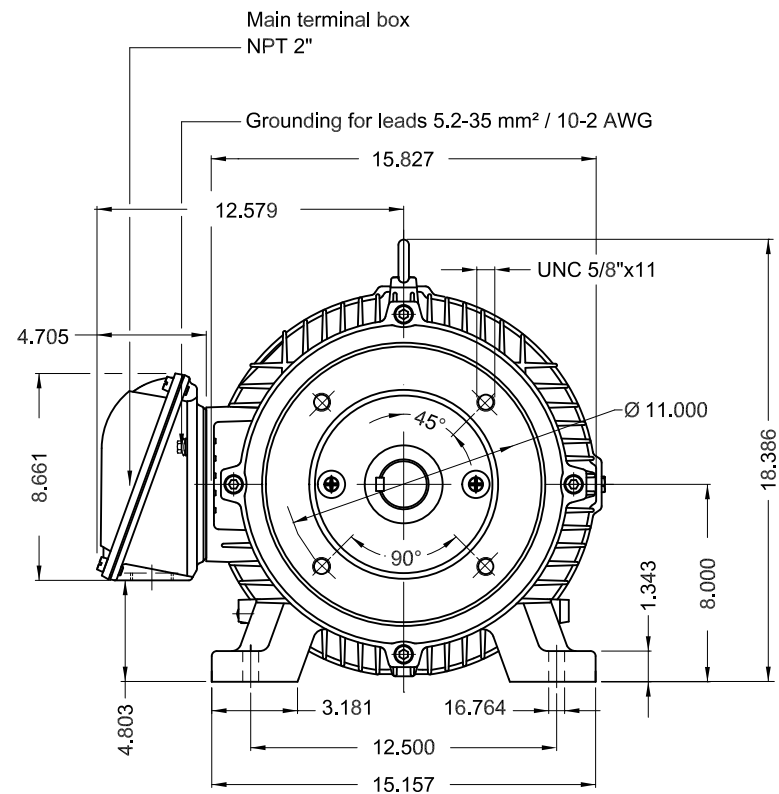
Performance : 415 V 50 Hz 4P IE2

Rated current	: 52.8 A	Moment of inertia (J)	: 9.16 sq.ft.lb
LRC	: 6.0	Duty cycle	: Cont.(S1)
Rated torque	: 143 ft.lb	Insulation class	: F
Locked rotor torque	: 210 %	Service factor	: 1.00
Breakdown torque	: 229 %	Temperature rise	: 80 K
Rated speed	: 1470 rpm	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  
D  
E



Without vertical jackscrews  
Color RAL 5009  
Painting plan 203A  
Mounting B34R(D)

40 HP 04 Poles 60 Hz A

ECM	LOC	SUMMARY OF MODIFICATIONS	EXECUTED	CHECKED	RELEASED	DATE	VER
EXECUTED	PIRWBUSER	THREE PH. MOTOR W22 PREM. EFF.					
CHECKED		FRAME 324/6TC IP55 TEFC					
RELEASED							
REL DT.	WMO	Jaragua do Sul	Product Engineering	SHEET	1 / 1		

PREVIEW  
WDD





FOR SAFE AREA  
Mod.TE1BFOXON  
CC029A



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

MODEL 04018ET3E324TC-W22

Inverter Duty Motor  
Severe Duty

PH3 60Hz Fr. 324/6TC 1000m.a.s.l. IP55 TEFC 590lb

V 230/460

A 94.2/47.1

HP 40

kW 30

SF 1.25

SFA 118/58.9

RPM 1775

PF 0.85

AMB 40°C

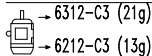
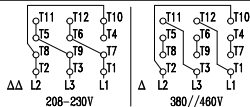
INS cl. F DT80K NEMA NOM EFF 94.1%

DUTY CONT.

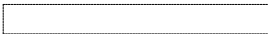
DES B Code G

USABLE @208V 104A SF 1.15 SFA 120

40HP 30kW 50Hz 380V 57.4A 1460RPM SF 1.00 EFF 92.4% (IE2)



MOBIL POLYREX EM (20000h)



MADE IN BRAZIL  
12447129