

DATA SHEET



Three Phase Induction Motor - Squirrel Cage

Customer								
Product line	: NEMA Premium Efficiency Three-Phase	Product code	: 11356018					
		Catalog #	: 10009ET3G445T-W22					
Frame	: 444/5T	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	: 1761 lb					
Protection degree	: IP55	Moment of inertia (J)	: 87.3 sq.ft.lb					
Design	: B							
Output [HP]	100	75	75	75	100	100	100	
Poles	8	8	8	8	8	8	8	
Frequency [Hz]	60	50	50	50	50	50	50	
Rated voltage [V]	460	380	400	415	380	400	415	
Rated current [A]	127	118	116	115	152	147	144	
L. R. Amperes [A]	762	717	778	806	714	779	806	
LRC [A]	6.0x(Code G)	6.1x(Code G)	6.7x(Code J)	7.0x(Code J)	4.7x(Code E)	5.3x(Code F)	5.6x(Code G)	
No load current [A]	56.0	55.0	61.0	67.0	55.0	61.0	67.0	
Rated speed [RPM]	890	740	740	740	735	740	740	
Slip [%]	1.11	1.33	1.33	1.33	2.00	1.33	1.33	
Rated torque [ft.lb]	590	532	532	532	714	710	710	
Locked rotor torque [%]	190	200	229	250	150	170	190	
Breakdown torque [%]	220	229	270	290	170	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	105 K	105 K	
Locked rotor time	27s (cold) 15s (hot)	21s (cold) 12s (hot)	21s (cold) 12s (hot)	21s (cold) 12s (hot)	21s (cold) 12s (hot)	21s (cold) 12s (hot)	21s (cold) 12s (hot)	
Noise level ²	63.0 dB(A)	59.0 dB(A)	59.0 dB(A)	59.0 dB(A)	59.0 dB(A)	59.0 dB(A)	59.0 dB(A)	
Efficiency (%)	25%	93.5	92.9	91.5	90.6	94.0	92.9	92.2
	50%	93.6	92.9	91.9	91.2	93.6	93.0	92.4
	75%	94.1	93.4	93.0	92.6	93.0	93.0	93.0
	100%	94.1	93.2	93.2	93.1	92.4	93.0	93.0
Power Factor	25%	0.38	0.36	0.32	0.29	0.44	0.40	0.37
	50%	0.63	0.59	0.55	0.51	0.69	0.65	0.61
	75%	0.74	0.72	0.68	0.65	0.78	0.75	0.73
	100%	0.79	0.78	0.75	0.73	0.81	0.79	0.78
Bearing type	: Drive end : 6319 C3	Non drive end : 6316 C3	Foundation loads					
Sealing	: WSeal	WSeal	Max. traction : 3281 lb					
Lubrication interval	: 17000 h	20000 h	Max. compression : 5042 lb					
Lubricant amount	: 45 g	34 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



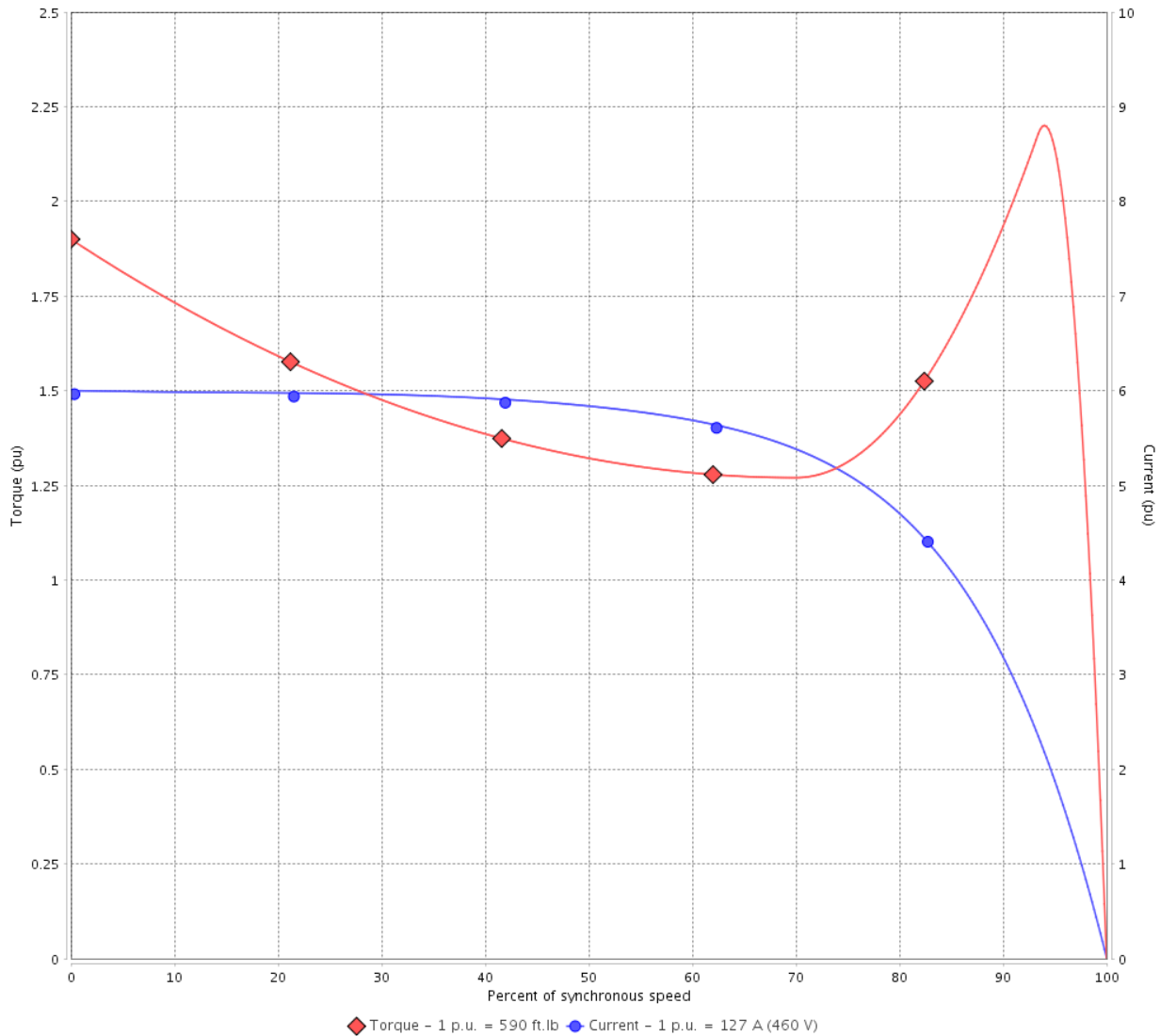
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 11356018

Catalog # : 10009ET3G445T-W22

TORQUE AND CURRENT VS SPEED CURVE



Performance : 460 V 60 Hz 8P

Rated current	: 127 A	Moment of inertia (J)	: 87.3 sq.ft.lb
LRC	: 6.0	Duty cycle	: Cont.(S1)
Rated torque	: 590 ft.lb	Insulation class	: F
Locked rotor torque	: 190 %	Service factor	: 1.25
Breakdown torque	: 220 %	Temperature rise	: 80 K
Rated speed	: 890 rpm	Design	: B

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

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TORQUE AND CURRENT VS SPEED CURVE



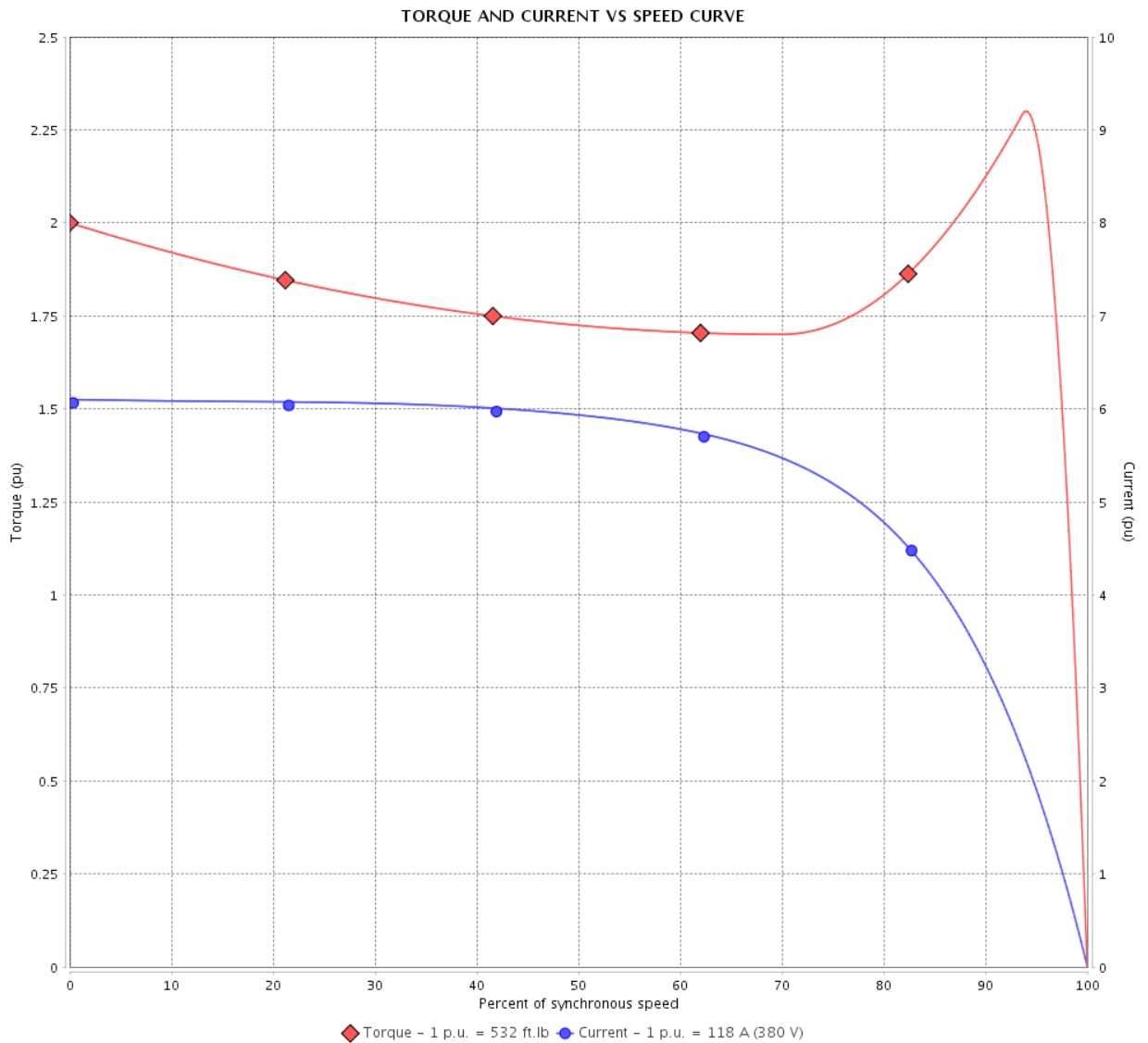
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Customer :

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Performance : 380 V 50 Hz 8P IE3

Rated current	: 118 A	Moment of inertia (J)	: 87.3 sq.ft.lb
LRC	: 6.1	Duty cycle	: Cont.(S1)
Rated torque	: 532 ft.lb	Insulation class	: F
Locked rotor torque	: 200 %	Service factor	: 1.00
Breakdown torque	: 229 %	Temperature rise	: 80 K
Rated speed	: 740 rpm	Design	: B

Locked rotor time : 21s (cold) 12s (hot)

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TORQUE AND CURRENT VS SPEED CURVE

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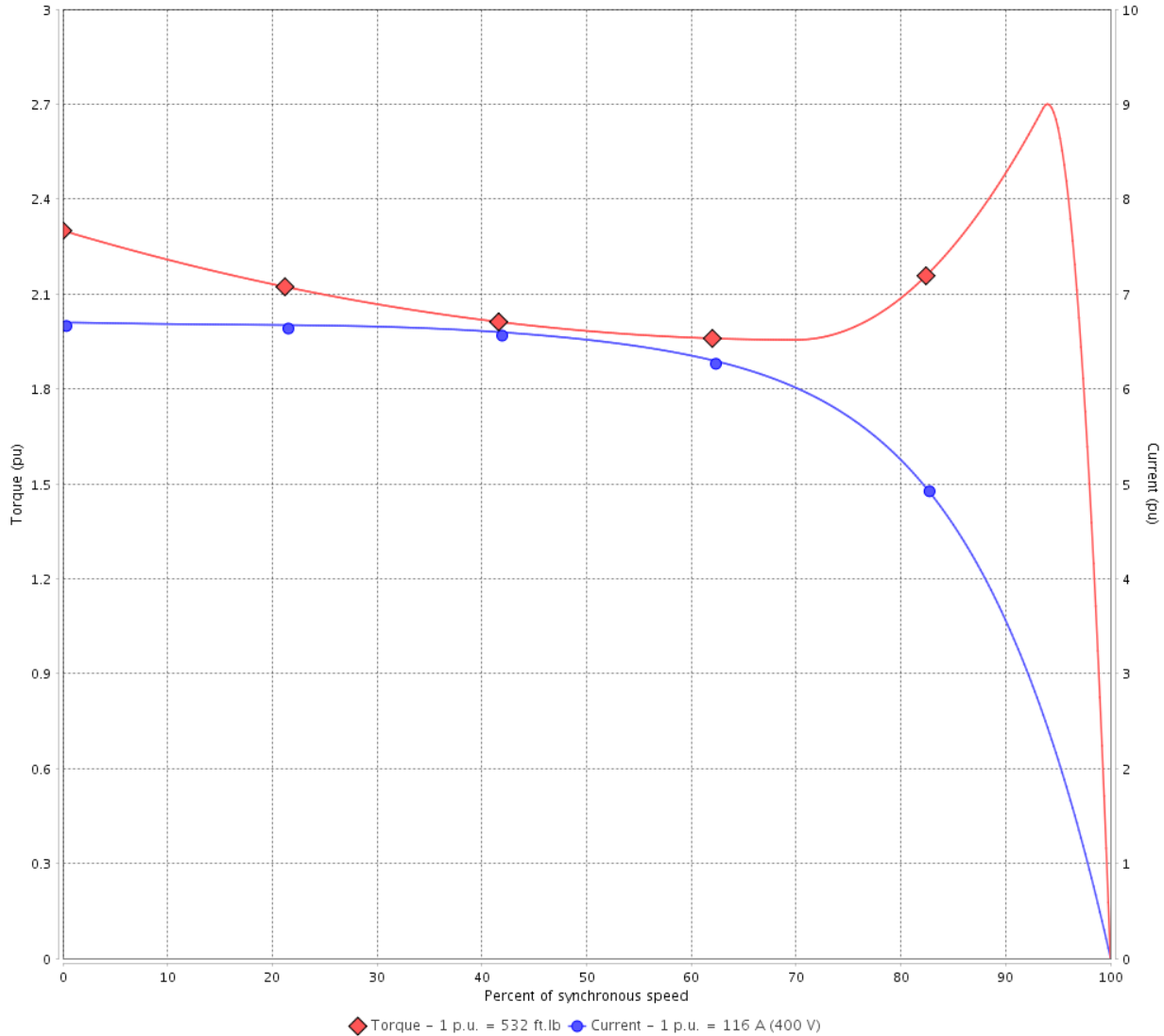
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TORQUE AND CURRENT VS SPEED CURVE



Performance : 400 V 50 Hz 8P IE3

Rated current	: 116 A	Moment of inertia (J)	: 87.3 sq.ft.lb
LRC	: 6.7	Duty cycle	: Cont.(S1)
Rated torque	: 532 ft.lb	Insulation class	: F
Locked rotor torque	: 229 %	Service factor	: 1.00
Breakdown torque	: 270 %	Temperature rise	: 80 K
Rated speed	: 740 rpm	Design	: B

Locked rotor time : 21s (cold) 12s (hot)

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TORQUE AND CURRENT VS SPEED CURVE



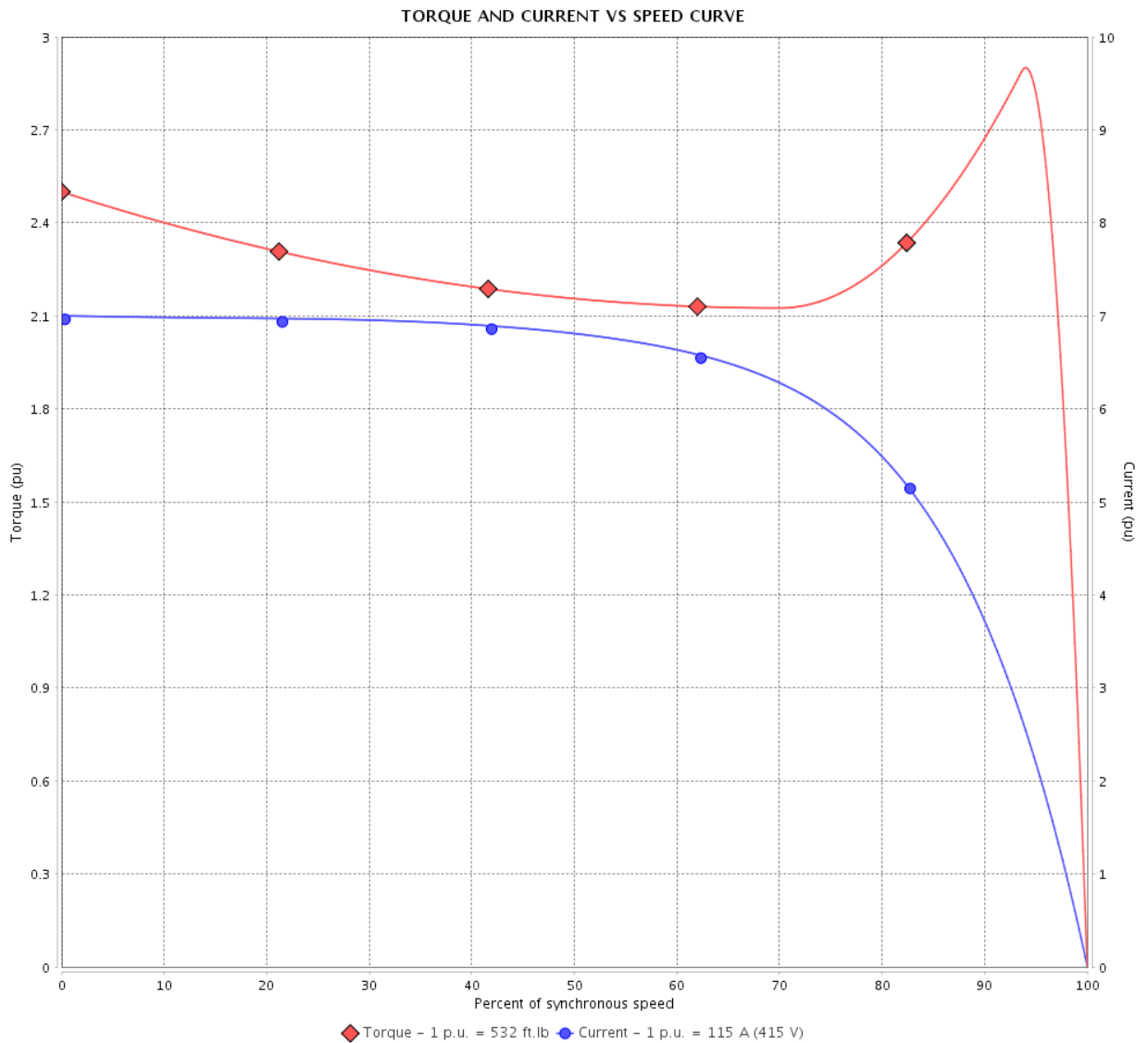
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Customer :

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Catalog # : 10009ET3G445T-W22



Performance : 415 V 50 Hz 8P IE3

Rated current	: 115 A	Moment of inertia (J)	: 87.3 sq.ft.lb
LRC	: 7.0	Duty cycle	: Cont.(S1)
Rated torque	: 532 ft.lb	Insulation class	: F
Locked rotor torque	: 250 %	Service factor	: 1.00
Breakdown torque	: 290 %	Temperature rise	: 80 K
Rated speed	: 740 rpm	Design	: B

Locked rotor time : 21s (cold) 12s (hot)

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TORQUE AND CURRENT VS SPEED CURVE

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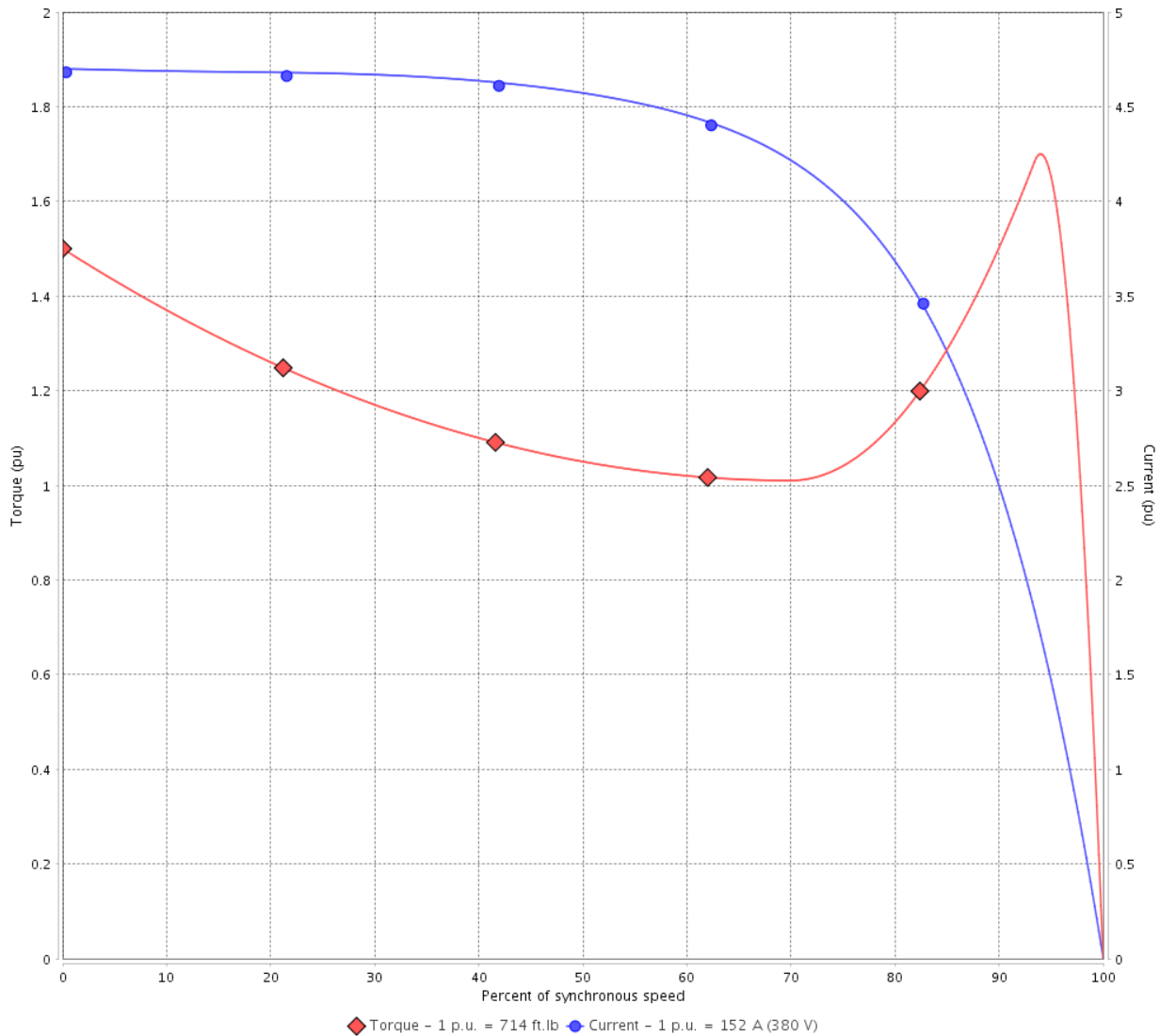
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TORQUE AND CURRENT VS SPEED CURVE



Performance : 380 V 50 Hz 8P IE2

Rated current	: 152 A	Moment of inertia (J)	: 87.3 sq.ft.lb
LRC	: 4.7	Duty cycle	: Cont.(S1)
Rated torque	: 714 ft.lb	Insulation class	: F
Locked rotor torque	: 150 %	Service factor	: 1.00
Breakdown torque	: 170 %	Temperature rise	: 105 K
Rated speed	: 735 rpm	Design	: B

Locked rotor time : 21s (cold) 12s (hot)

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TORQUE AND CURRENT VS SPEED CURVE



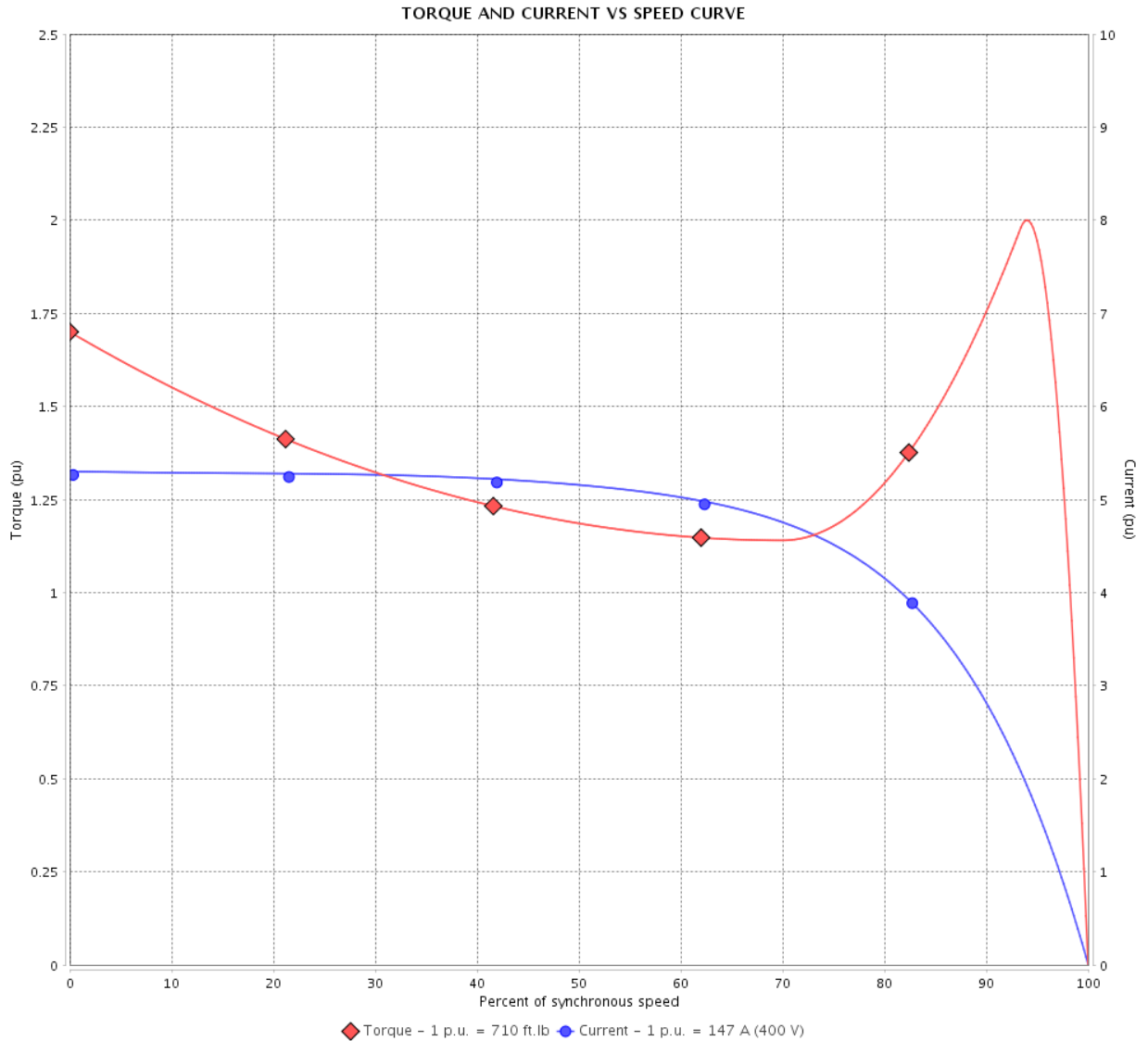
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Performance : 400 V 50 Hz 8P IE2

Rated current	: 147 A	Moment of inertia (J)	: 87.3 sq.ft.lb
LRC	: 5.3	Duty cycle	: Cont.(S1)
Rated torque	: 710 ft.lb	Insulation class	: F
Locked rotor torque	: 170 %	Service factor	: 1.00
Breakdown torque	: 200 %	Temperature rise	: 105 K
Rated speed	: 740 rpm	Design	: B

Locked rotor time : 21s (cold) 12s (hot)

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TORQUE AND CURRENT VS SPEED CURVE

Three Phase Induction Motor - Squirrel Cage



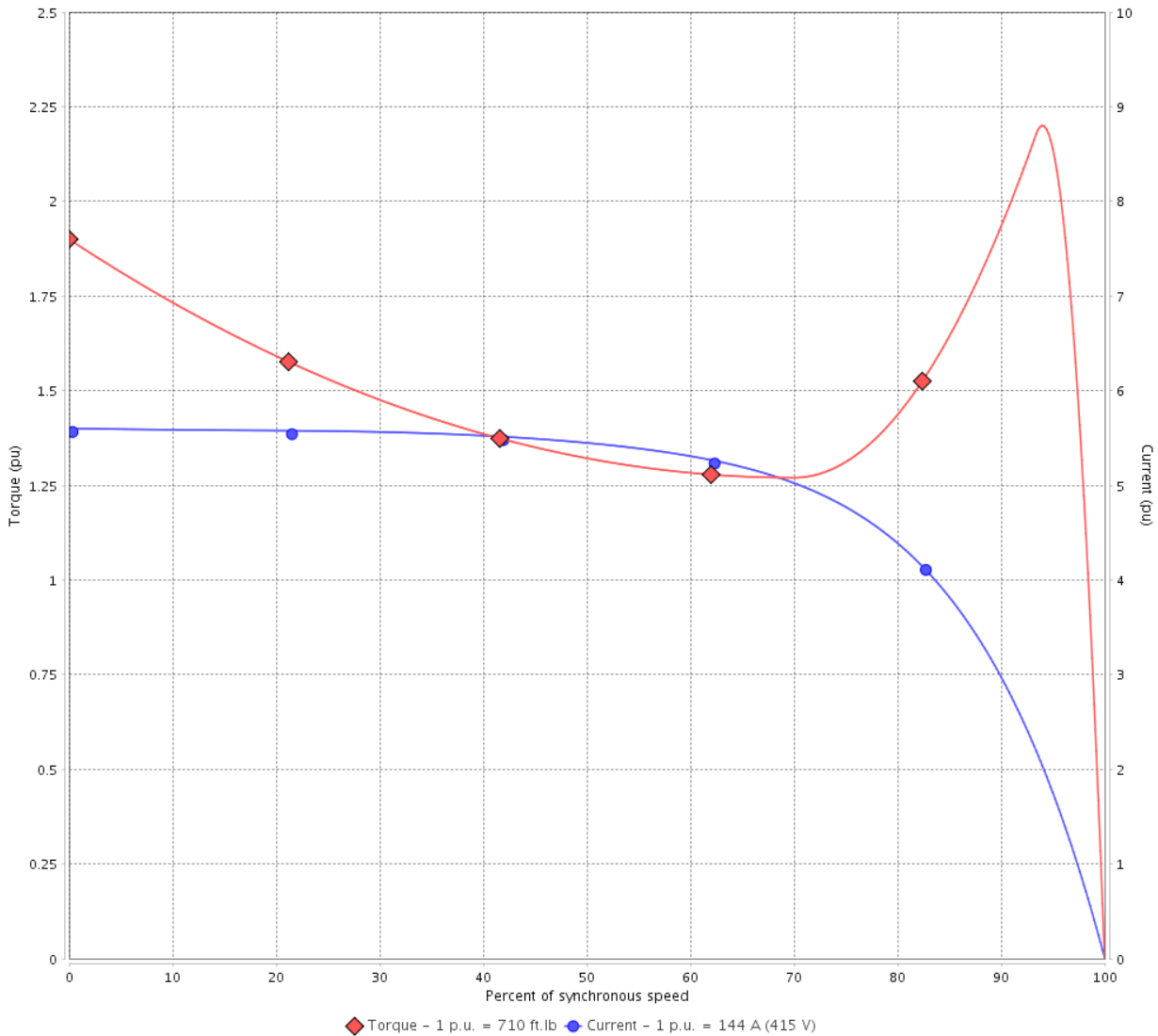
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TORQUE AND CURRENT VS SPEED CURVE



Performance : 415 V 50 Hz 8P IE2

Rated current	: 144 A	Moment of inertia (J)	: 87.3 sq.ft.lb
LRC	: 5.6	Duty cycle	: Cont.(S1)
Rated torque	: 710 ft.lb	Insulation class	: F
Locked rotor torque	: 190 %	Service factor	: 1.00
Breakdown torque	: 220 %	Temperature rise	: 105 K
Rated speed	: 740 rpm	Design	: B

Locked rotor time : 21s (cold) 12s (hot)

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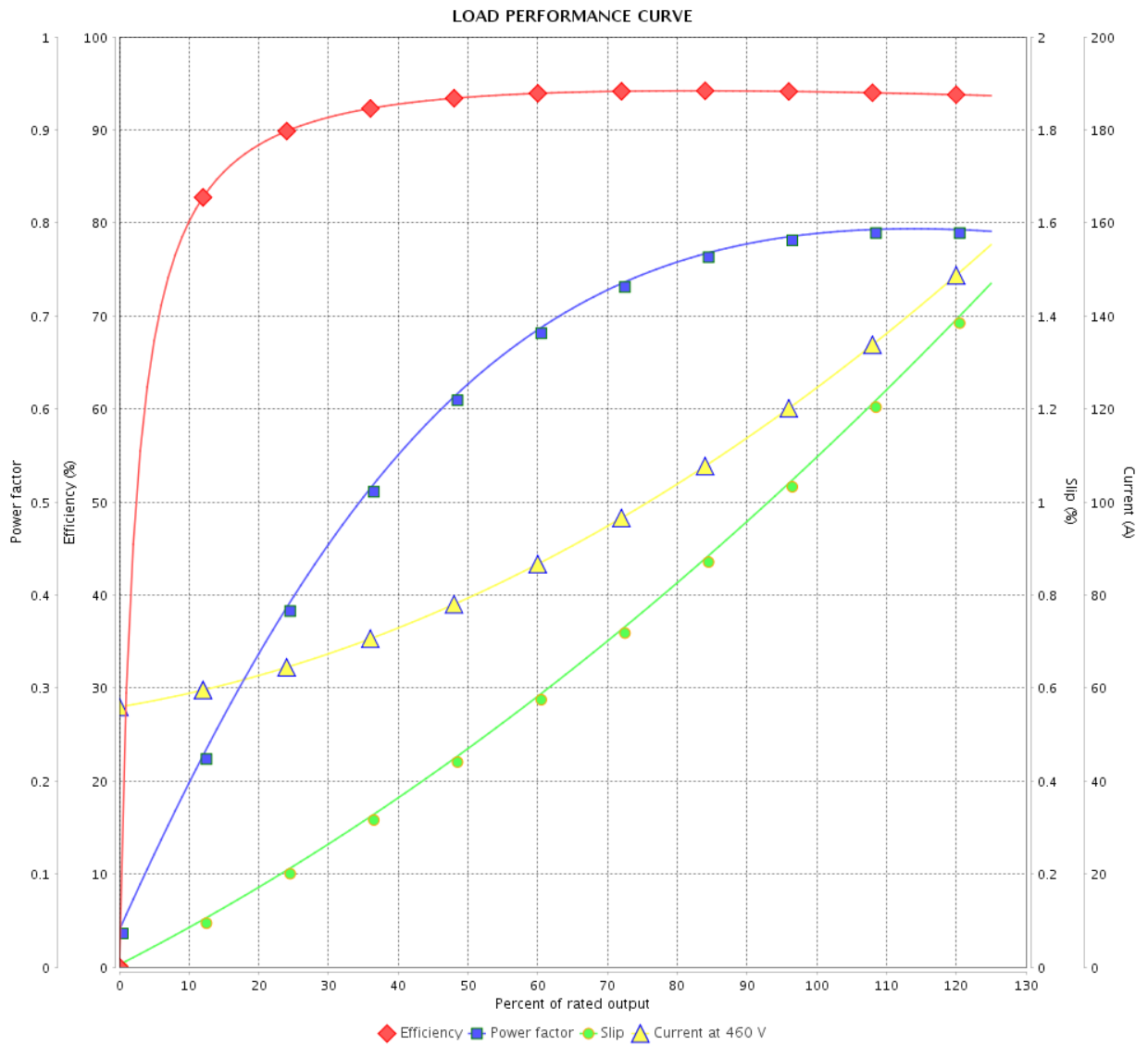


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Performance : 460 V 60 Hz 8P

Rated current : 127 A
 LRC : 6.0
 Rated torque : 590 ft.lb
 Locked rotor torque : 190 %
 Breakdown torque : 220 %
 Rated speed : 890 rpm

Moment of inertia (J) : 87.3 sq.ft.lb
 Duty cycle : Cont.(S1)
 Insulation class : F
 Service factor : 1.25
 Temperature rise : 80 K
 Design : B

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Three Phase Induction Motor - Squirrel Cage

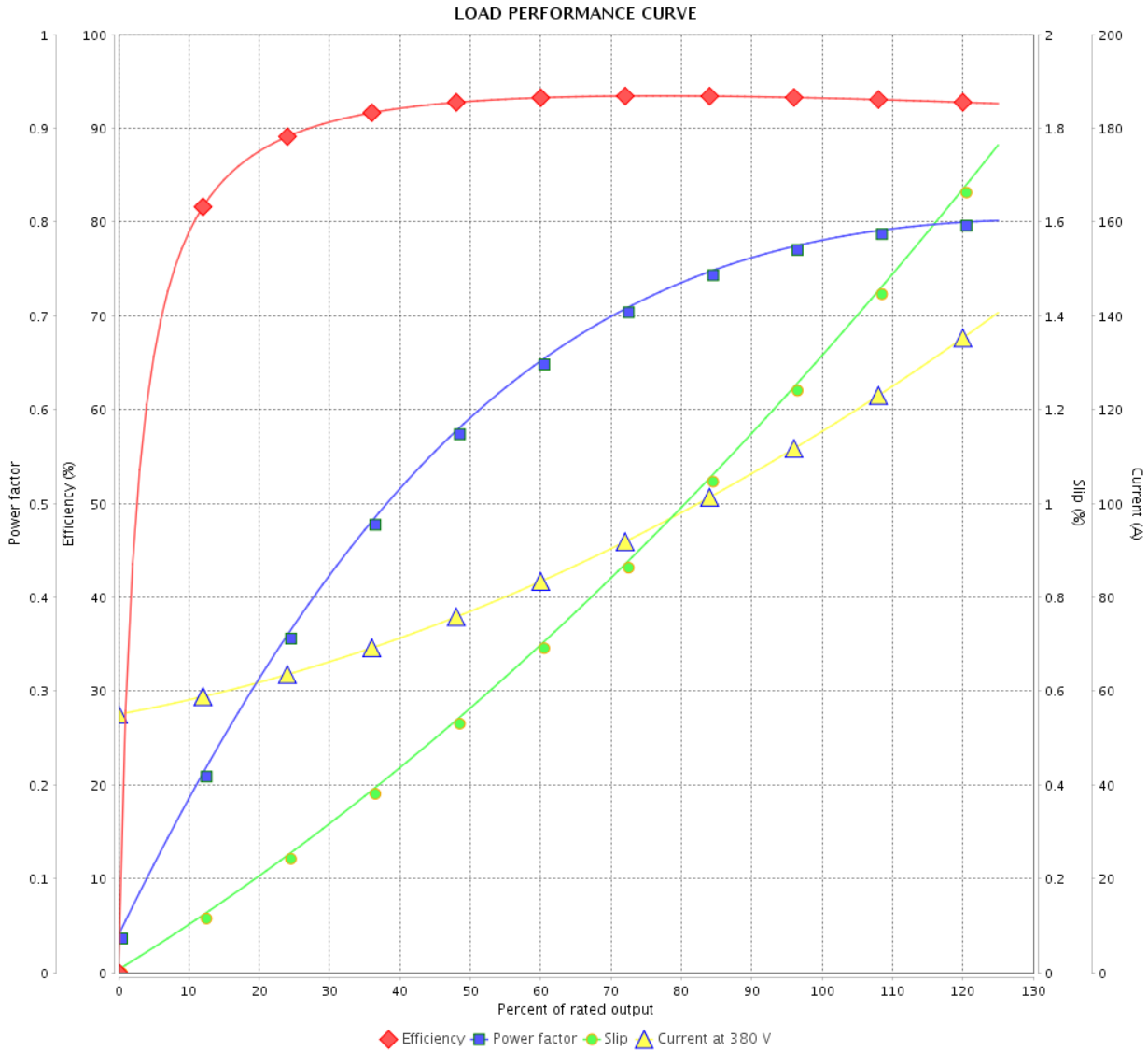


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Performance : 380 V 50 Hz 8P IE3

Rated current : 118 A
 LRC : 6.1
 Rated torque : 532 ft.lb
 Locked rotor torque : 200 %
 Breakdown torque : 229 %
 Rated speed : 740 rpm

Moment of inertia (J) : 87.3 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

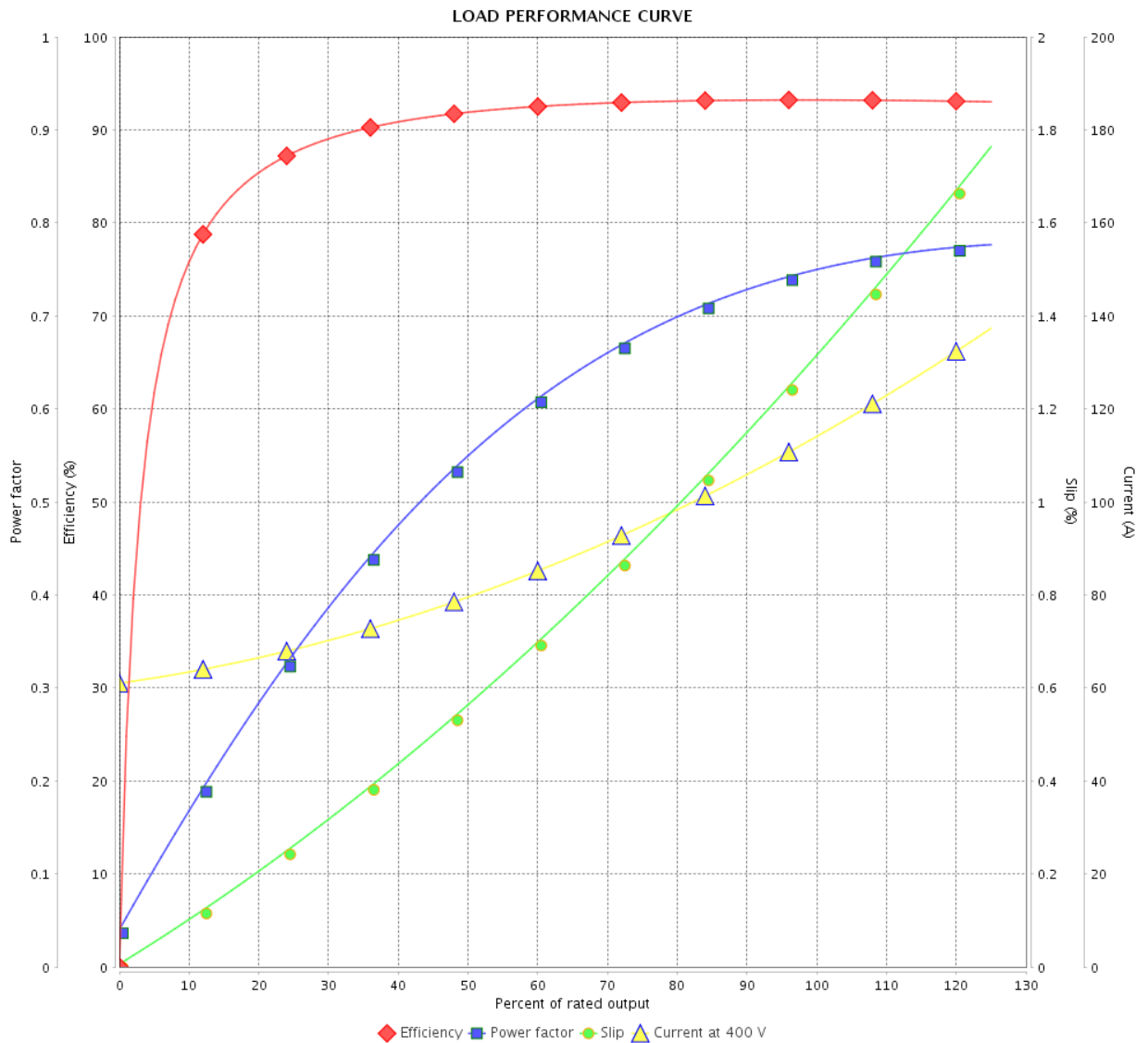


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Performance : 400 V 50 Hz 8P IE3

Rated current : 116 A
 LRC : 6.7
 Rated torque : 532 ft.lb
 Locked rotor torque : 229 %
 Breakdown torque : 270 %
 Rated speed : 740 rpm

Moment of inertia (J) : 87.3 sq.ft.lb
 Duty cycle : Cont.(S1)
 Insulation class : F
 Service factor : 1.00
 Temperature rise : 80 K
 Design : B

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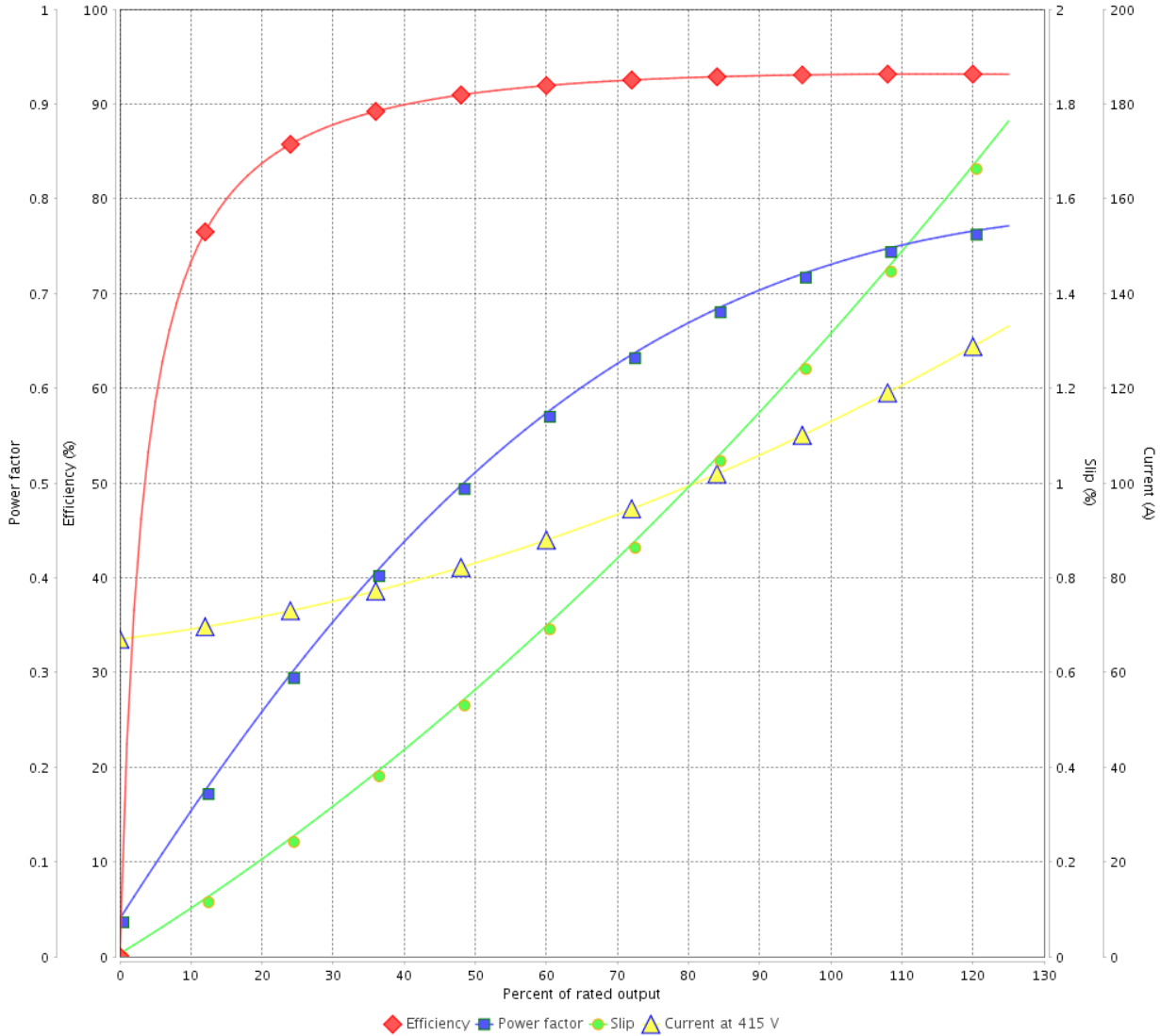
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Performance : 415 V 50 Hz 8P IE3

Rated current	: 115 A	Moment of inertia (J)	: 87.3 sq.ft.lb
LRC	: 7.0	Duty cycle	: Cont.(S1)
Rated torque	: 532 ft.lb	Insulation class	: F
Locked rotor torque	: 250 %	Service factor	: 1.00
Breakdown torque	: 290 %	Temperature rise	: 80 K
Rated speed	: 740 rpm	Design	: B

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Three Phase Induction Motor - Squirrel Cage

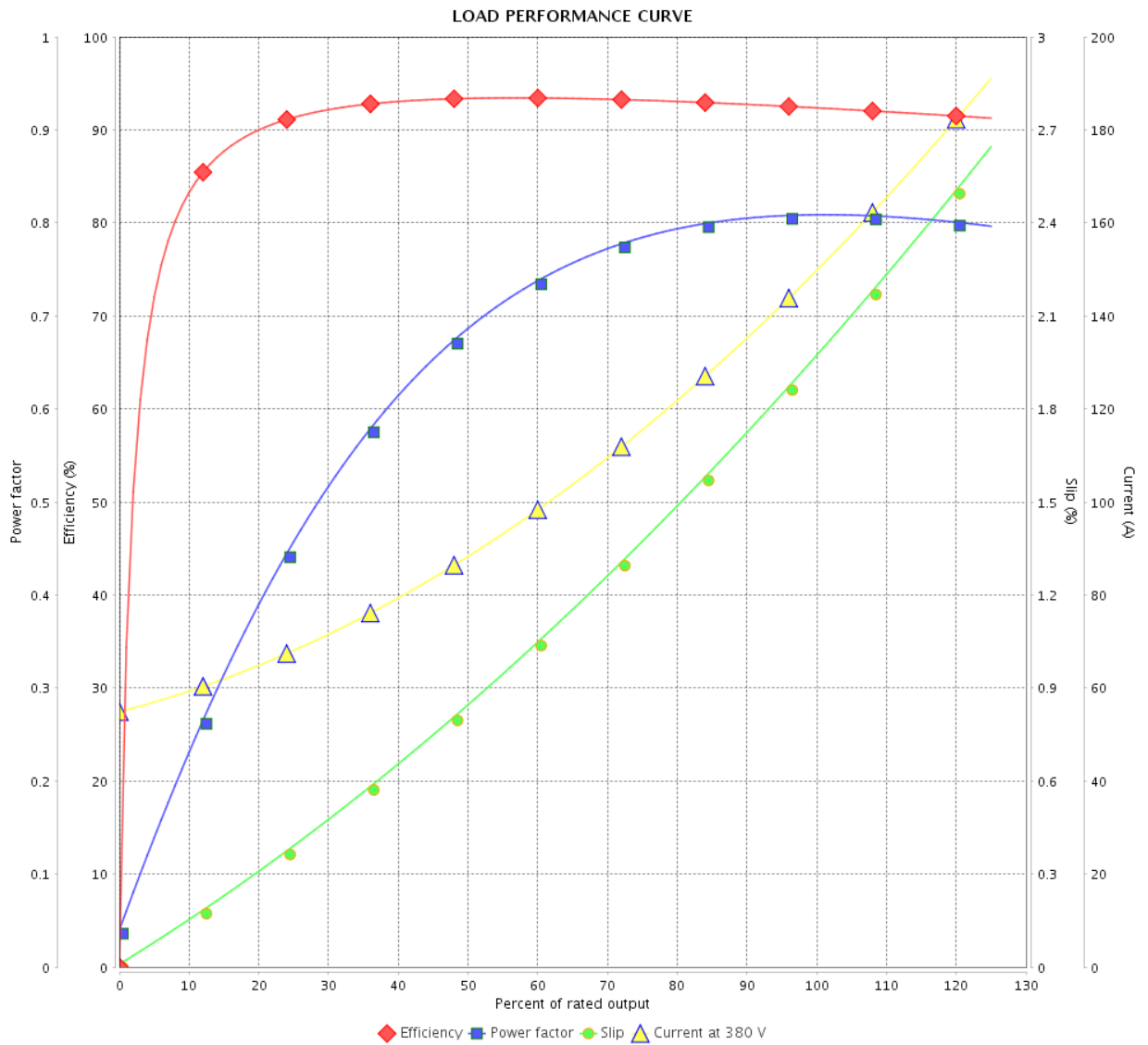


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Performance : 380 V 50 Hz 8P IE2

Rated current : 152 A
 LRC : 4.7
 Rated torque : 714 ft.lb
 Locked rotor torque : 150 %
 Breakdown torque : 170 %
 Rated speed : 735 rpm

Moment of inertia (J) : 87.3 sq.ft.lb
 Duty cycle : Cont.(S1)
 Insulation class : F
 Service factor : 1.00
 Temperature rise : 105 K
 Design : B

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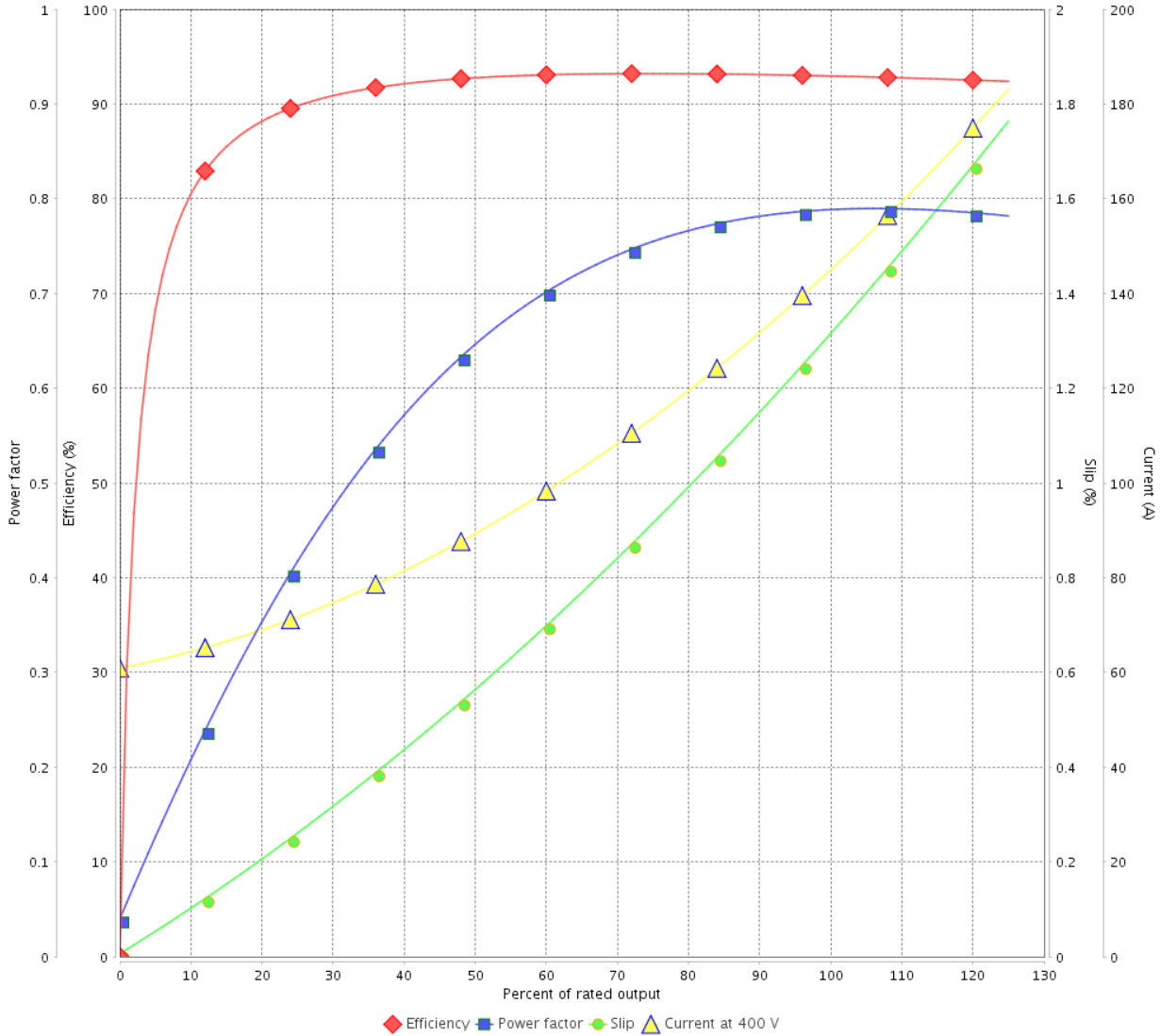
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LOAD PERFORMANCE CURVE



Performance : 400 V 50 Hz 8P IE2

Rated current	: 147 A	Moment of inertia (J)	: 87.3 sq.ft.lb
LRC	: 5.3	Duty cycle	: Cont.(S1)
Rated torque	: 710 ft.lb	Insulation class	: F
Locked rotor torque	: 170 %	Service factor	: 1.00
Breakdown torque	: 200 %	Temperature rise	: 105 K
Rated speed	: 740 rpm	Design	: B

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Three Phase Induction Motor - Squirrel Cage

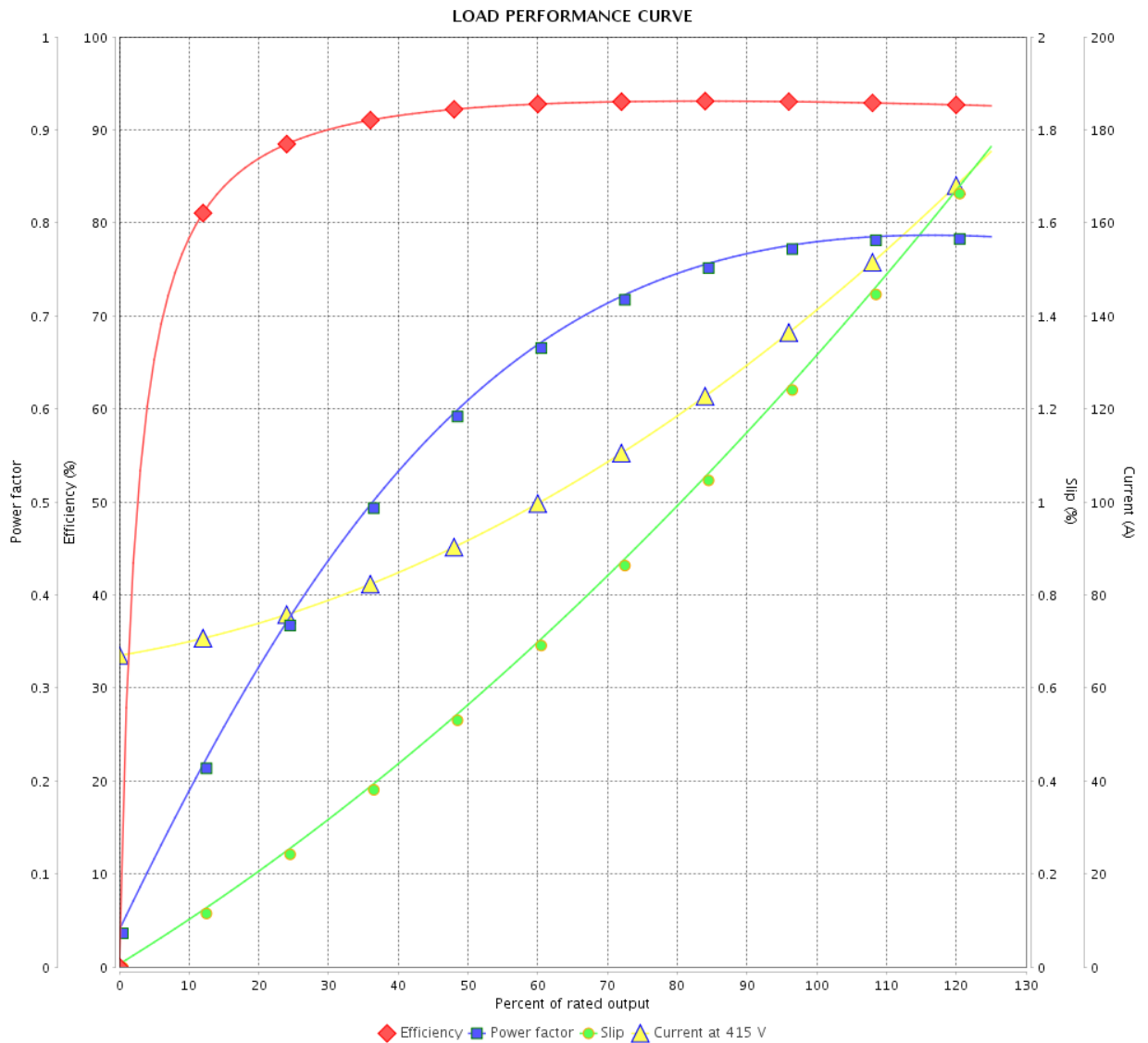


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Performance : 415 V 50 Hz 8P IE2

Rated current : 144 A
 LRC : 5.6
 Rated torque : 710 ft.lb
 Locked rotor torque : 190 %
 Breakdown torque : 220 %
 Rated speed : 740 rpm

Moment of inertia (J) : 87.3 sq.ft.lb
 Duty cycle : Cont.(S1)
 Insulation class : F
 Service factor : 1.00
 Temperature rise : 105 K
 Design : B

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THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



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Performance : 460 V 60 Hz 8P

Rated current	: 127 A	Moment of inertia (J)	: 87.3 sq.ft.lb
LRC	: 6.0	Duty cycle	: Cont.(S1)
Rated torque	: 590 ft.lb	Insulation class	: F
Locked rotor torque	: 190 %	Service factor	: 1.25
Breakdown torque	: 220 %	Temperature rise	: 80 K
Rated speed	: 890 rpm	Design	: B

Heating constant

Cooling constant

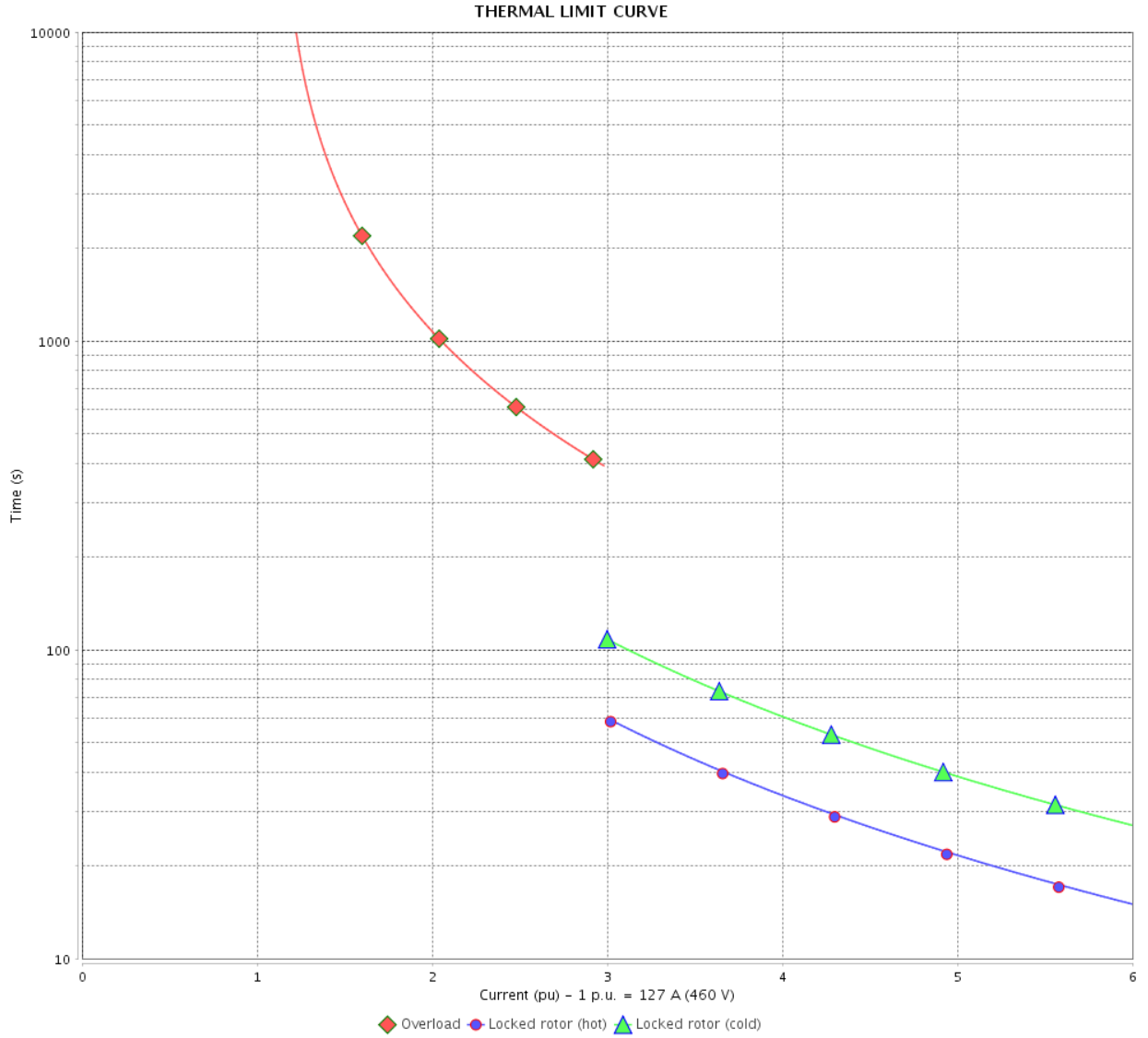
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Three Phase Induction Motor - Squirrel Cage



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Rated current	: 118 A	Moment of inertia (J)	: 87.3 sq.ft.lb
LRC	: 6.1	Duty cycle	: Cont.(S1)
Rated torque	: 532 ft.lb	Insulation class	: F
Locked rotor torque	: 200 %	Service factor	: 1.00
Breakdown torque	: 229 %	Temperature rise	: 80 K
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Heating constant

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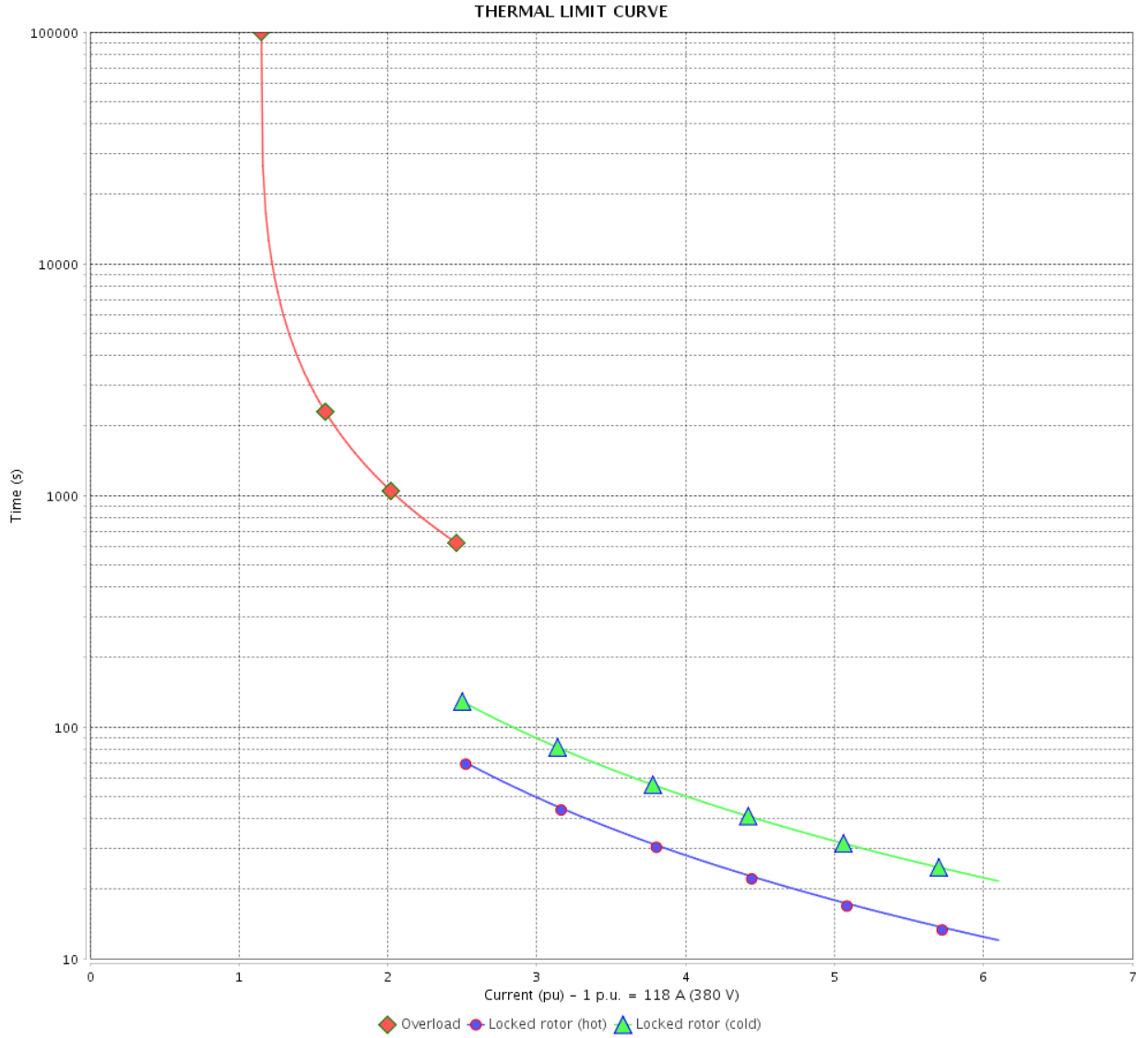
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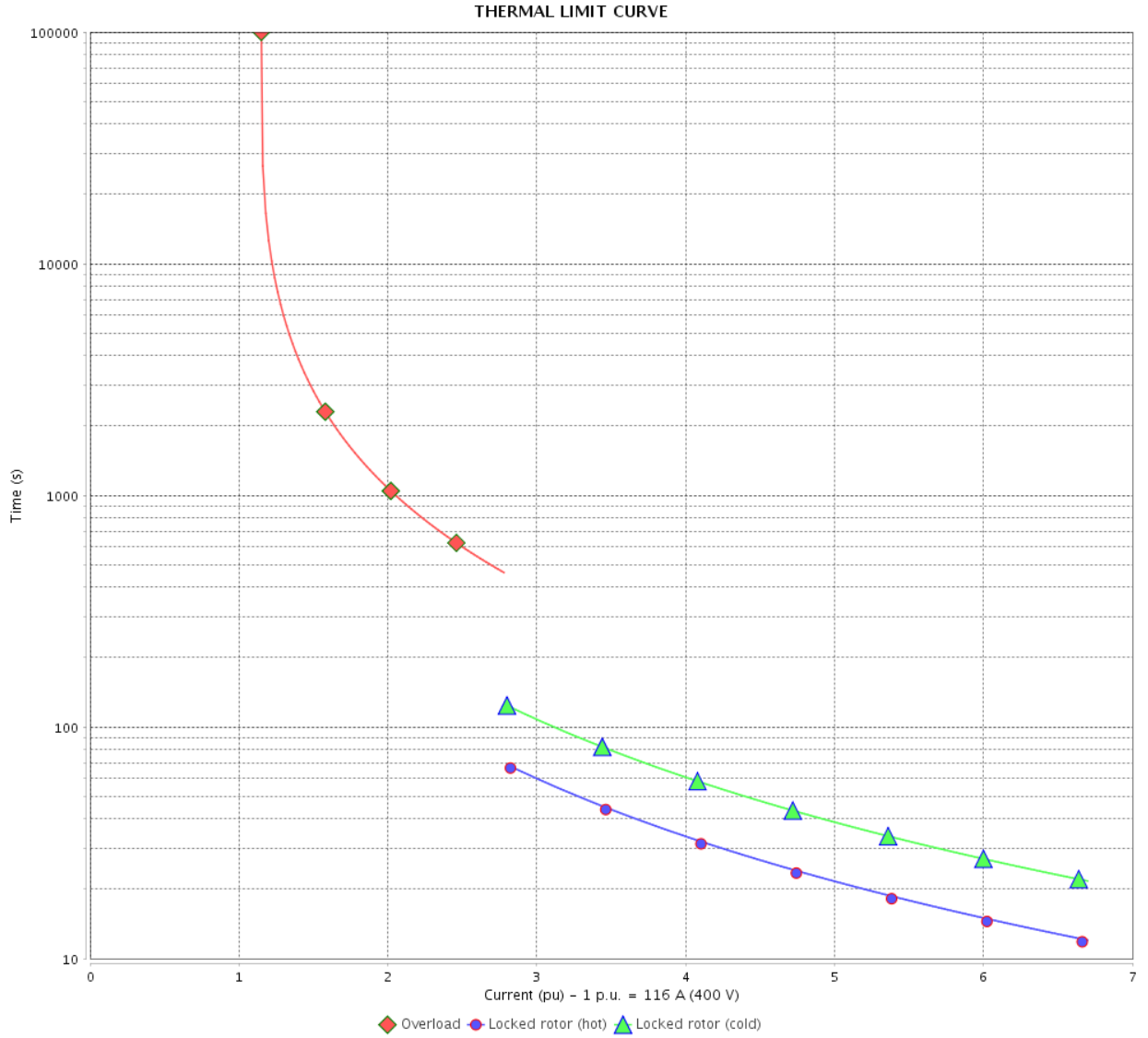
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Heating constant

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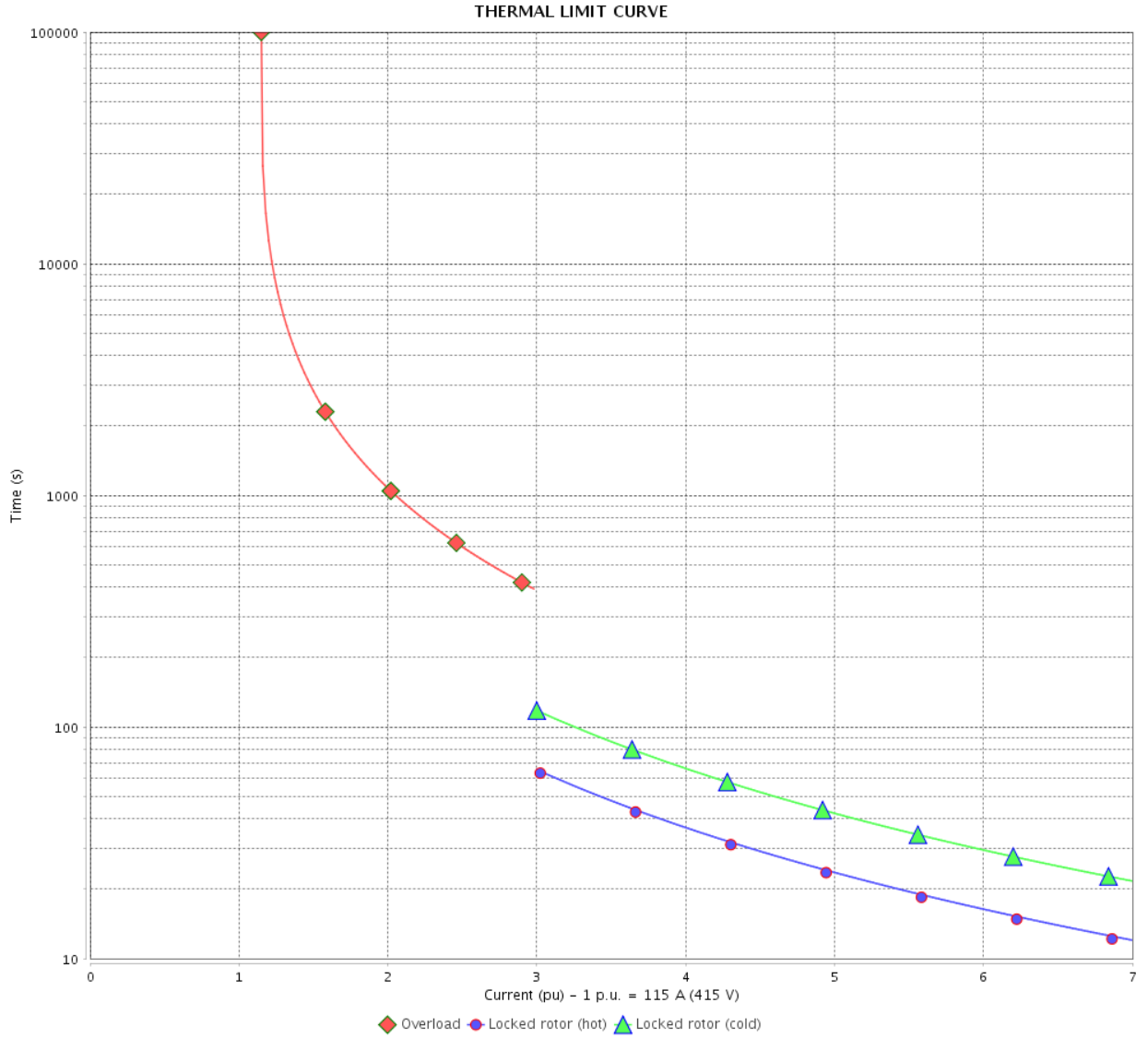
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Rated torque	: 714 ft.lb	Insulation class	: F
Locked rotor torque	: 150 %	Service factor	: 1.00
Breakdown torque	: 170 %	Temperature rise	: 105 K
Rated speed	: 735 rpm	Design	: B

Heating constant

Cooling constant

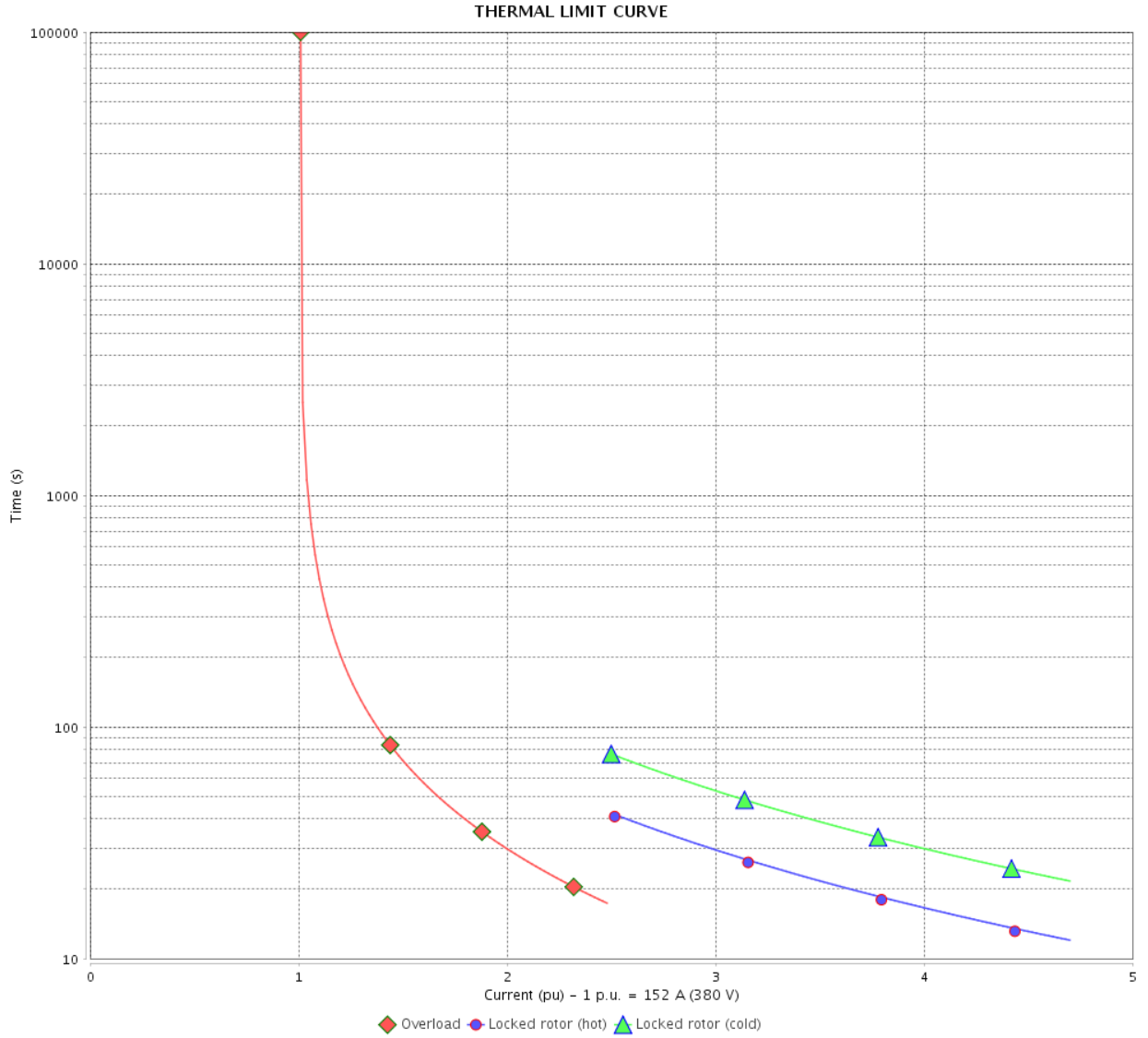
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LRC : 5.3	Duty cycle : Cont.(S1)
Rated torque : 710 ft.lb	Insulation class : F
Locked rotor torque : 170 %	Service factor : 1.00
Breakdown torque : 200 %	Temperature rise : 105 K
Rated speed : 740 rpm	Design : B

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Cooling constant

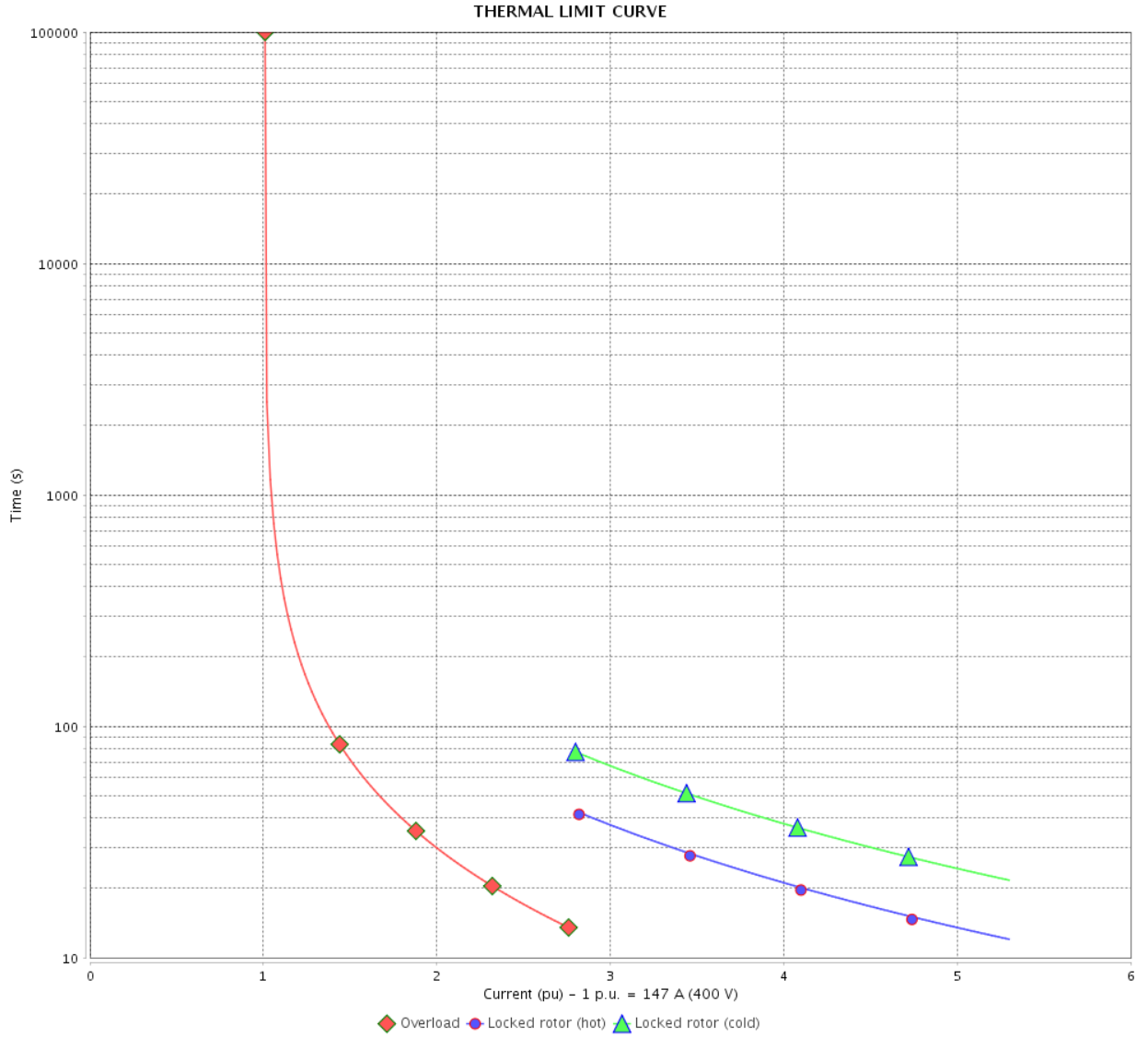
Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page 26 / 36	Revision
Checked by				
Date	12/04/2022			

THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



Customer : _____



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

THERMAL LIMIT CURVE



Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : NEMA Premium Efficiency Three-Phase
 Product code : 11356018
 Catalog # : 10009ET3G445T-W22

Performance : 415 V 50 Hz 8P IE2

Rated current : 144 A	Moment of inertia (J) : 87.3 sq.ft.lb
LRC : 5.6	Duty cycle : Cont.(S1)
Rated torque : 710 ft.lb	Insulation class : F
Locked rotor torque : 190 %	Service factor : 1.00
Breakdown torque : 220 %	Temperature rise : 105 K
Rated speed : 740 rpm	Design : B

Heating constant

Cooling constant

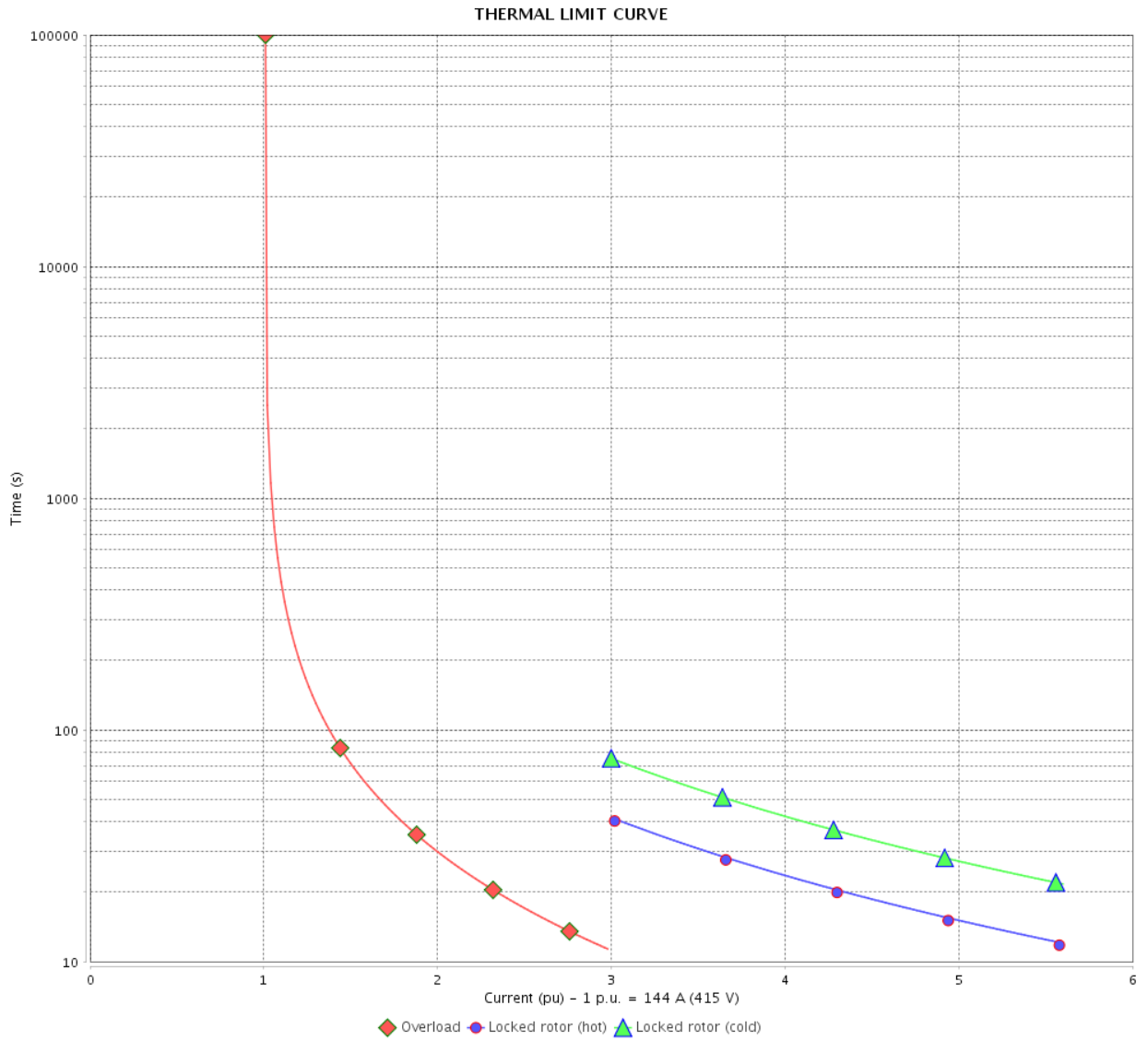
Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page 28 / 36	Revision
Checked by				
Date	12/04/2022			

THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



Customer : _____



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Performed by				
Checked by				
Date				
			Page	Revision
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VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage

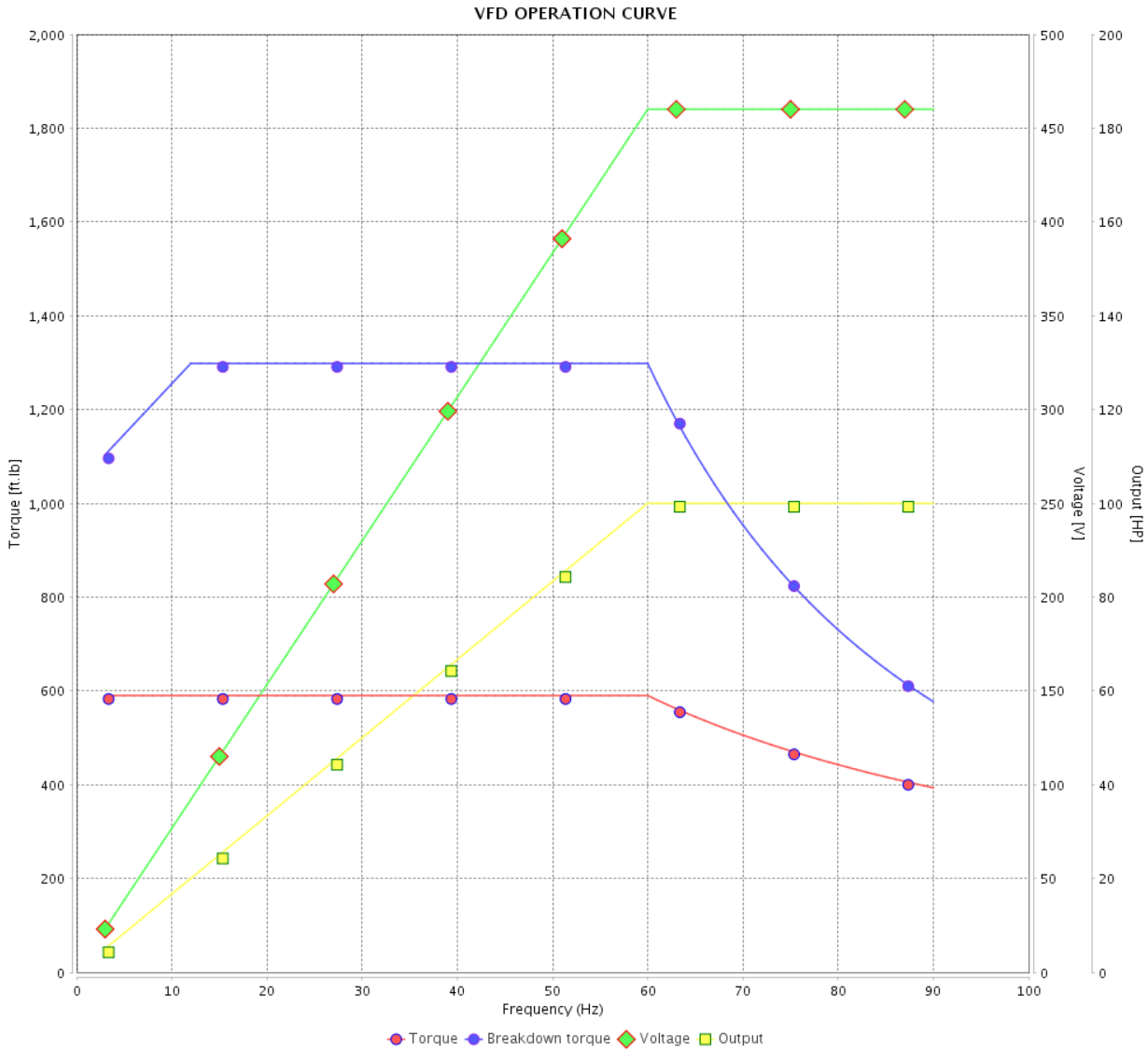


Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 11356018

Catalog # : 10009ET3G445T-W22



Performance : 460 V 60 Hz 8P

Rated current : 127 A
 LRC : 6.0
 Rated torque : 590 ft.lb
 Locked rotor torque : 190 %
 Breakdown torque : 220 %
 Rated speed : 890 rpm

Moment of inertia (J) : 87.3 sq.ft.lb
 Duty cycle : Cont.(S1)
 Insulation class : F
 Service factor : 1.25
 Temperature rise : 80 K
 Design : B

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Performed by			Page	Revision
Checked by				
Date				
			30 / 36	

VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage

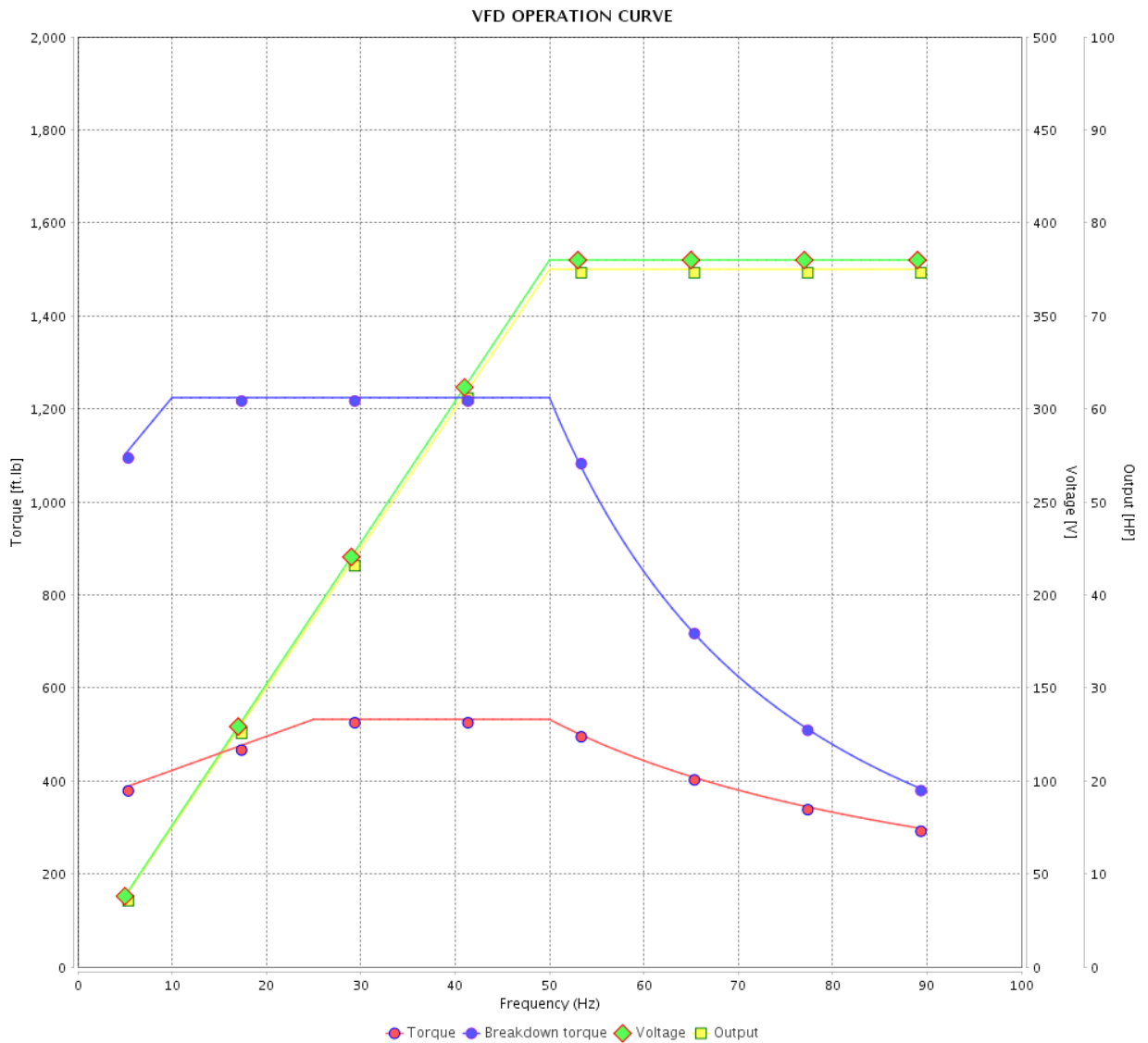


Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 11356018

Catalog # : 10009ET3G445T-W22



Performance : 380 V 50 Hz 8P IE3

Rated current : 118 A
 LRC : 6.1
 Rated torque : 532 ft.lb
 Locked rotor torque : 200 %
 Breakdown torque : 229 %
 Rated speed : 740 rpm

Moment of inertia (J) : 87.3 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



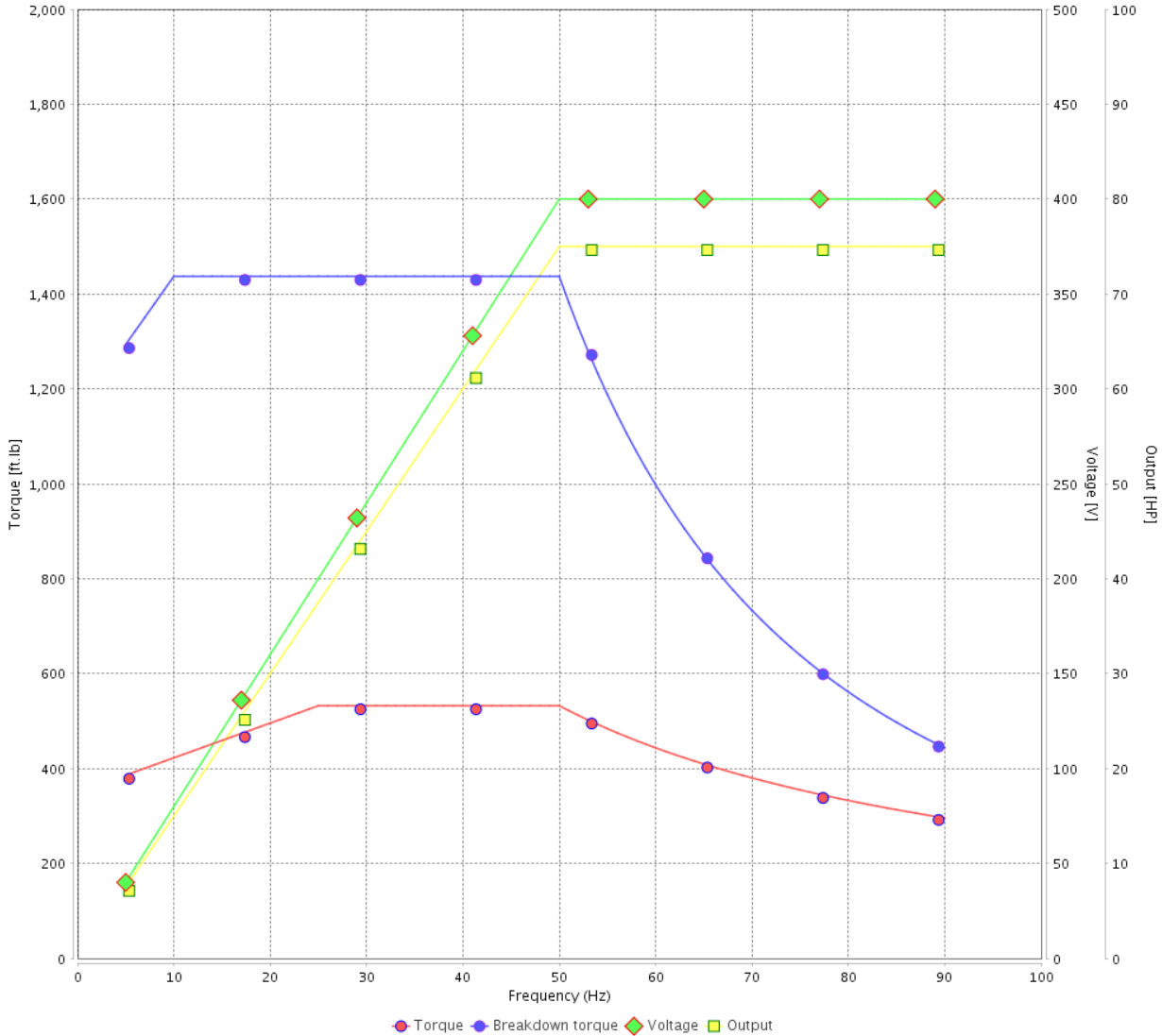
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 11356018

Catalog # : 10009ET3G445T-W22

VFD OPERATION CURVE



Performance : 400 V 50 Hz 8P IE3

Rated current	: 116 A	Moment of inertia (J)	: 87.3 sq.ft.lb
LRC	: 6.7	Duty cycle	: Cont.(S1)
Rated torque	: 532 ft.lb	Insulation class	: F
Locked rotor torque	: 229 %	Service factor	: 1.00
Breakdown torque	: 270 %	Temperature rise	: 80 K
Rated speed	: 740 rpm	Design	: B

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Performed by			Page 32 / 36	Revision
Checked by				
Date	12/04/2022			

VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage

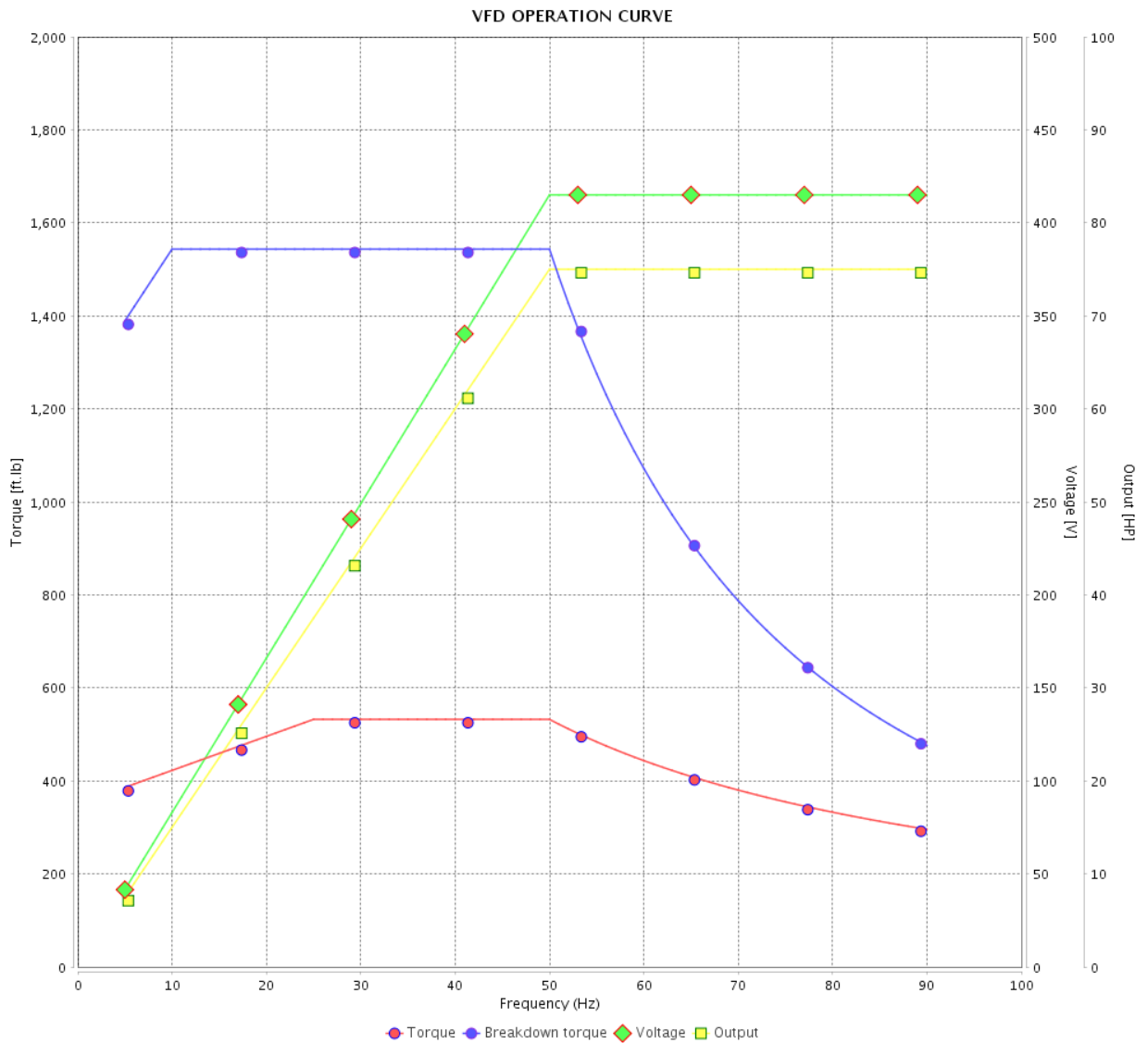


Customer : _____

Product line : NEMA Premium Efficiency Three-Phase

Product code : 11356018

Catalog # : 10009ET3G445T-W22



Performance : 415 V 50 Hz 8P IE3

Rated current : 115 A
 LRC : 7.0
 Rated torque : 532 ft.lb
 Locked rotor torque : 250 %
 Breakdown torque : 290 %
 Rated speed : 740 rpm

Moment of inertia (J) : 87.3 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 33 / 36	Revision
Checked by				
Date	12/04/2022			

VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage



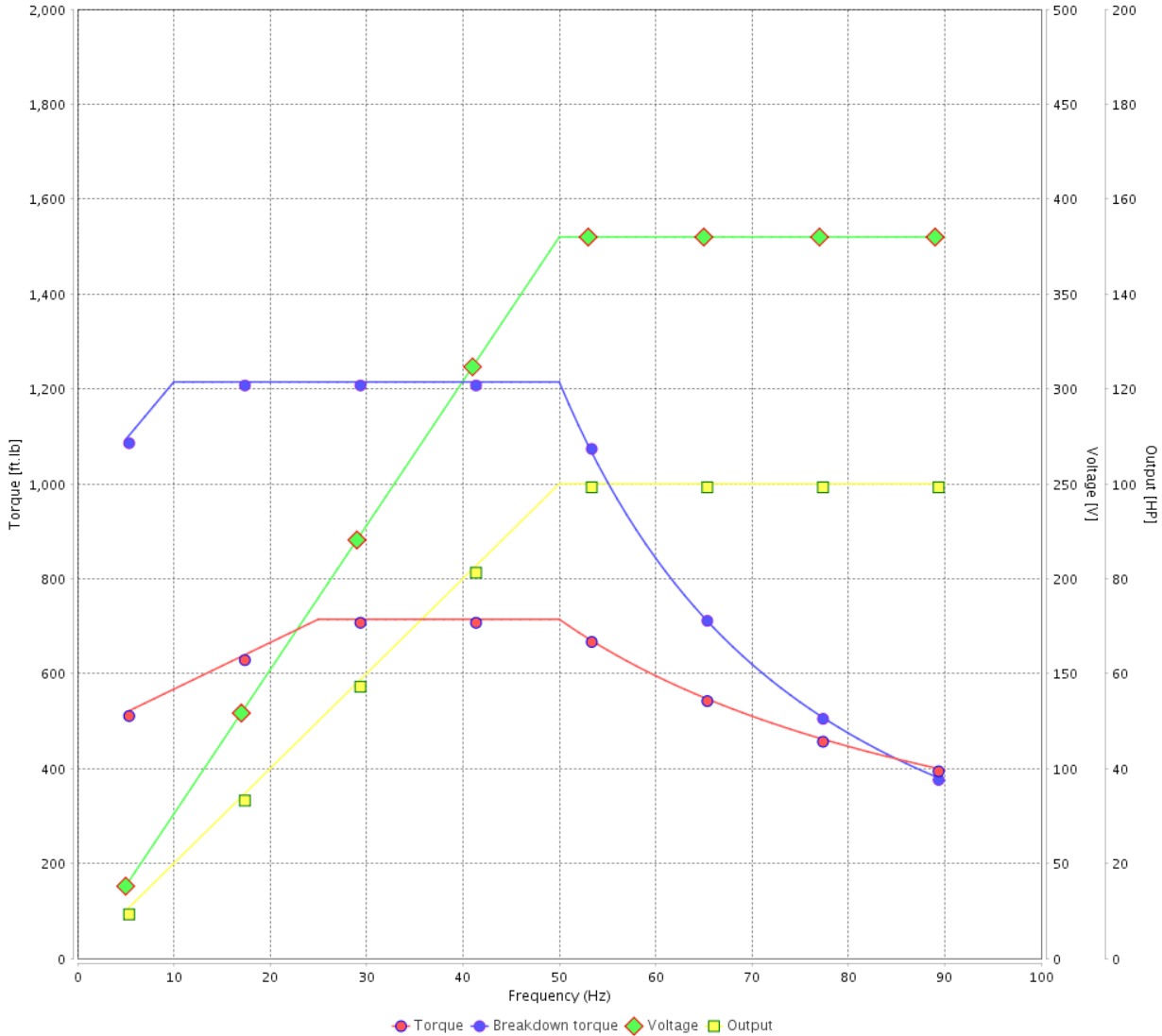
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 11356018

Catalog # : 10009ET3G445T-W22

VFD OPERATION CURVE



Performance : 380 V 50 Hz 8P IE2

Rated current	: 152 A	Moment of inertia (J)	: 87.3 sq.ft.lb
LRC	: 4.7	Duty cycle	: Cont.(S1)
Rated torque	: 714 ft.lb	Insulation class	: F
Locked rotor torque	: 150 %	Service factor	: 1.00
Breakdown torque	: 170 %	Temperature rise	: 105 K
Rated speed	: 735 rpm	Design	: B

Rev.	Changes Summary	Performed	Checked	Date
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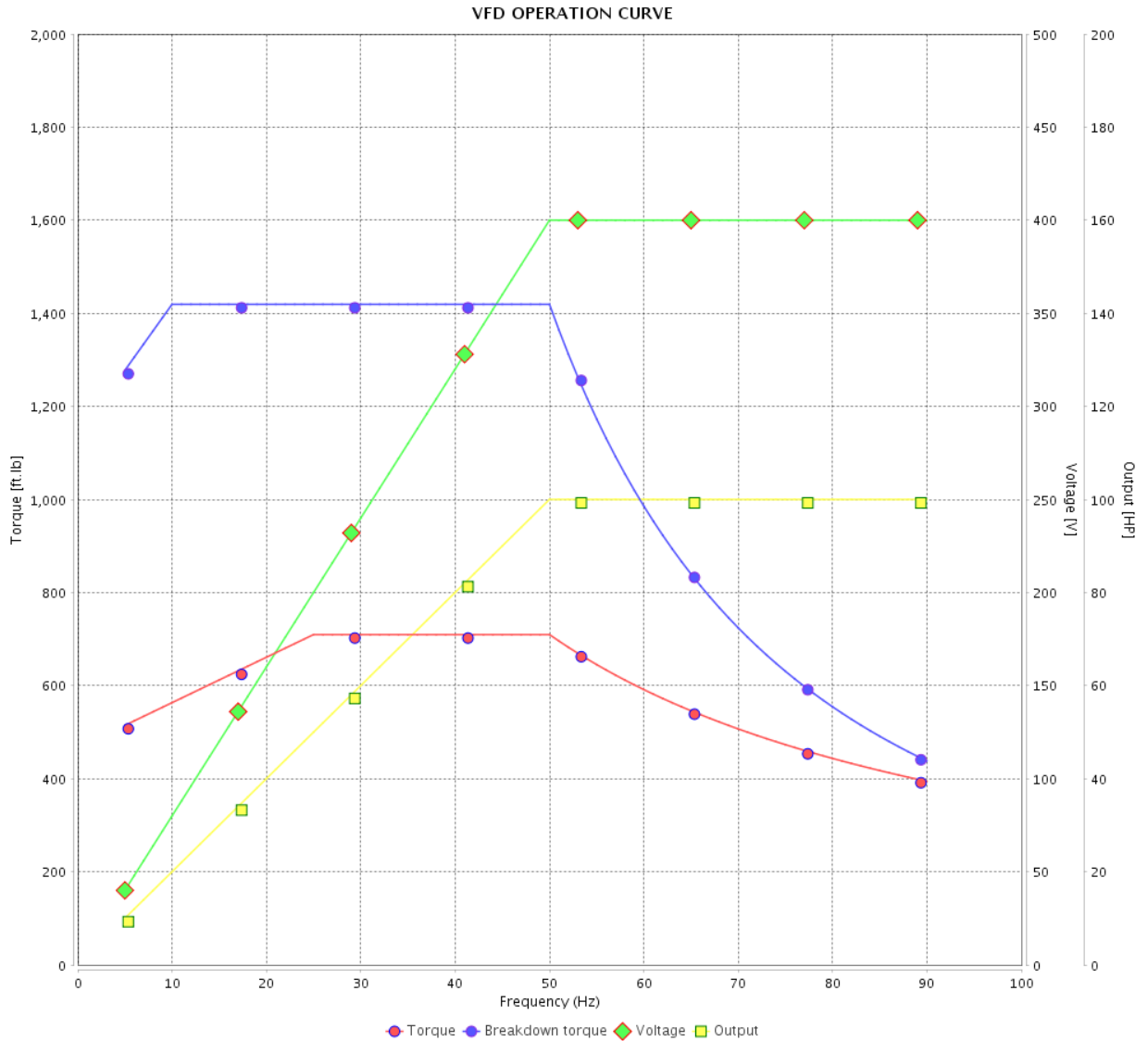
VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : NEMA Premium Efficiency Three-Phase
 Product code : 11356018
 Catalog # : 10009ET3G445T-W22



Performance : 400 V 50 Hz 8P IE2

Rated current	: 147 A	Moment of inertia (J)	: 87.3 sq.ft.lb
LRC	: 5.3	Duty cycle	: Cont.(S1)
Rated torque	: 710 ft.lb	Insulation class	: F
Locked rotor torque	: 170 %	Service factor	: 1.00
Breakdown torque	: 200 %	Temperature rise	: 105 K
Rated speed	: 740 rpm	Design	: B

Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page 35 / 36	Revision
Checked by				
Date	12/04/2022			

VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage



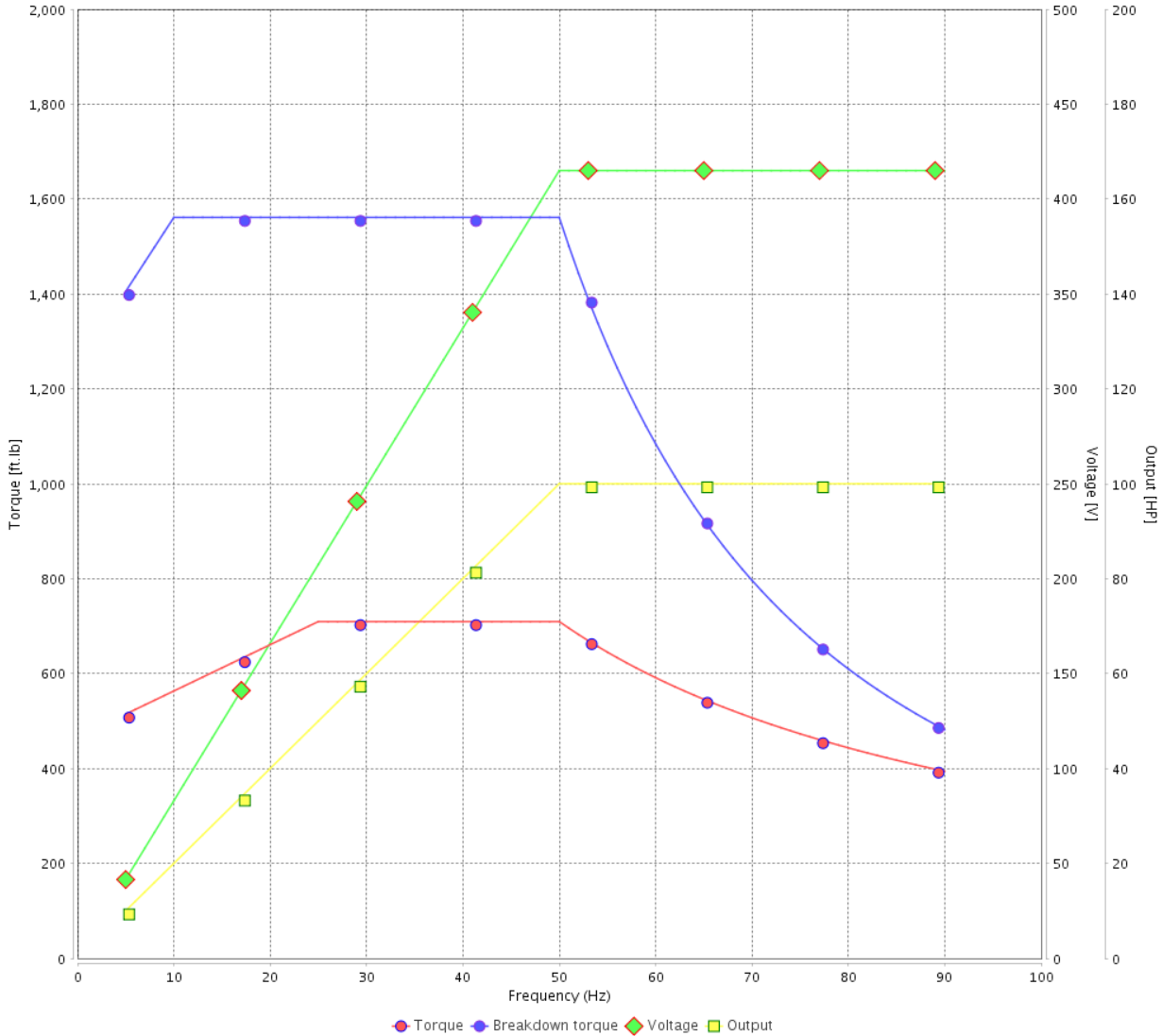
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 11356018

Catalog # : 10009ET3G445T-W22

VFD OPERATION CURVE



Performance : 415 V 50 Hz 8P IE2

Rated current	: 144 A	Moment of inertia (J)	: 87.3 sq.ft.lb
LRC	: 5.6	Duty cycle	: Cont.(S1)
Rated torque	: 710 ft.lb	Insulation class	: F
Locked rotor torque	: 190 %	Service factor	: 1.00
Breakdown torque	: 220 %	Temperature rise	: 105 K
Rated speed	: 740 rpm	Design	: B

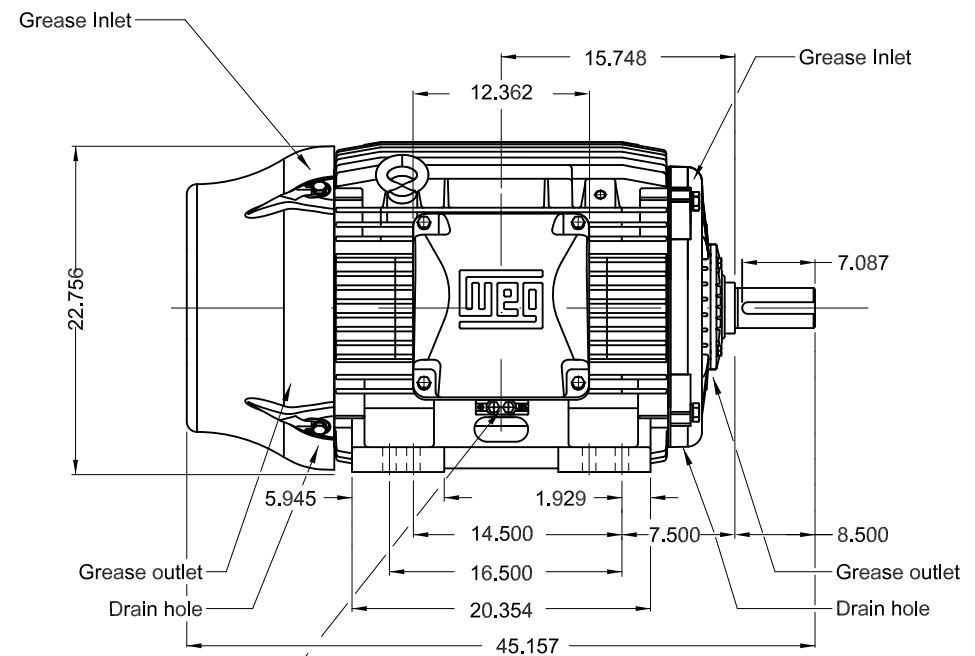
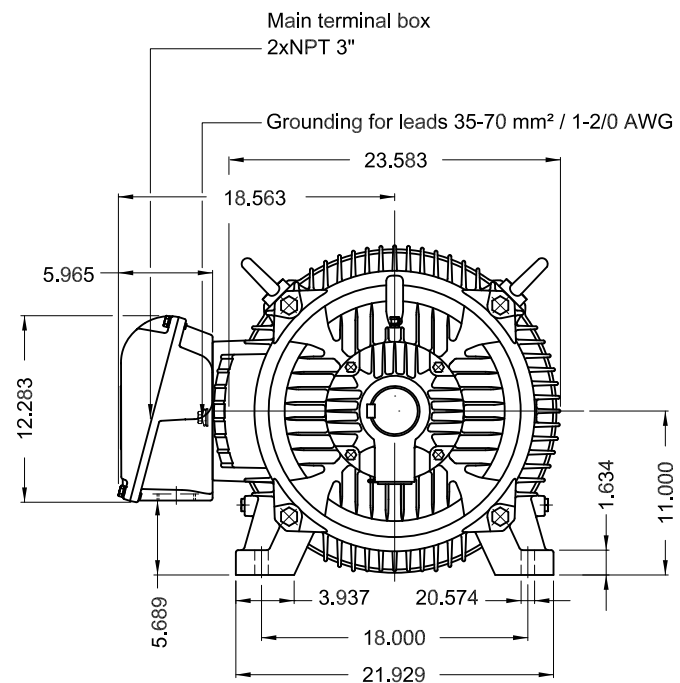
Rev.	Changes Summary	Performed	Checked	Date
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Date	12/04/2022			

1 2 3 4 5 6

A

B

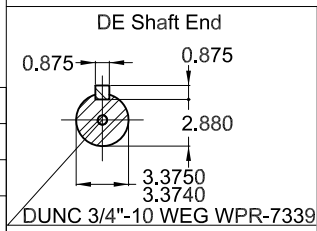
C



D

E

Color RAL 5009
 Painting plan 203A
 Mounting NEMA F-1
 Mounting B3R(D)



100 HP 08 Poles 60 Hz A

ECM	LOC	SUMMARY OF MODIFICATIONS	EXECUTED	CHECKED	RELEASED	DATE	VER
EXECUTED	PIRWUSER	THREE PH. MOTOR W22 PREM. EFF.					
CHECKED		FRAME 444/5T IP55 TEFC					
RELEASED							
REL DT.	WMO	Jaragua do Sul	Product Engineering	SHEET	1 / 1		

PREVIEW
 WDD



MODEL 10009ET3G445T-W22
MADE IN BRAZIL
11356018



Inverter Duty Motor
Severe Duty

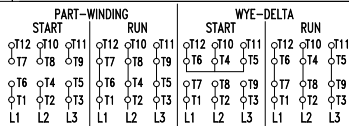


FOR SAFE AREA
MOD.TE1BFOXON



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 - T3C
For use on PWM, Gr. A, B, C, D and F,
VT 1000:1, CT 20:1, 1.0SF, T3A

PH 3	FR 444/5T	HP(kW) 100(75)		Hz 60
V 460		A 127		IP55
NEMA NOM EFF		94.1	%	RPM 890
ENCL TEFC	DUTY	CONT.		INS. CL. F ΔT 80 K
PF 0.79		DES B	CODE G	AMB. 40°C
SF 1.25	SFA 159		ALT 1000 m.a.s.l.	



→ 6319-C3(45g)
→ 6316-C3(34g)

MOBIL POLYREX EM
17000 h

1759 Lbs