

DATA SHEET



Three Phase Induction Motor - Squirrel Cage

Customer							
Product line	: NEMA Premium Efficiency Three-Phase	Product code	: 11584438				
		Catalog #	: 10009ST3QIE445T-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	: 1769 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%						
	50%	93.6	92.9	91.9	91.2	93.6	93.0
	75%	94.1	93.4	93.0	92.6	93.0	93.0
	100%	94.1	93.2	93.2	93.1	92.4	93.0
Power Factor	25%						
	50%	0.63	0.59	0.55	0.51	0.69	0.65
	75%	0.74	0.72	0.68	0.65	0.78	0.75
	100%	0.79	0.78	0.75	0.73	0.81	0.78
Bearing type	: Drive end 6319 C3	Non drive end 6316 C3	Foundation loads				
Sealing	: Inpro/Seal	Inpro/Seal	Max. traction : 3277 lb				
Lubrication interval	: 17000 h	20000 h	Max. compression : 5046 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.			
Rev.	Changes Summary			Performed	Checked	Date	
Performed by							
Checked by					Page	Revision	
Date	12/04/2022				1 / 36		

TORQUE AND CURRENT VS SPEED CURVE

Three Phase Induction Motor - Squirrel Cage



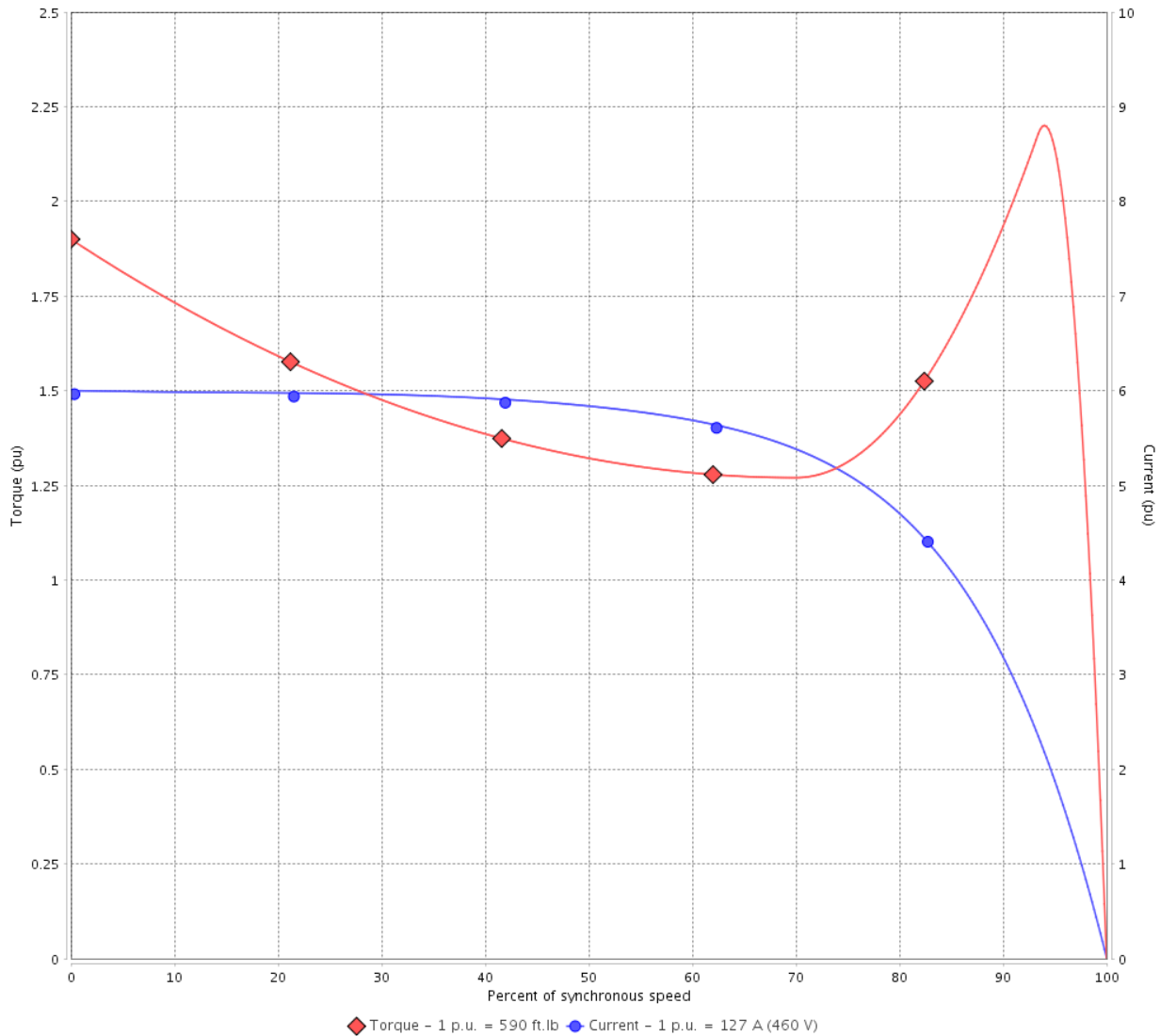
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Product code : 11584438

Catalog # : 10009ST3QIE445T-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)

Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page 2 / 36	Revision
Checked by				
Date	12/04/2022			

TORQUE AND CURRENT VS SPEED CURVE



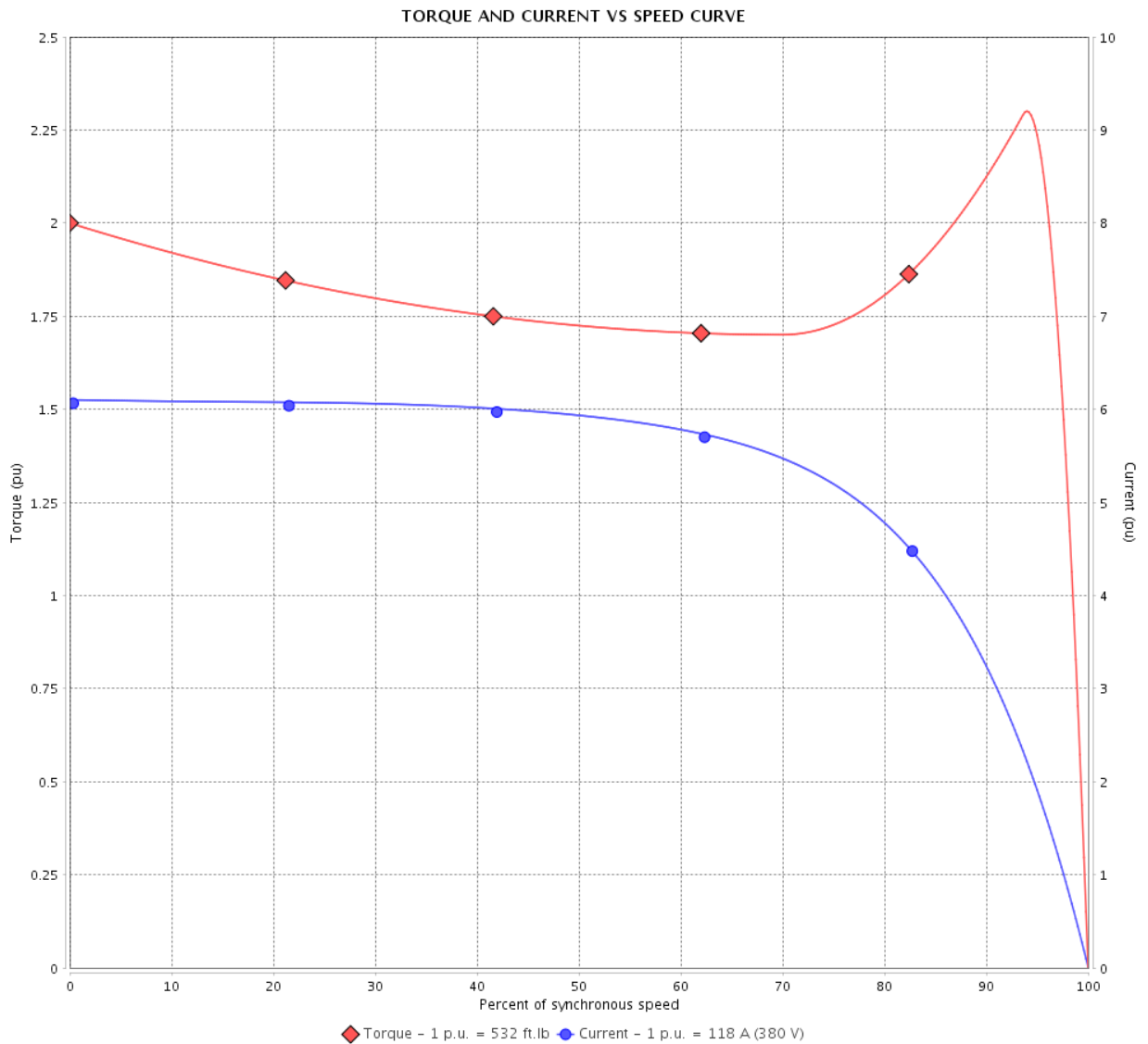
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Customer :

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Product code : 11584438

Catalog # : 10009ST3QIE445T-W22



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)

Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page 3 / 36	Revision
Checked by				
Date	12/04/2022			

TORQUE AND CURRENT VS SPEED CURVE

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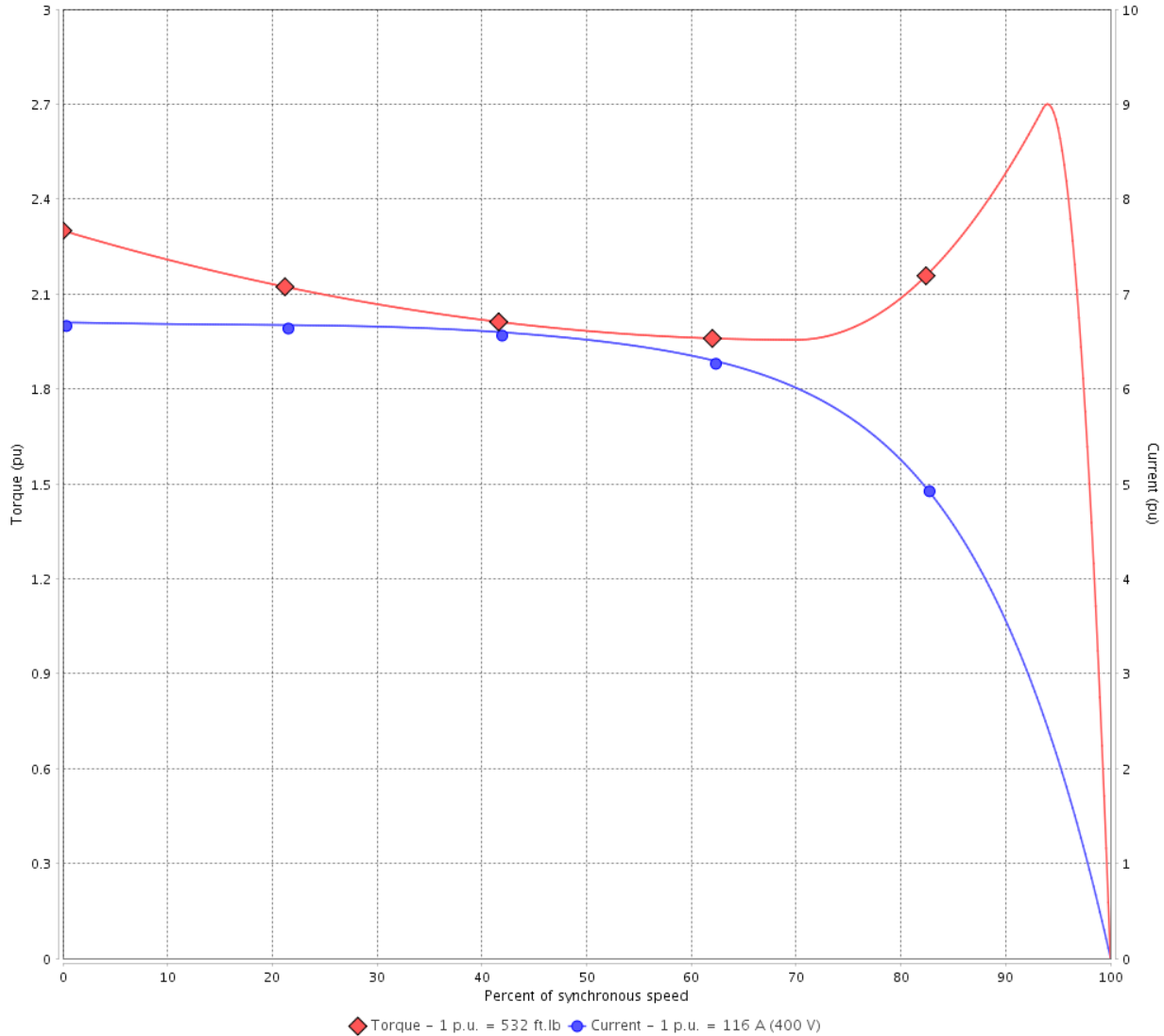
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TORQUE AND CURRENT VS SPEED CURVE



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)

Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page 4 / 36	Revision
Checked by				
Date	12/04/2022			

TORQUE AND CURRENT VS SPEED CURVE



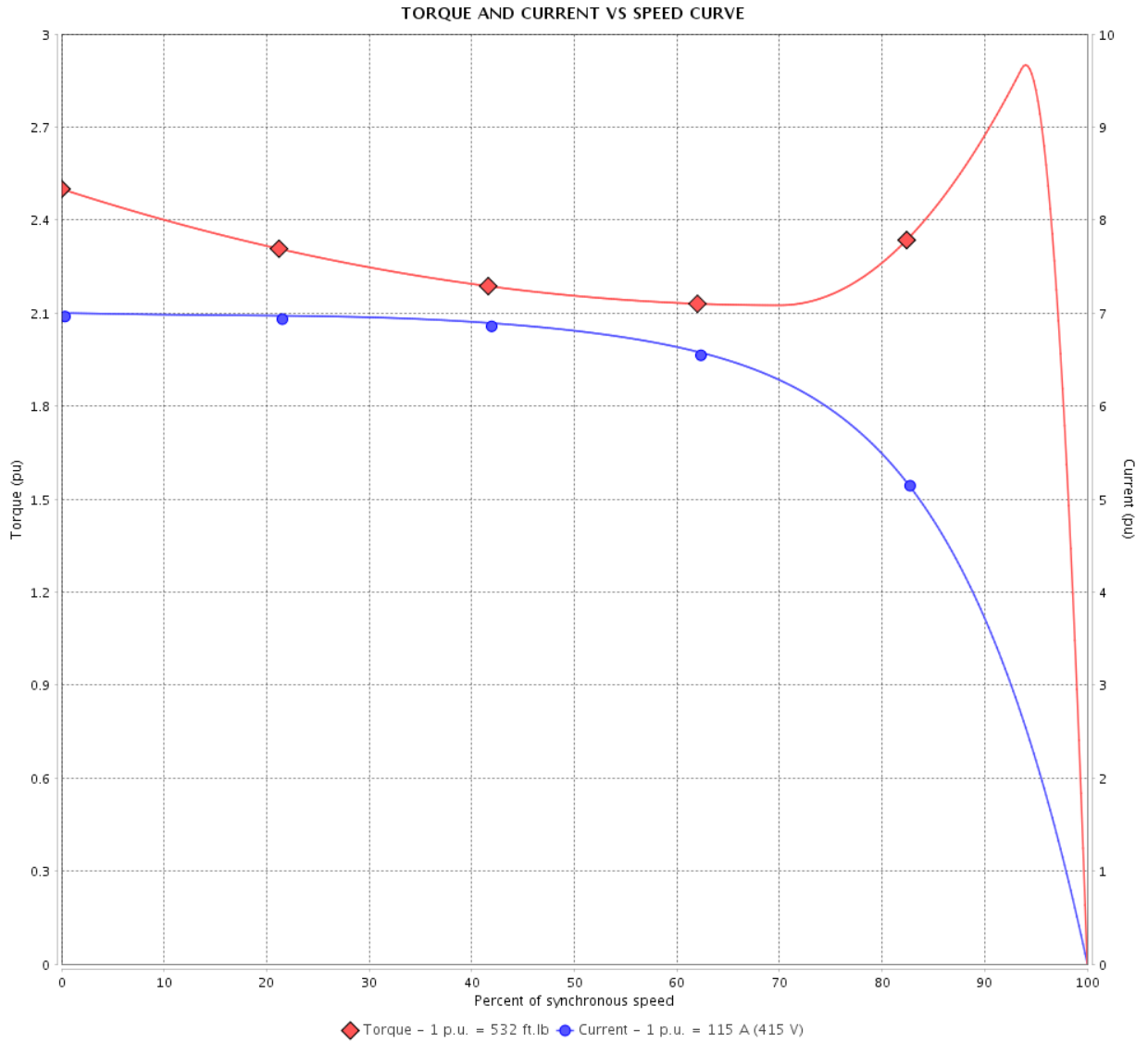
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Performance : 415 V 50 Hz 8P IE3

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

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

Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page 5 / 36	Revision
Checked by				
Date	12/04/2022			

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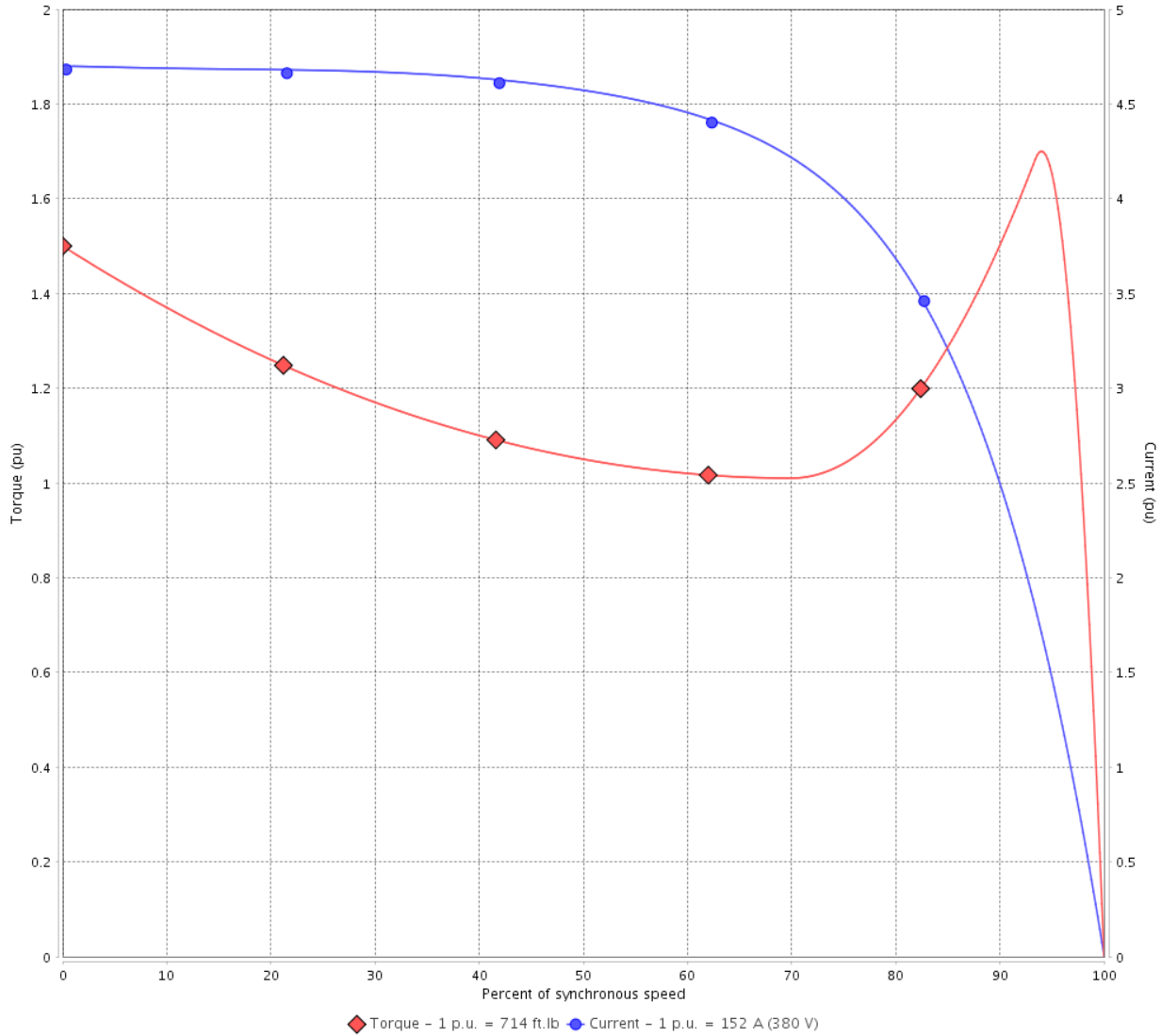
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TORQUE AND CURRENT VS SPEED CURVE



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)

Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page 6 / 36	Revision
Checked by				
Date	12/04/2022			

TORQUE AND CURRENT VS SPEED CURVE



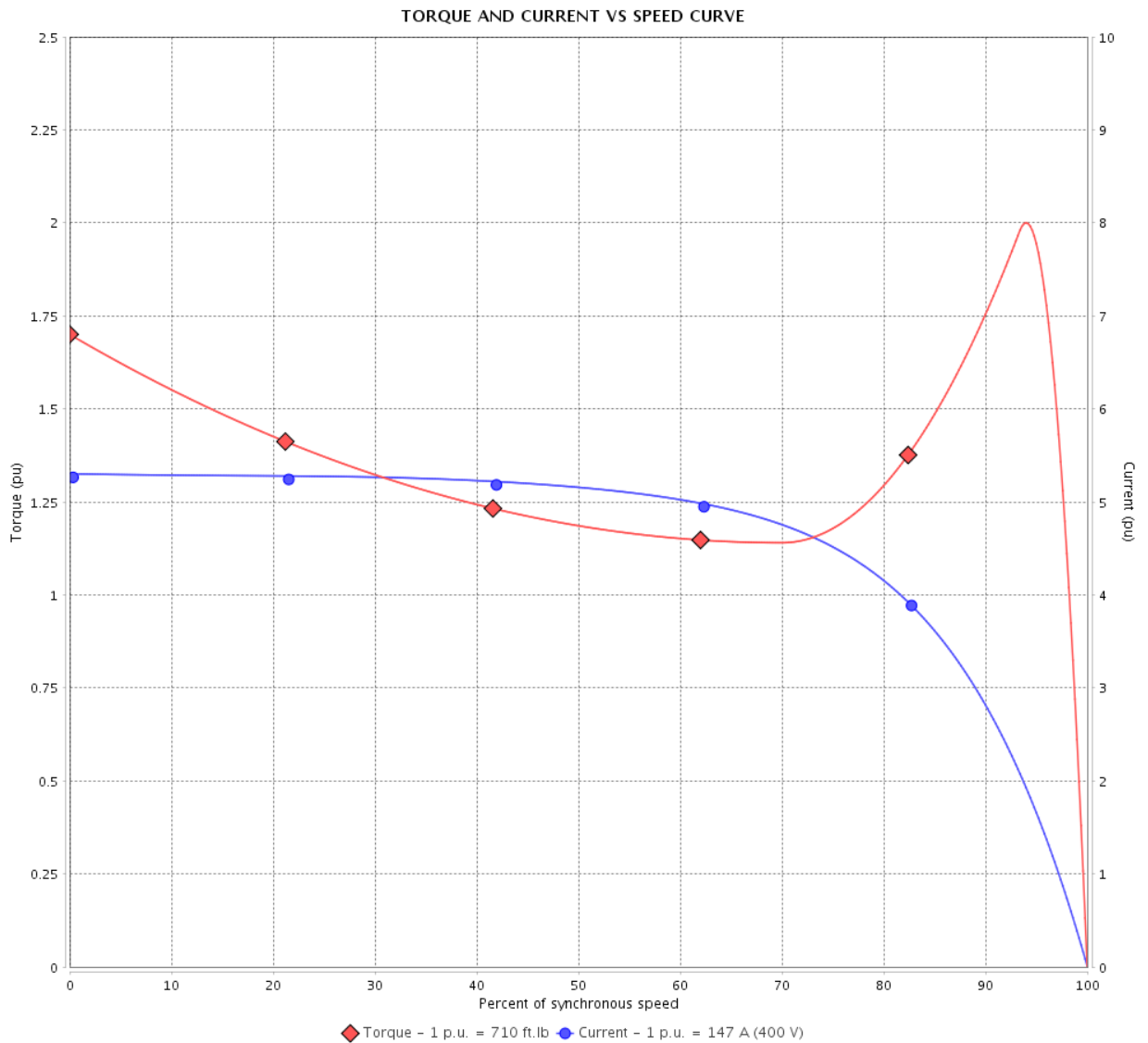
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Performance : 400 V 50 Hz 8P IE2

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)

Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page 7 / 36	Revision
Checked by				
Date	12/04/2022			

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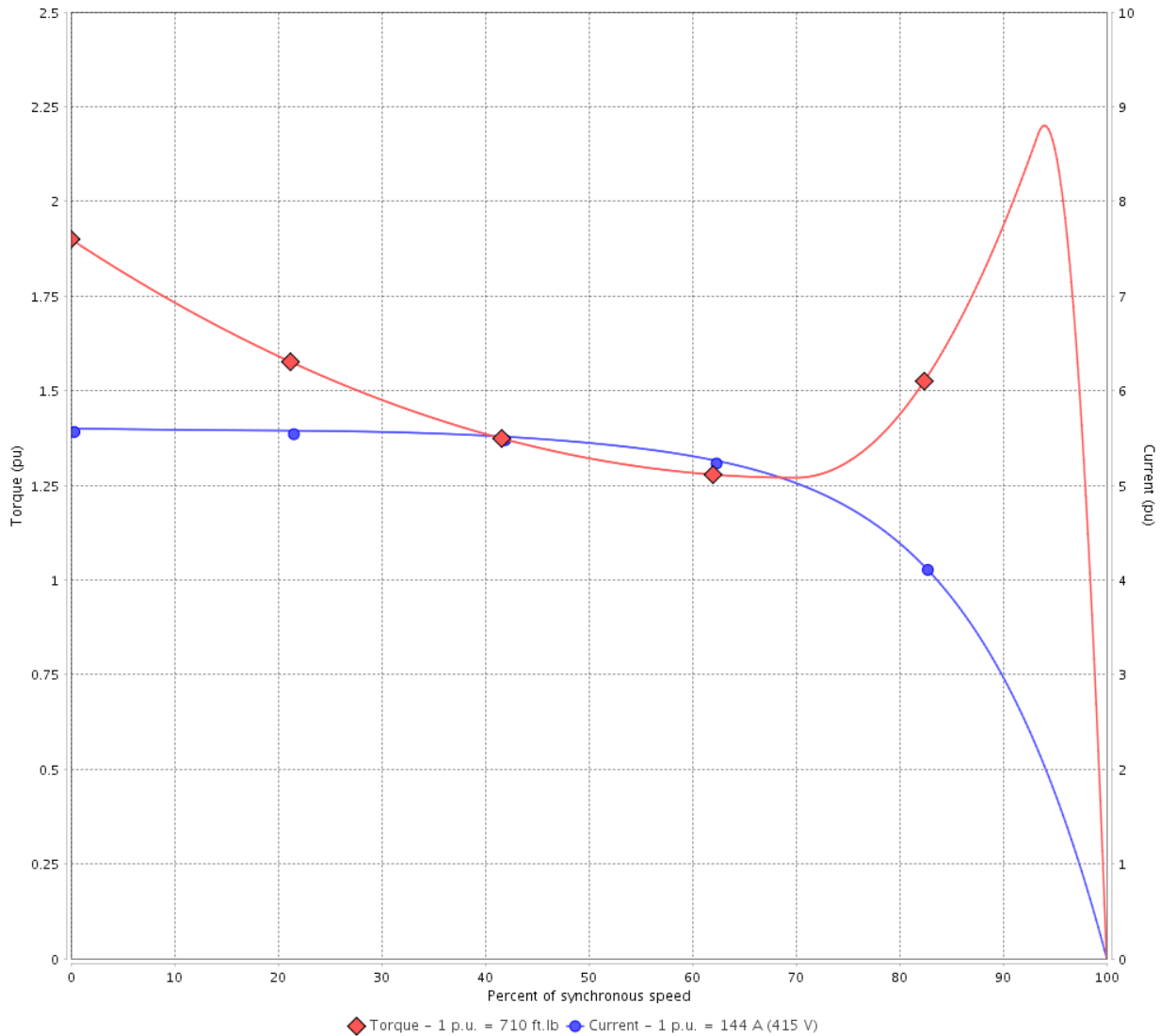
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Catalog # : 10009ST3QIE445T-W22

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)

Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page 8 / 36	Revision
Checked by				
Date	12/04/2022			

LOAD PERFORMANCE CURVE

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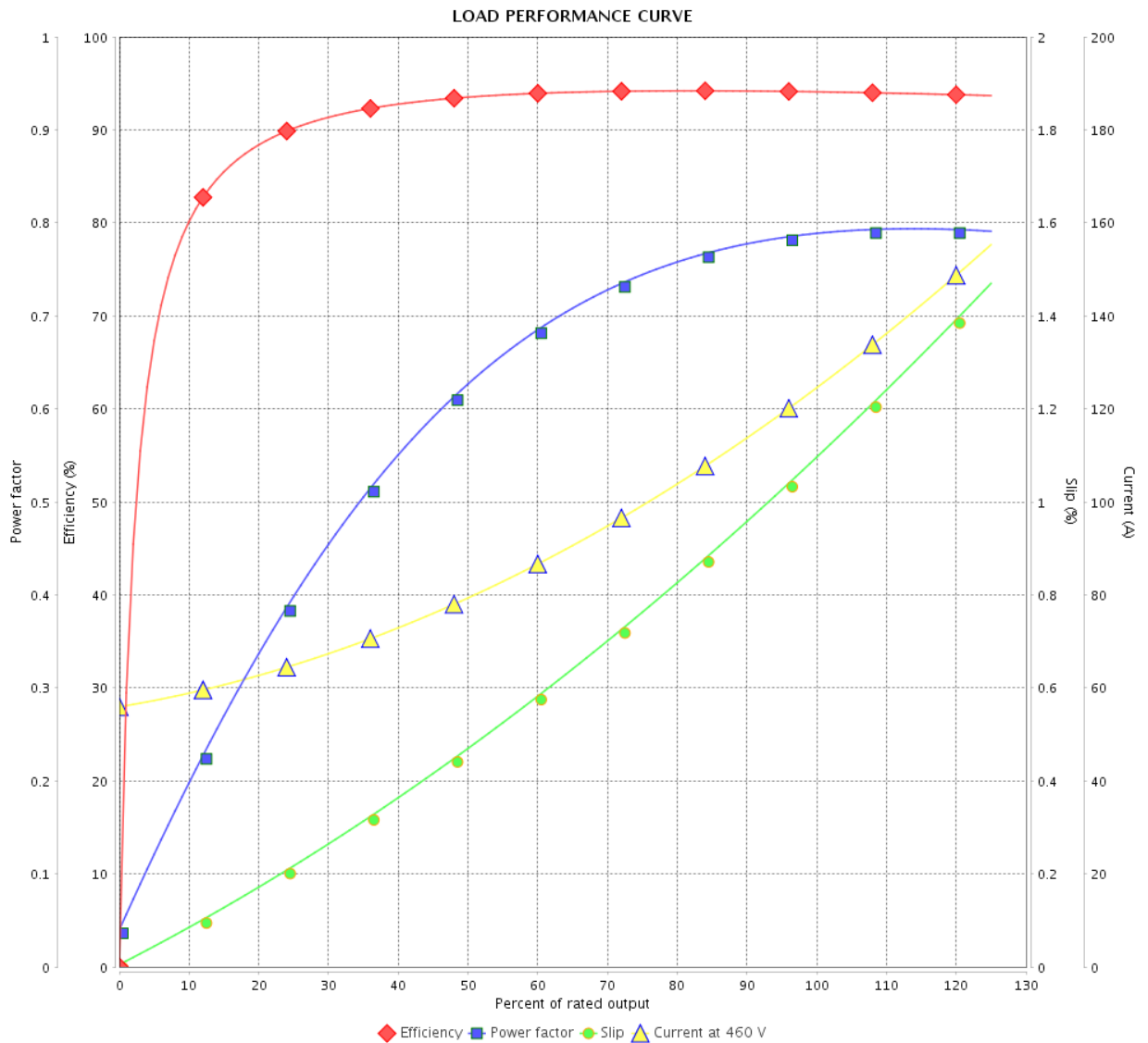


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Performance : 460 V 60 Hz 8P

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

Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page	Revision
Checked by			9 / 36	
Date	12/04/2022			

LOAD PERFORMANCE CURVE

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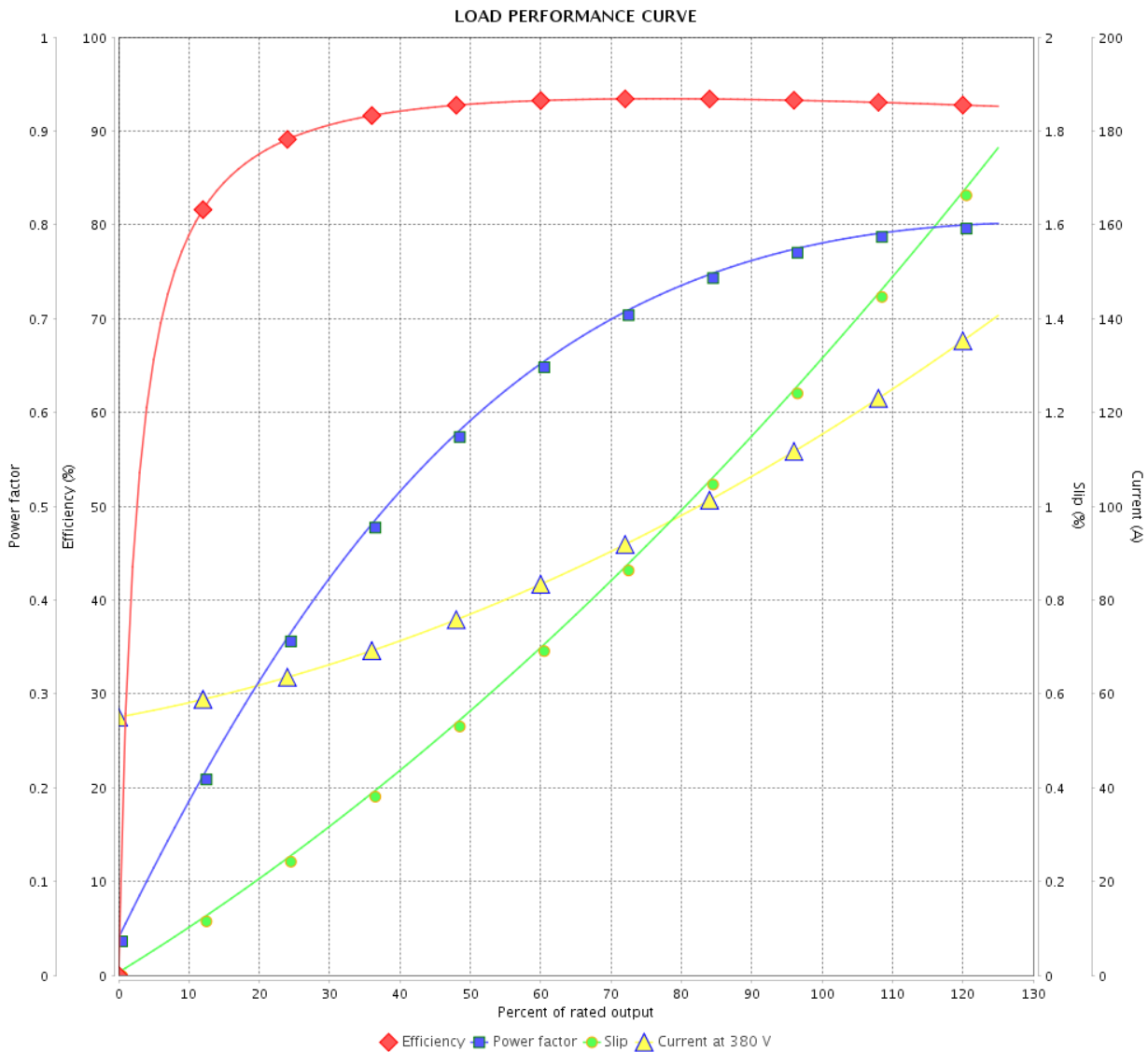


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Performance : 380 V 50 Hz 8P IE3

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

Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page 10 / 36	Revision
Checked by				
Date	12/04/2022			

LOAD PERFORMANCE CURVE

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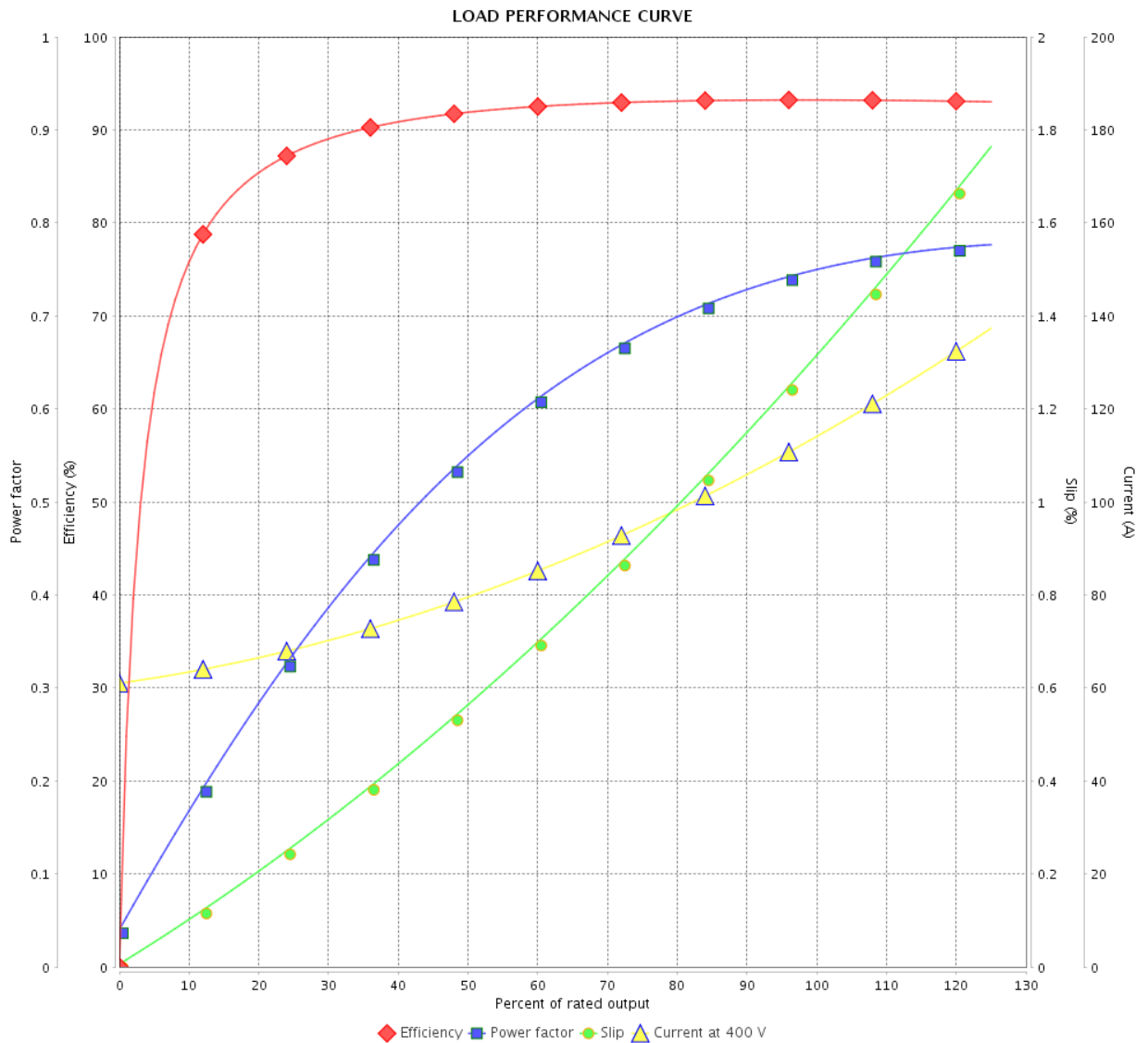


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Performance : 400 V 50 Hz 8P IE3

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

Rev.	Changes Summary	Performed	Checked	Date
Performed by				
Checked by				
Date				
		Page	Revision	
		11 / 36		

LOAD PERFORMANCE CURVE

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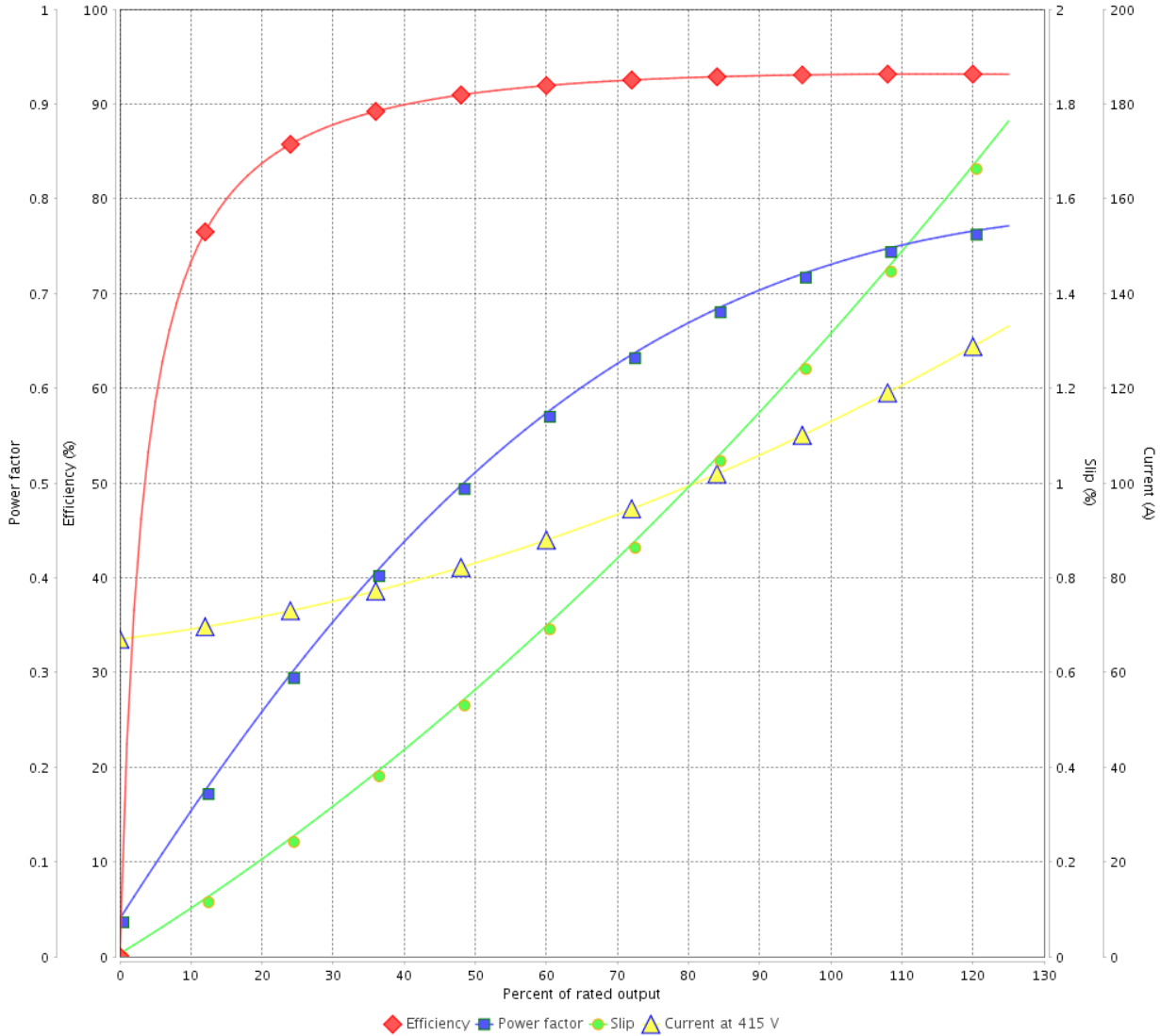
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Performance : 415 V 50 Hz 8P IE3

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		Revision
Checked by		12 / 36		
Date		12/04/2022		

LOAD PERFORMANCE CURVE

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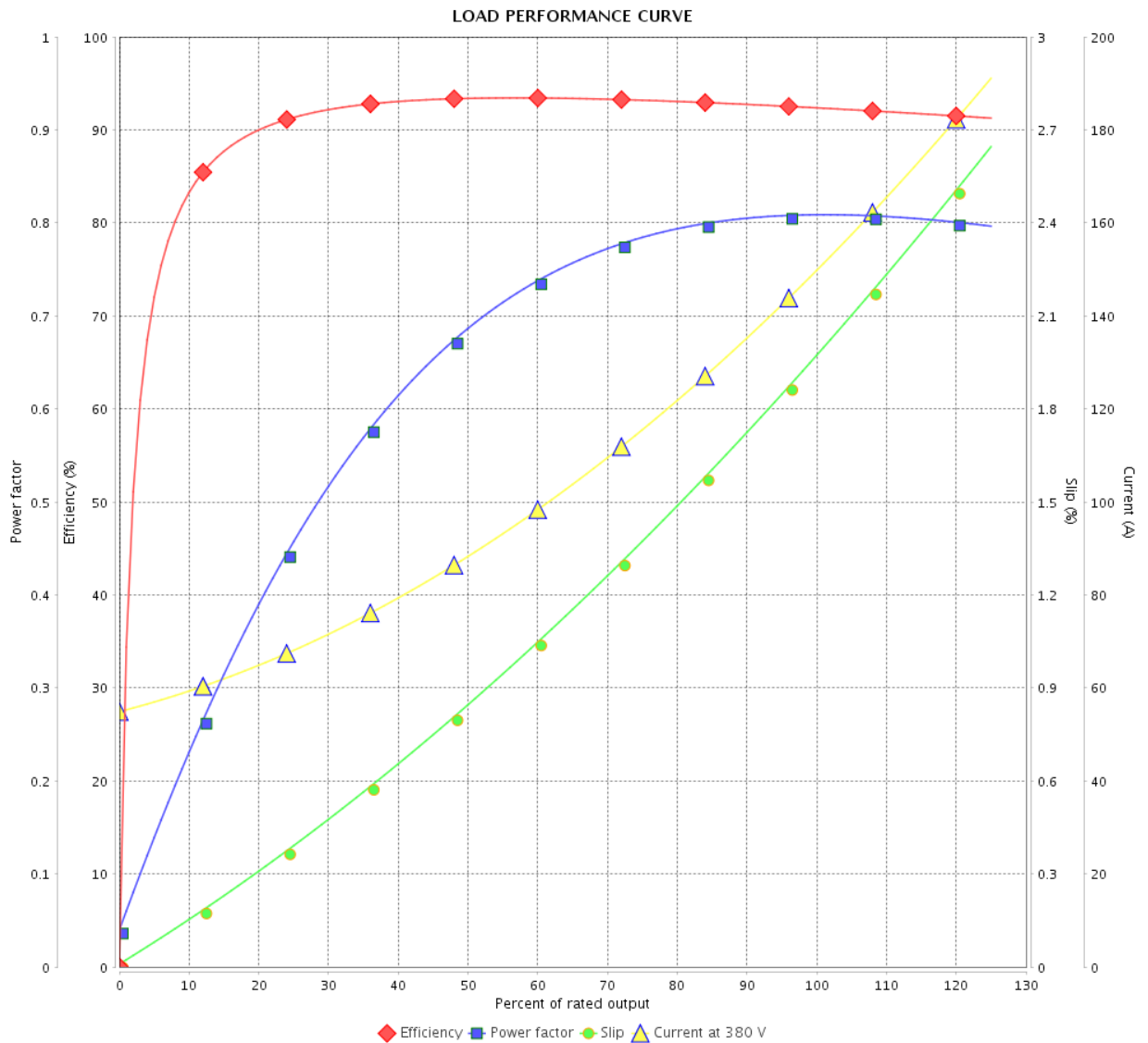


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Performance : 380 V 50 Hz 8P IE2

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

Rev.	Changes Summary	Performed	Checked	Date
Performed by		Page		Revision
Checked by		13 / 36		
Date		12/04/2022		

LOAD PERFORMANCE CURVE

Three Phase Induction Motor - Squirrel Cage



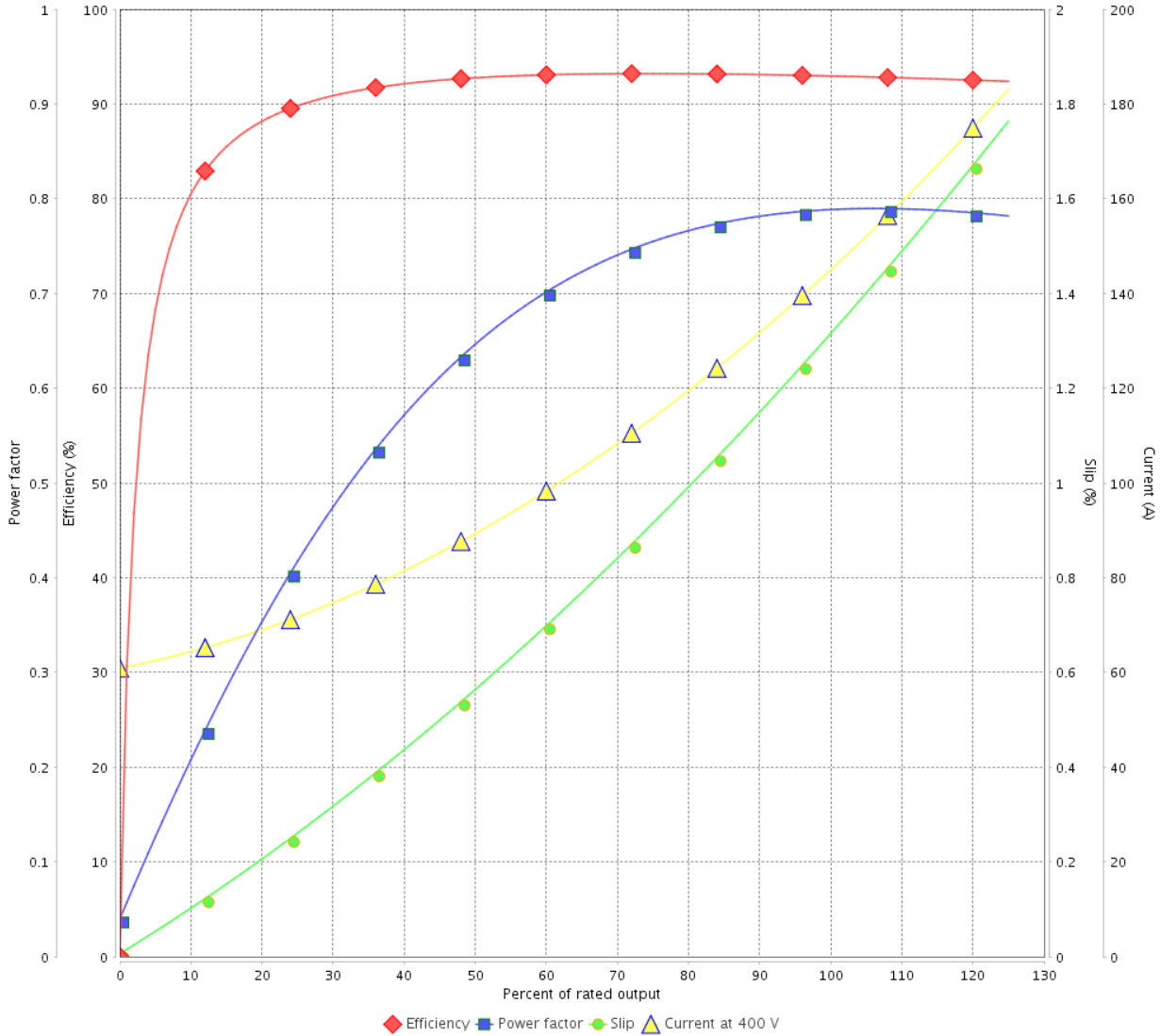
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Performance : 400 V 50 Hz 8P IE2

Rated current : 147 A
 LRC : 5.3
 Rated torque : 710 ft.lb
 Locked rotor torque : 170 %
 Breakdown torque : 200 %
 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

Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page	Revision
Checked by			14 / 36	
Date	12/04/2022			

LOAD PERFORMANCE CURVE

Three Phase Induction Motor - Squirrel Cage

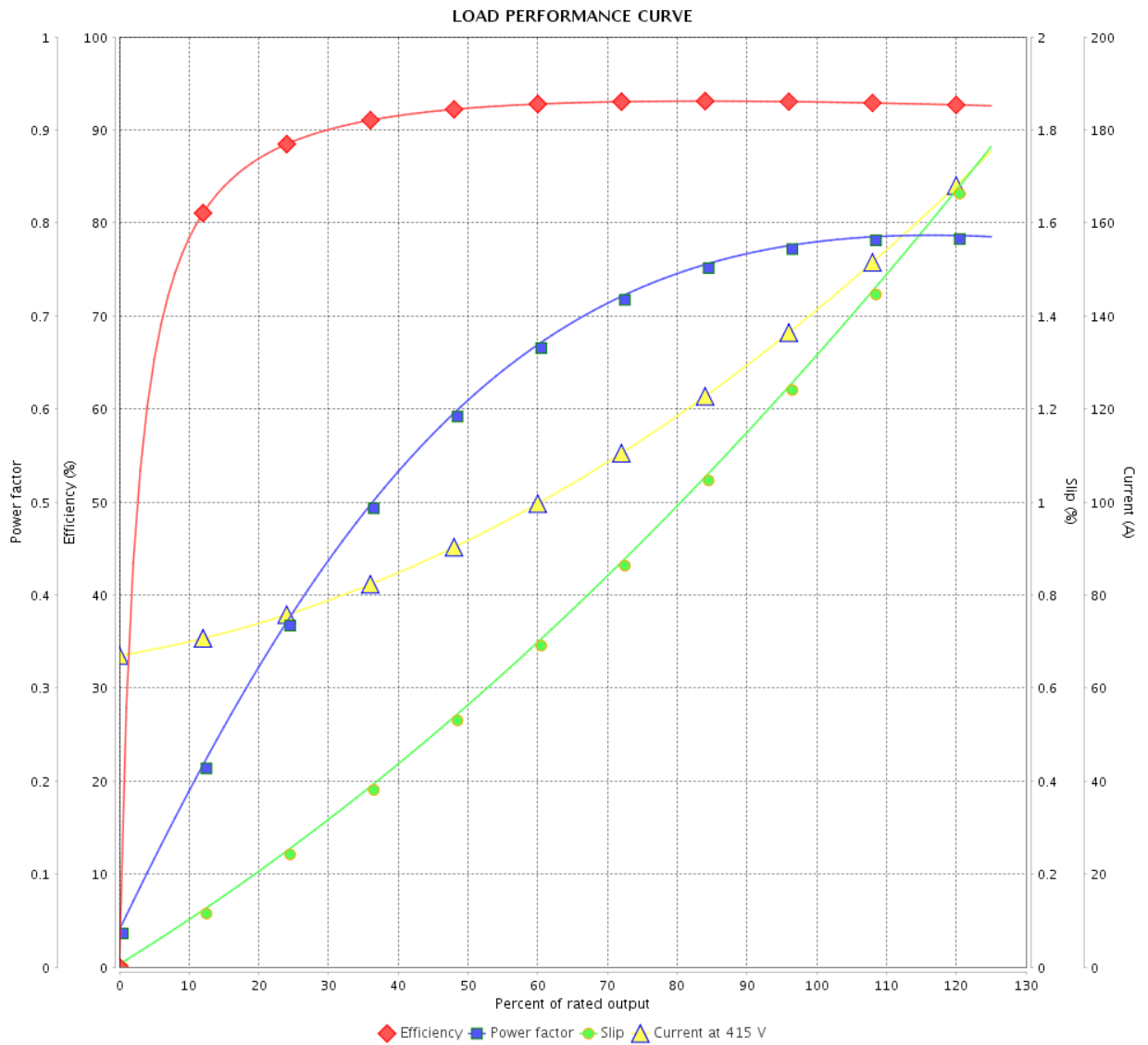


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Performance : 415 V 50 Hz 8P IE2

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

Rev.	Changes Summary	Performed	Checked	Date
Performed by		Page		Revision
Checked by		15 / 36		
Date		12/04/2022		

THERMAL LIMIT CURVE



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Customer :

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Product code : 11584438
Catalog # : 10009ST3QIE445T-W22

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

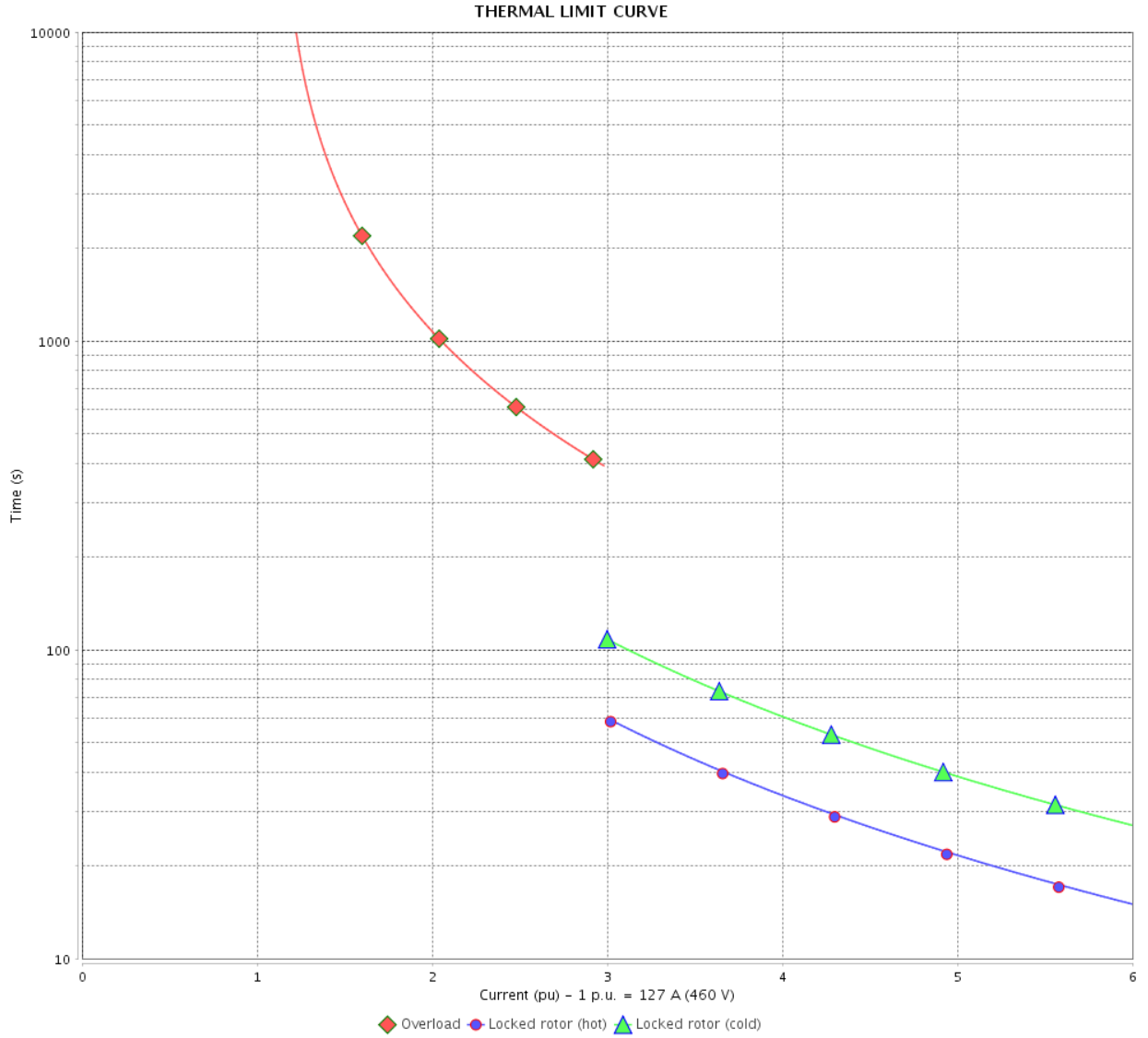
Rev.	Changes Summary	Performed	Checked	Date
Performed by				
Checked by			Page	Revision
Date	12/04/2022		16 / 36	

THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



Customer : _____



Rev.	Changes Summary	Performed	Checked	Date
Performed by		Page 17 / 36		Revision
Checked by				
Date				

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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

Heating constant

Cooling constant

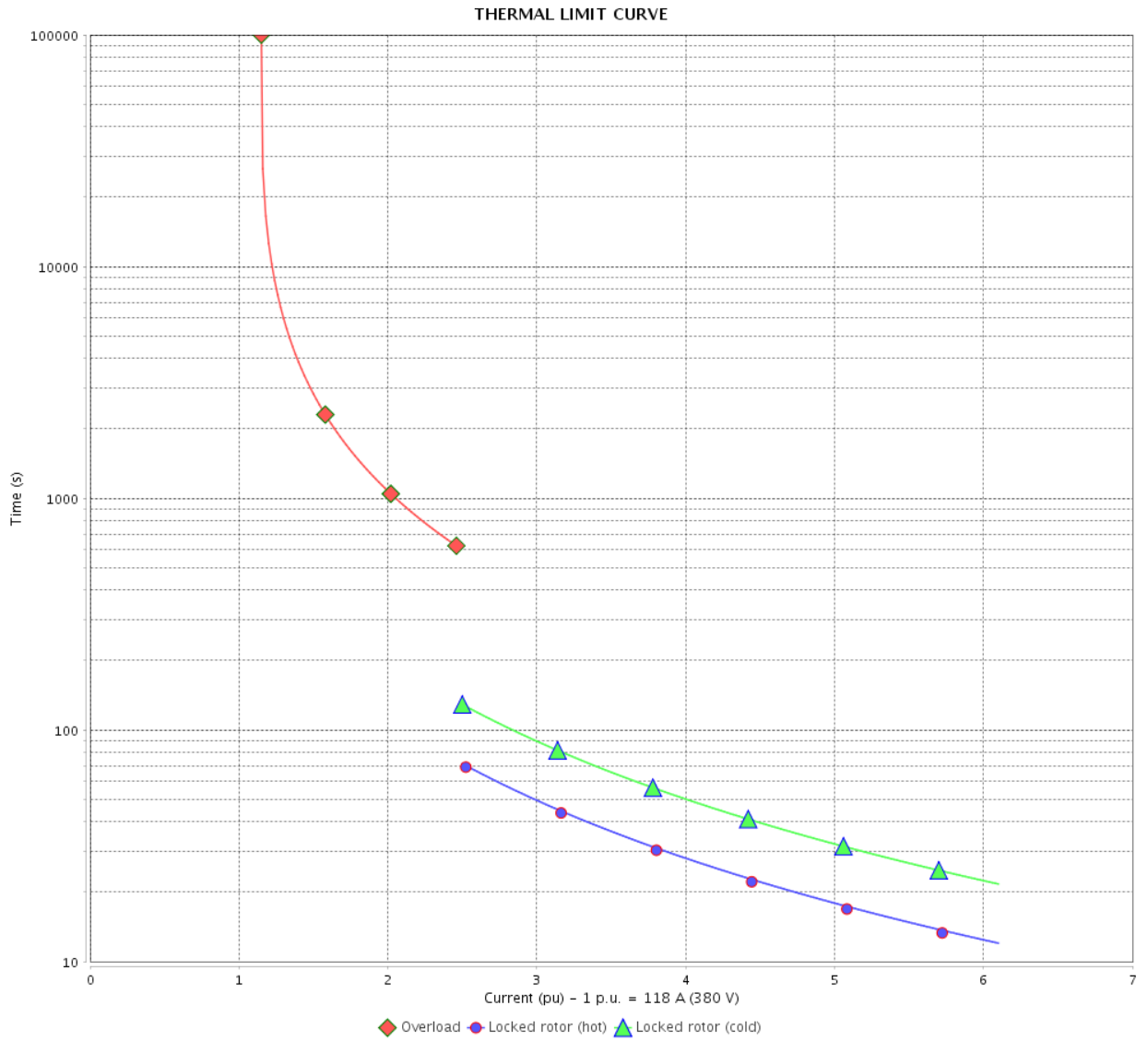
Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page 18 / 36	Revision
Checked by				
Date	12/04/2022			

THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



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Rev.	Changes Summary	Performed	Checked	Date
Performed by		Page 19 / 36		Revision
Checked by				
Date				

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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

Heating constant

Cooling constant

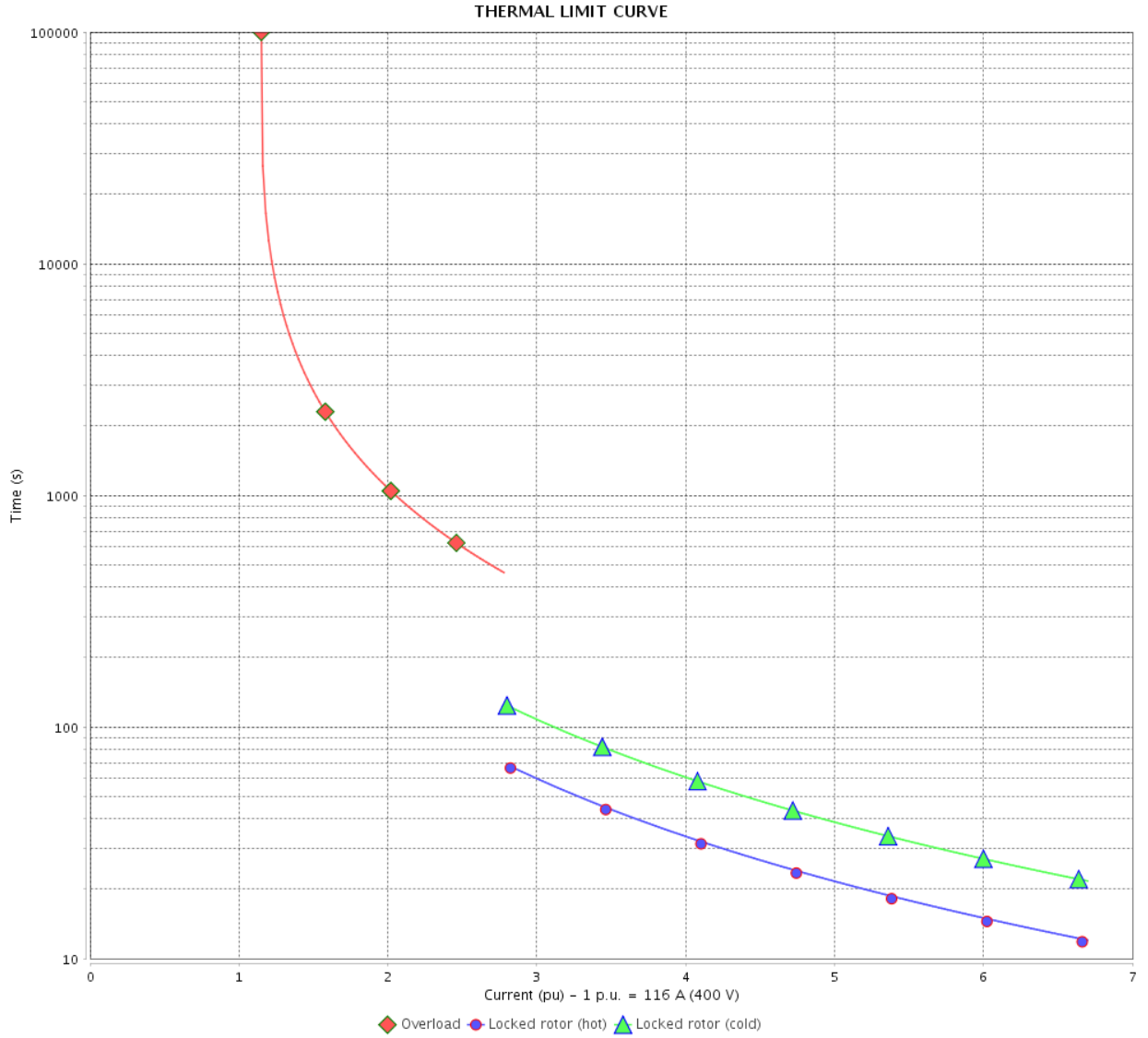
Rev.	Changes Summary	Performed	Checked	Date
Performed by				
Checked by			Page	Revision
Date	12/04/2022		20 / 36	

THERMAL LIMIT CURVE

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Rev.	Changes Summary	Performed	Checked	Date
Performed by		Page		Revision
Checked by		21 / 36		
Date		12/04/2022		

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Locked rotor torque : 250 %	Service factor : 1.00
Breakdown torque : 290 %	Temperature rise : 80 K
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Heating constant

Cooling constant

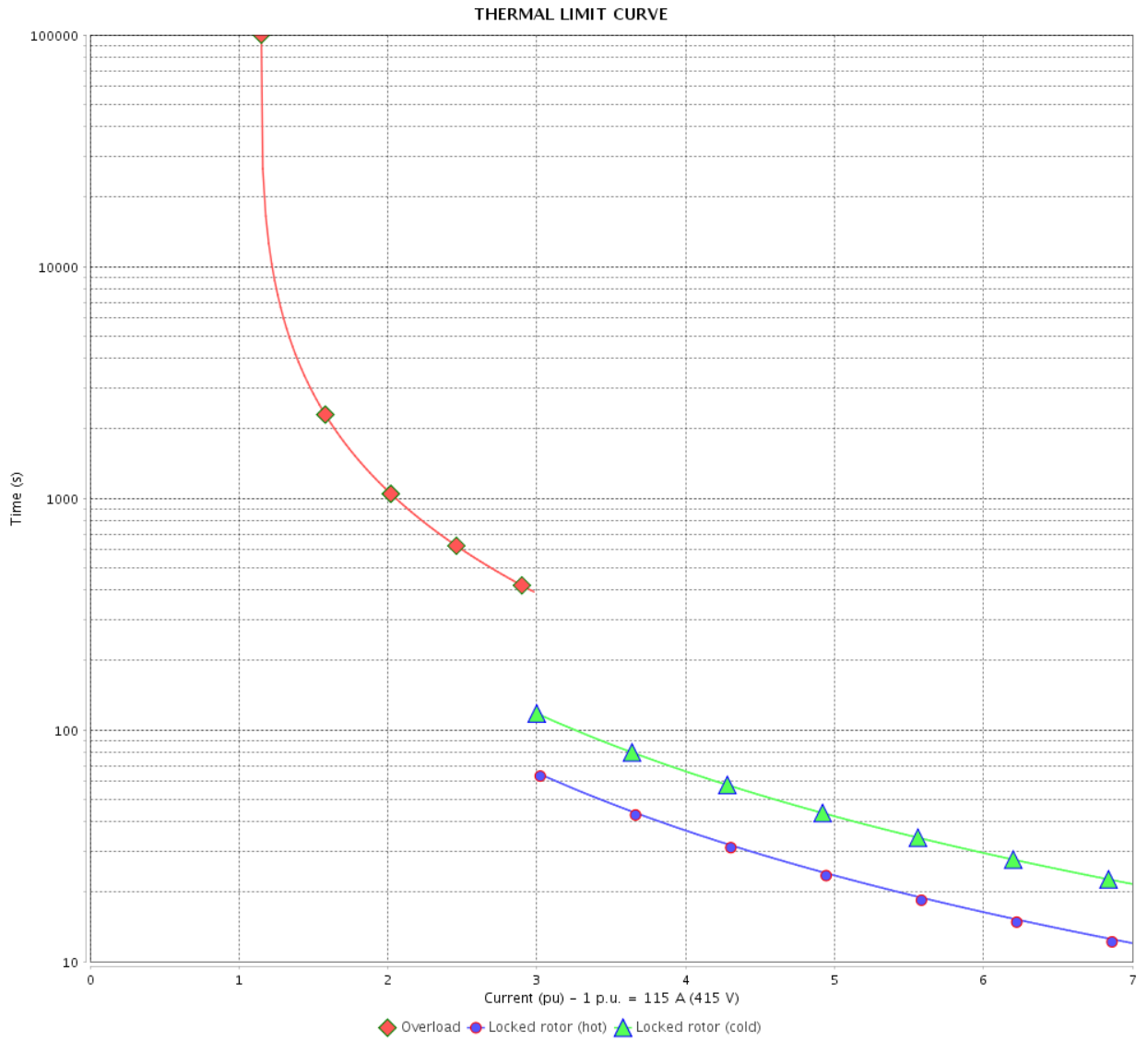
Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page 22 / 36	Revision
Checked by				
Date	12/04/2022			

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Rev.	Changes Summary	Performed	Checked	Date
Performed by		Page		Revision
Checked by		23 / 36		
Date		12/04/2022		

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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

Heating constant

Cooling constant

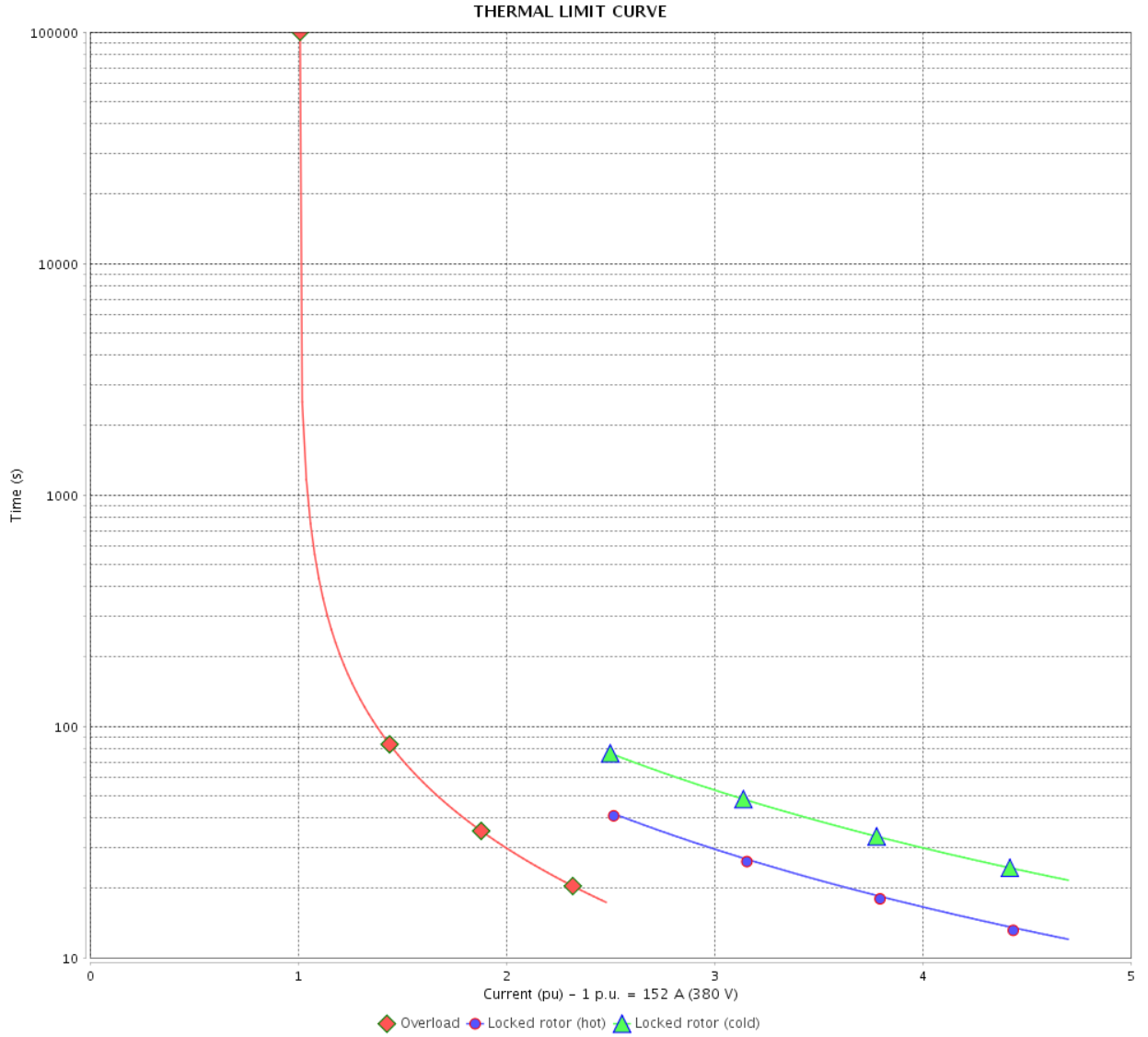
Rev.	Changes Summary	Performed	Checked	Date
Performed by				
Checked by			Page	Revision
Date	12/04/2022		24 / 36	

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Rev.	Changes Summary	Performed	Checked	Date
Performed by		Page		Revision
Checked by		25 / 36		
Date		12/04/2022		

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Rated current : 147 A	Moment of inertia (J) : 87.3 sq.ft.lb
LRC : 5.3	Duty cycle : Cont.(S1)
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Breakdown torque : 200 %	Temperature rise : 105 K
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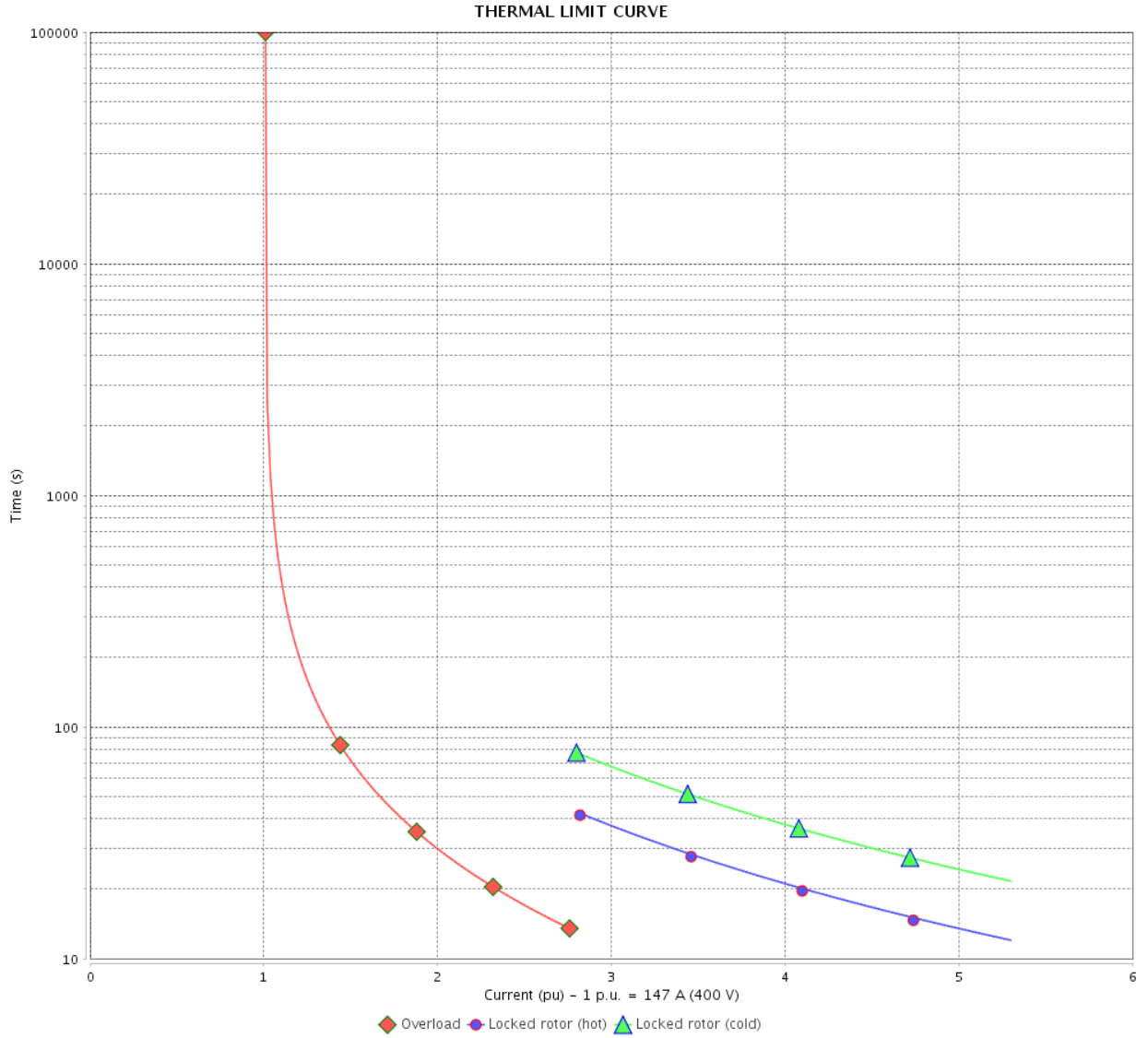
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Three Phase Induction Motor - Squirrel Cage



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 : 11584438
 Catalog # : 10009ST3QIE445T-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

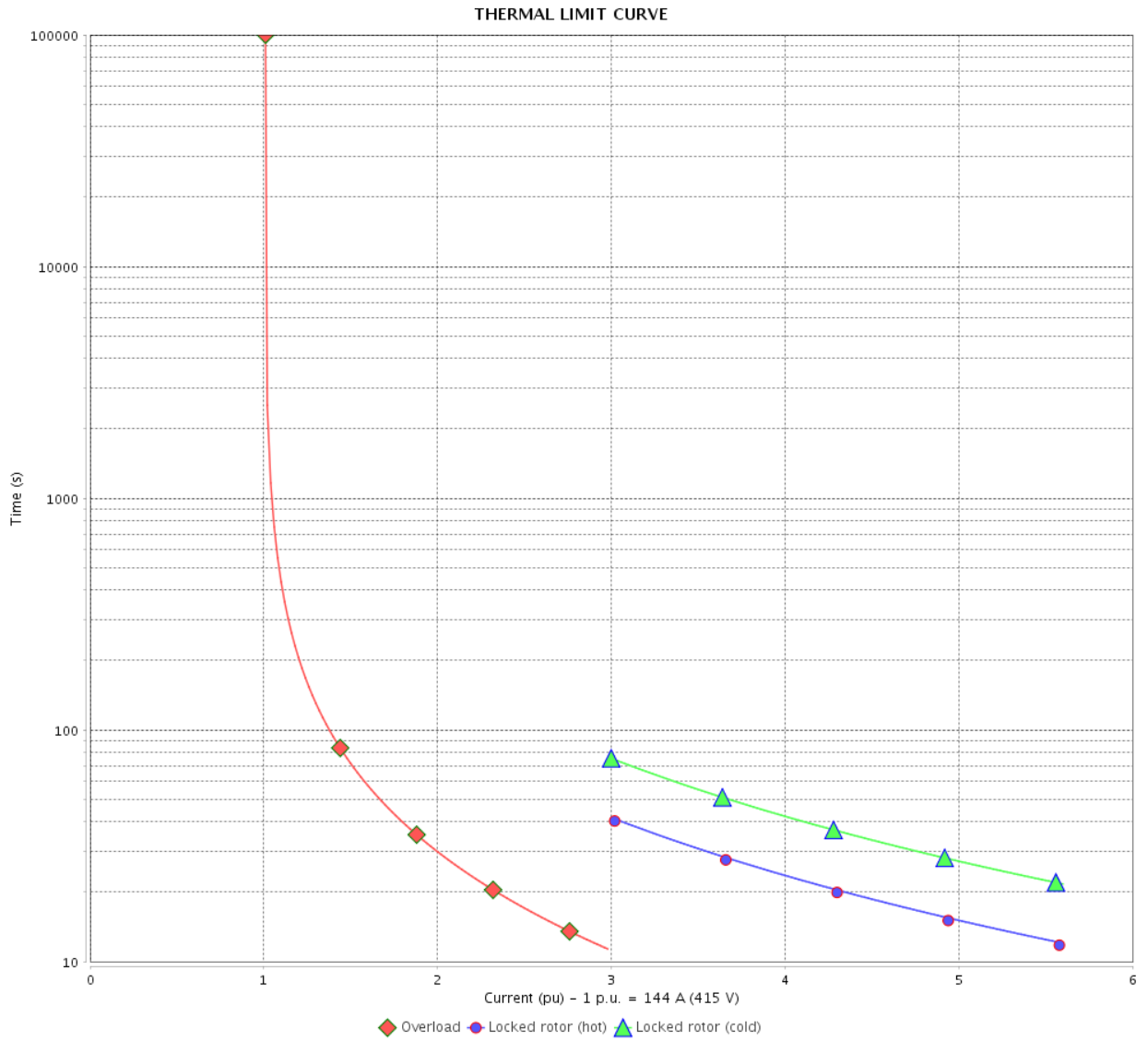
Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page 28 / 36	Revision
Checked by				
Date	12/04/2022			

THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



Customer : _____



Rev.	Changes Summary	Performed	Checked	Date
Performed by		Page		Revision
Checked by		29 / 36		
Date		12/04/2022		

VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage

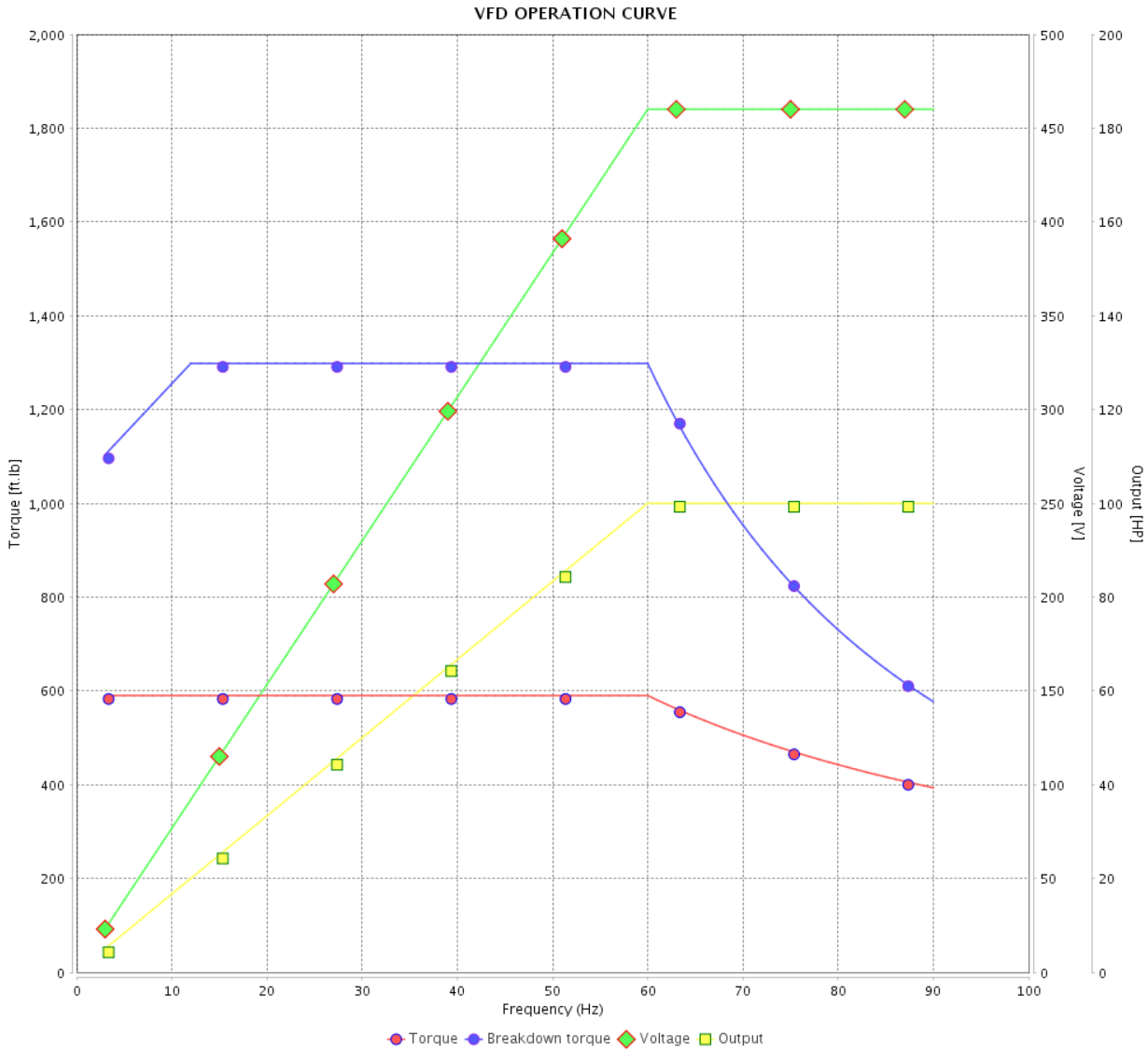


Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 11584438

Catalog # : 10009ST3QIE445T-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

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

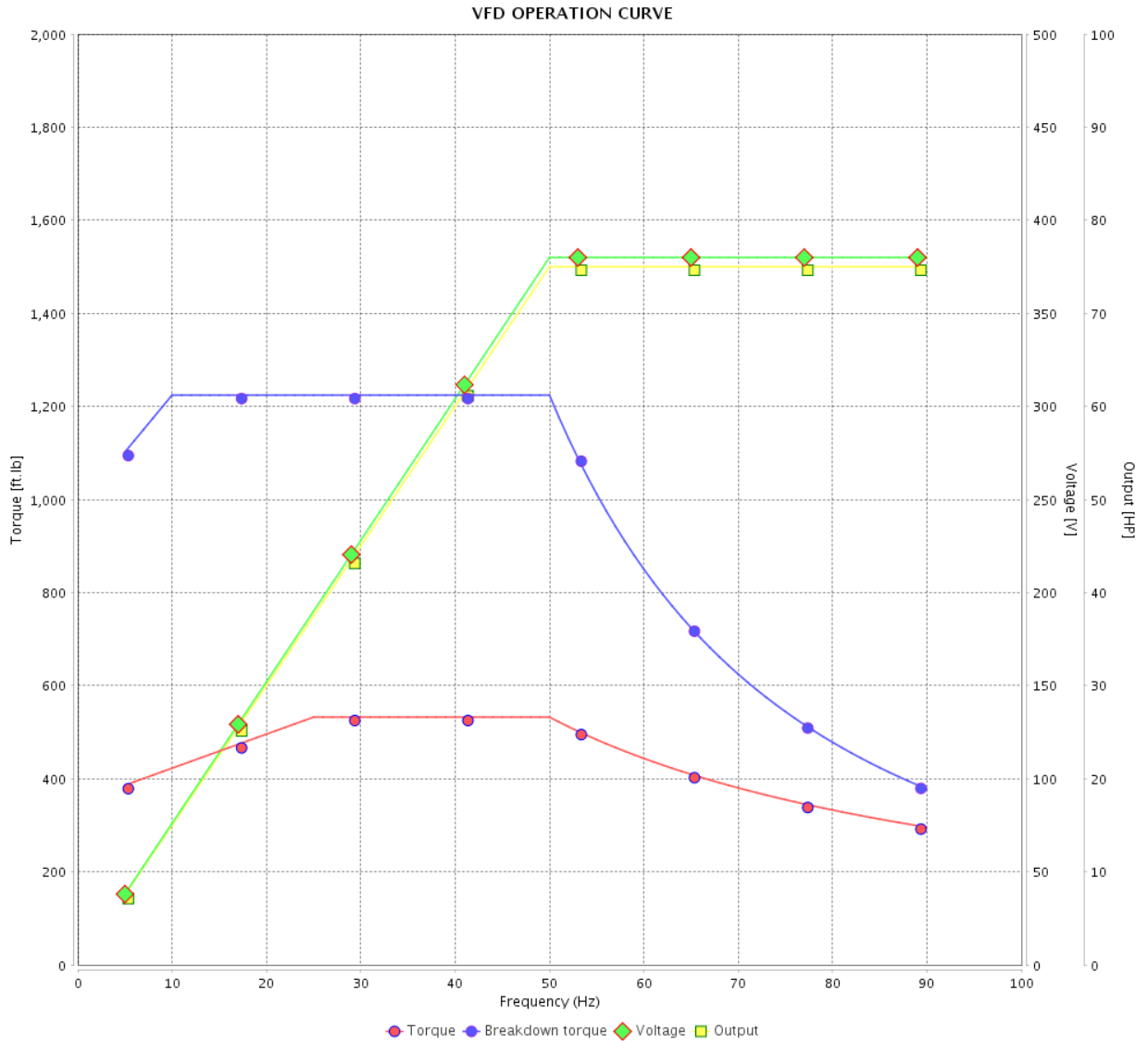


Customer : _____

Product line : NEMA Premium Efficiency Three-Phase

Product code : 11584438

Catalog # : 10009ST3QIE445T-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

Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page 31 / 36	Revision
Checked by				
Date	12/04/2022			

VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage



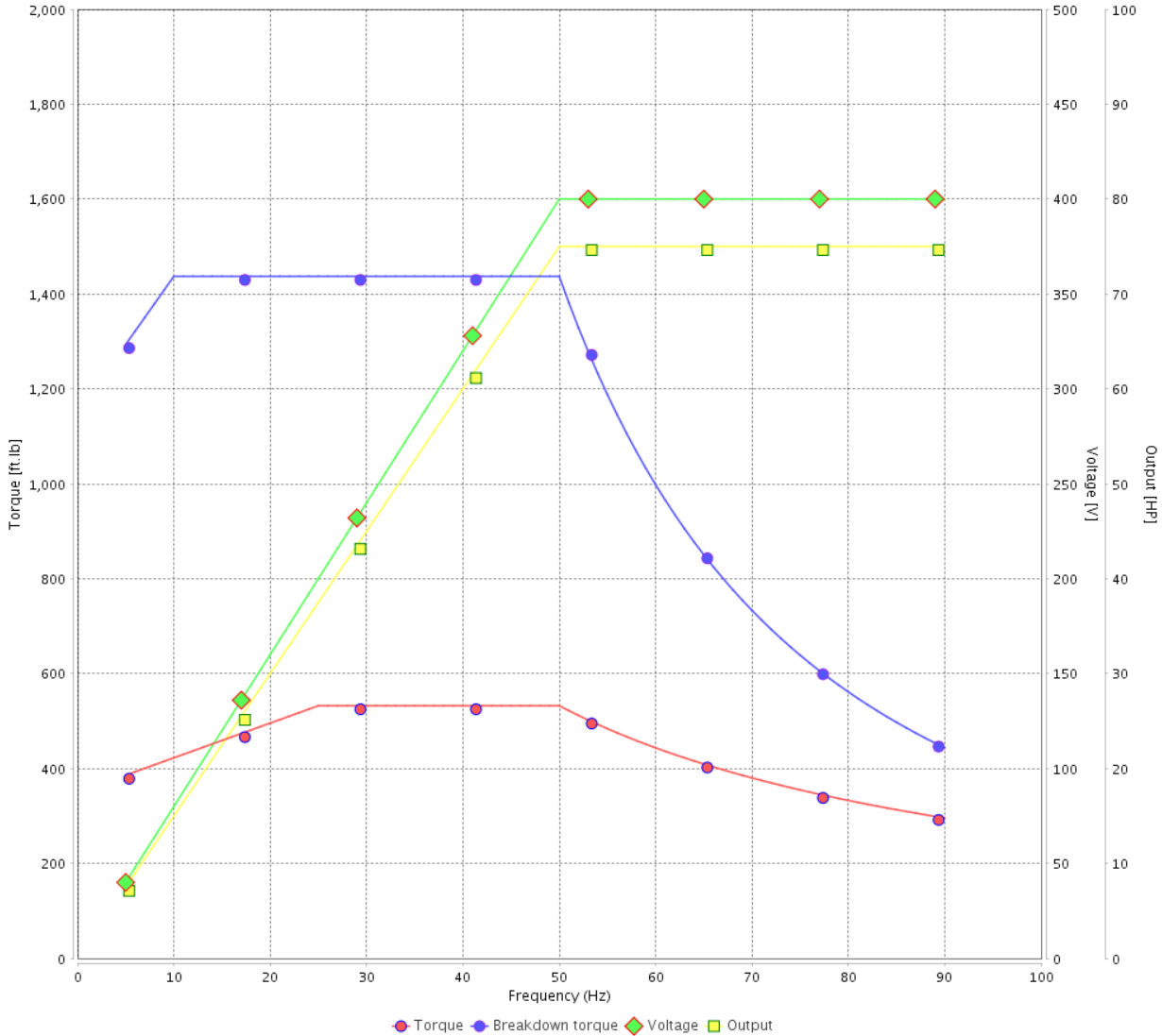
Customer : _____

Product line : NEMA Premium Efficiency Three-Phase

Product code : 11584438

Catalog # : 10009ST3QIE445T-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

Rev.	Changes Summary	Performed	Checked	Date
Performed by		Page		Revision
Checked by		32 / 36		
Date	12/04/2022			

VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage

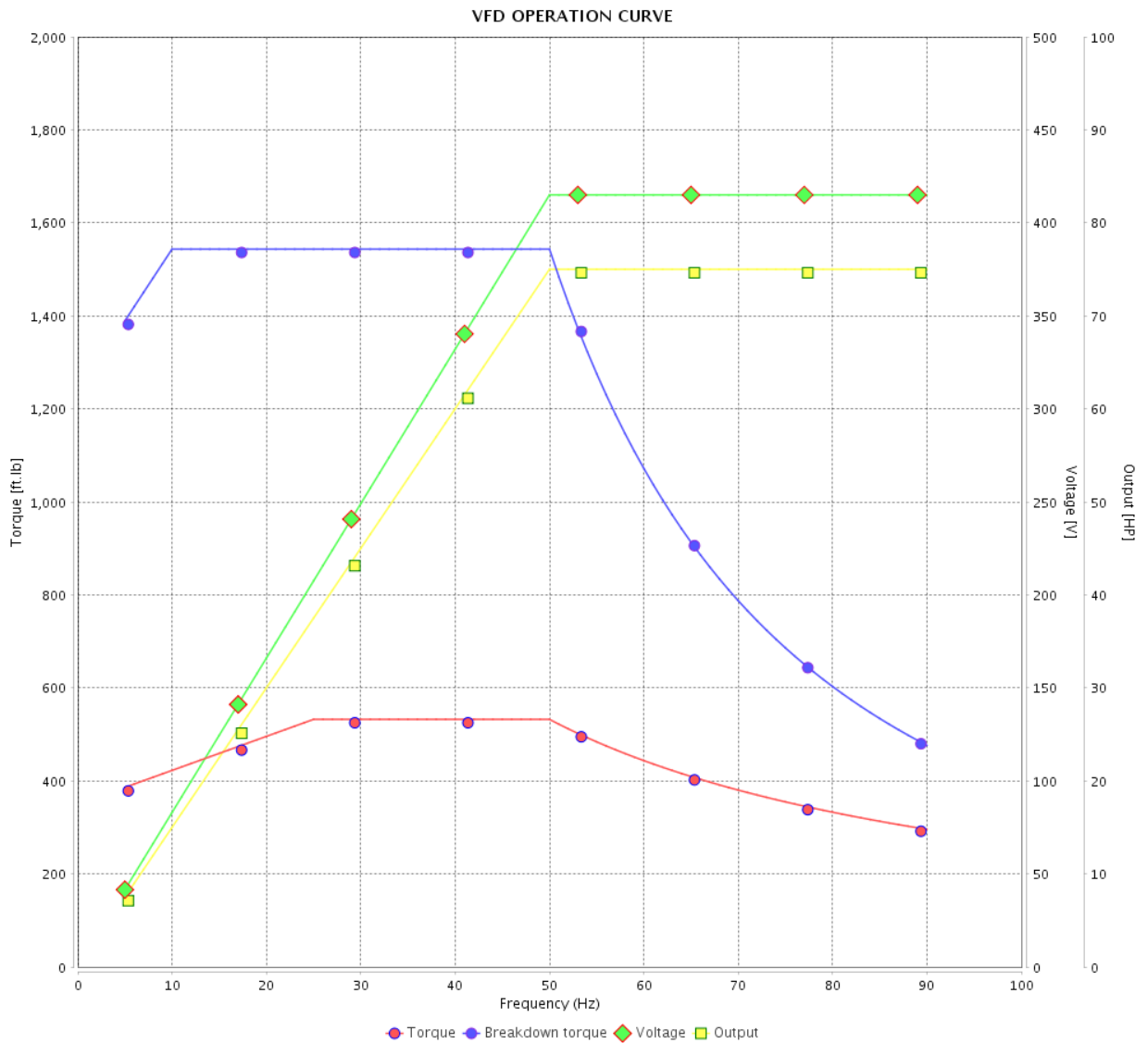


Customer : _____

Product line : NEMA Premium Efficiency Three-Phase

Product code : 11584438

Catalog # : 10009ST3QIE445T-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
Checked by				
Date	12/04/2022			

VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage



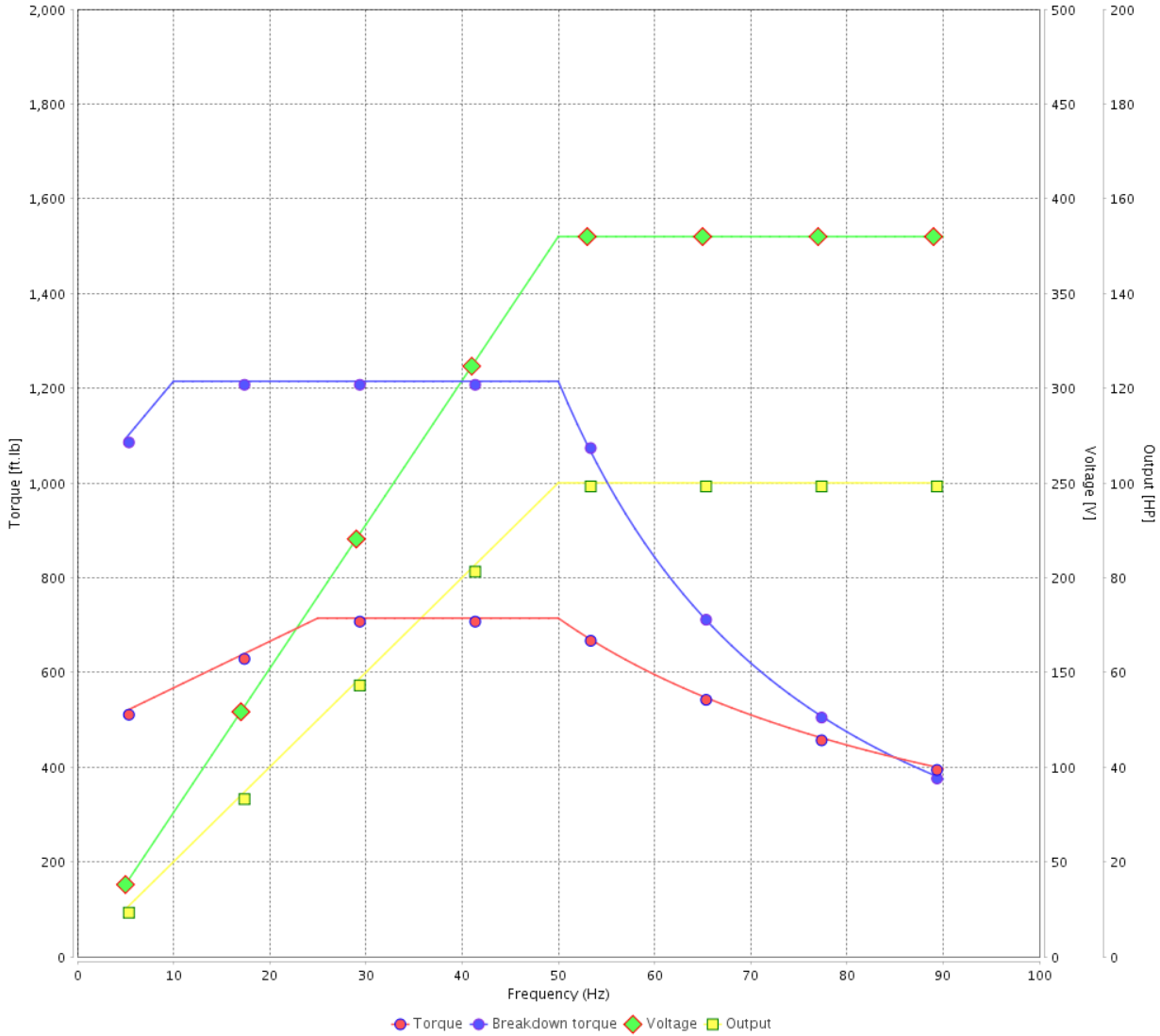
Customer : _____

Product line : NEMA Premium Efficiency Three-Phase

Product code : 11584438

Catalog # : 10009ST3QIE445T-W22

VFD OPERATION CURVE



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

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

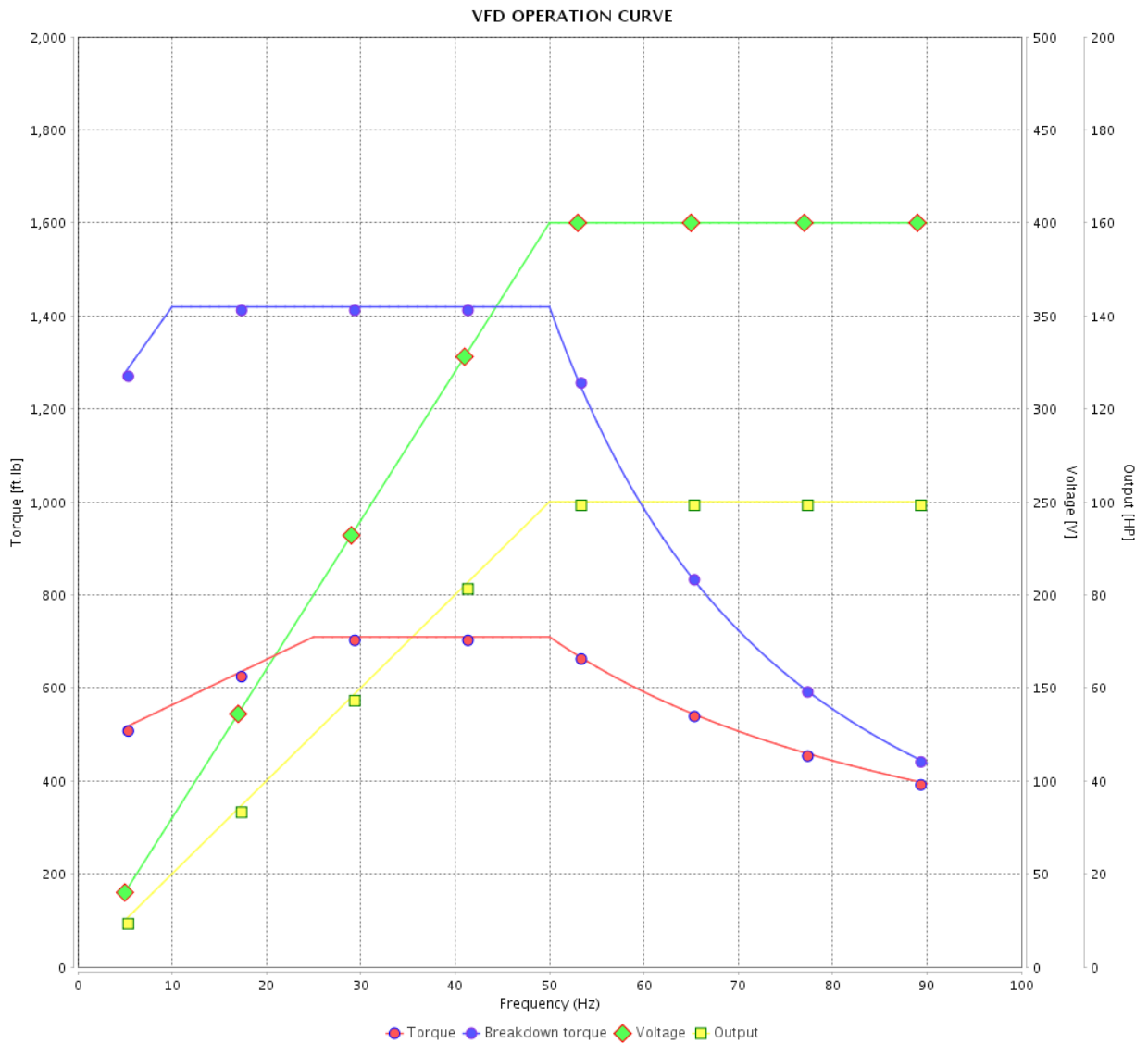


Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 11584438

Catalog # : 10009ST3QIE445T-W22



Performance : 400 V 50 Hz 8P IE2

Rated current : 147 A
 LRC : 5.3
 Rated torque : 710 ft.lb
 Locked rotor torque : 170 %
 Breakdown torque : 200 %
 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

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

VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage



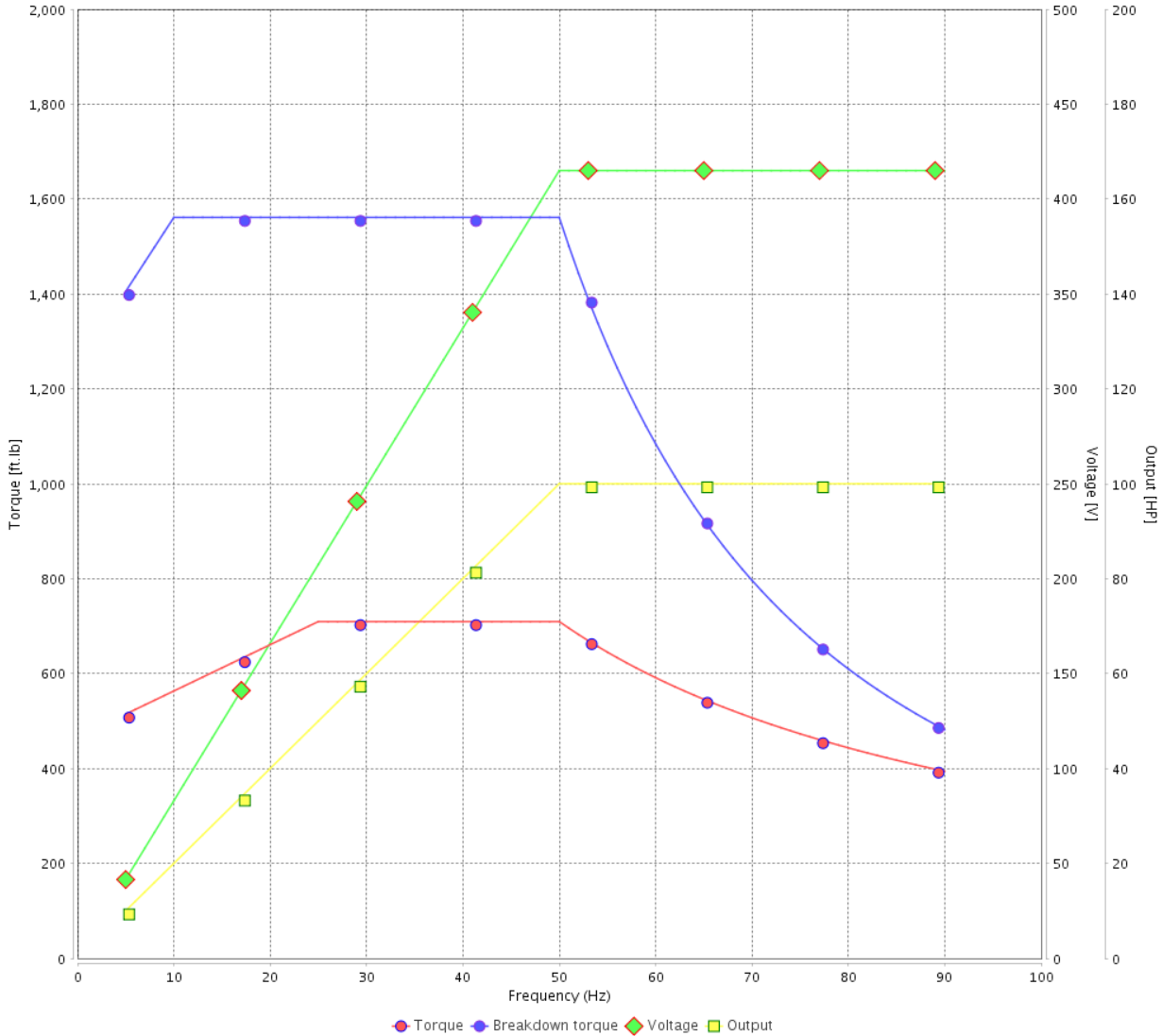
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 11584438

Catalog # : 10009ST3QIE445T-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

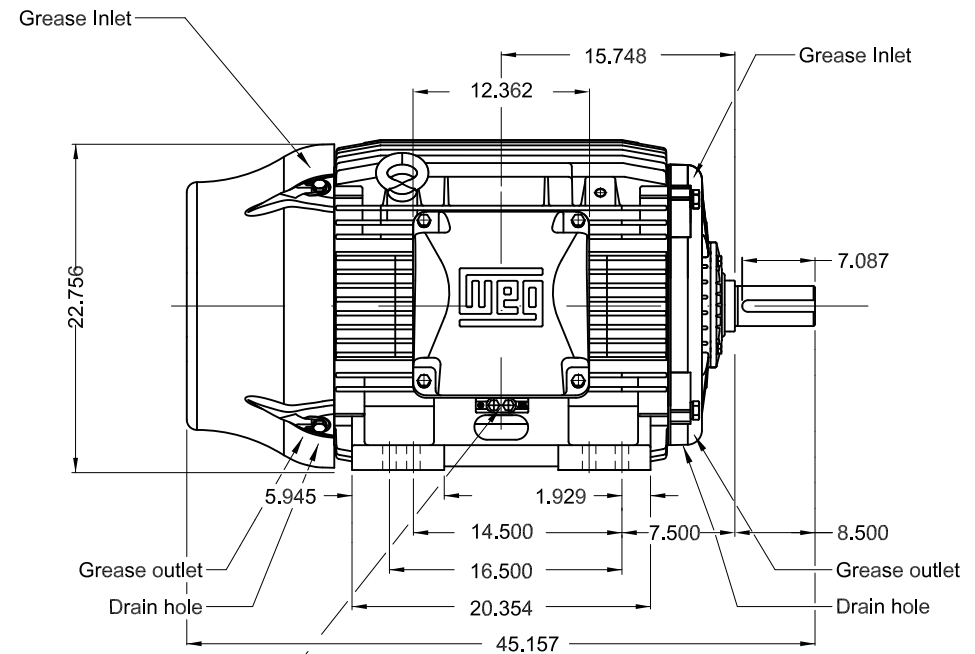
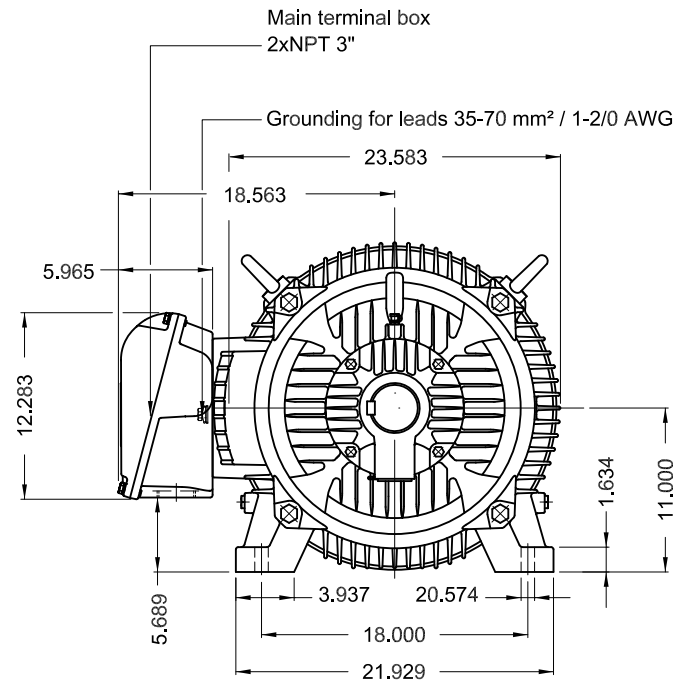
Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page 36 / 36	Revision
Checked by				
Date	12/04/2022			

1 2 3 4 5 6

A

B

C

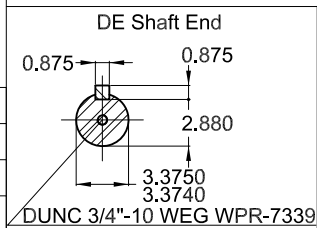


Grounding for leads 25-185 mm² / 3AWG-350MCM

D

E

Color RAL 5009
 Painting plan 202E
 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 IEEE 841 W22 PREM. EFF.					
CHECKED		FRAME 444/5T IP55 TEFC					
RELEASED							
REL DT.	WMO	Jaragua do Sul	Product Engineering	SHEET	1 / 1		

PREVIEW
 WDD





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 - T3C
For use on PWM: Gr. A, B, C, D and F,
VT 1000:1, CT 20:1, 1.00SF - T3A

MODEL 10009ST3QIE445T-W22



Inverter Duty Motor
Severe Duty

MADE IN BRAZIL
11584438

PH3 60Hz Fr. 444/5T 1000m.a.s.l. IP55 TEFC 1768lb

V 460

A 127

HP 100

kW 75

SF 1.25

SFA 159

RPM 890

PF 0.79

AMB 40°C

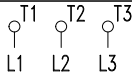
INS cl. F DT80K

NEMA NOM EFF 94.1%

DUTY CONT.

DES B Code G

GUARANT. EFF 93.0%



460V



→ 6319-C3 (45g) 95BC03X30

→ 6316-C3 (34g) 80BC03X30



MOBIL POLYREX EM (17000h)

