

DATA SHEET



Three Phase Induction Motor - Squirrel Cage

Customer								
Product line		: NEMA Premium Efficiency Three-Phase		Product code :		12447811		
				Catalog # :		04018ST3QIE324TC-W22		
Frame		: 324/6TC		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		: 594 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]	460	380	400	415	380	400	415	
Rated current [A]	47.1	42.8	41.6	41.1	56.7	54.1	52.8	
L. R. Amperes [A]	287	218	241	255	221	243	259	
LRC [A]	6.1x(Code G)	5.1x(Code H)	5.8x(Code J)	6.2x(Code J)	3.9x(Code E)	4.5x(Code F)	4.9x(Code G)	
No load current [A]	16.0	15.7	17.3	18.6	15.7	17.3	18.6	
Rated speed [RPM]	1770	1470	1470	1470	1460	1465	1465	
Slip [%]	1.67	2.00	2.00	2.00	2.67	2.33	2.33	
Rated torque [ft.lb]	118	107	106	106	144	143	143	
Locked rotor torque [%]	220	229	250	280	170	190	210	
Breakdown torque [%]	240	250	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)	25s (cold)	27s (cold)	27s (cold)	25s (cold)	27s (cold)	27s (cold)	
	20s (hot)	14s (hot)	15s (hot)	15s (hot)	14s (hot)	15s (hot)	15s (hot)	
Noise level ²	66.0 dB(A)	63.0 dB(A)	63.0 dB(A)	63.0 dB(A)	63.0 dB(A)	63.0 dB(A)	63.0 dB(A)	
Efficiency (%)	25%	93.4	92.8	92.0	91.0	94.0	93.5	92.8
	50%	93.6	92.9	92.4	91.7	93.6	93.6	93.0
	75%	94.1	93.1	93.0	92.6	93.0	93.0	93.0
	100%	94.1	93.0	93.2	93.1	92.4	93.0	93.0
Power Factor	25%	0.47	0.44	0.40	0.38	0.54	0.49	0.47
	50%	0.72	0.68	0.64	0.62	0.78	0.74	0.72
	75%	0.80	0.78	0.75	0.73	0.84	0.82	0.80
	100%	0.85	0.84	0.82	0.80	0.87	0.86	0.85
Bearing type	: Drive end		: Non drive end		Foundation loads			
	: 6312 C3		: 6212 C3		Max. traction : 969 lb			
	: Inpro/Seal		: Inpro/Seal		Max. compression : 1562 lb			
	: 20000 h		: 20000 h					
	: 21 g		: 13 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



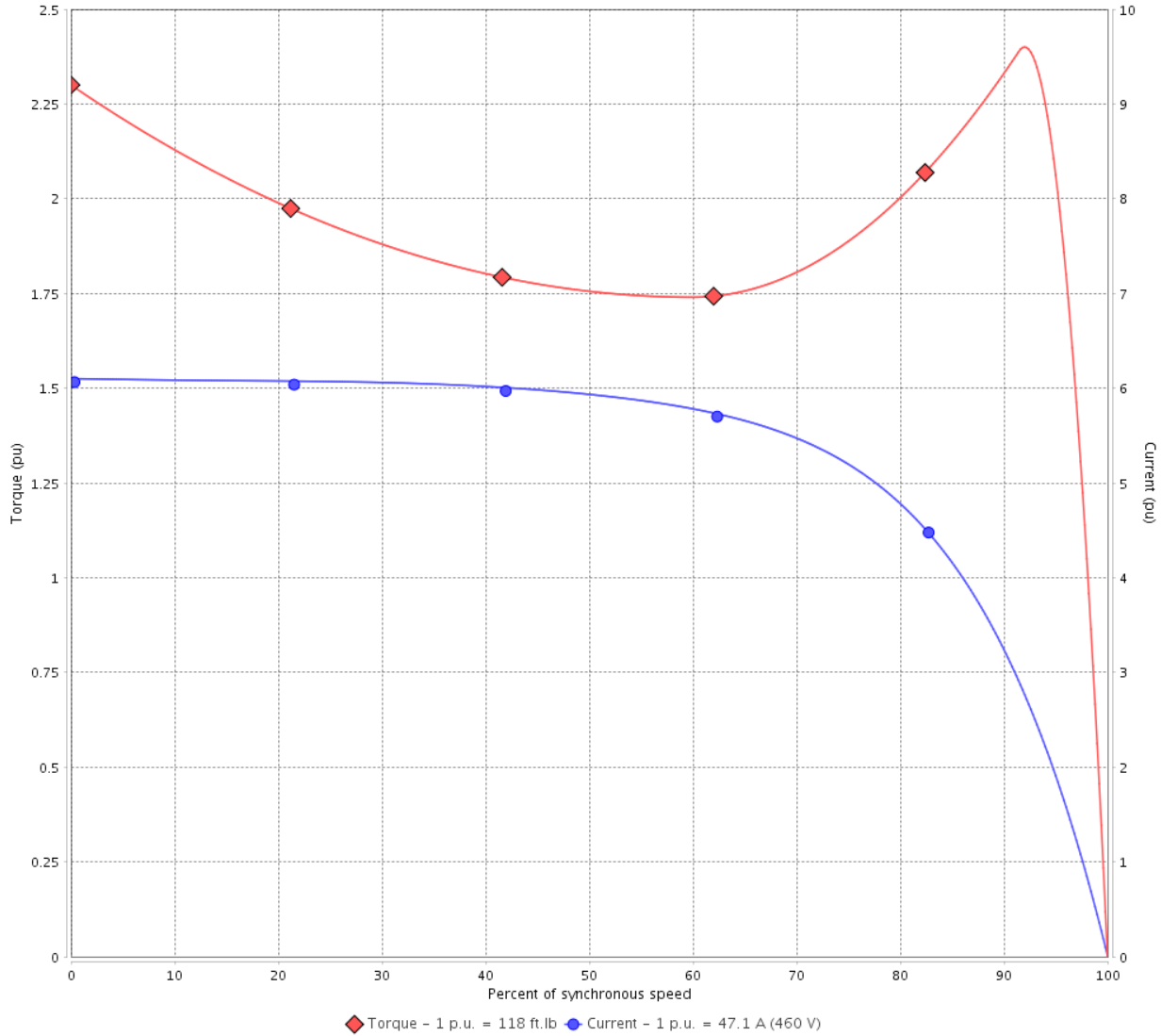
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12447811

Catalog # : 04018ST3QIE324TC-W22

TORQUE AND CURRENT VS SPEED CURVE



Performance : 460 V 60 Hz 4P

Rated current	: 47.1 A	Moment of inertia (J)	: 9.16 sq.ft.lb
LRC	: 6.1	Duty cycle	: Cont.(S1)
Rated torque	: 118 ft.lb	Insulation class	: F
Locked rotor torque	: 220 %	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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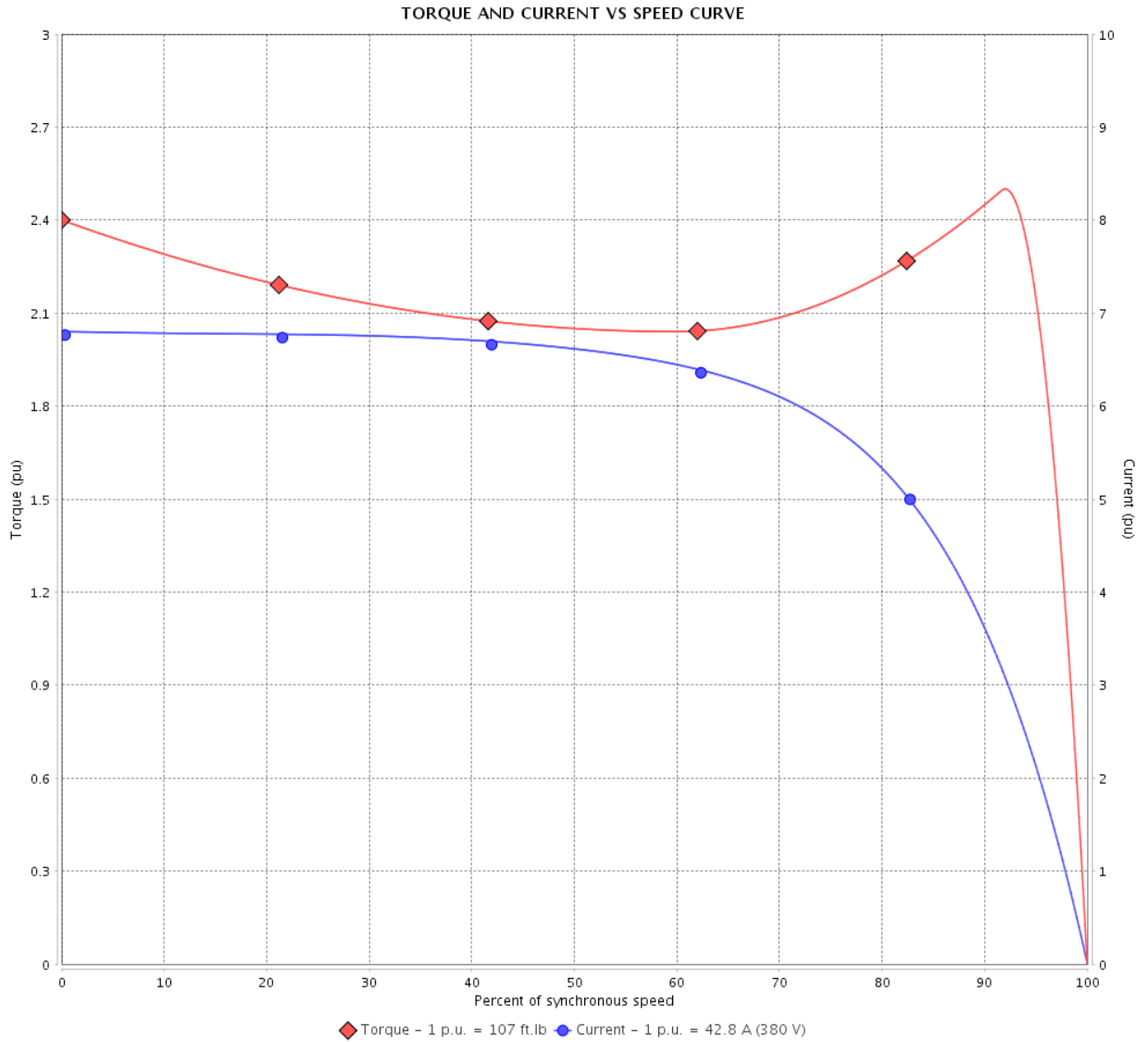
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Performance : 380 V 50 Hz 4P IE3

Rated current	: 42.8 A	Moment of inertia (J)	: 9.16 sq.ft.lb
LRC	: 5.1	Duty cycle	: Cont.(S1)
Rated torque	: 107 ft.lb	Insulation class	: F
Locked rotor torque	: 229 %	Service factor	: 1.00
Breakdown torque	: 250 %	Temperature rise	: 80 K
Rated speed	: 1470 rpm	Design	: B

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

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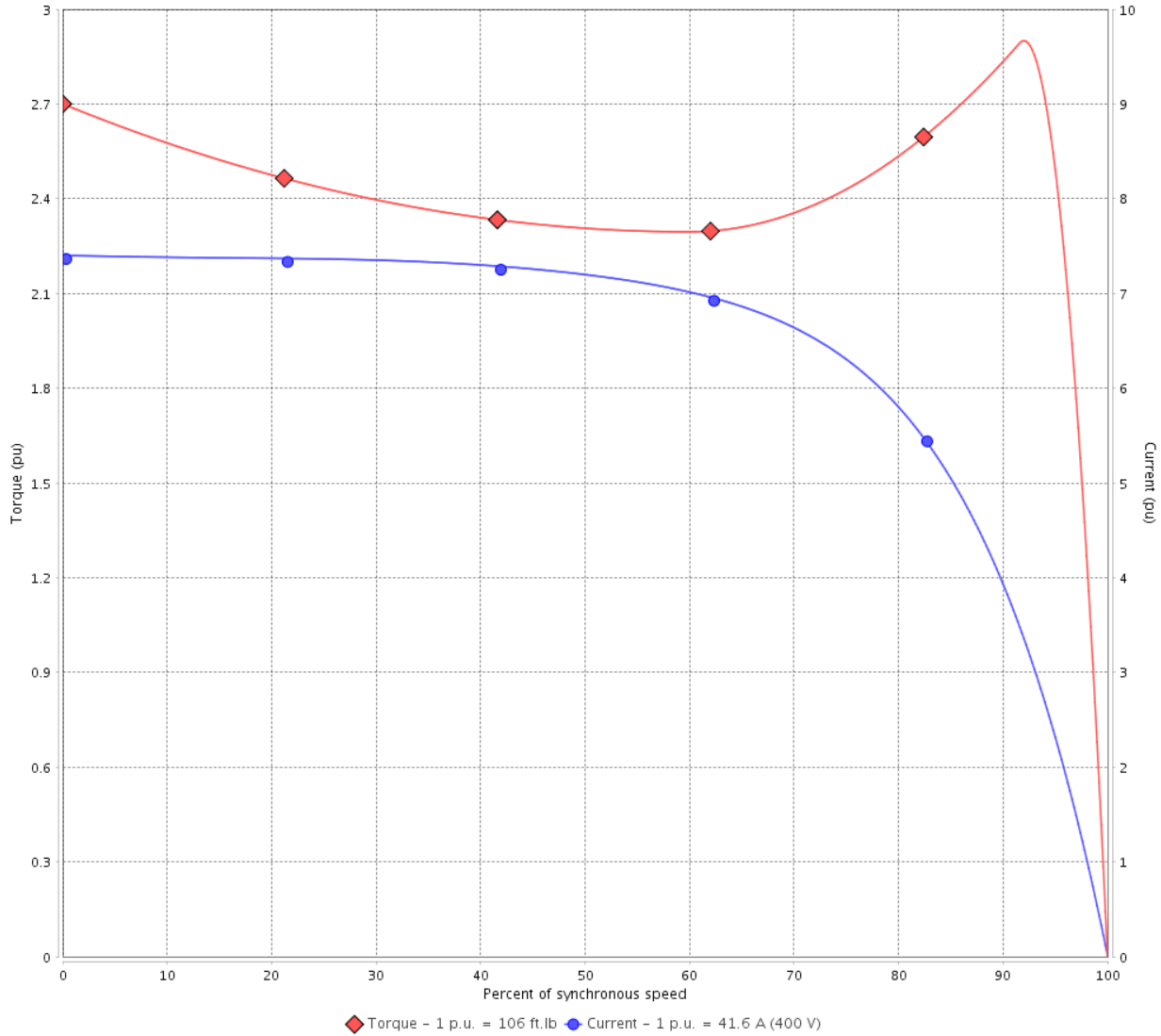
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TORQUE AND CURRENT VS SPEED CURVE



Performance : 400 V 50 Hz 4P IE3

Rated current	: 41.6 A	Moment of inertia (J)	: 9.16 sq.ft.lb
LRC	: 5.8	Duty cycle	: Cont.(S1)
Rated torque	: 106 ft.lb	Insulation class	: F
Locked rotor torque	: 250 %	Service factor	: 1.00
Breakdown torque	: 290 %	Temperature rise	: 80 K
Rated speed	: 1470 rpm	Design	: B

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

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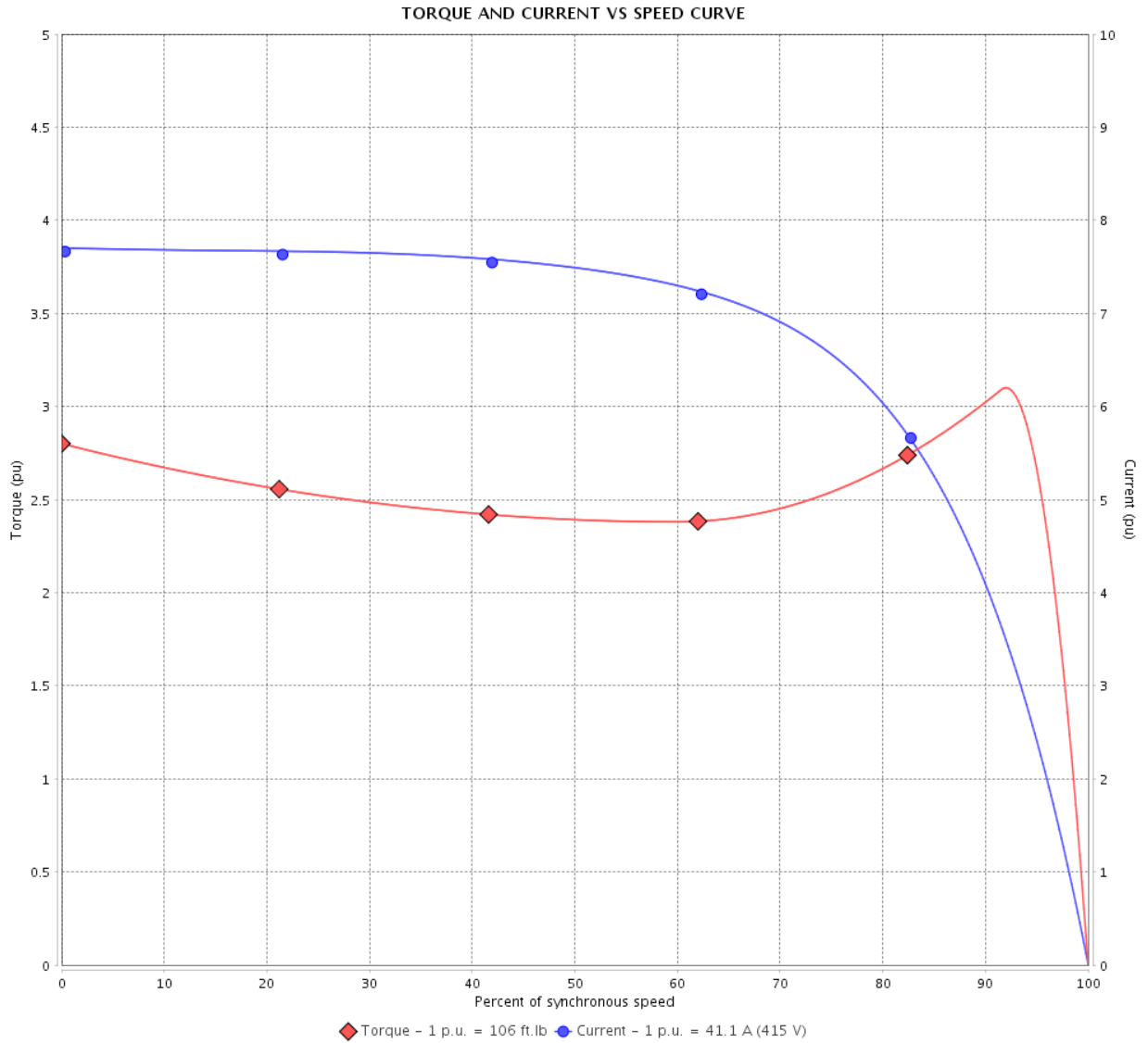
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Performance : 415 V 50 Hz 4P IE3

Rated current	: 41.1 A	Moment of inertia (J)	: 9.16 sq.ft.lb
LRC	: 6.2	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	: 1470 rpm	Design	: B

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

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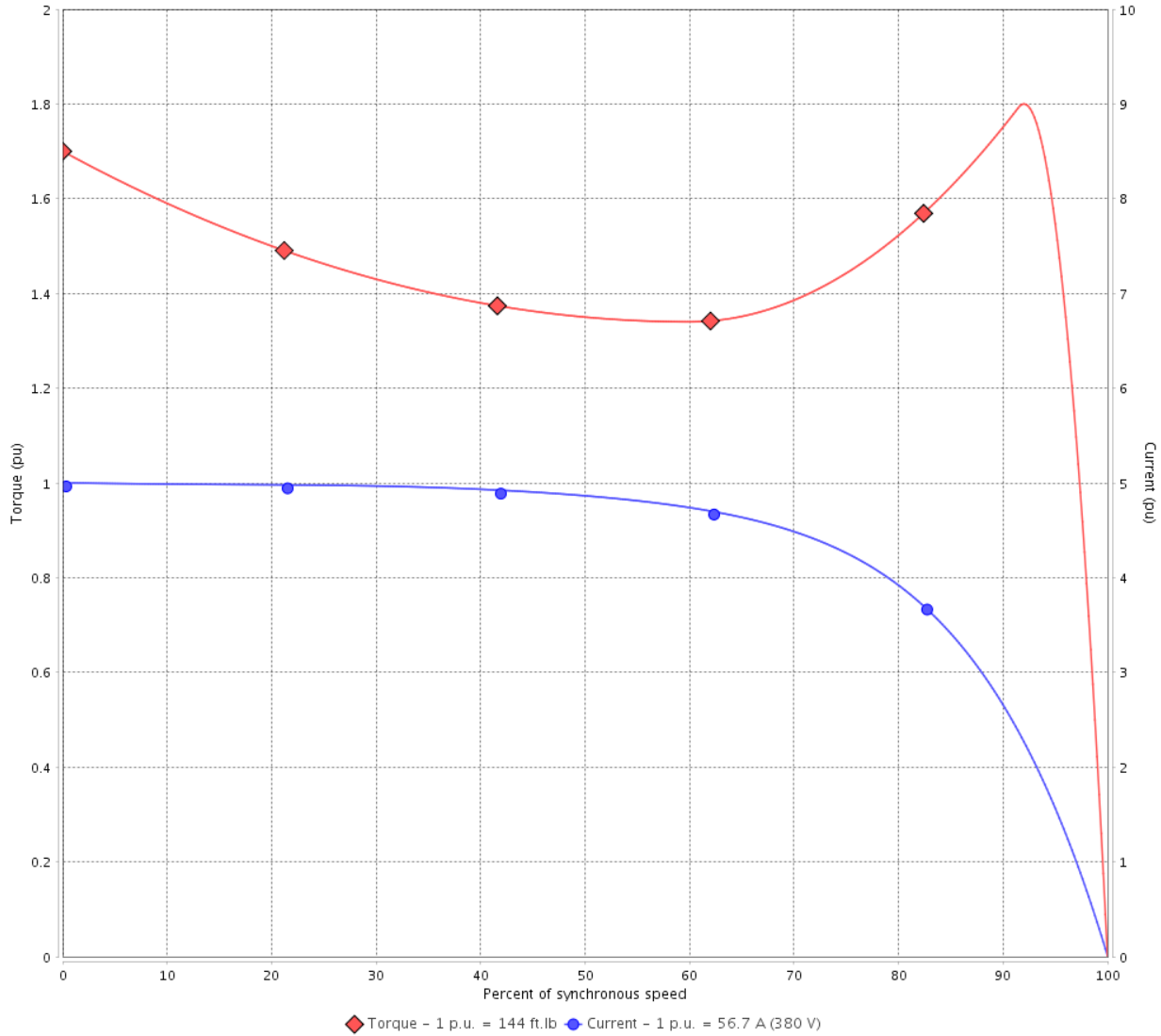
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TORQUE AND CURRENT VS SPEED CURVE



Performance : 380 V 50 Hz 4P IE2

Rated current	: 56.7 A	Moment of inertia (J)	: 9.16 sq.ft.lb
LRC	: 3.9	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



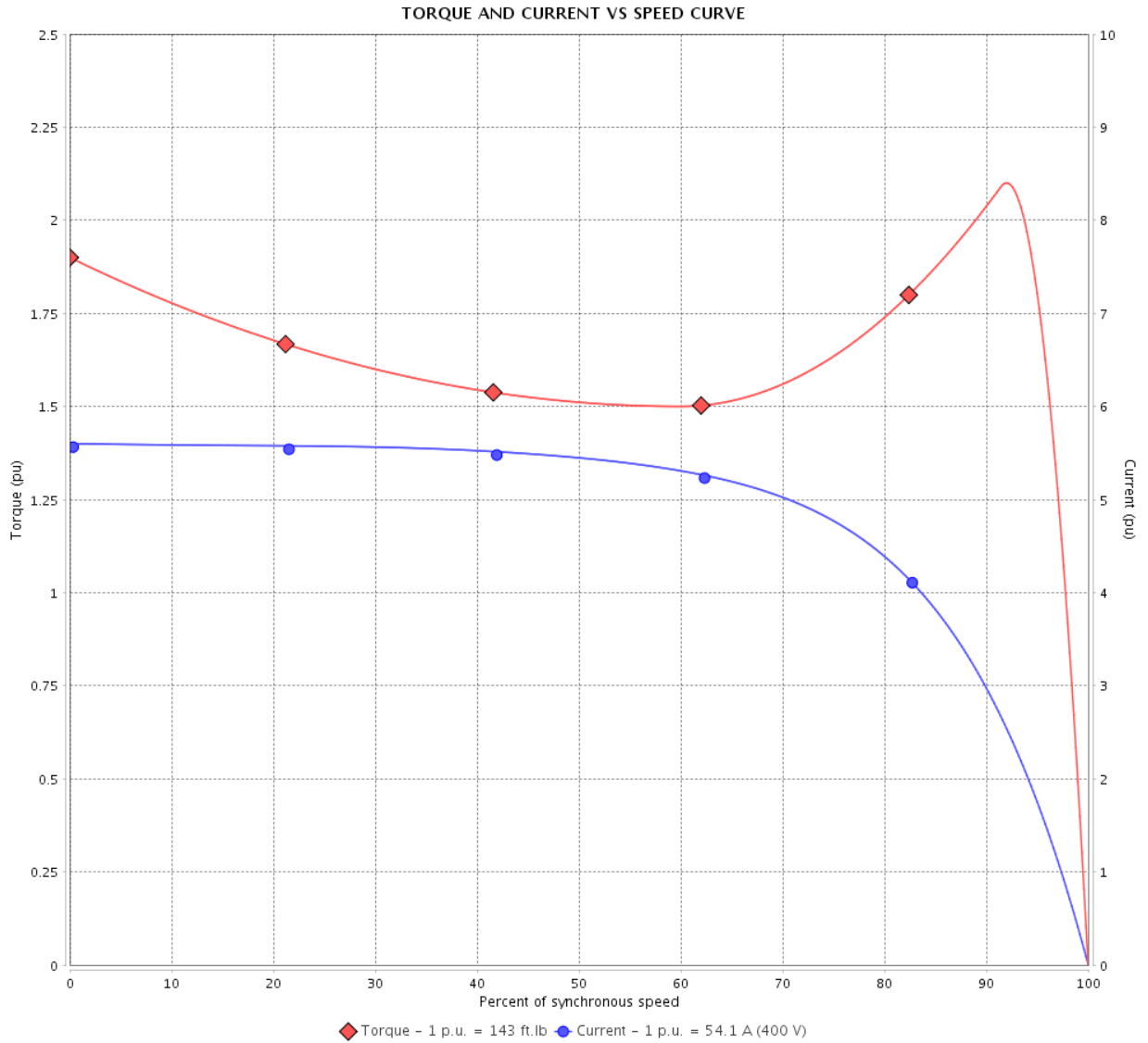
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Performance : 400 V 50 Hz 4P IE2

Rated current	: 54.1 A	Moment of inertia (J)	: 9.16 sq.ft.lb
LRC	: 4.5	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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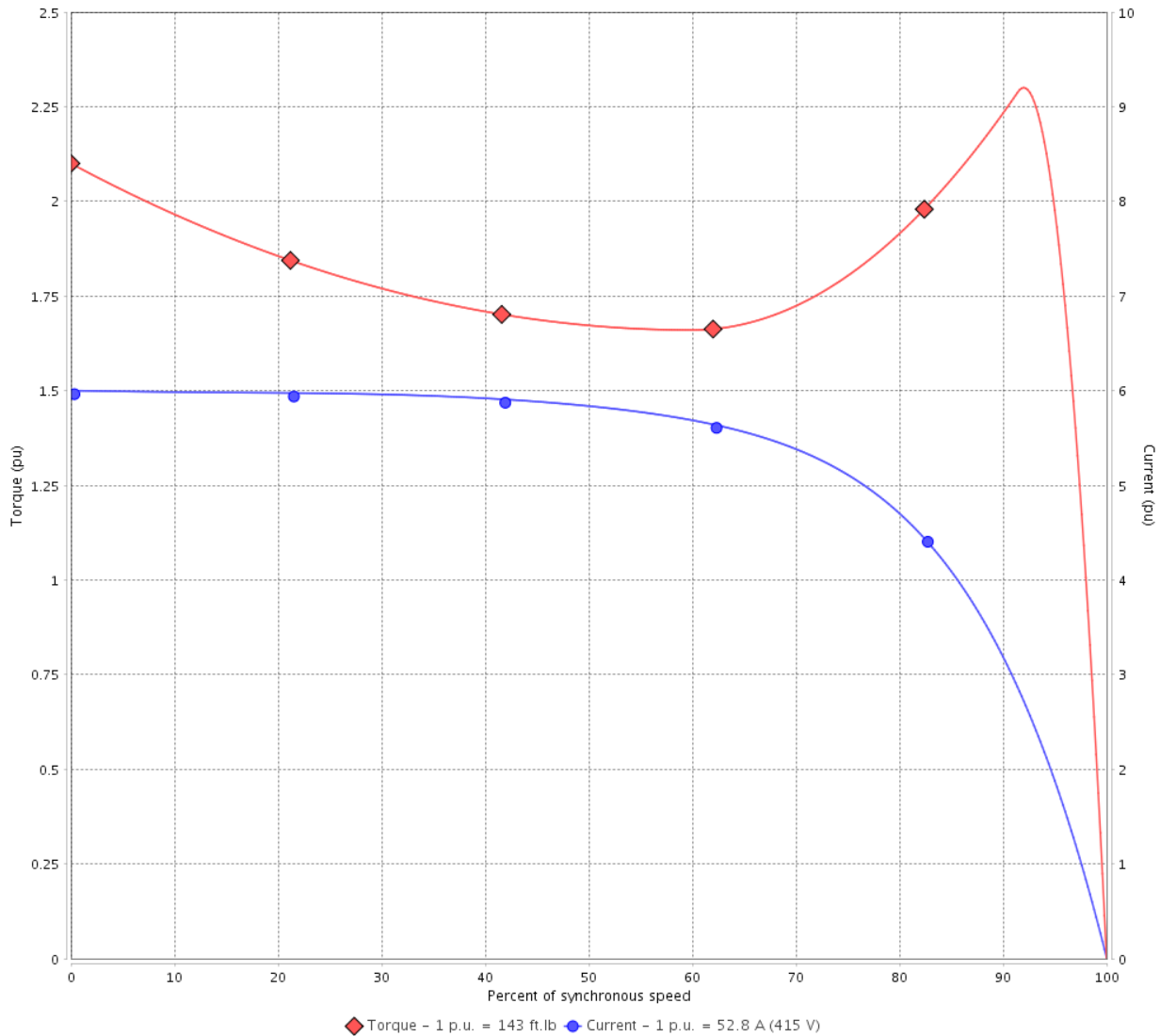
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Performance : 415 V 50 Hz 4P IE2

Rated current	: 52.8 A	Moment of inertia (J)	: 9.16 sq.ft.lb
LRC	: 4.9	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	: 1465 rpm	Design	: B

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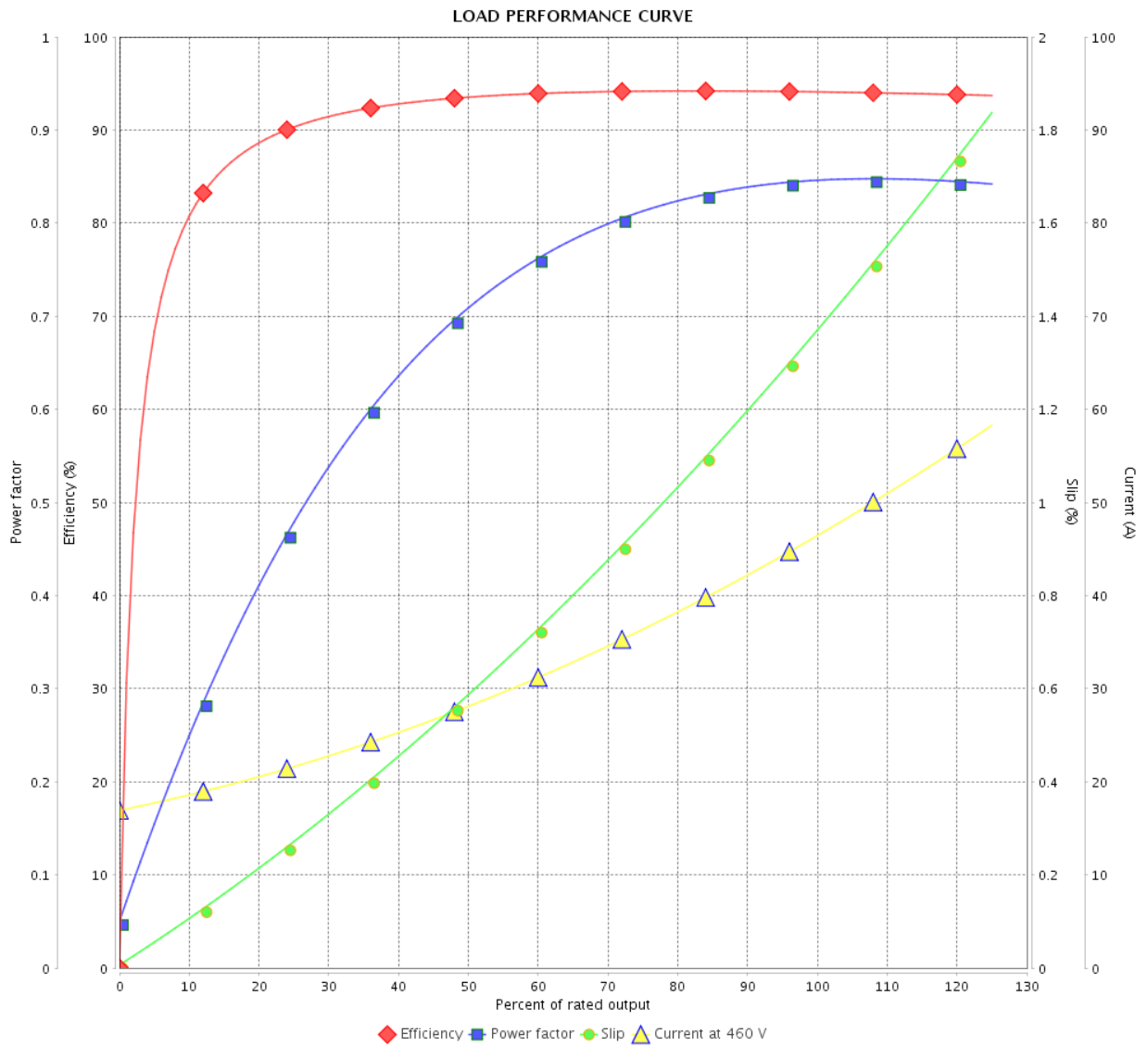


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Performance : 460 V 60 Hz 4P

Rated current : 47.1 A
 LRC : 6.1
 Rated torque : 118 ft.lb
 Locked rotor torque : 220 %
 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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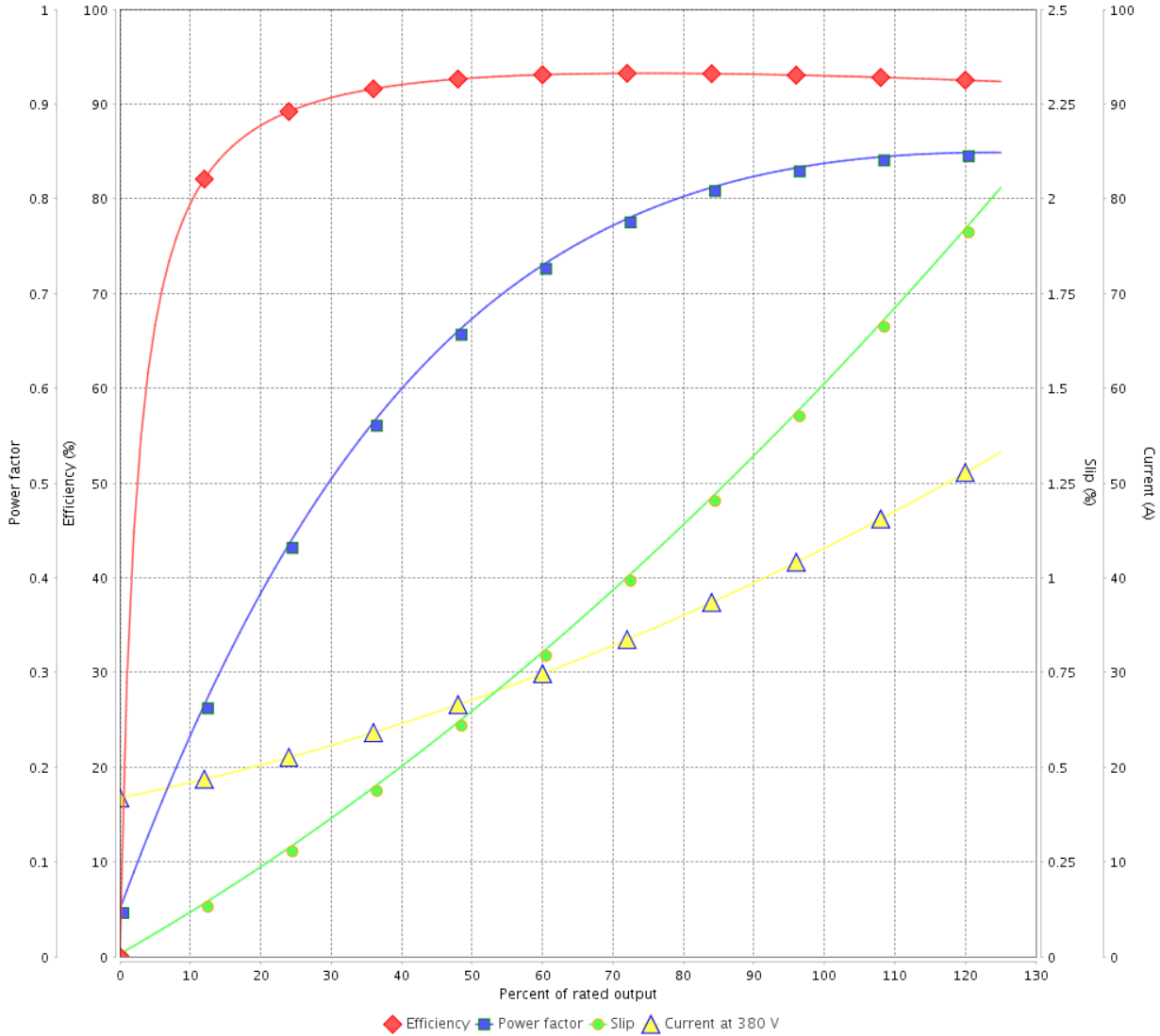
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Performance : 380 V 50 Hz 4P IE3

Rated current : 42.8 A
 LRC : 5.1
 Rated torque : 107 ft.lb
 Locked rotor torque : 229 %
 Breakdown torque : 250 %
 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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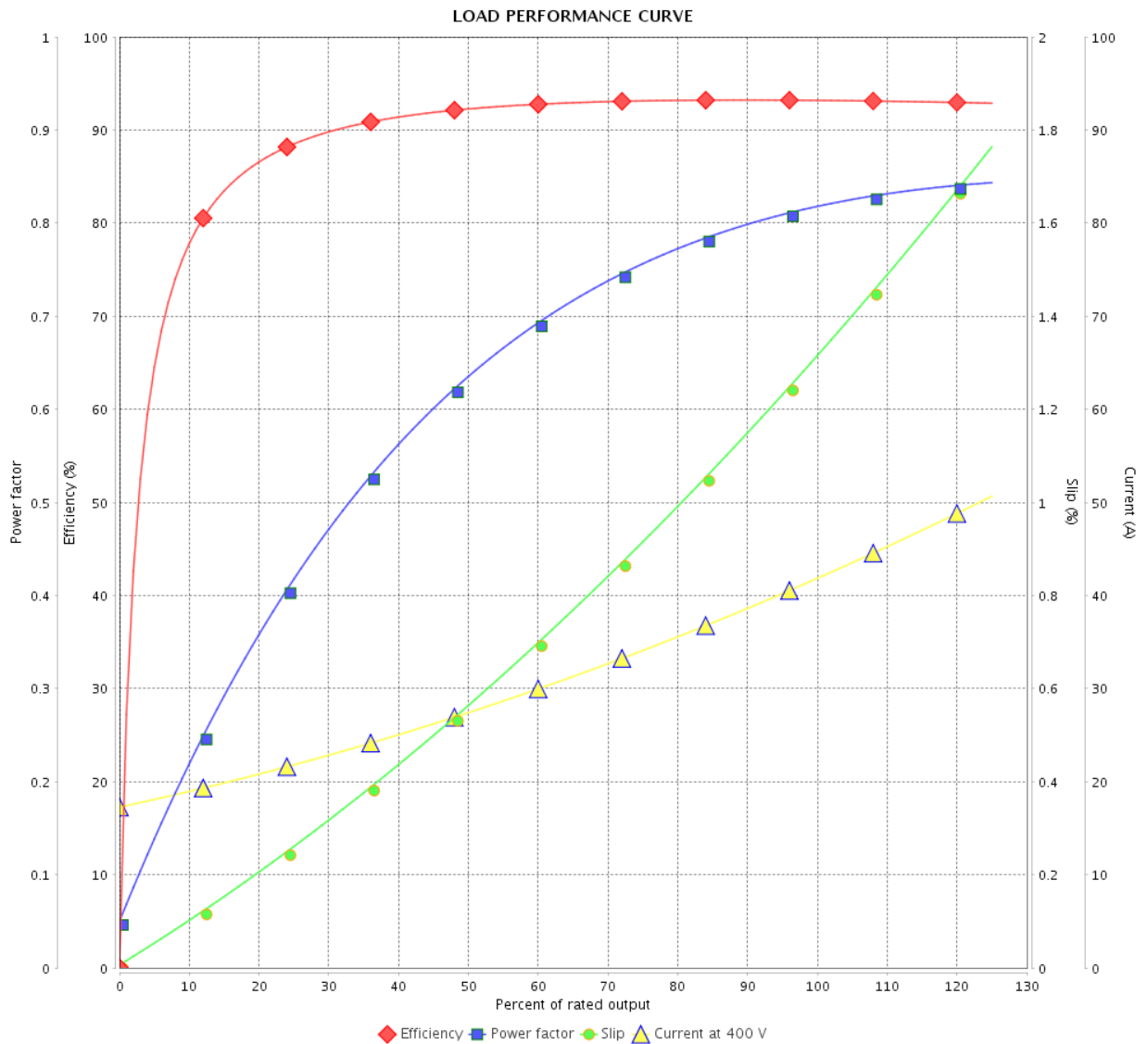


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Performance : 400 V 50 Hz 4P IE3

Rated current : 41.6 A
 LRC : 5.8
 Rated torque : 106 ft.lb
 Locked rotor torque : 250 %
 Breakdown torque : 290 %
 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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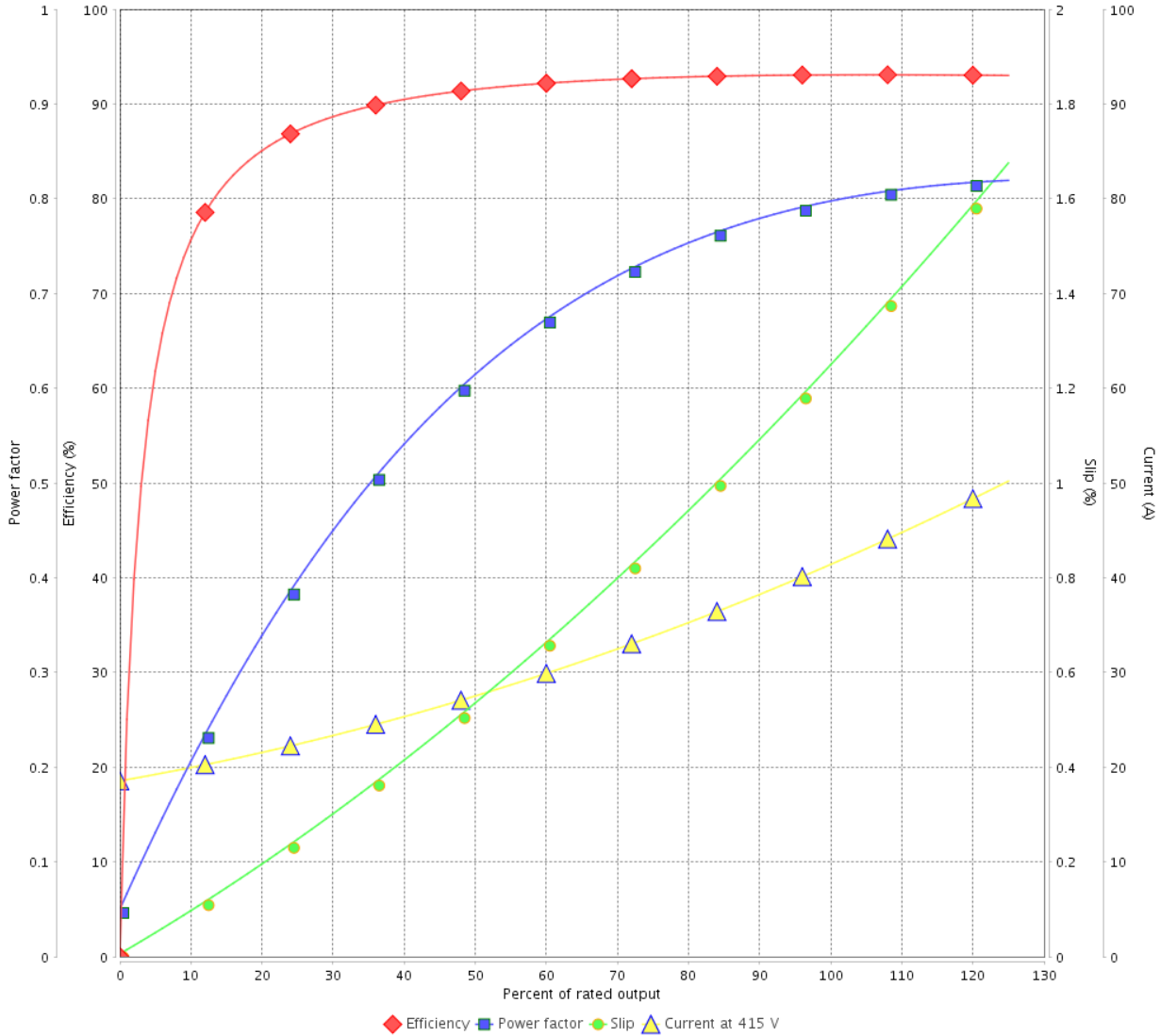
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Performance : 415 V 50 Hz 4P IE3

Rated current	: 41.1 A	Moment of inertia (J)	: 9.16 sq.ft.lb
LRC	: 6.2	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	: 1470 rpm	Design	: B

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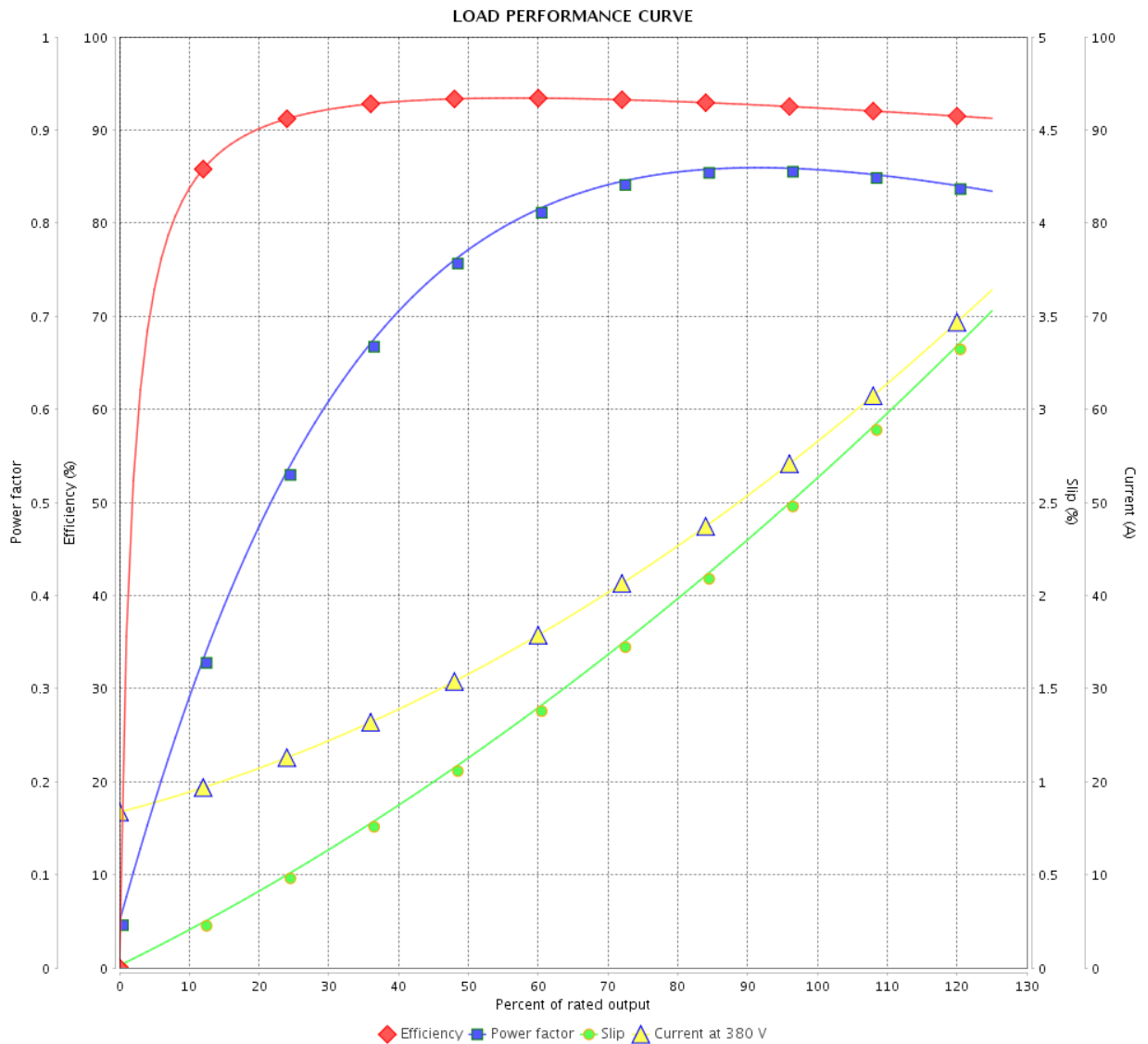


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Performance : 380 V 50 Hz 4P IE2

Rated current : 56.7 A
 LRC : 3.9
 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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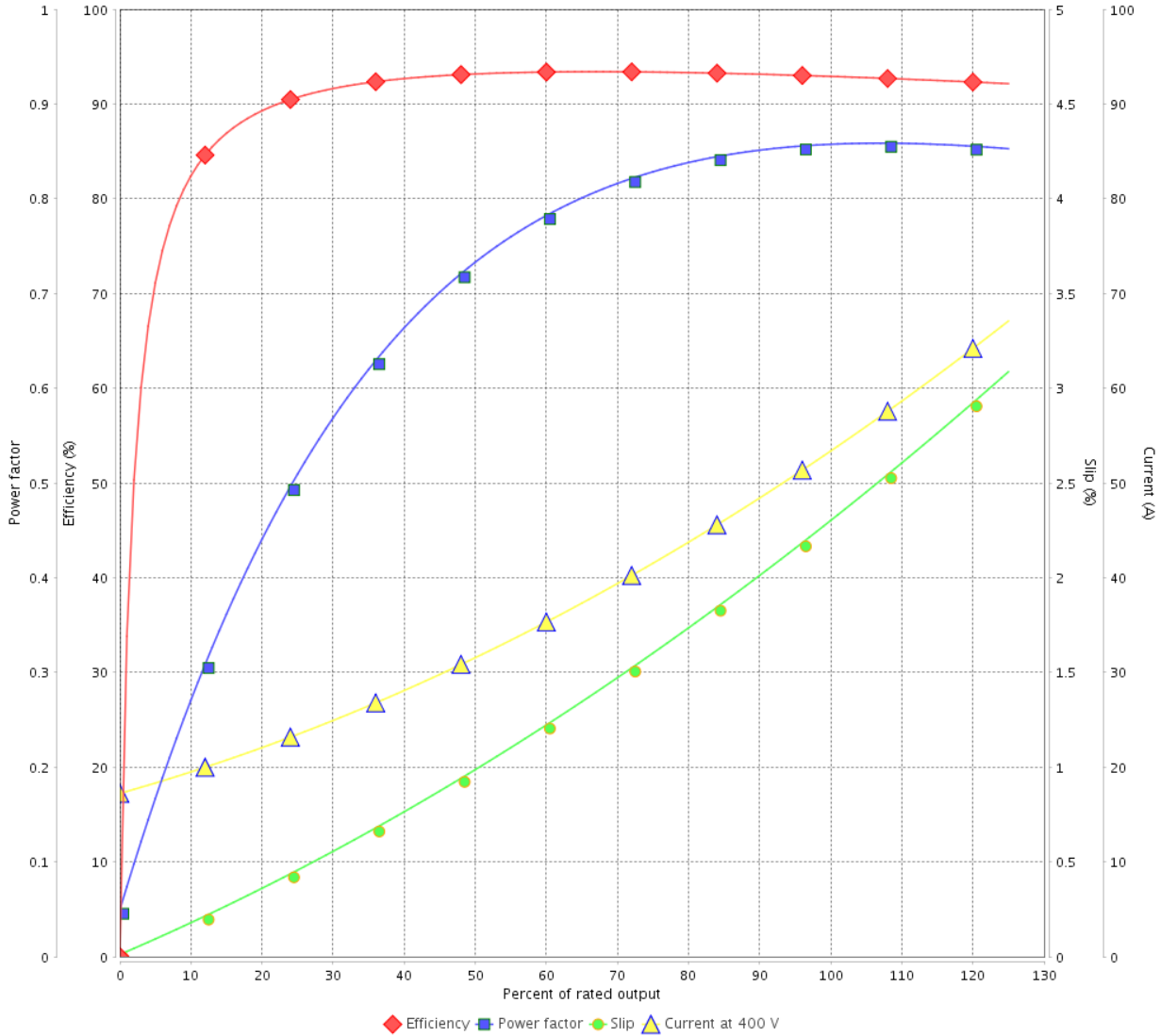
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Performance : 400 V 50 Hz 4P IE2

Rated current : 54.1 A
 LRC : 4.5
 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
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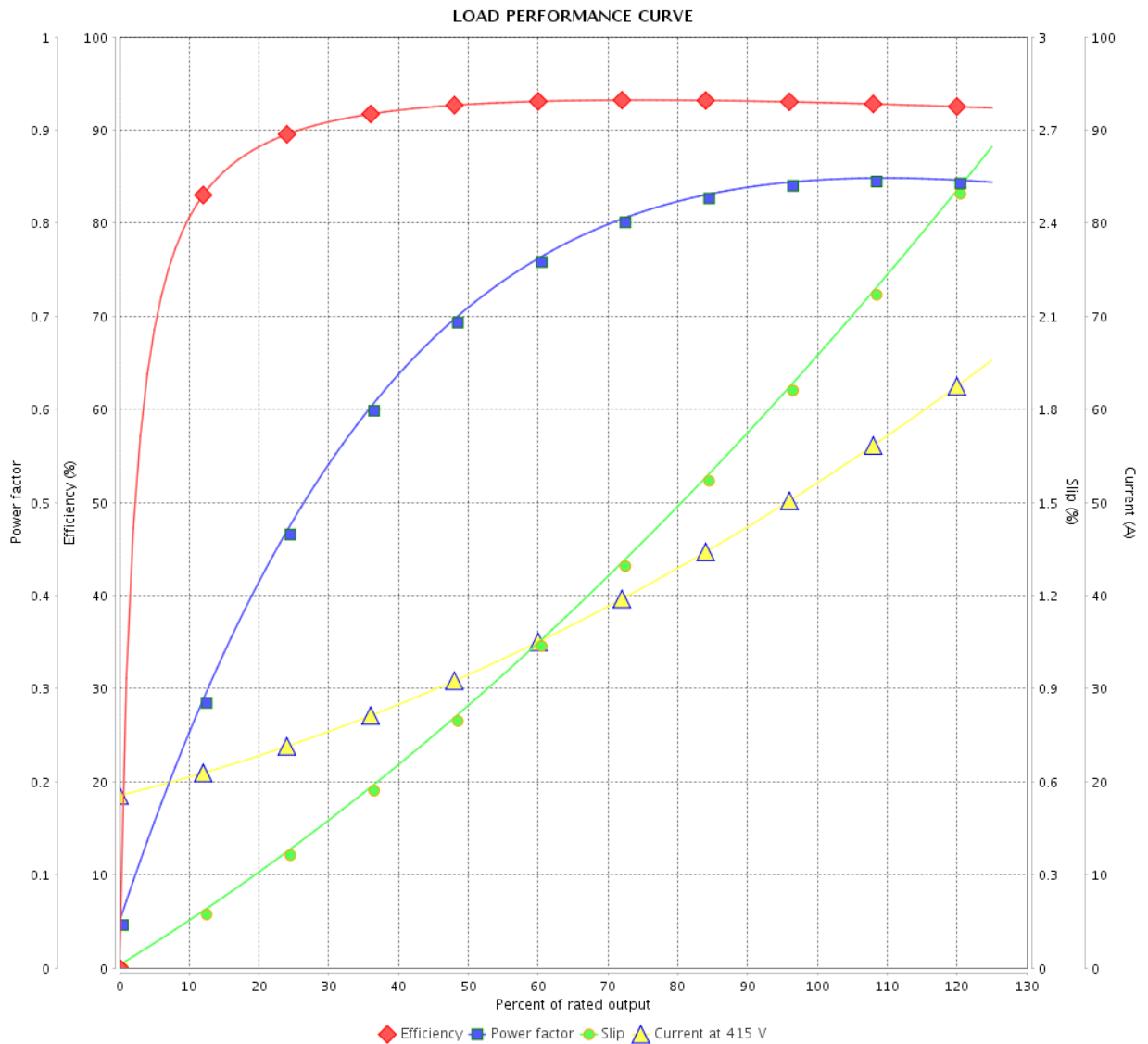


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Rated torque : 118 ft.lb	Insulation class : F
Locked rotor torque : 220 %	Service factor : 1.25
Breakdown torque : 240 %	Temperature rise : 80 K
Rated speed : 1770 rpm	Design : B

Heating constant

Cooling constant

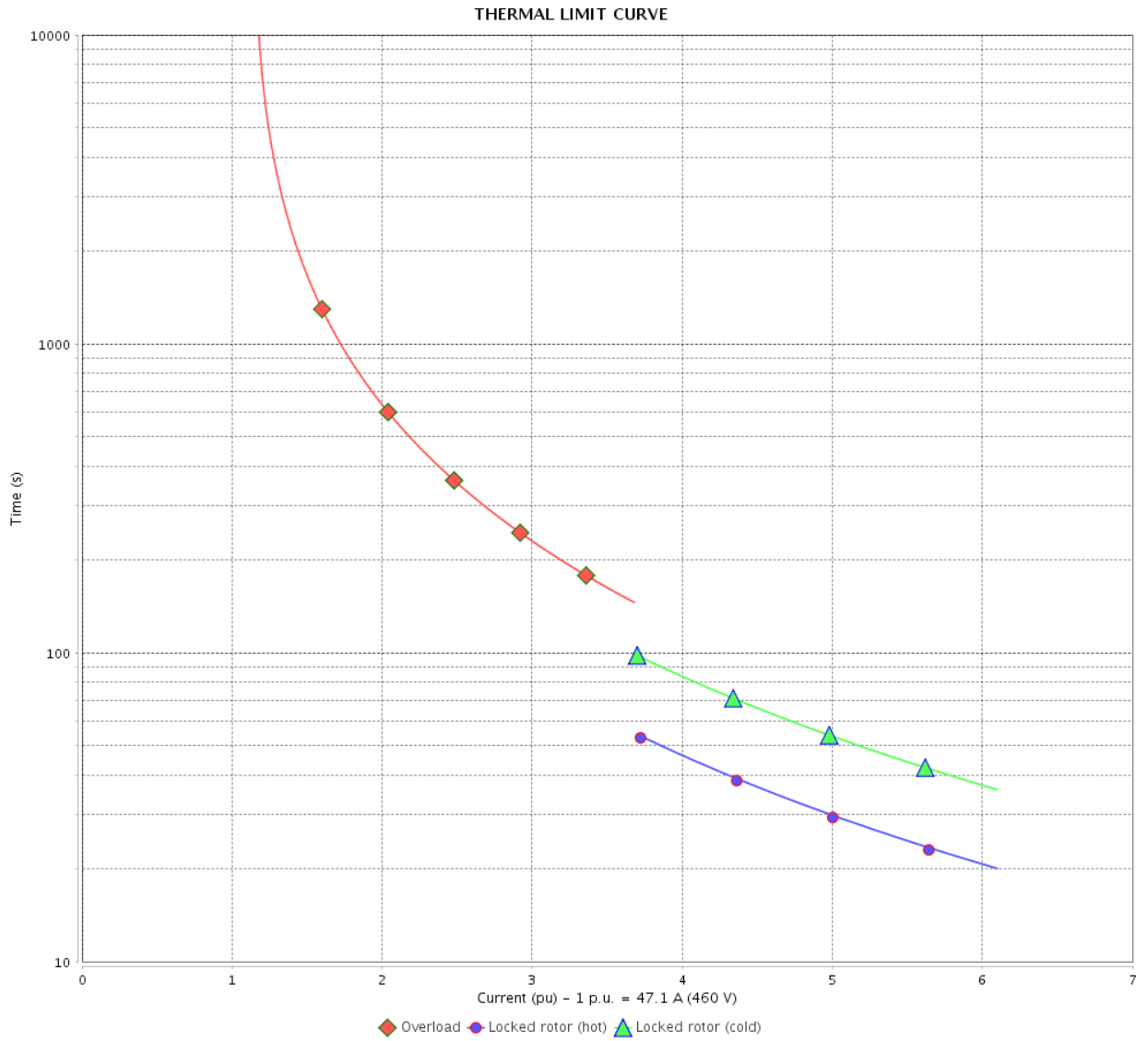
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LRC : 5.1	Duty cycle : Cont.(S1)
Rated torque : 107 ft.lb	Insulation class : F
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Breakdown torque : 250 %	Temperature rise : 80 K
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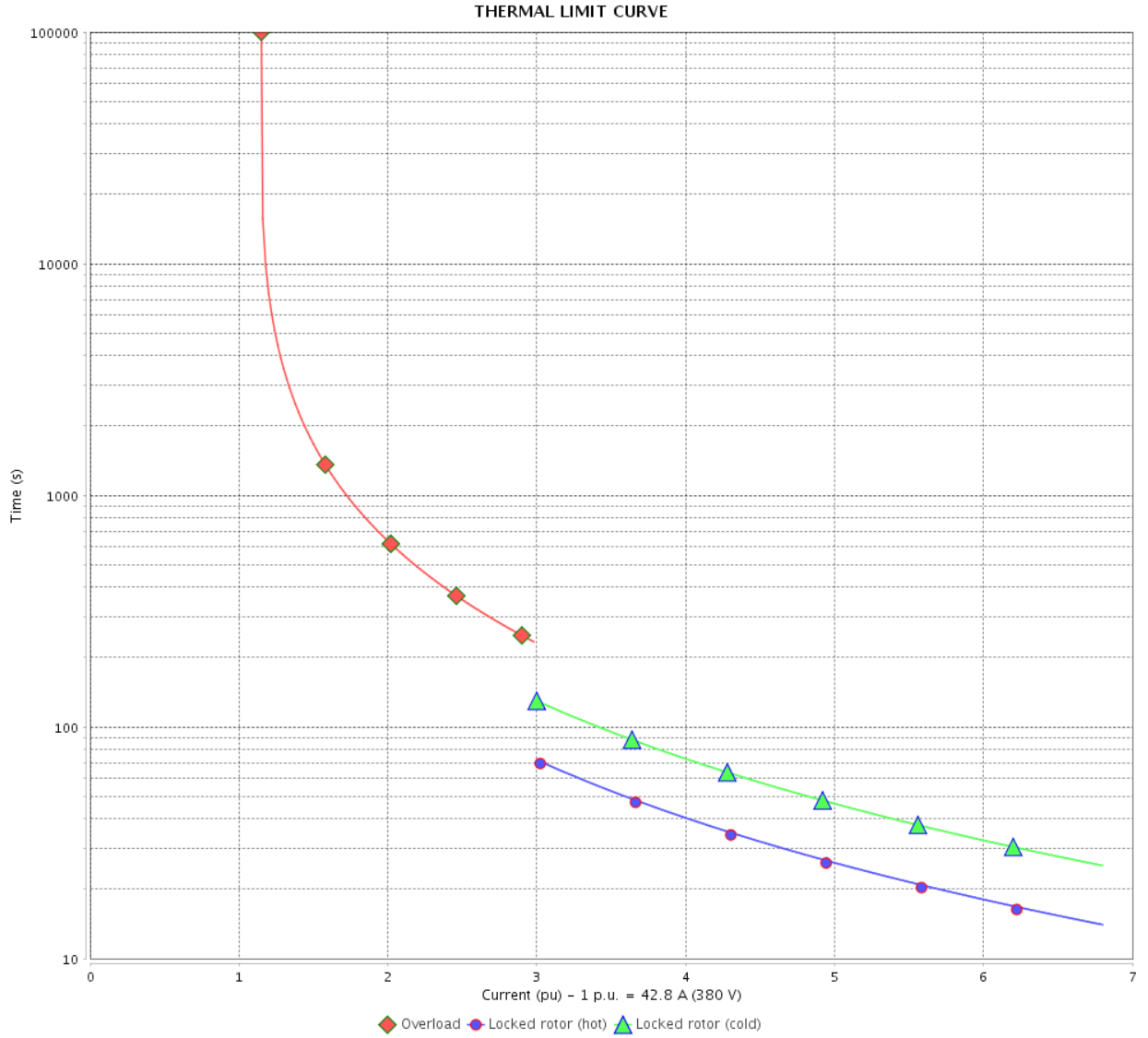
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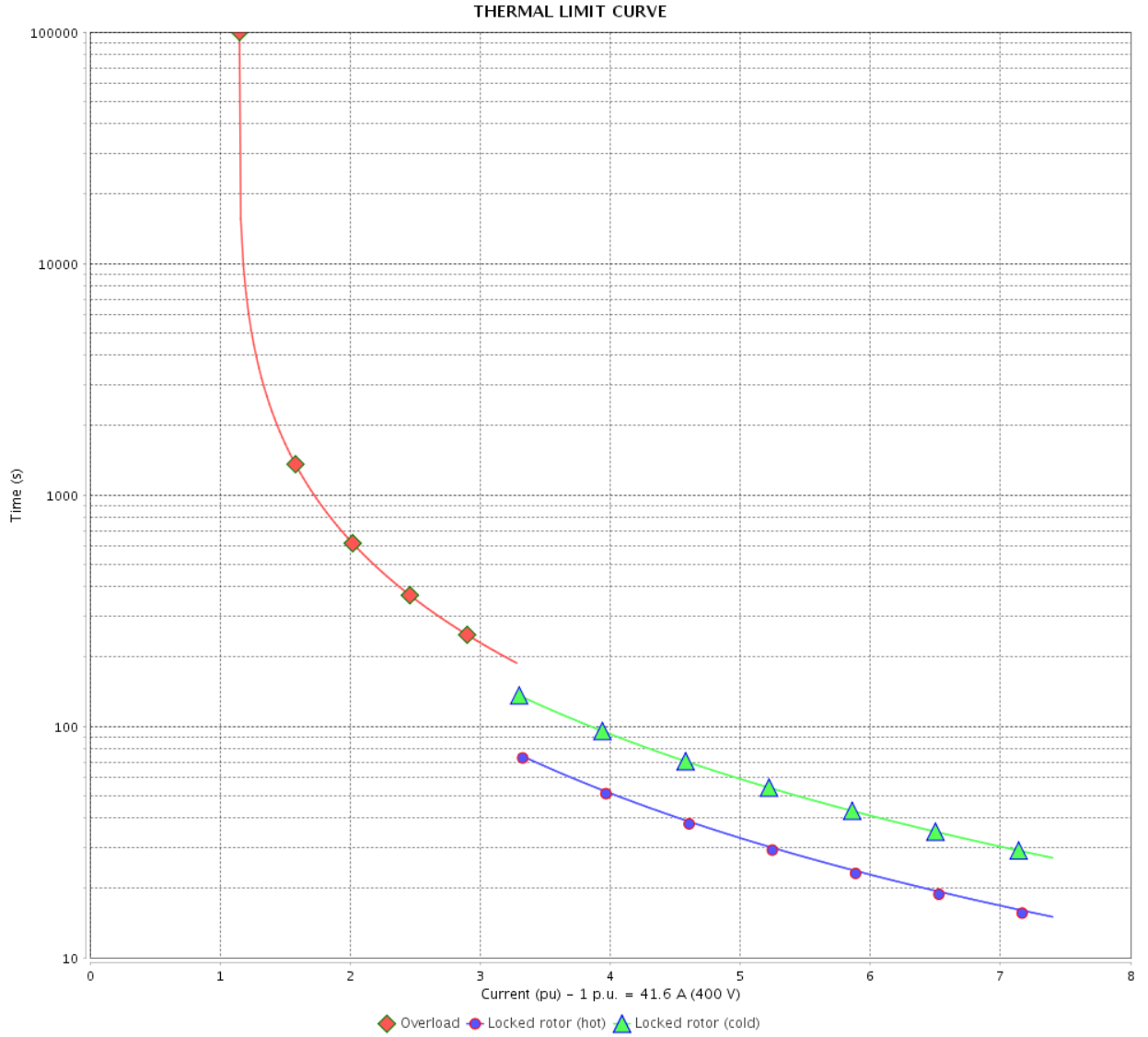
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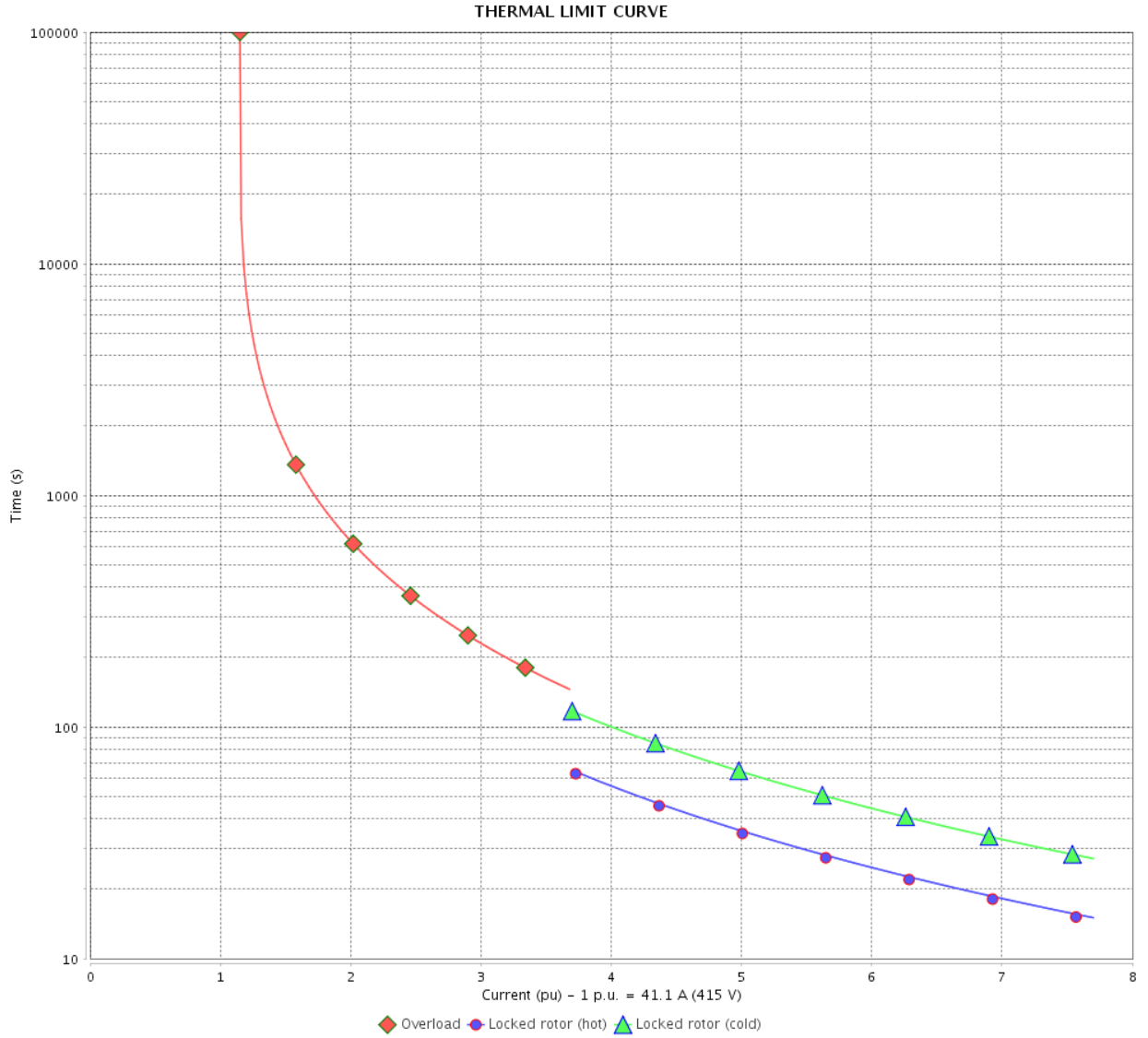
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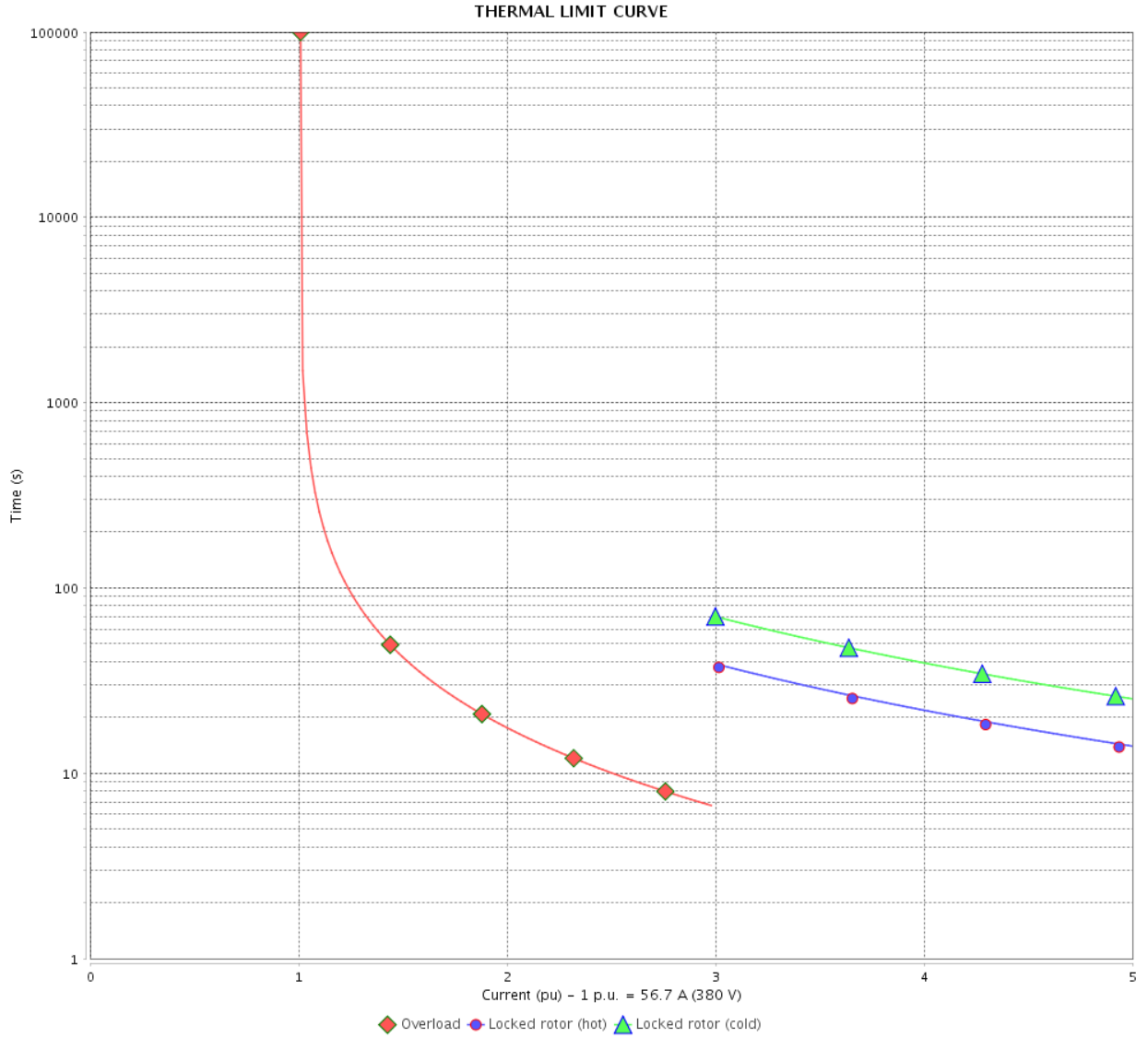
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LRC	: 4.5	Duty cycle	: Cont.(S1)
Rated torque	: 143 ft.lb	Insulation class	: F
Locked rotor torque	: 190 %	Service factor	: 1.00
Breakdown torque	: 210 %	Temperature rise	: 105 K
Rated speed	: 1465 rpm	Design	: B

Heating constant

Cooling constant

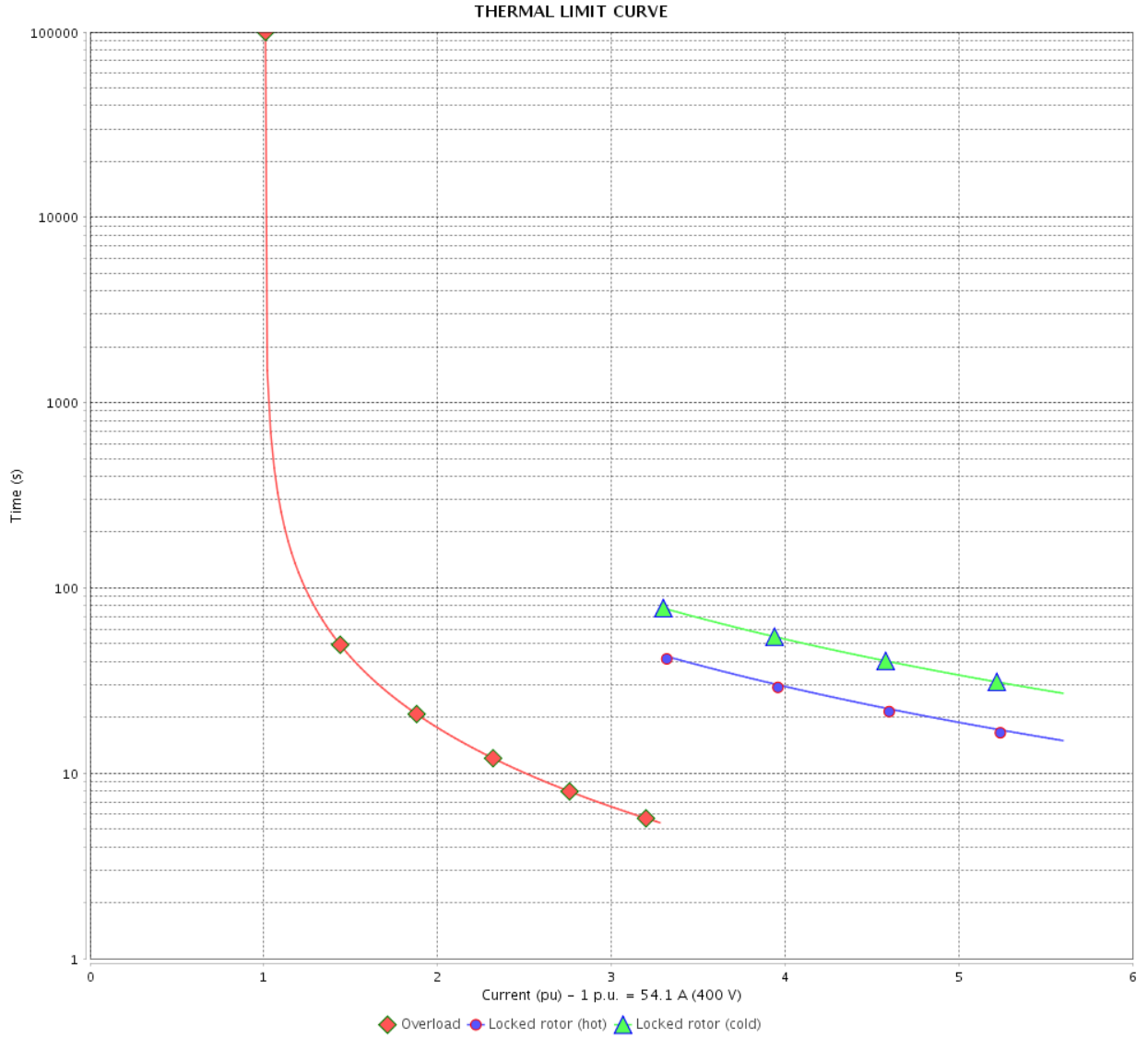
Rev.	Changes Summary	Performed	Checked	Date
Performed by				
Checked by			Page	Revision
Date	12/04/2022		26 / 36	

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 : 12447811
Catalog # : 04018ST3QIE324TC-W22

Performance : 415 V 50 Hz 4P IE2

Rated current	: 52.8 A	Moment of inertia (J)	: 9.16 sq.ft.lb
LRC	: 4.9	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	: 1465 rpm	Design	: B

Heating constant

Cooling constant

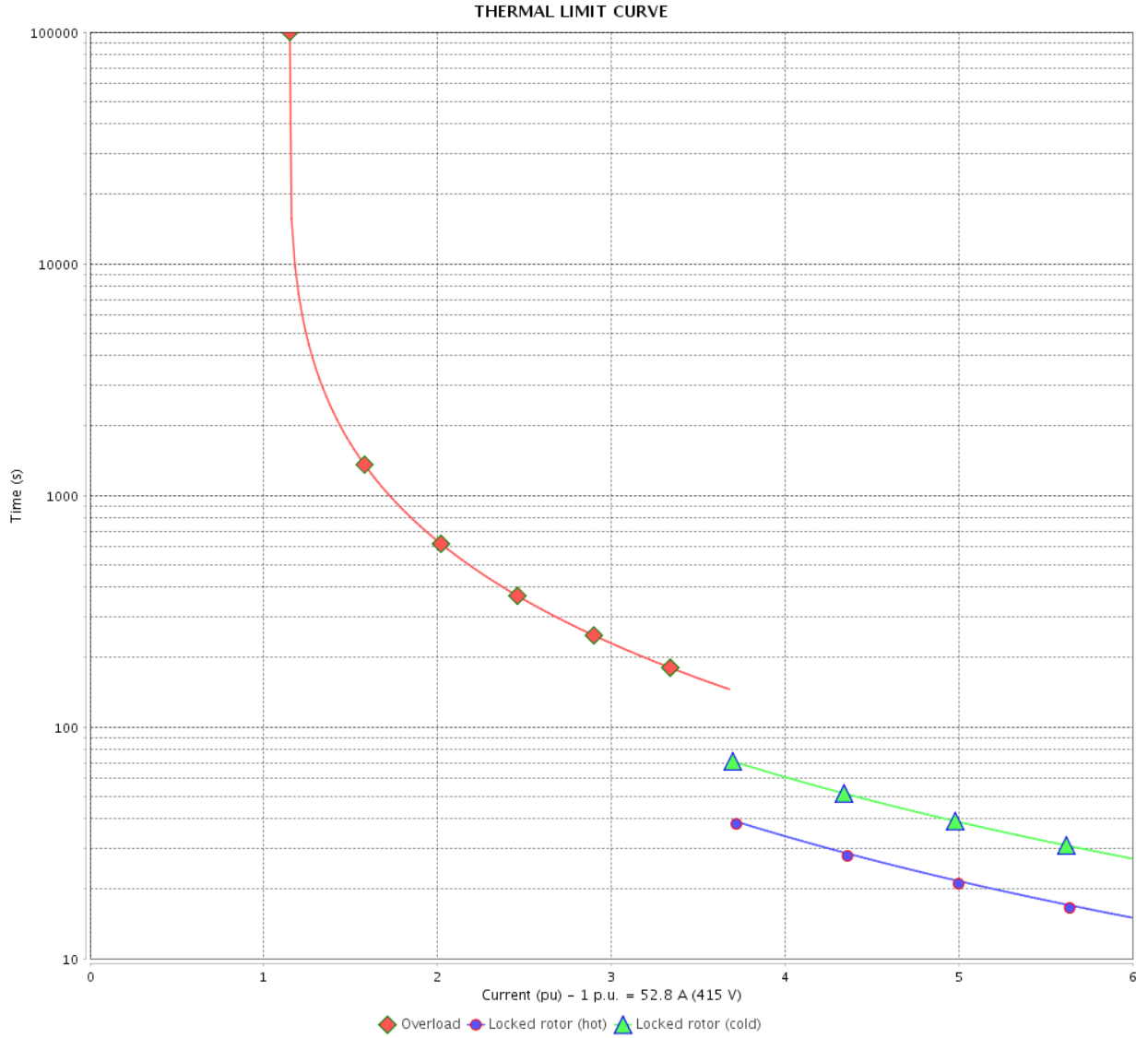
Rev.	Changes Summary	Performed	Checked	Date
Performed by				
Checked by			Page	Revision
Date	12/04/2022		28 / 36	

THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



Customer : _____



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Performed by		Page 29 / 36		Revision
Checked by				
Date				

VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage

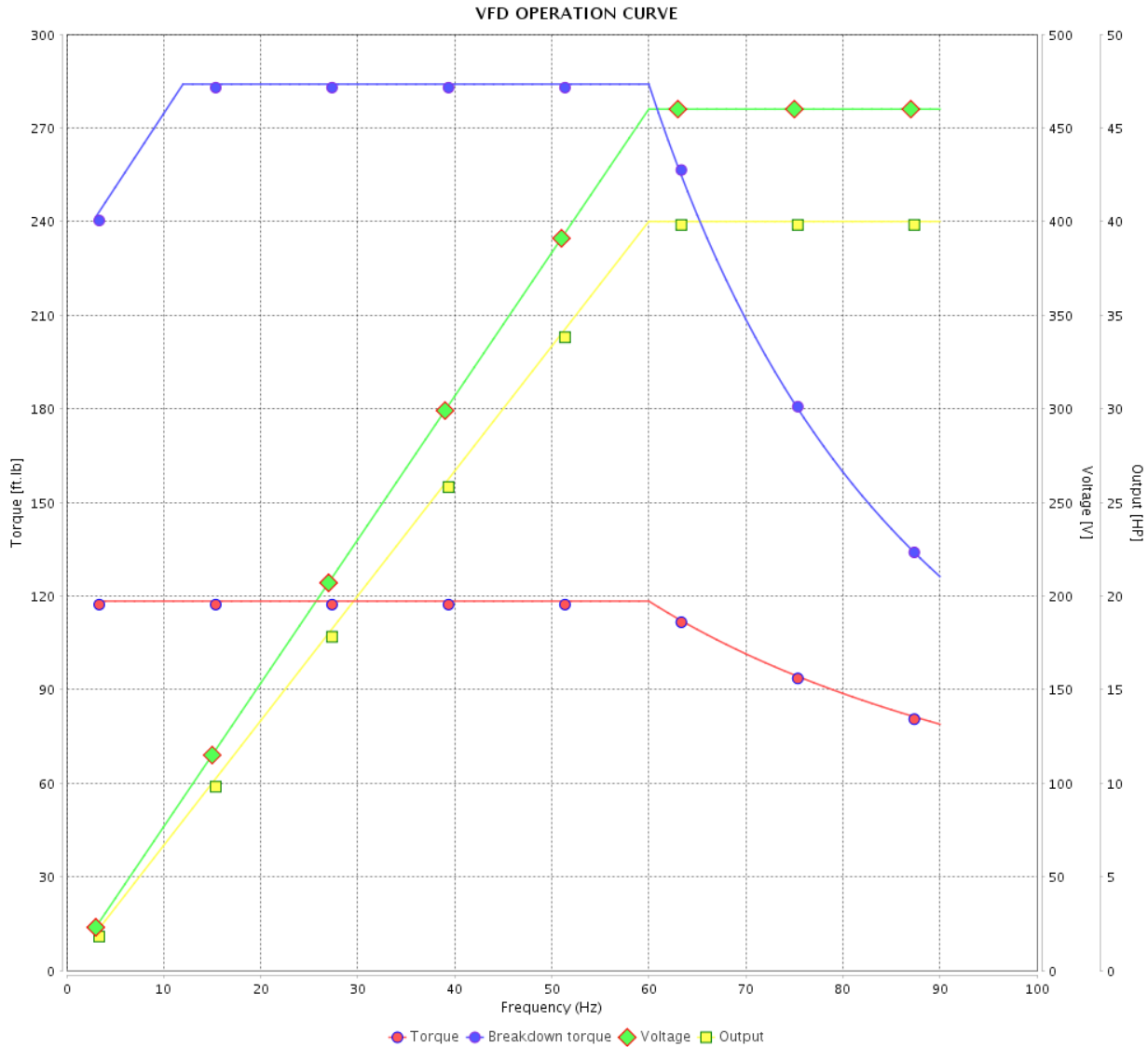


Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12447811

Catalog # : 04018ST3QIE324TC-W22



Performance : 460 V 60 Hz 4P

Rated current : 47.1 A
 LRC : 6.1
 Rated torque : 118 ft.lb
 Locked rotor torque : 220 %
 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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Performed by			Page 30 / 36	Revision
Checked by				
Date	12/04/2022			

VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage

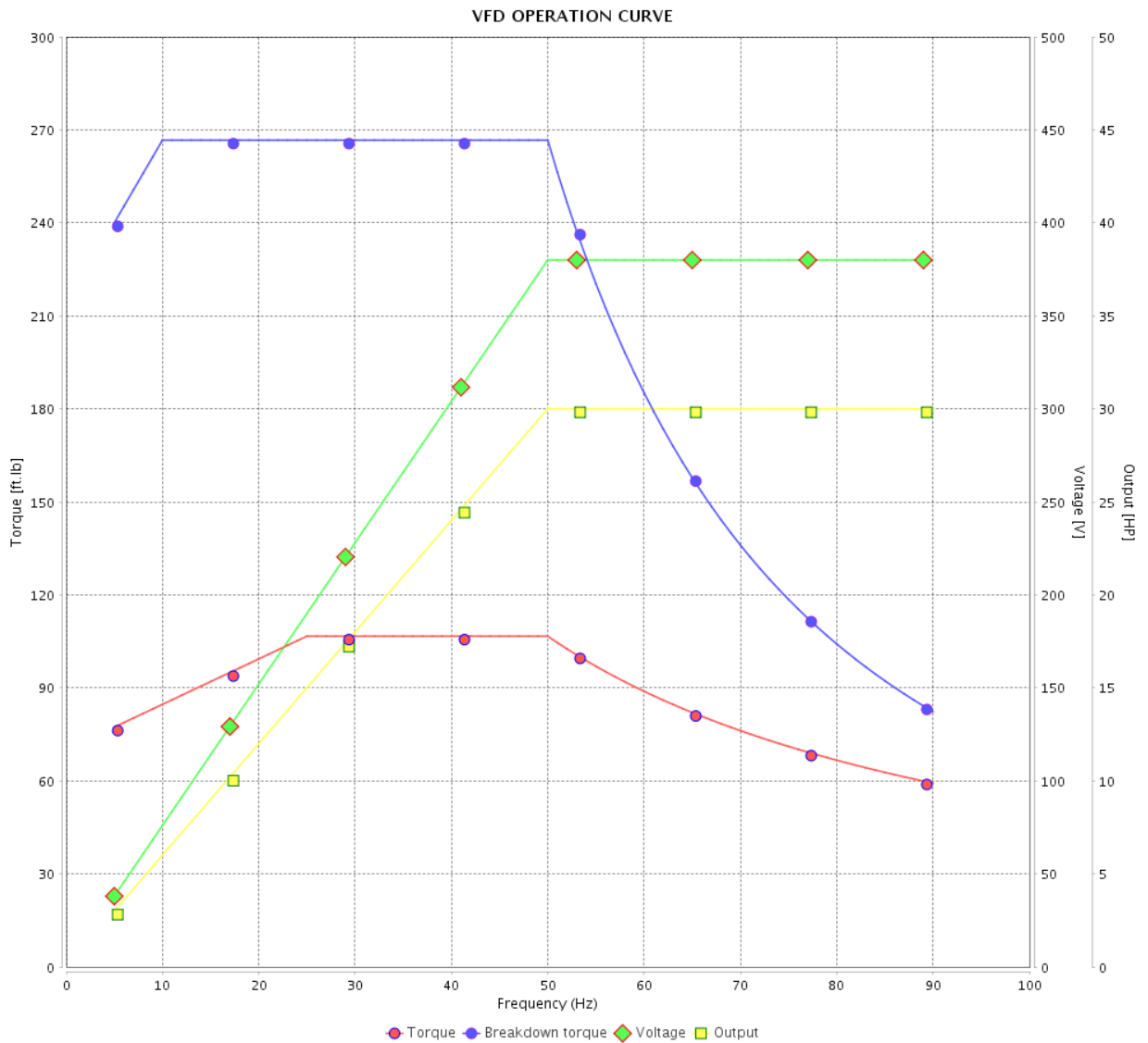


Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12447811

Catalog # : 04018ST3QIE324TC-W22



Performance : 380 V 50 Hz 4P IE3

Rated current : 42.8 A
 LRC : 5.1
 Rated torque : 107 ft.lb
 Locked rotor torque : 229 %
 Breakdown torque : 250 %
 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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Performed by			Page	Revision
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Date	12/04/2022			

VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage



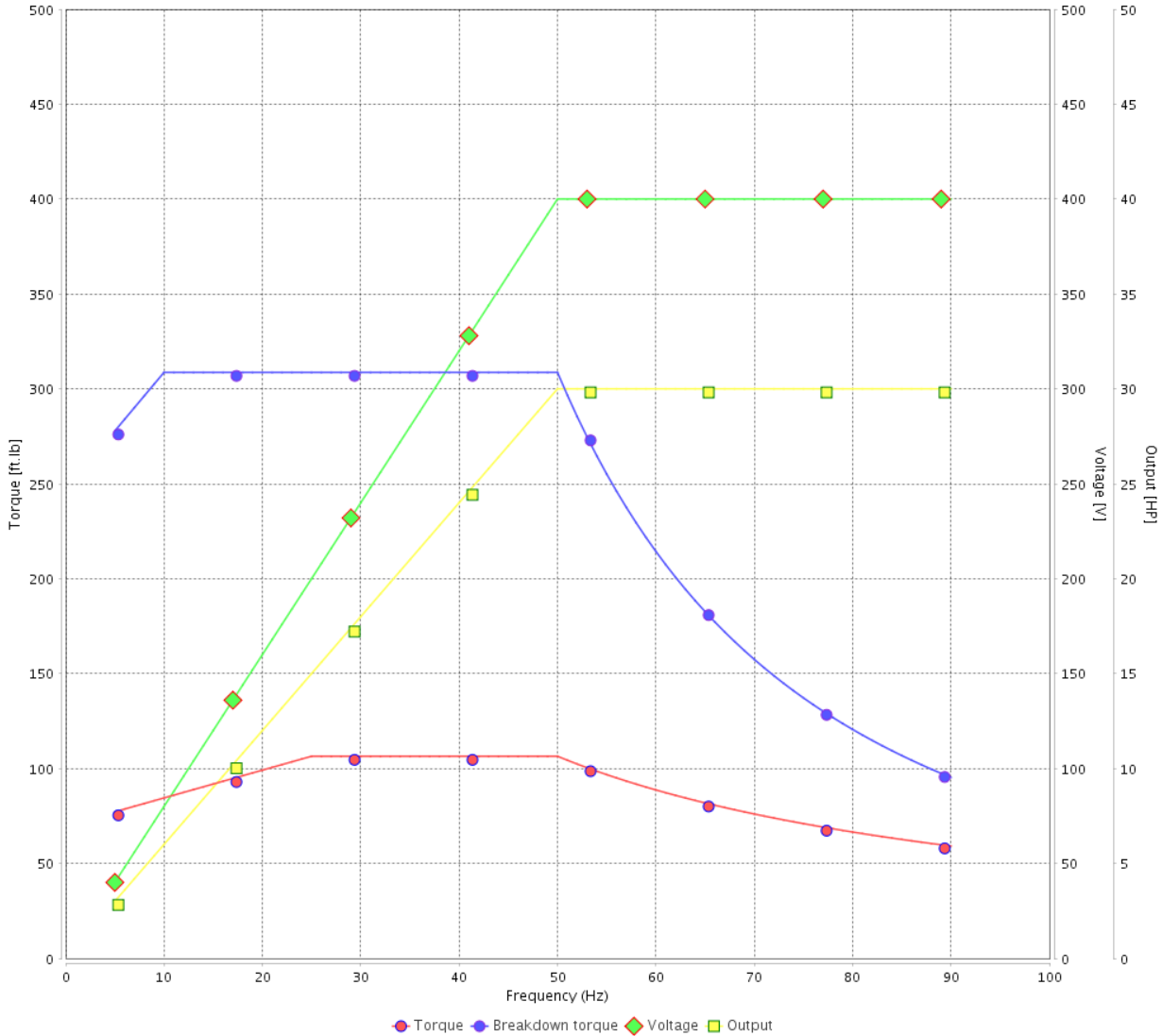
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12447811

Catalog # : 04018ST3QIE324TC-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	: 5.8	Duty cycle	: Cont.(S1)
Rated torque	: 106 ft.lb	Insulation class	: F
Locked rotor torque	: 250 %	Service factor	: 1.00
Breakdown torque	: 290 %	Temperature rise	: 80 K
Rated speed	: 1470 rpm	Design	: B

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

VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage

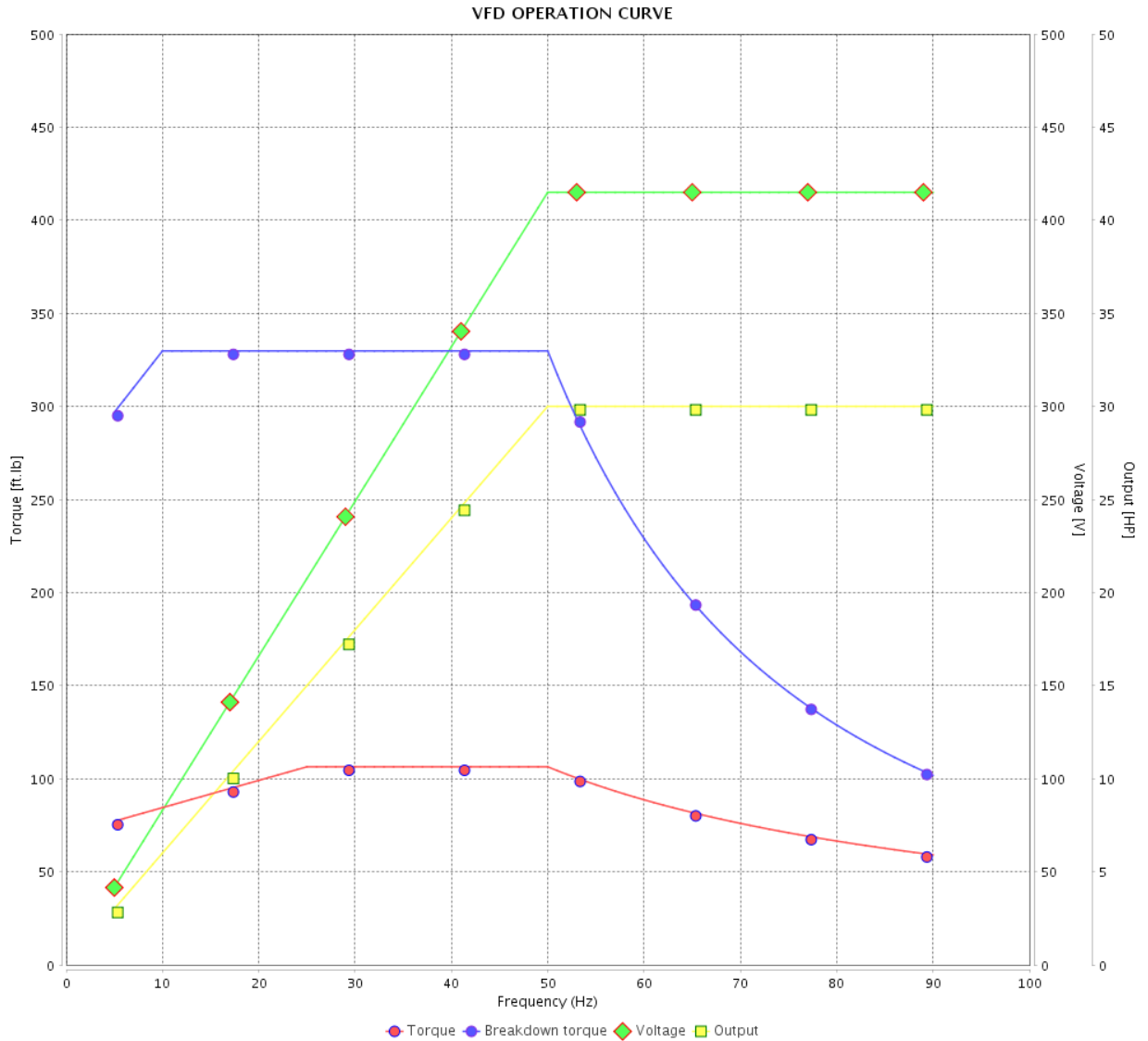


Customer : _____

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12447811

Catalog # : 04018ST3QIE324TC-W22



Performance : 415 V 50 Hz 4P IE3

Rated current : 41.1 A
 LRC : 6.2
 Rated torque : 106 ft.lb
 Locked rotor torque : 280 %
 Breakdown torque : 310 %
 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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VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage



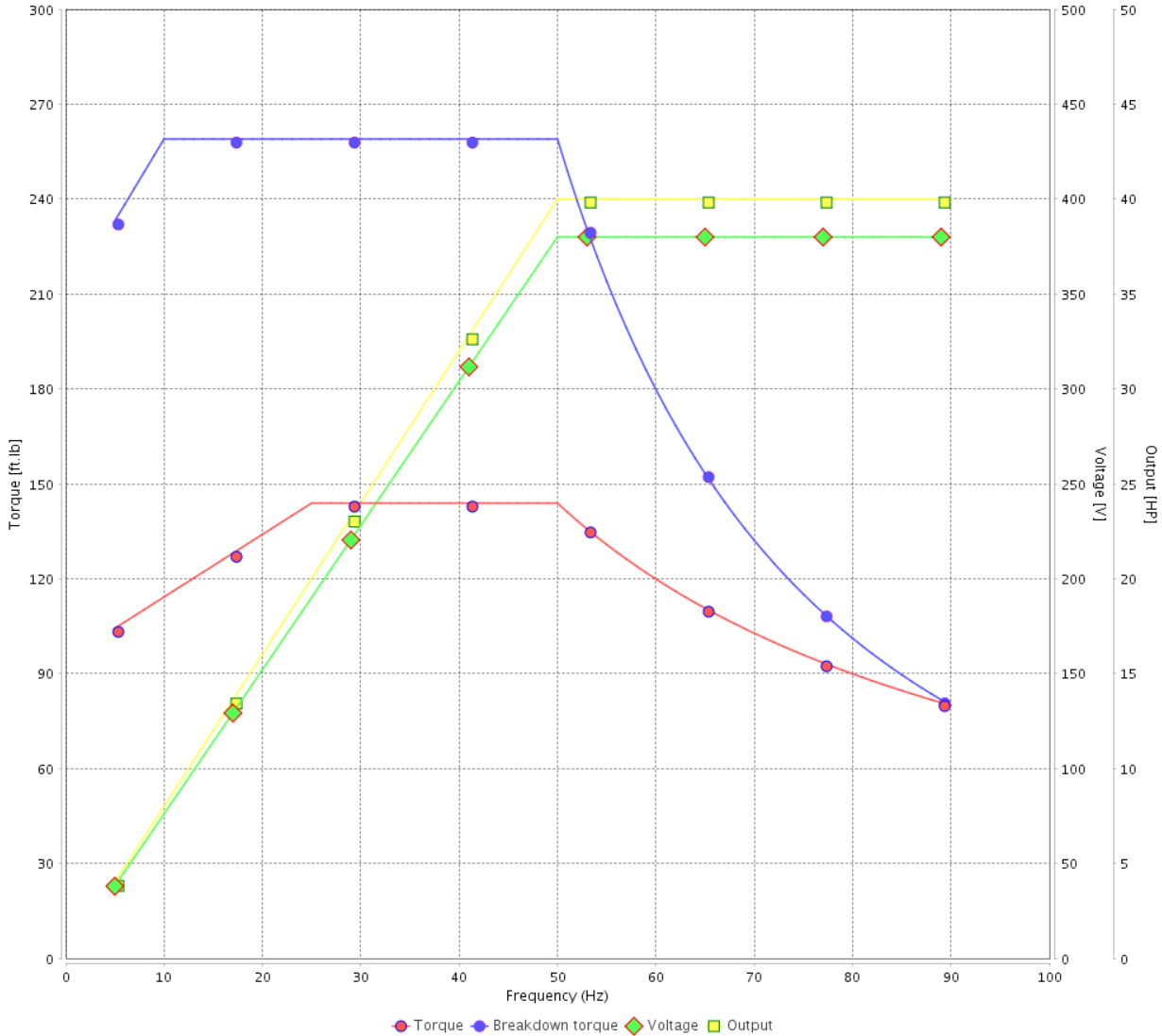
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12447811

Catalog # : 04018ST3QIE324TC-W22

VFD OPERATION CURVE



Performance : 380 V 50 Hz 4P IE2

Rated current	: 56.7 A	Moment of inertia (J)	: 9.16 sq.ft.lb
LRC	: 3.9	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

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Date	12/04/2022			

VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage

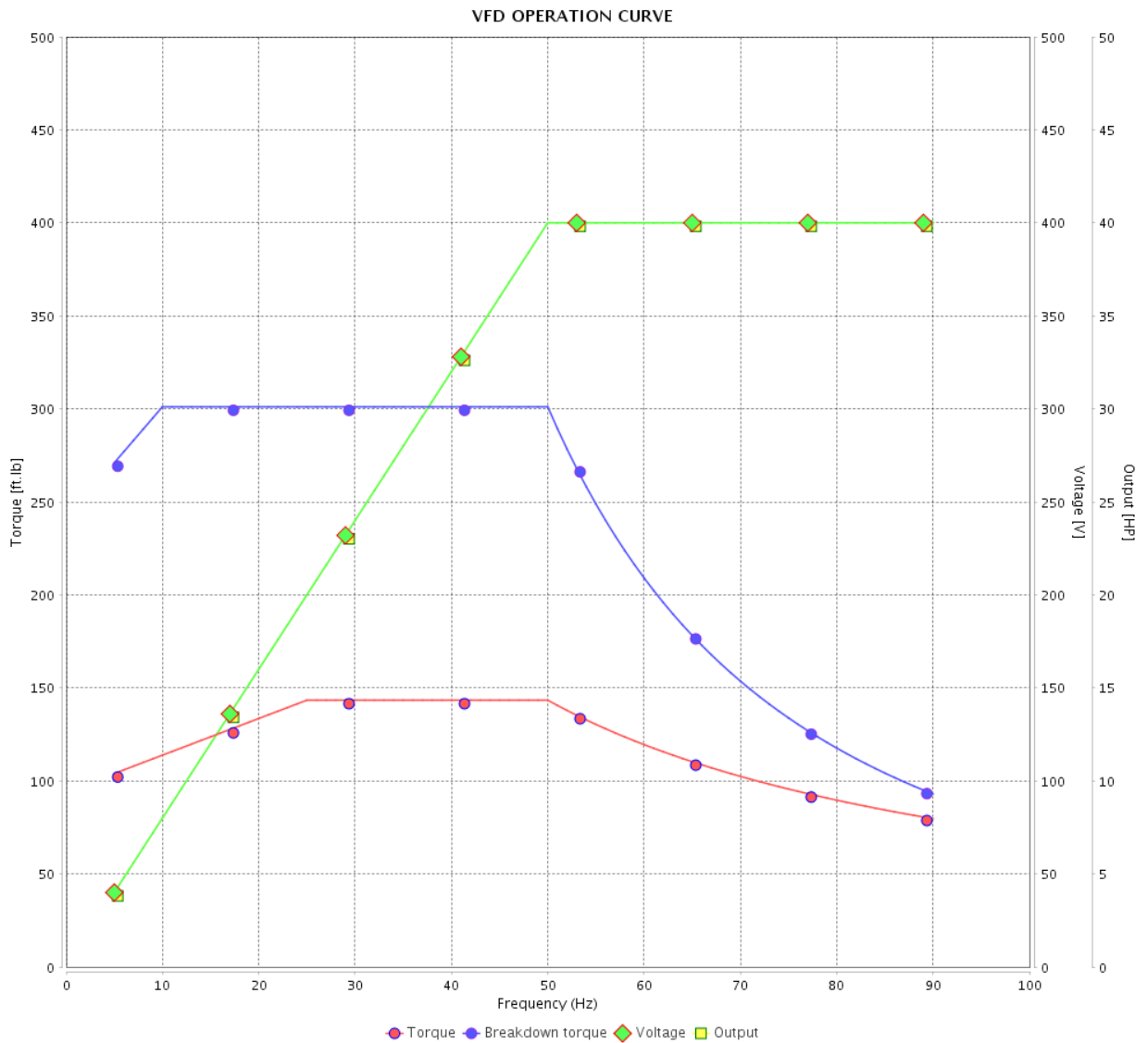


Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12447811

Catalog # : 04018ST3QIE324TC-W22



Performance : 400 V 50 Hz 4P IE2

Rated current : 54.1 A
 LRC : 4.5
 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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VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage

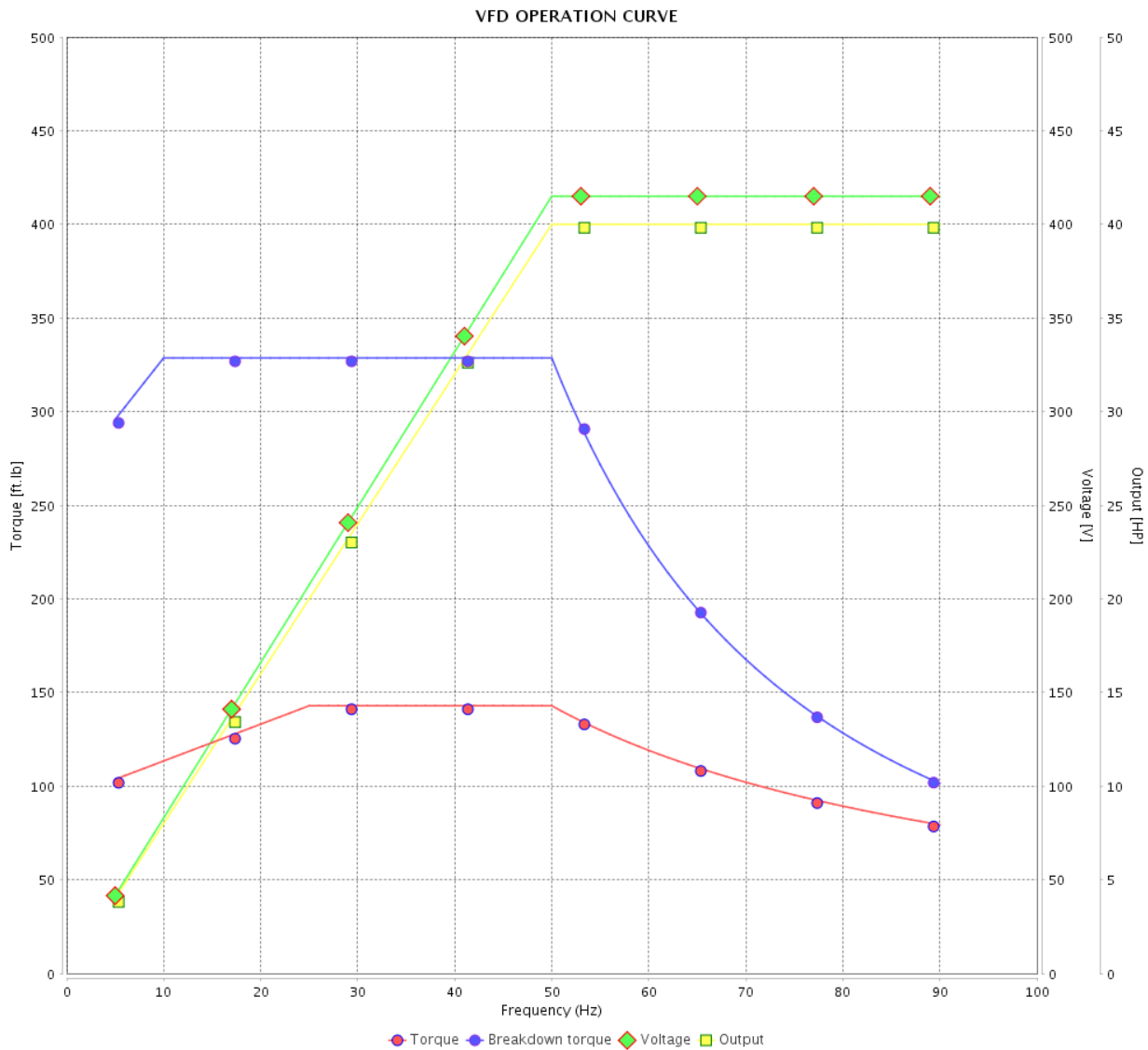


Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12447811

Catalog # : 04018ST3QIE324TC-W22



Performance : 415 V 50 Hz 4P IE2

Rated current	: 52.8 A	Moment of inertia (J)	: 9.16 sq.ft.lb
LRC	: 4.9	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	: 1465 rpm	Design	: B

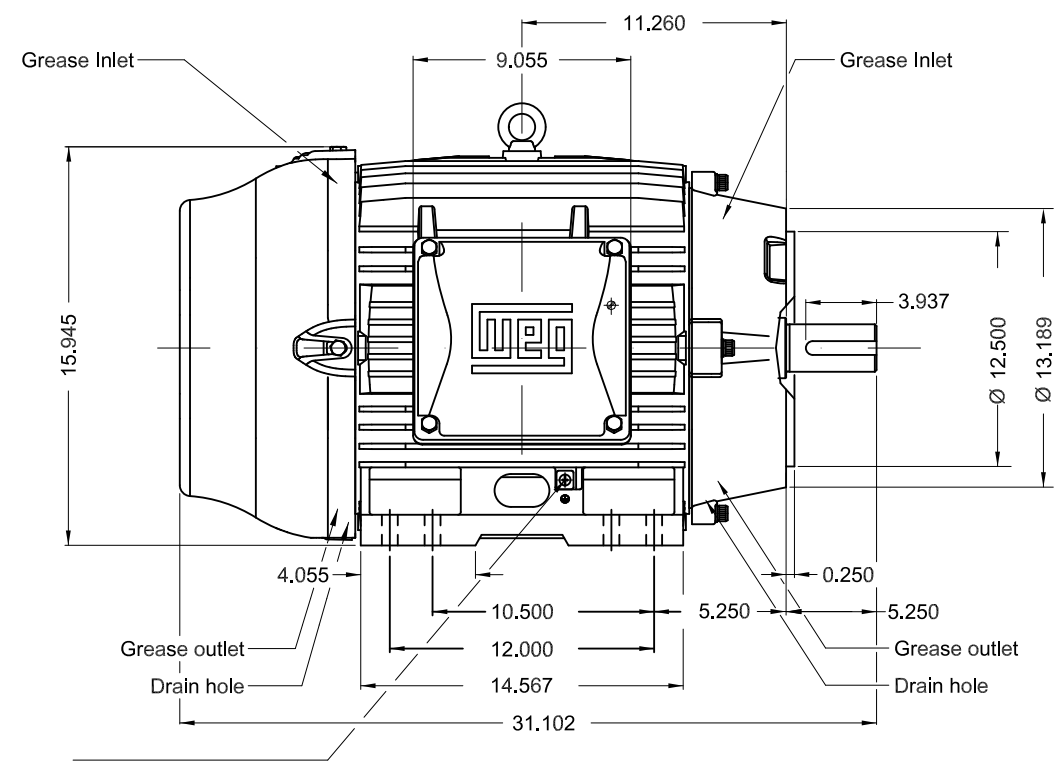
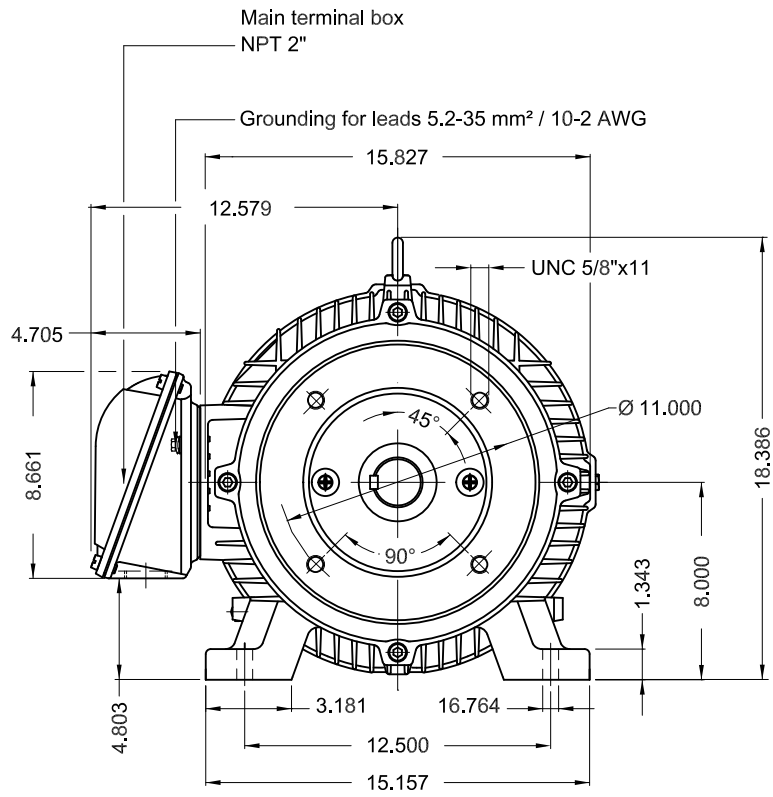
Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page 36 / 36	Revision
Checked by				
Date	12/04/2022			

1 2 3 4 5 6

A

B

C

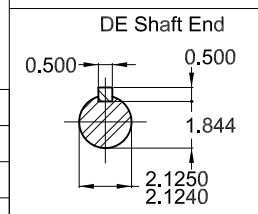


Grounding for leads 5.2-35 mm² / 10-2 AWG

D

E

Without vertical jackscrews
 Color RAL 5009
 Painting plan 202E
 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 IEEE 841 W22 PREM. EFF.					
CHECKED		FRAME 324/6TC IP55 TEFC					
RELEASED							
REL DT.	WMO	Jaragua do Sul	Product Engineering	SHEET	1 / 1		

PREVIEW
 WDD

