

DATA SHEET

Three Phase Induction Motor - Squirrel Cage



Customer							
Product line		: NEMA Premium Efficiency Three-Phase		Product code :		11431307	
				Catalog # :		07512ST3QIE405T-W22	
Frame		: 404/5T		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		: 1212 lb	
Protection degree		: IP55		Moment of inertia (J)		: 40.2 sq.ft.lb	
Design		: B					
Output [HP]	75	50	50	50	75	75	75
Poles	6	6	6	6	6	6	6
Frequency [Hz]	60	50	50	50	50	50	50
Rated voltage [V]	460	380	400	415	380	400	415
Rated current [A]	84.9	70.9	69.0	68.1	104	98.1	95.7
L. R. Amperes [A]	543	510	545	579	510	540	574
LRC [A]	6.4x(Code G)	7.2x(Code H)	7.9x(Code J)	8.5x(Code K)	4.9x(Code D)	5.5x(Code E)	6.0x(Code F)
No load current [A]	30.0	29.7	31.8	33.5	29.7	31.8	33.5
Rated speed [RPM]	1184	988	990	991	978	981	983
Slip [%]	1.33	1.20	1.00	0.90	2.20	1.90	1.70
Rated torque [ft.lb]	333	266	265	265	403	401	401
Locked rotor torque [%]	200	229	260	290	150	170	190
Breakdown torque [%]	229	270	300	330	180	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	30s (cold)	25s (cold)	25s (cold)	25s (cold)	25s (cold)	25s (cold)	25s (cold)
	17s (hot)	14s (hot)	14s (hot)	14s (hot)	14s (hot)	14s (hot)	14s (hot)
Noise level ²	68.0 dB(A)	64.0 dB(A)	64.0 dB(A)	64.0 dB(A)	64.0 dB(A)	64.0 dB(A)	64.0 dB(A)
Efficiency (%)	25%						
	50%	94.1	90.6	91.1	91.0	91.8	92.4
	75%	94.5	91.7	92.3	92.3	92.2	92.8
	100%	94.5	93.3	93.3	93.3	92.4	93.0
Power Factor	25%						
	50%	0.74	0.66	0.62	0.60	0.79	0.76
	75%	0.83	0.79	0.75	0.74	0.86	0.84
	100%	0.86	0.85	0.83	0.81	0.87	0.86
Bearing type	: Drive end		: Non drive end		Foundation loads		
	: 6316 C3		: 6314 C3		Max. traction : 2040 lb		
	: Inpro/Seal		: Inpro/Seal		Max. compression : 3252 lb		
	: 16000 h		: 17000 h				
	: 34 g		: 27 g				
Lubricant type		: Mobil Polyrex EM					
Notes							
This revision replaces and cancel the previous one, which must be eliminated. (1) Looking the motor from the shaft end. (2) Measured at 1m and with tolerance of +3dB(A). (3) Approximate weight subject to changes after manufacturing process. (4) At 100% of full load.				These are average values based on tests with sinusoidal power supply, subject to the tolerances stipulated in NEMA MG-1.			
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TORQUE AND CURRENT VS SPEED CURVE

Three Phase Induction Motor - Squirrel Cage



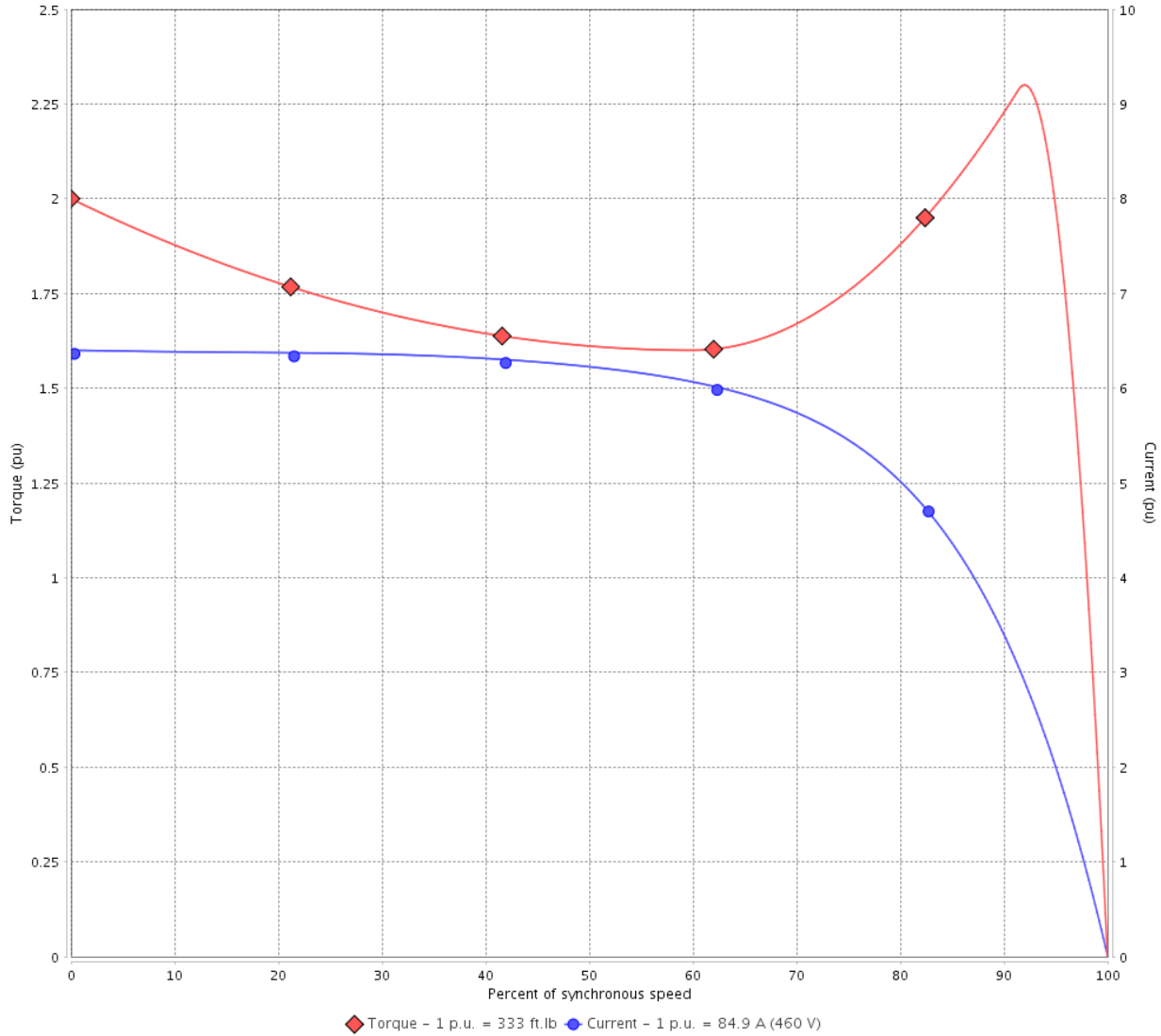
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 11431307

Catalog # : 07512ST3QIE405T-W22

TORQUE AND CURRENT VS SPEED CURVE



Performance : 460 V 60 Hz 6P

Rated current	: 84.9 A	Moment of inertia (J)	: 40.2 sq.ft.lb
LRC	: 6.4	Duty cycle	: Cont.(S1)
Rated torque	: 333 ft.lb	Insulation class	: F
Locked rotor torque	: 200 %	Service factor	: 1.25
Breakdown torque	: 229 %	Temperature rise	: 80 K
Rated speed	: 1184 rpm	Design	: B

Locked rotor time : 30s (cold) 17s (hot)

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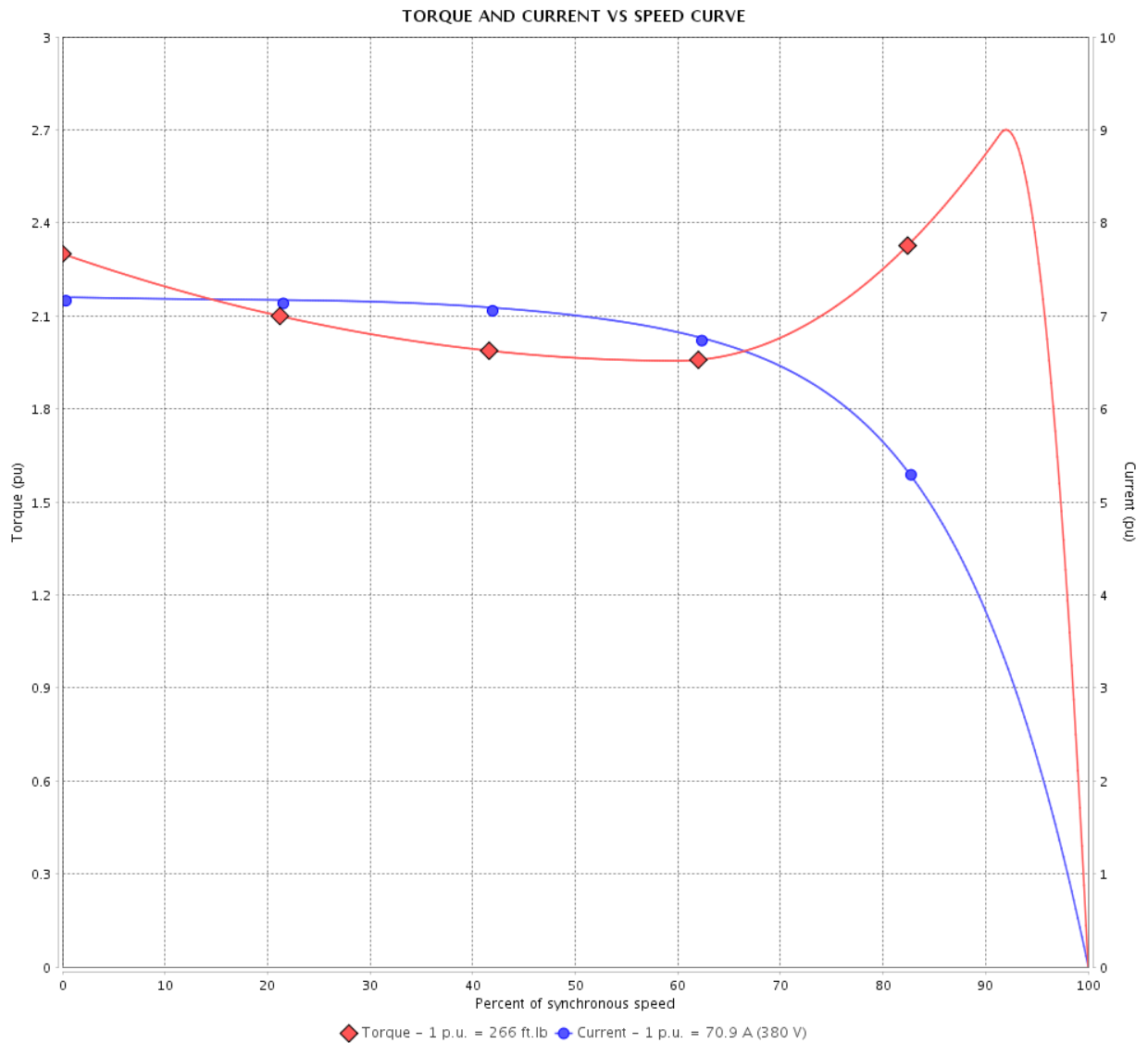
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Performance : 380 V 50 Hz 6P IE3

Rated current	: 70.9 A	Moment of inertia (J)	: 40.2 sq.ft.lb
LRC	: 7.2	Duty cycle	: Cont.(S1)
Rated torque	: 266 ft.lb	Insulation class	: F
Locked rotor torque	: 229 %	Service factor	: 1.00
Breakdown torque	: 270 %	Temperature rise	: 80 K
Rated speed	: 988 rpm	Design	: B

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

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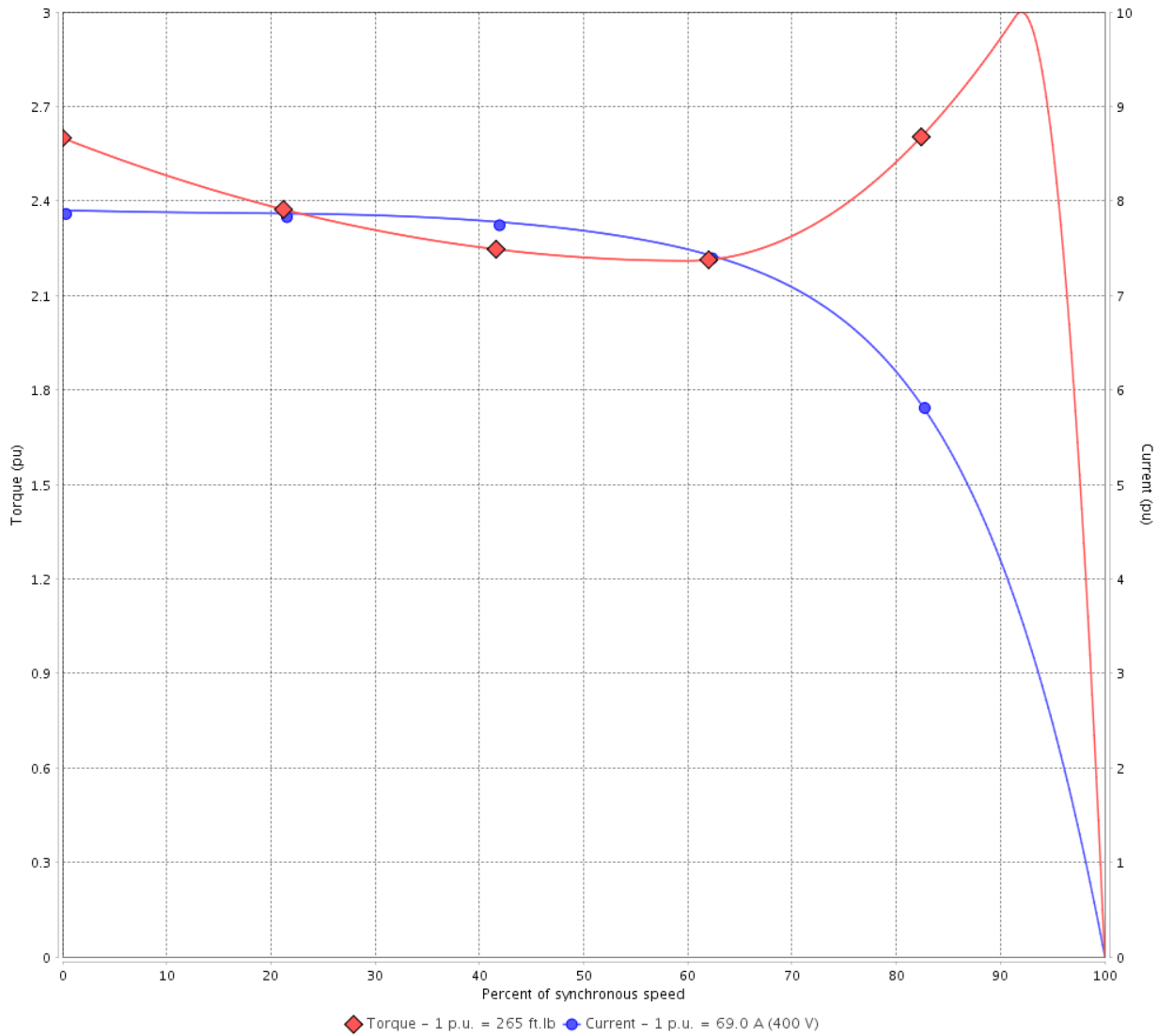
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TORQUE AND CURRENT VS SPEED CURVE



Performance : 400 V 50 Hz 6P IE3

Rated current	: 69.0 A	Moment of inertia (J)	: 40.2 sq.ft.lb
LRC	: 7.9	Duty cycle	: Cont.(S1)
Rated torque	: 265 ft.lb	Insulation class	: F
Locked rotor torque	: 260 %	Service factor	: 1.00
Breakdown torque	: 300 %	Temperature rise	: 80 K
Rated speed	: 990 rpm	Design	: B

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

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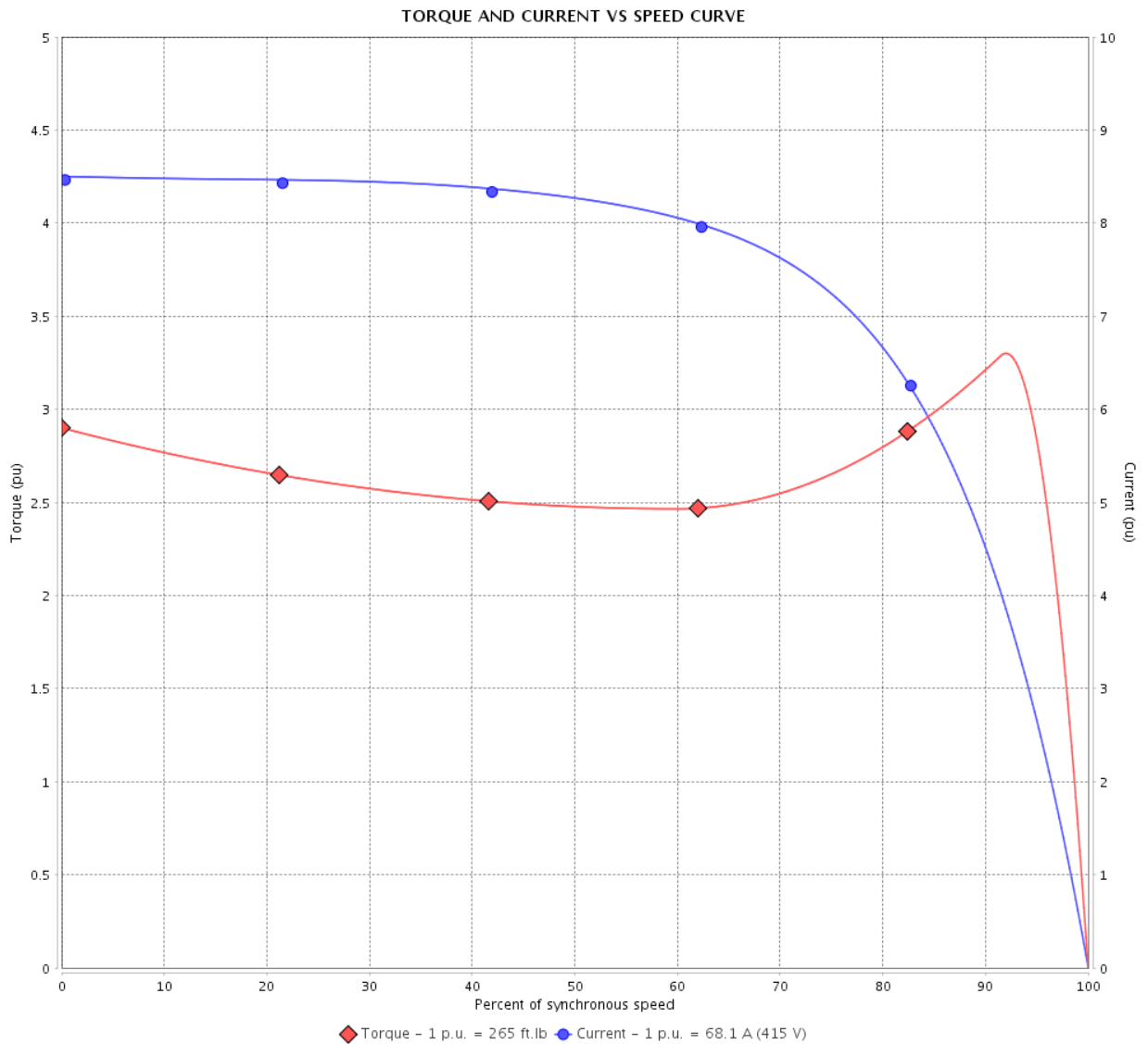
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Performance : 415 V 50 Hz 6P IE3

Rated current	: 68.1 A	Moment of inertia (J)	: 40.2 sq.ft.lb
LRC	: 8.5	Duty cycle	: Cont.(S1)
Rated torque	: 265 ft.lb	Insulation class	: F
Locked rotor torque	: 290 %	Service factor	: 1.00
Breakdown torque	: 330 %	Temperature rise	: 80 K
Rated speed	: 991 rpm	Design	: B

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

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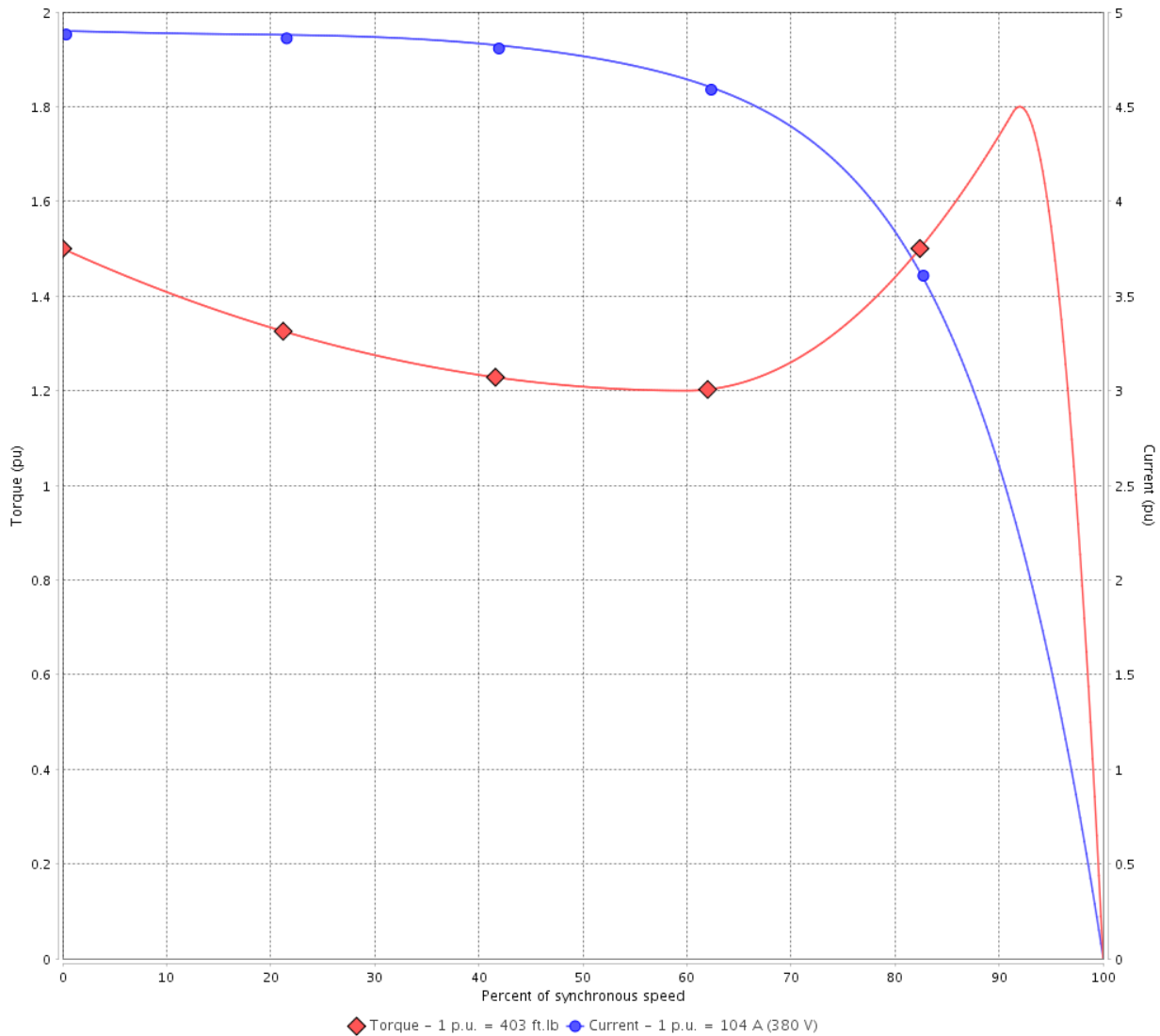
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TORQUE AND CURRENT VS SPEED CURVE



Performance : 380 V 50 Hz 6P IE1

Rated current	: 104 A	Moment of inertia (J)	: 40.2 sq.ft.lb
LRC	: 4.9	Duty cycle	: Cont.(S1)
Rated torque	: 403 ft.lb	Insulation class	: F
Locked rotor torque	: 150 %	Service factor	: 1.00
Breakdown torque	: 180 %	Temperature rise	: 105 K
Rated speed	: 978 rpm	Design	: B

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

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TORQUE AND CURRENT VS SPEED CURVE



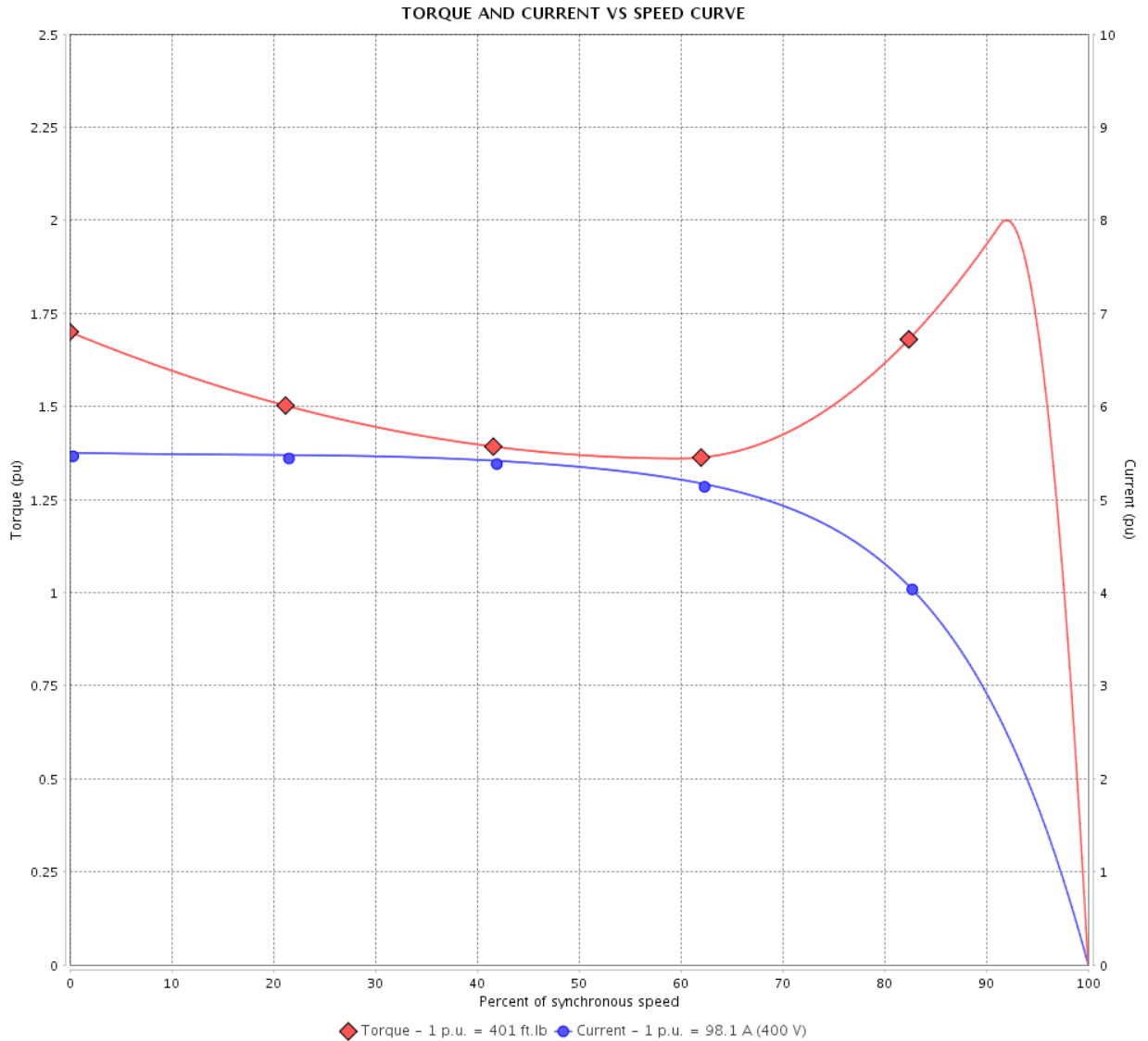
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Performance : 400 V 50 Hz 6P IE1

Rated current	: 98.1 A	Moment of inertia (J)	: 40.2 sq.ft.lb
LRC	: 5.5	Duty cycle	: Cont.(S1)
Rated torque	: 401 ft.lb	Insulation class	: F
Locked rotor torque	: 170 %	Service factor	: 1.00
Breakdown torque	: 200 %	Temperature rise	: 105 K
Rated speed	: 981 rpm	Design	: B

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

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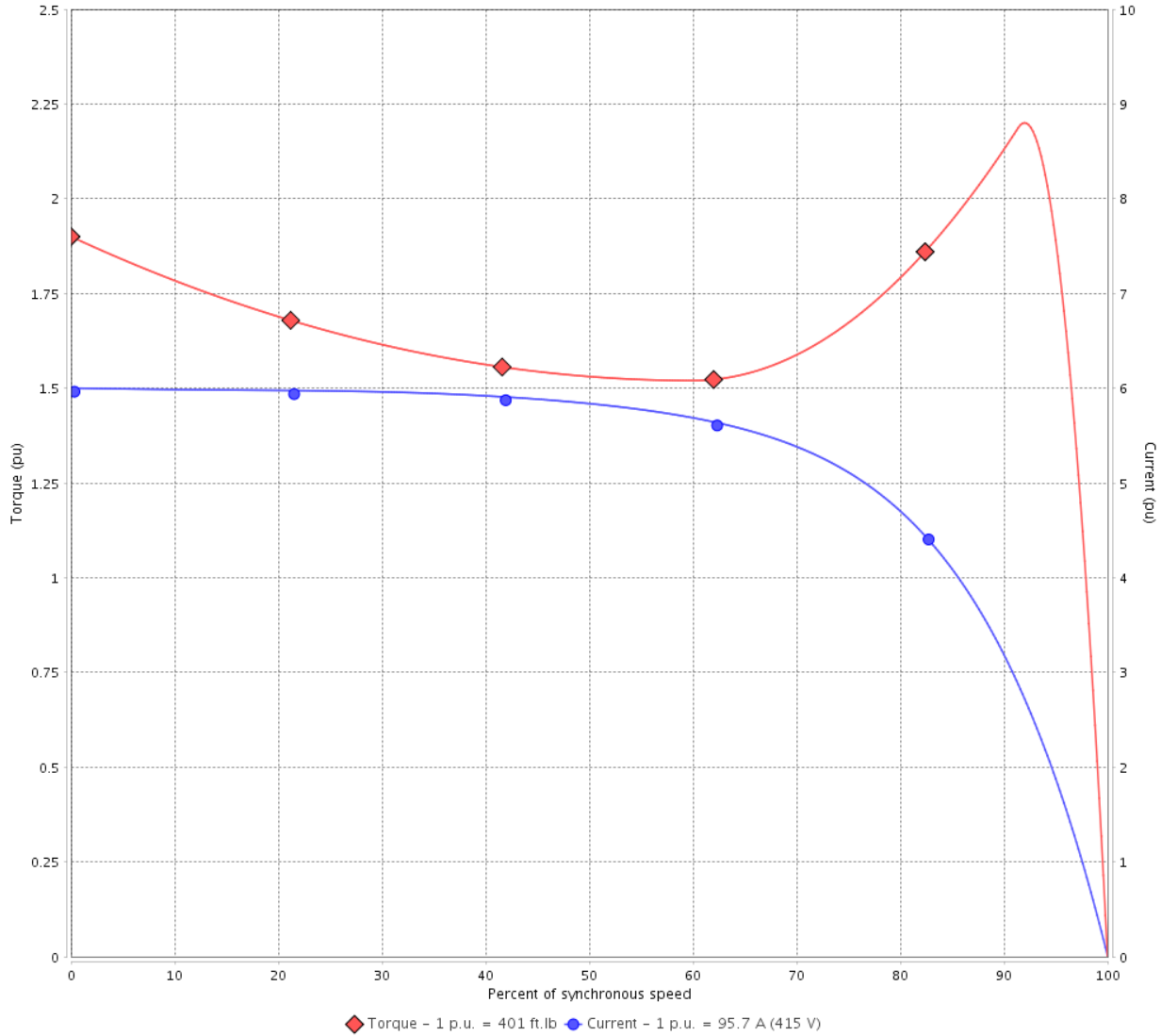
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TORQUE AND CURRENT VS SPEED CURVE



Performance : 415 V 50 Hz 6P IE1

Rated current	: 95.7 A	Moment of inertia (J)	: 40.2 sq.ft.lb
LRC	: 6.0	Duty cycle	: Cont.(S1)
Rated torque	: 401 ft.lb	Insulation class	: F
Locked rotor torque	: 190 %	Service factor	: 1.00
Breakdown torque	: 220 %	Temperature rise	: 105 K
Rated speed	: 983 rpm	Design	: B

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

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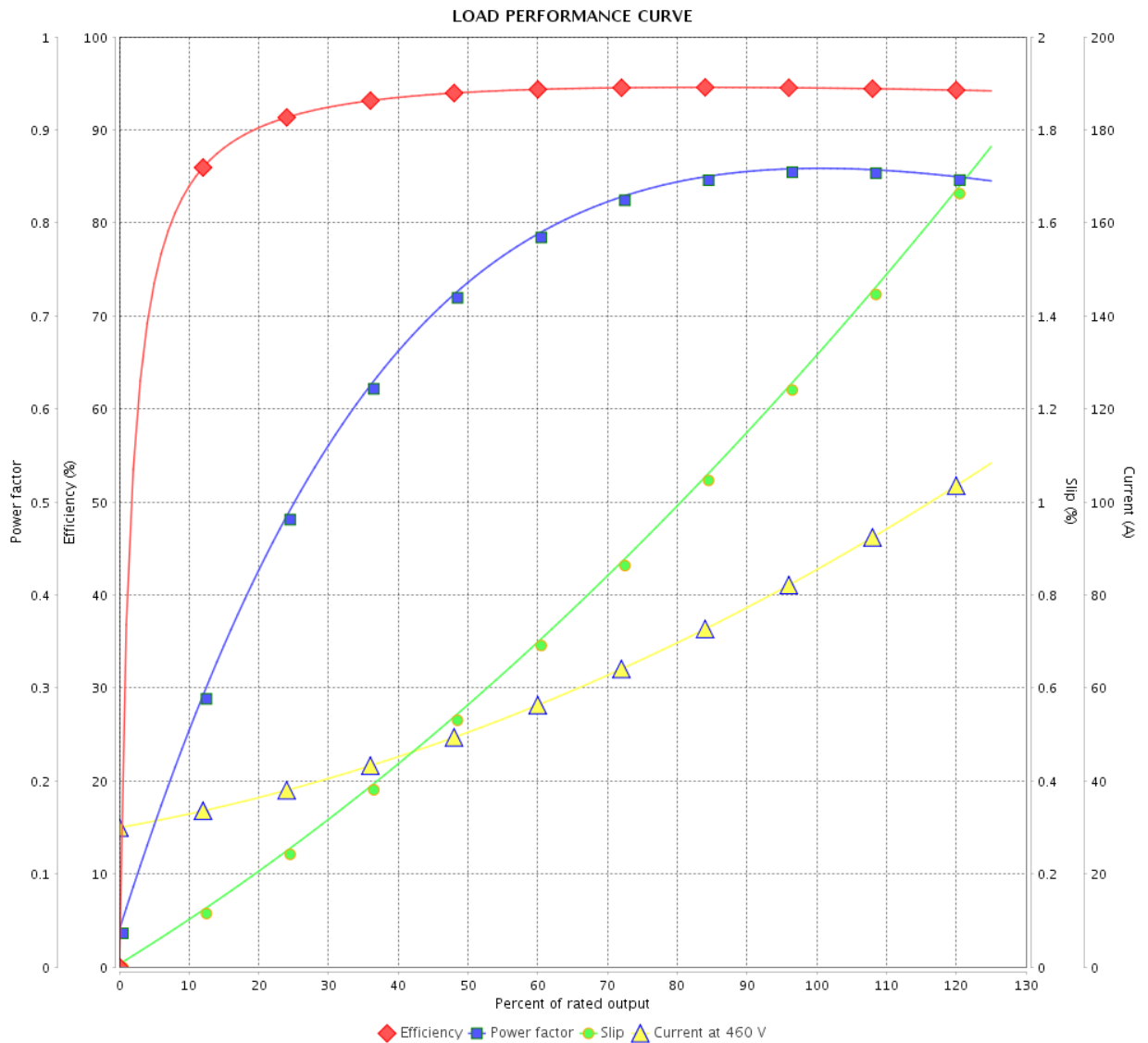


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Performance : 460 V 60 Hz 6P

Rated current : 84.9 A
 LRC : 6.4
 Rated torque : 333 ft.lb
 Locked rotor torque : 200 %
 Breakdown torque : 229 %
 Rated speed : 1184 rpm

Moment of inertia (J) : 40.2 sq.ft.lb
 Duty cycle : Cont.(S1)
 Insulation class : F
 Service factor : 1.25
 Temperature rise : 80 K
 Design : B

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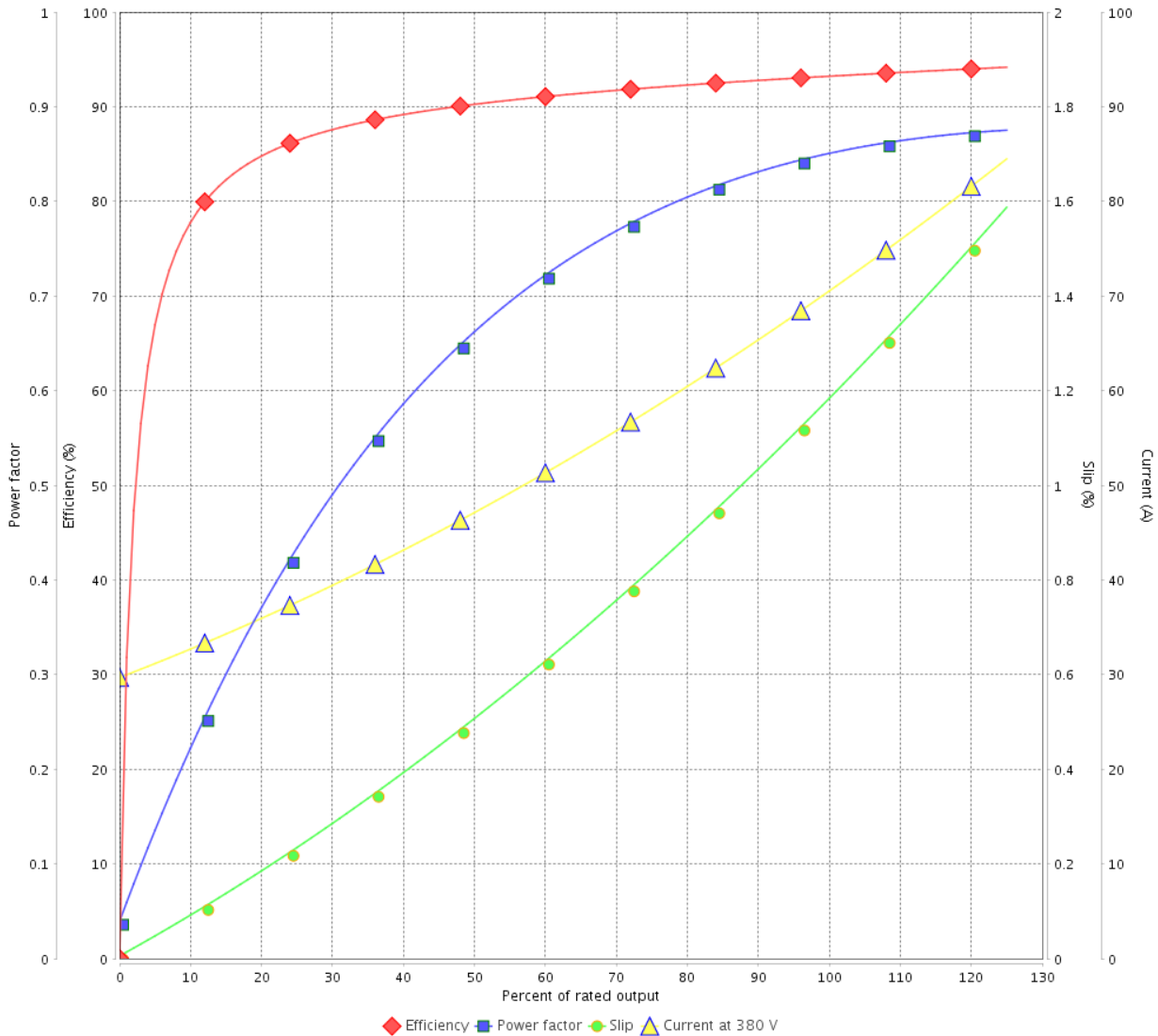
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Performance : 380 V 50 Hz 6P IE3

Rated current	: 70.9 A	Moment of inertia (J)	: 40.2 sq.ft.lb
LRC	: 7.2	Duty cycle	: Cont.(S1)
Rated torque	: 266 ft.lb	Insulation class	: F
Locked rotor torque	: 229 %	Service factor	: 1.00
Breakdown torque	: 270 %	Temperature rise	: 80 K
Rated speed	: 988 rpm	Design	: B

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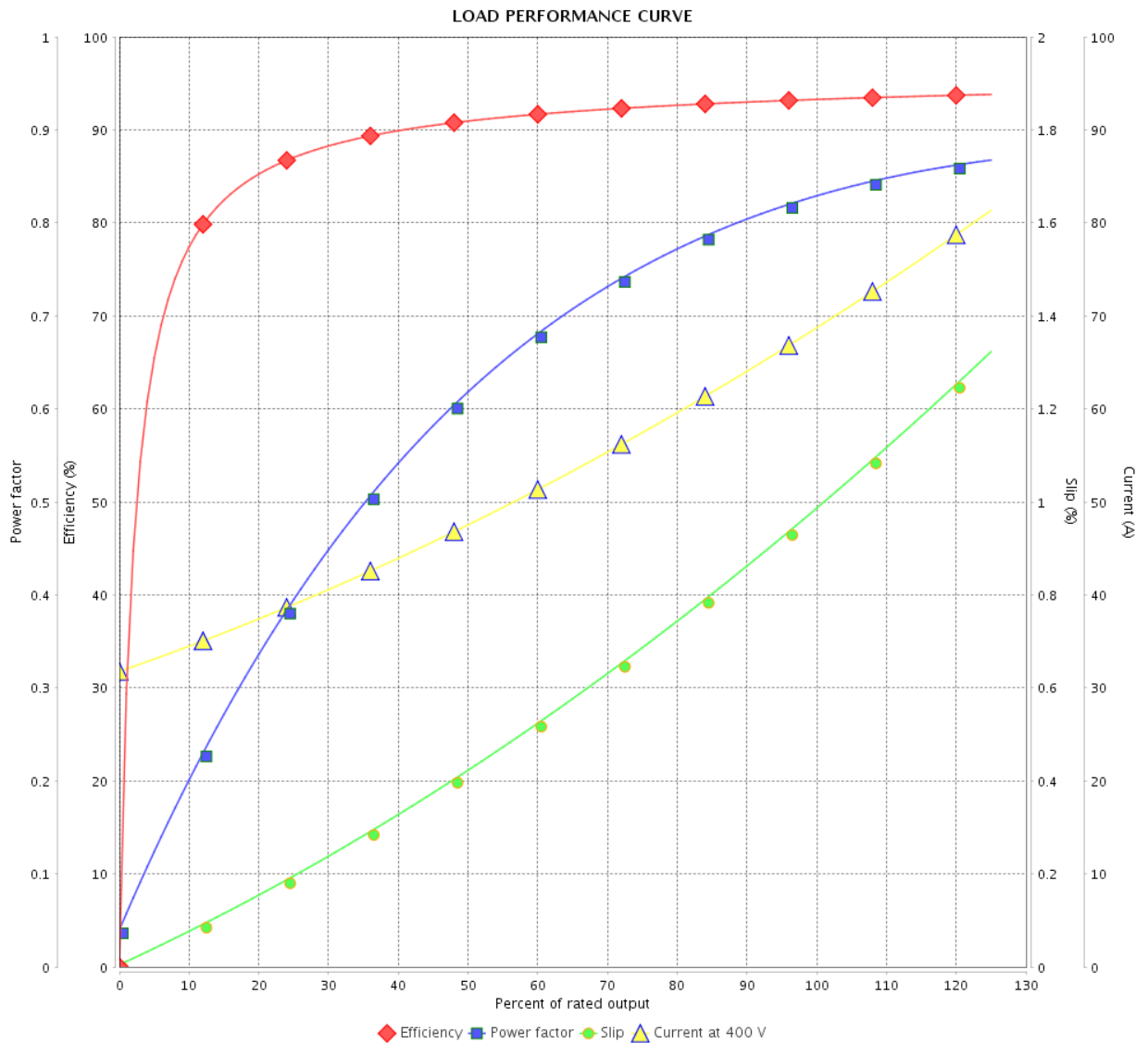


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Performance : 400 V 50 Hz 6P IE3

Rated current : 69.0 A
 LRC : 7.9
 Rated torque : 265 ft.lb
 Locked rotor torque : 260 %
 Breakdown torque : 300 %
 Rated speed : 990 rpm

Moment of inertia (J) : 40.2 sq.ft.lb
 Duty cycle : Cont.(S1)
 Insulation class : F
 Service factor : 1.00
 Temperature rise : 80 K
 Design : B

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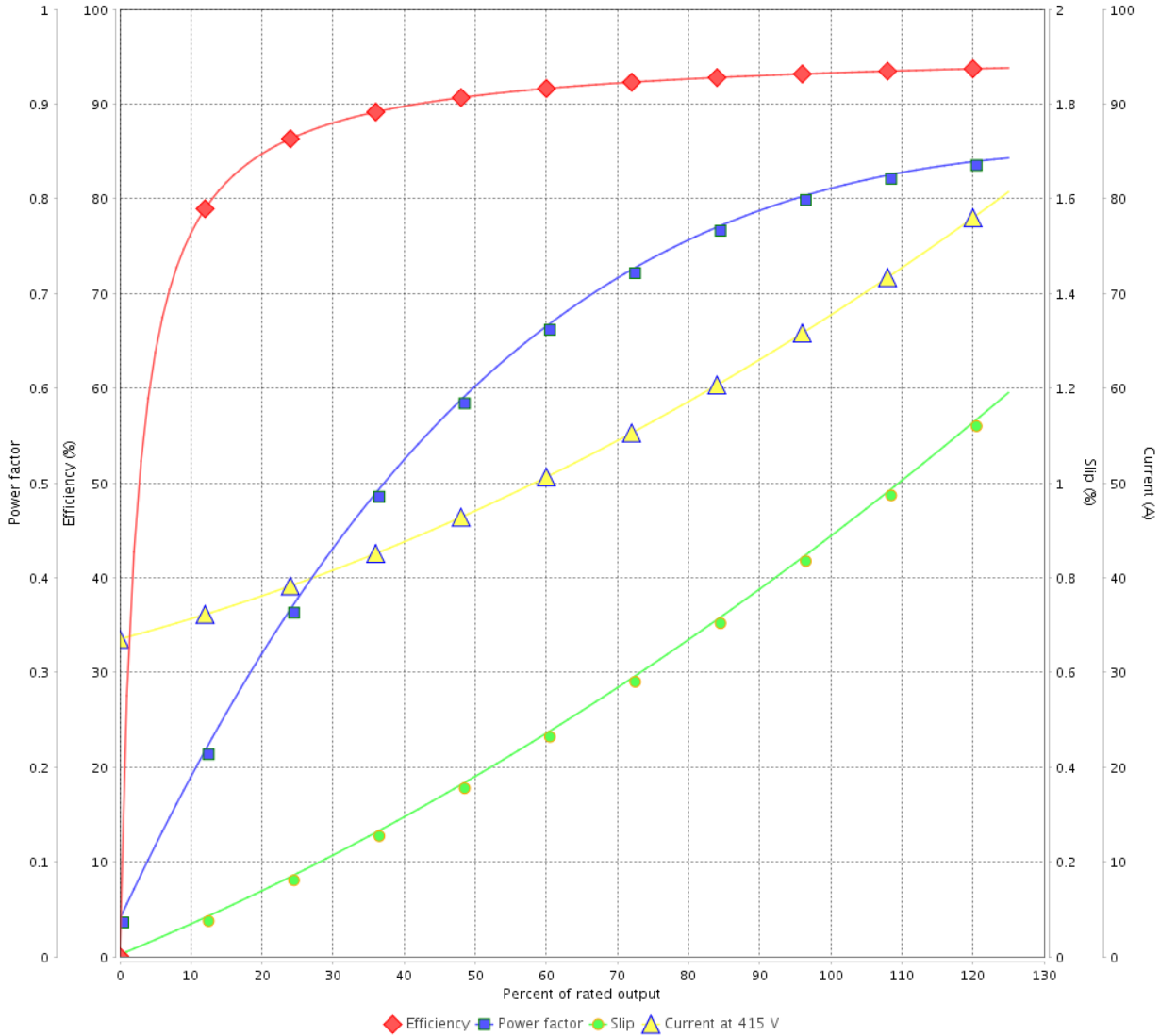
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Rated current : 68.1 A
 LRC : 8.5
 Rated torque : 265 ft.lb
 Locked rotor torque : 290 %
 Breakdown torque : 330 %
 Rated speed : 991 rpm

Moment of inertia (J) : 40.2 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

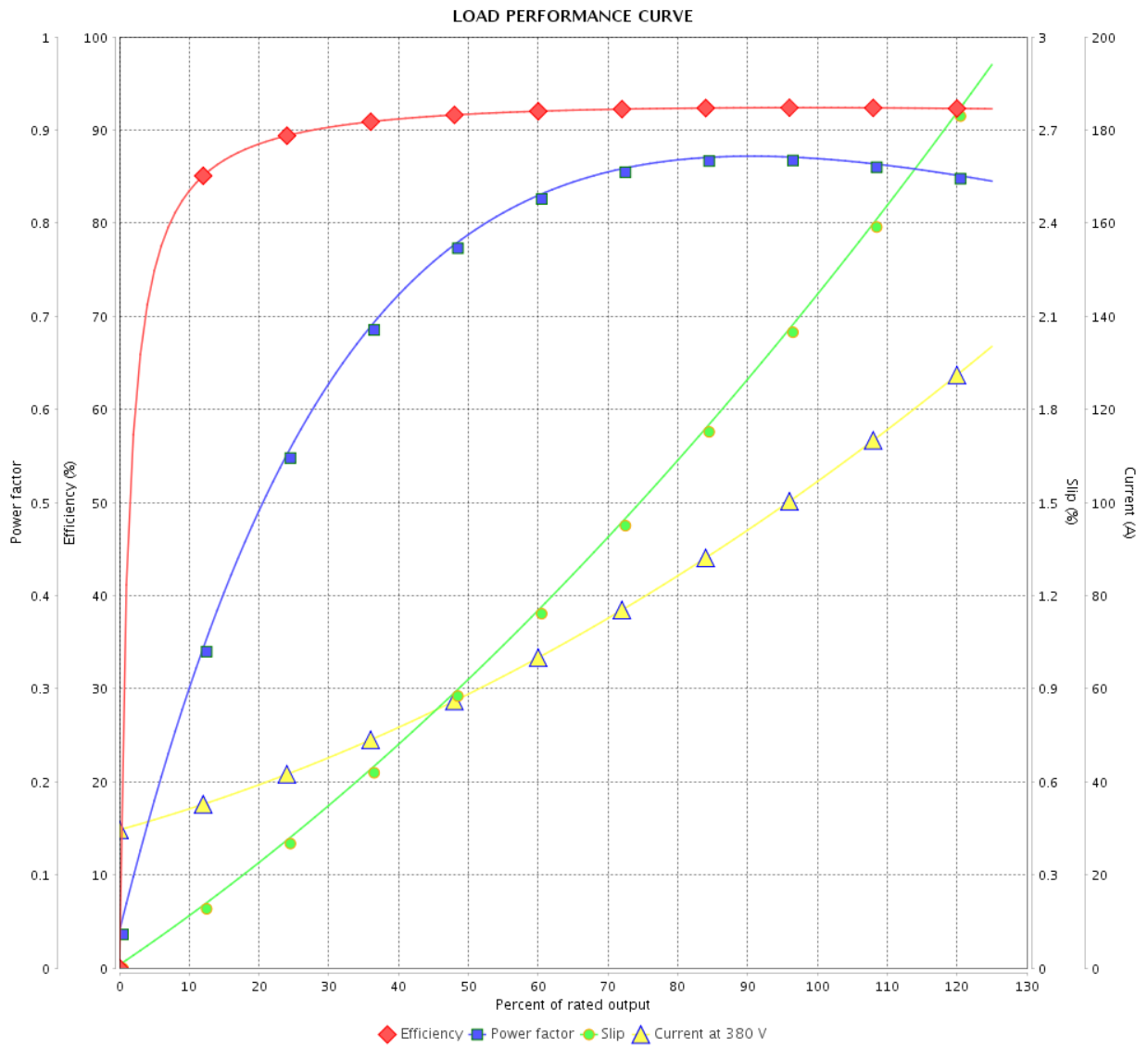


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Catalog # : 07512ST3QIE405T-W22



Performance : 380 V 50 Hz 6P IE1

Rated current : 104 A
 LRC : 4.9
 Rated torque : 403 ft.lb
 Locked rotor torque : 150 %
 Breakdown torque : 180 %
 Rated speed : 978 rpm

Moment of inertia (J) : 40.2 sq.ft.lb
 Duty cycle : Cont.(S1)
 Insulation class : F
 Service factor : 1.00
 Temperature rise : 105 K
 Design : B

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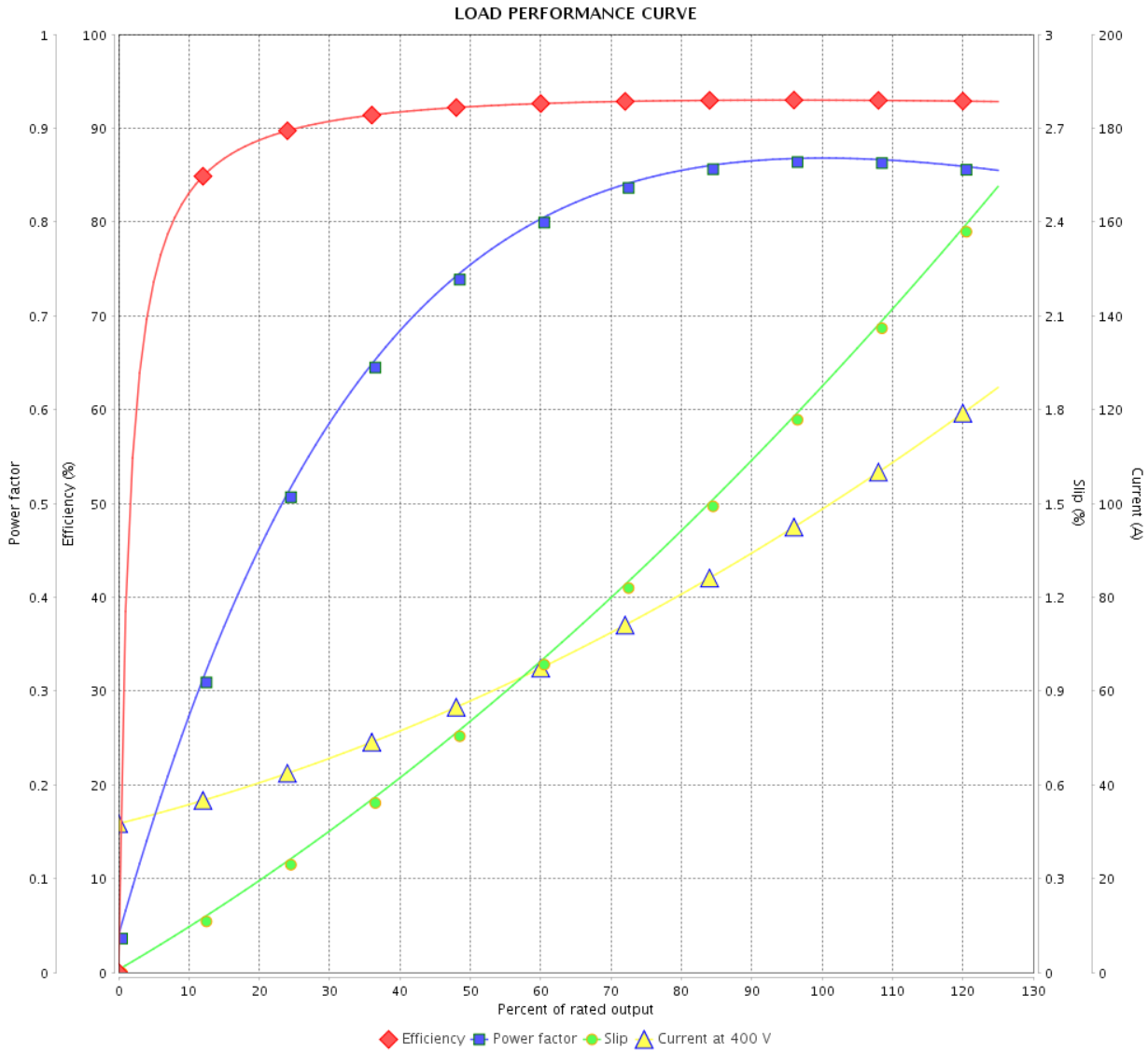


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Performance : 400 V 50 Hz 6P IE1

Rated current : 98.1 A
 LRC : 5.5
 Rated torque : 401 ft.lb
 Locked rotor torque : 170 %
 Breakdown torque : 200 %
 Rated speed : 981 rpm

Moment of inertia (J) : 40.2 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

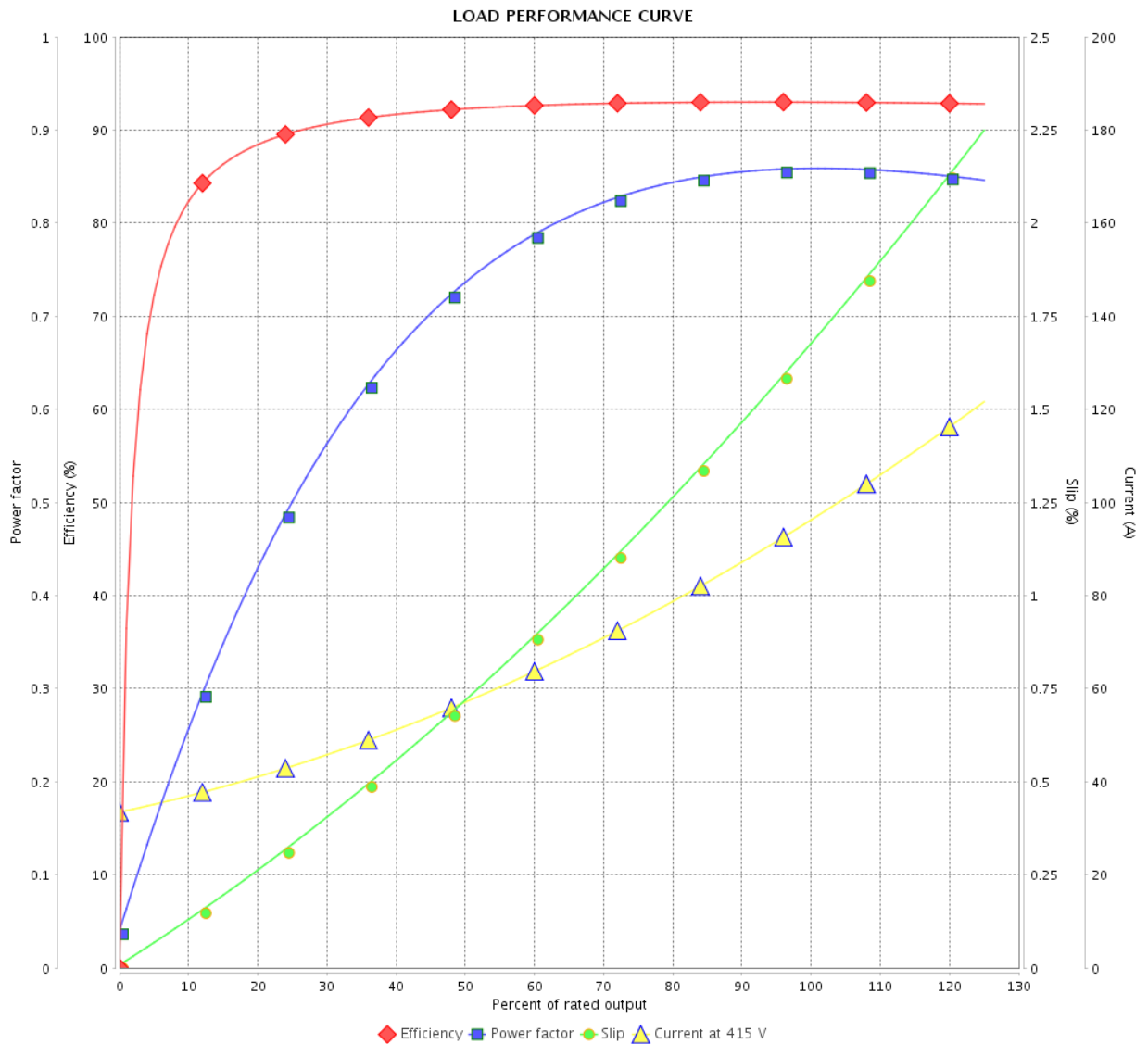


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THERMAL LIMIT CURVE



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Heating constant

Cooling constant

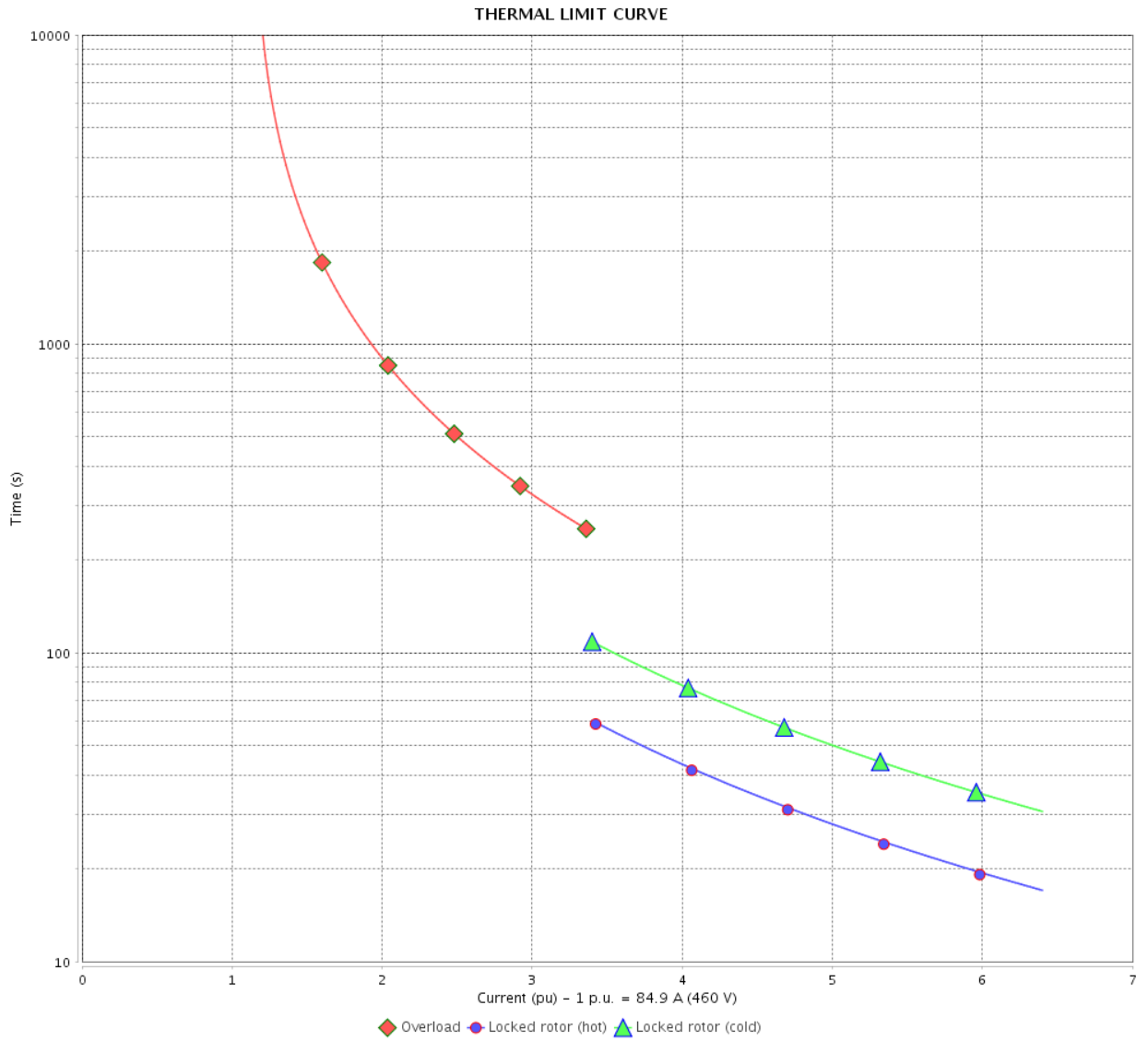
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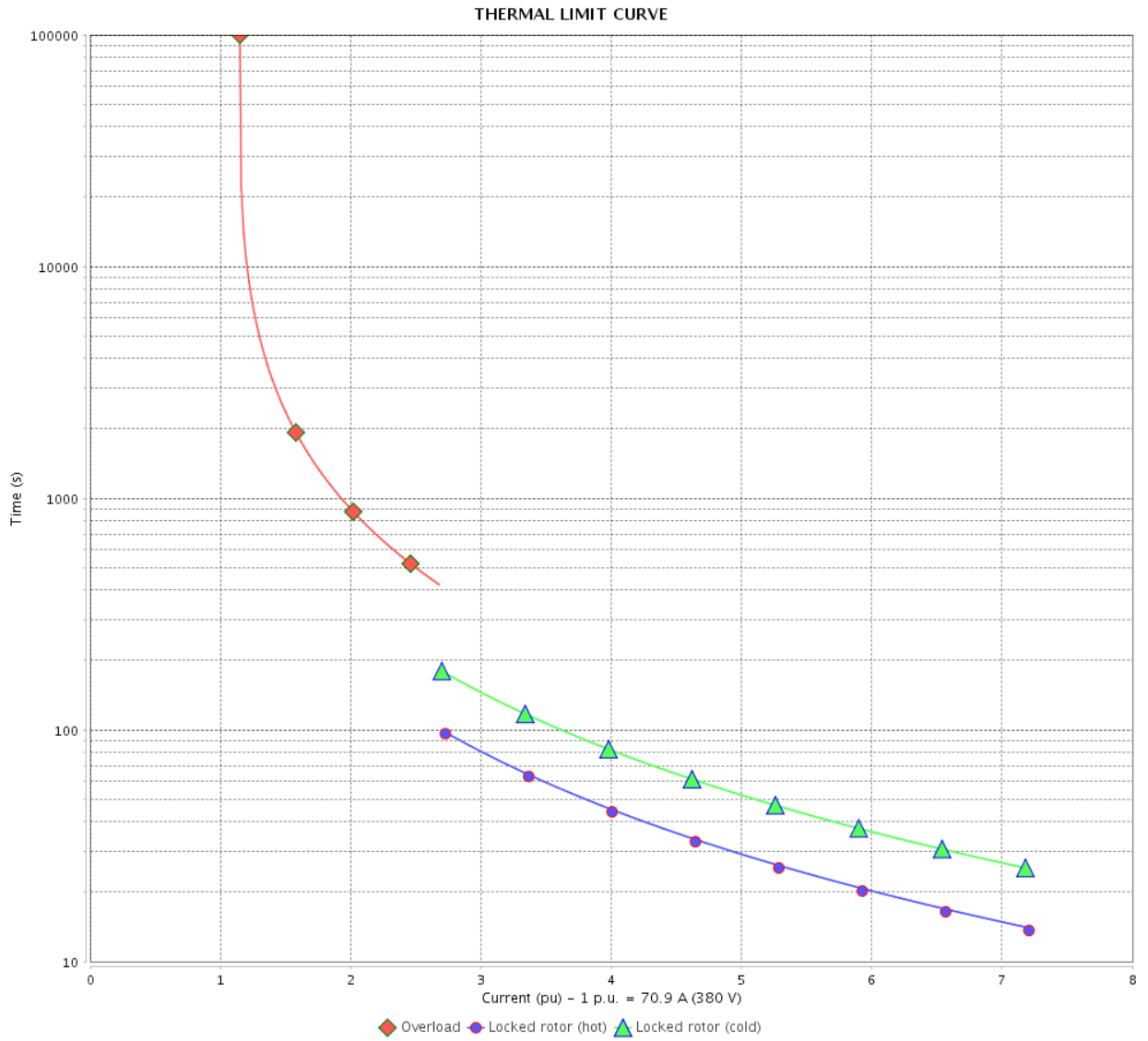
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Locked rotor torque	: 260 %	Service factor	: 1.00
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Rated speed	: 990 rpm	Design	: B

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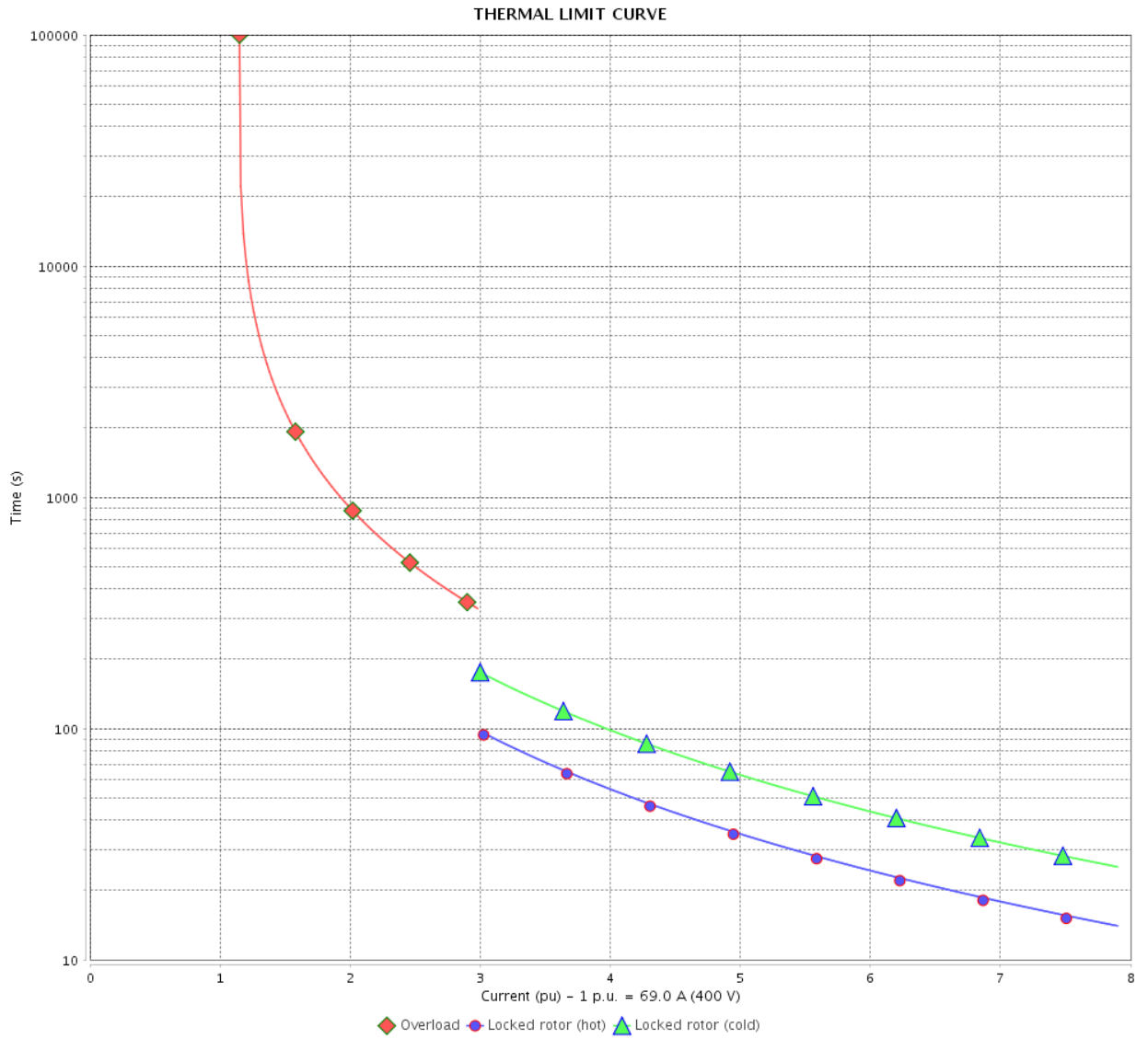
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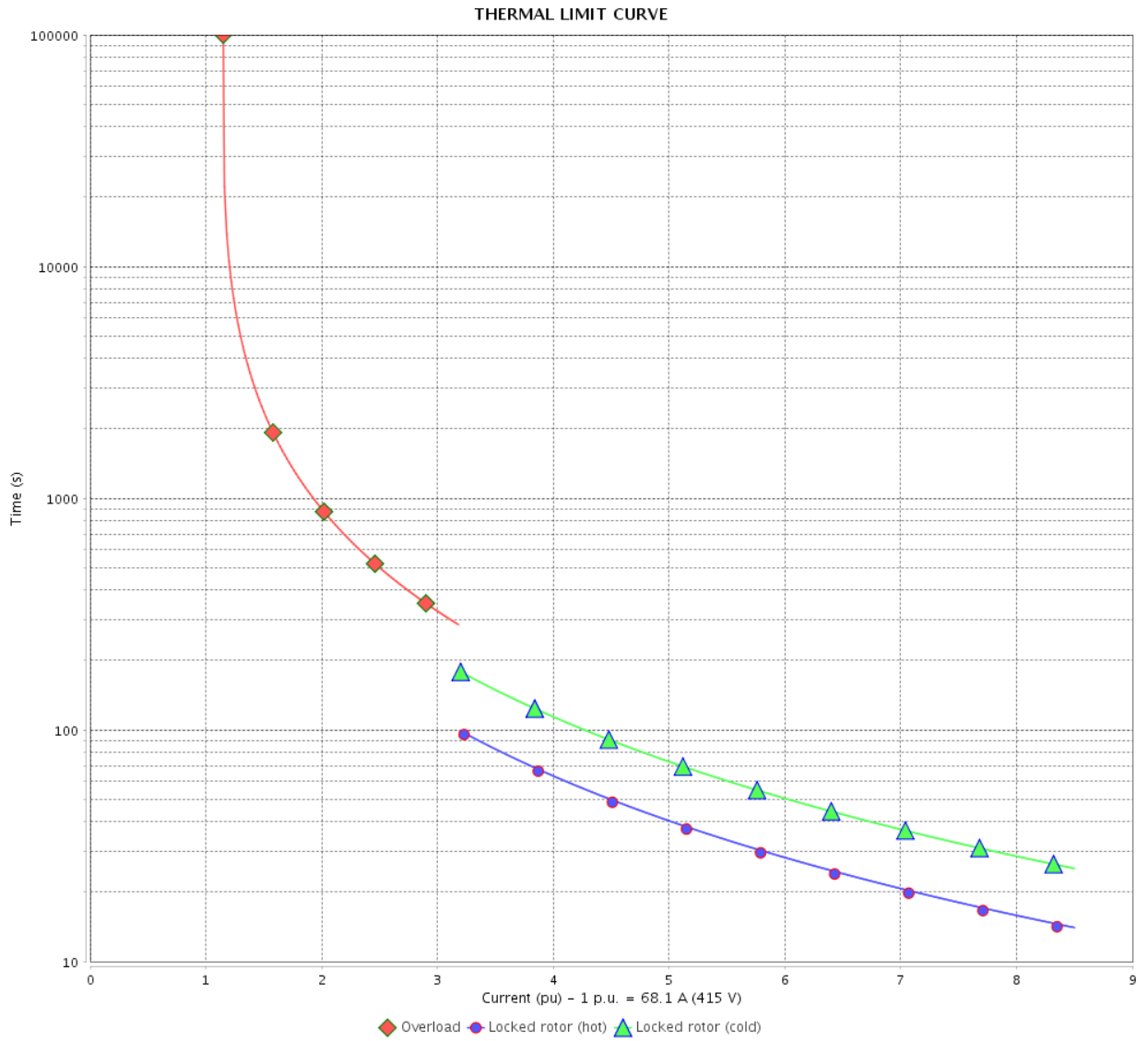
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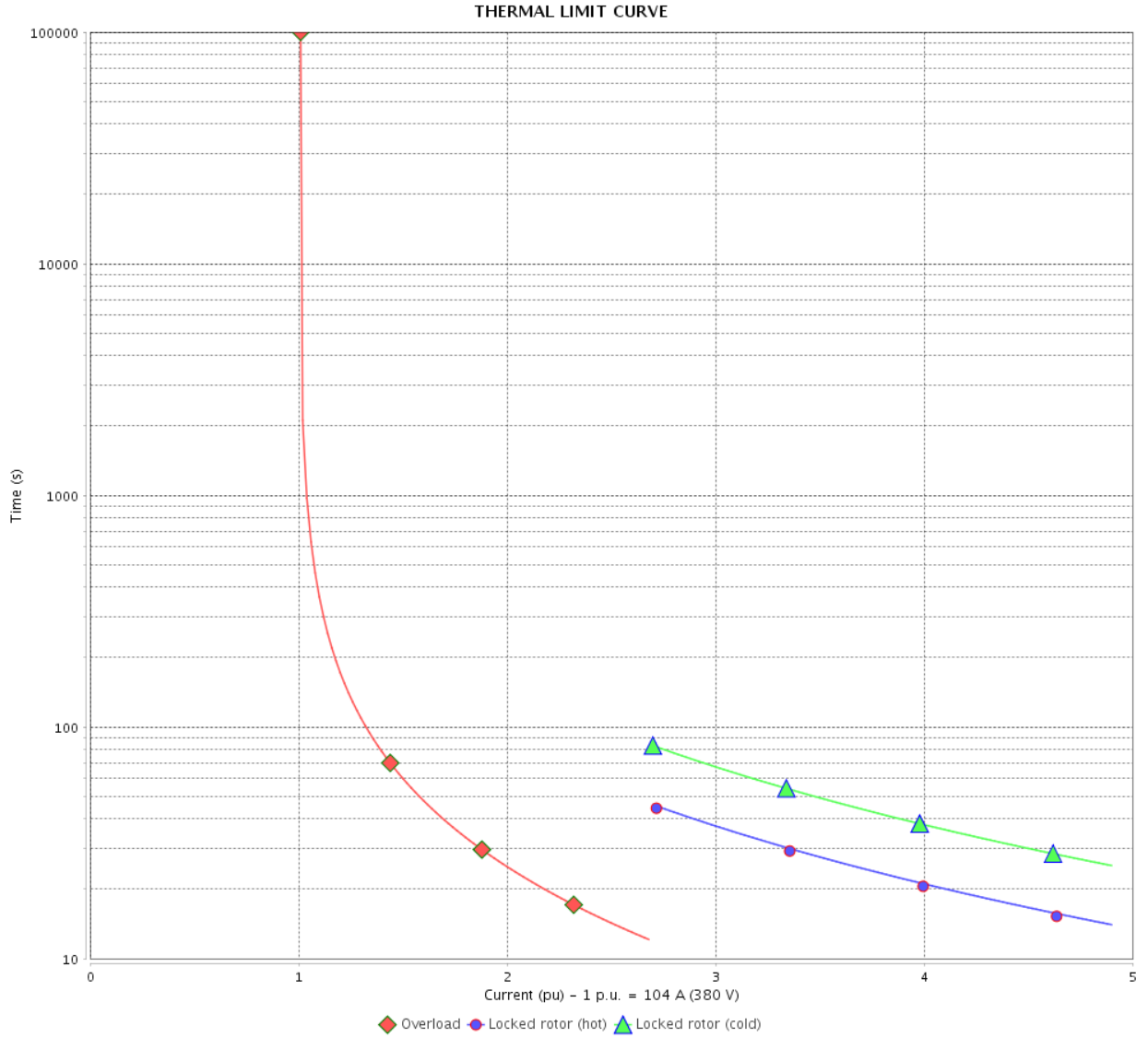
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Heating constant

Cooling constant

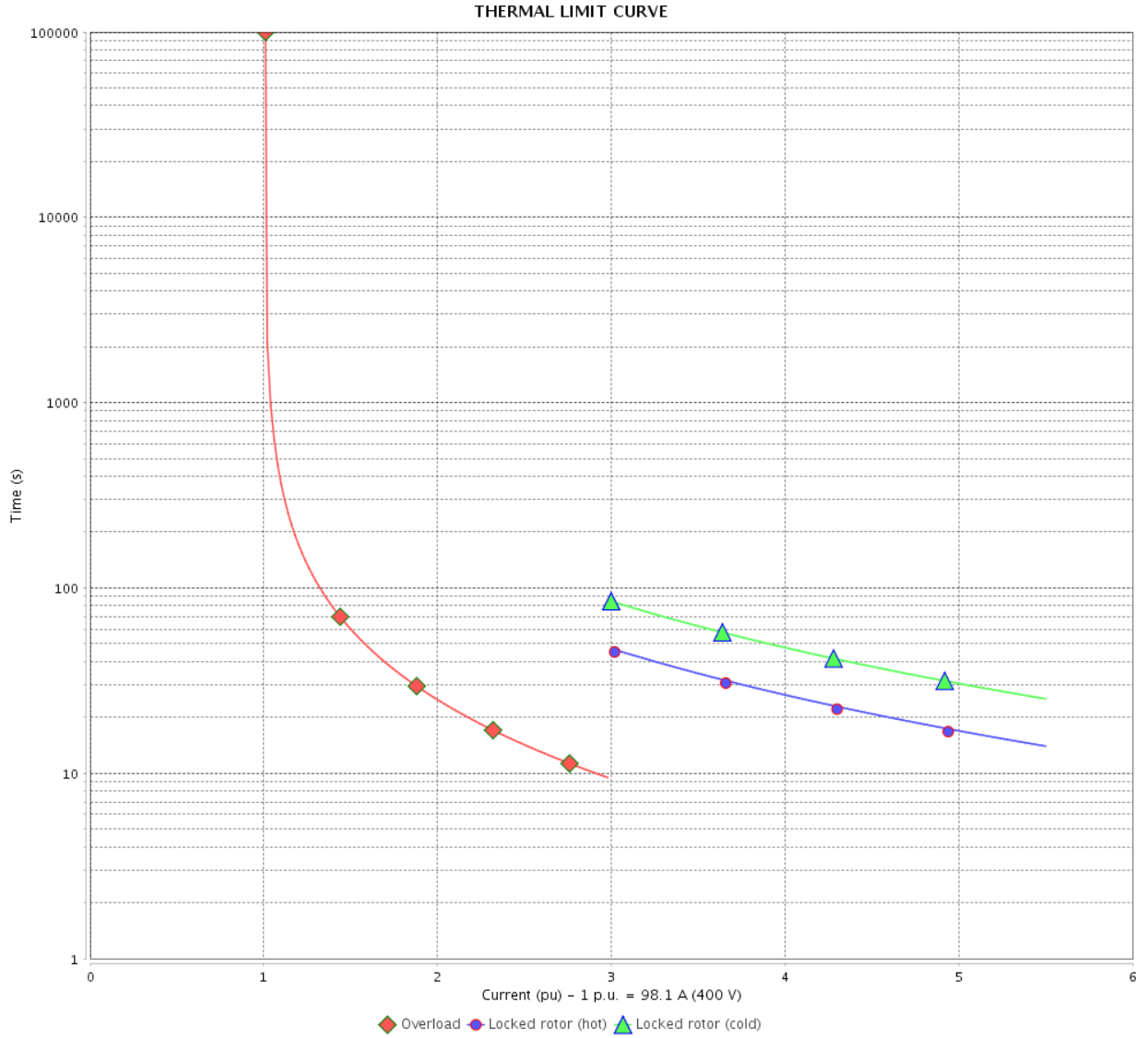
Rev.	Changes Summary	Performed	Checked	Date
Performed by				
Checked by			Page	Revision
Date	13/04/2022		26 / 36	

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 : 11431307
Catalog # : 07512ST3QIE405T-W22

Performance : 415 V 50 Hz 6P IE1

Rated current	: 95.7 A	Moment of inertia (J)	: 40.2 sq.ft.lb
LRC	: 6.0	Duty cycle	: Cont.(S1)
Rated torque	: 401 ft.lb	Insulation class	: F
Locked rotor torque	: 190 %	Service factor	: 1.00
Breakdown torque	: 220 %	Temperature rise	: 105 K
Rated speed	: 983 rpm	Design	: B

Heating constant

Cooling constant

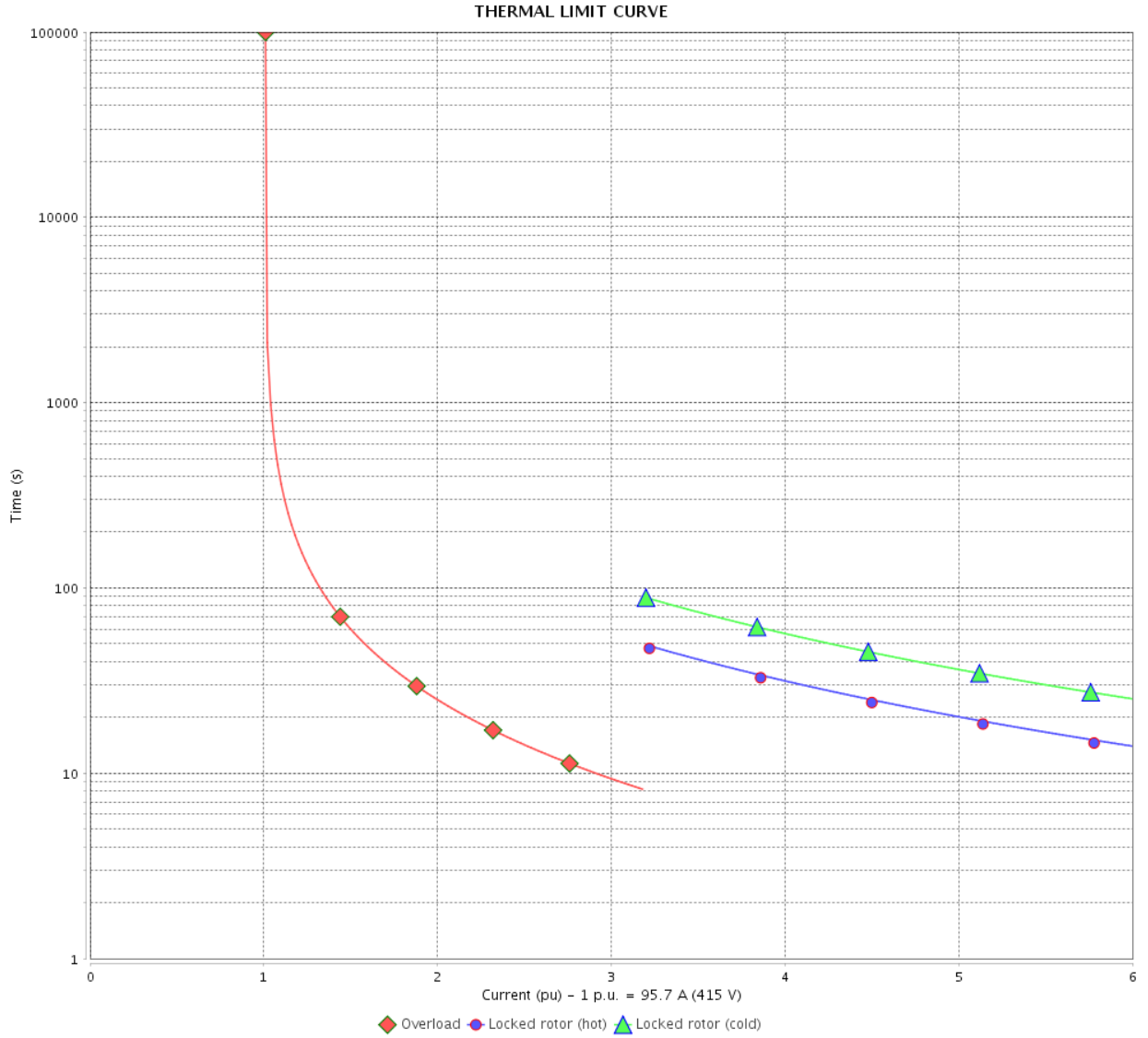
Rev.	Changes Summary	Performed	Checked	Date
Performed by				
Checked by			Page	Revision
Date	13/04/2022		28 / 36	

THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



Customer : _____



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Performed by		Page Revision 29 / 36		
Checked by				
Date				

VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage

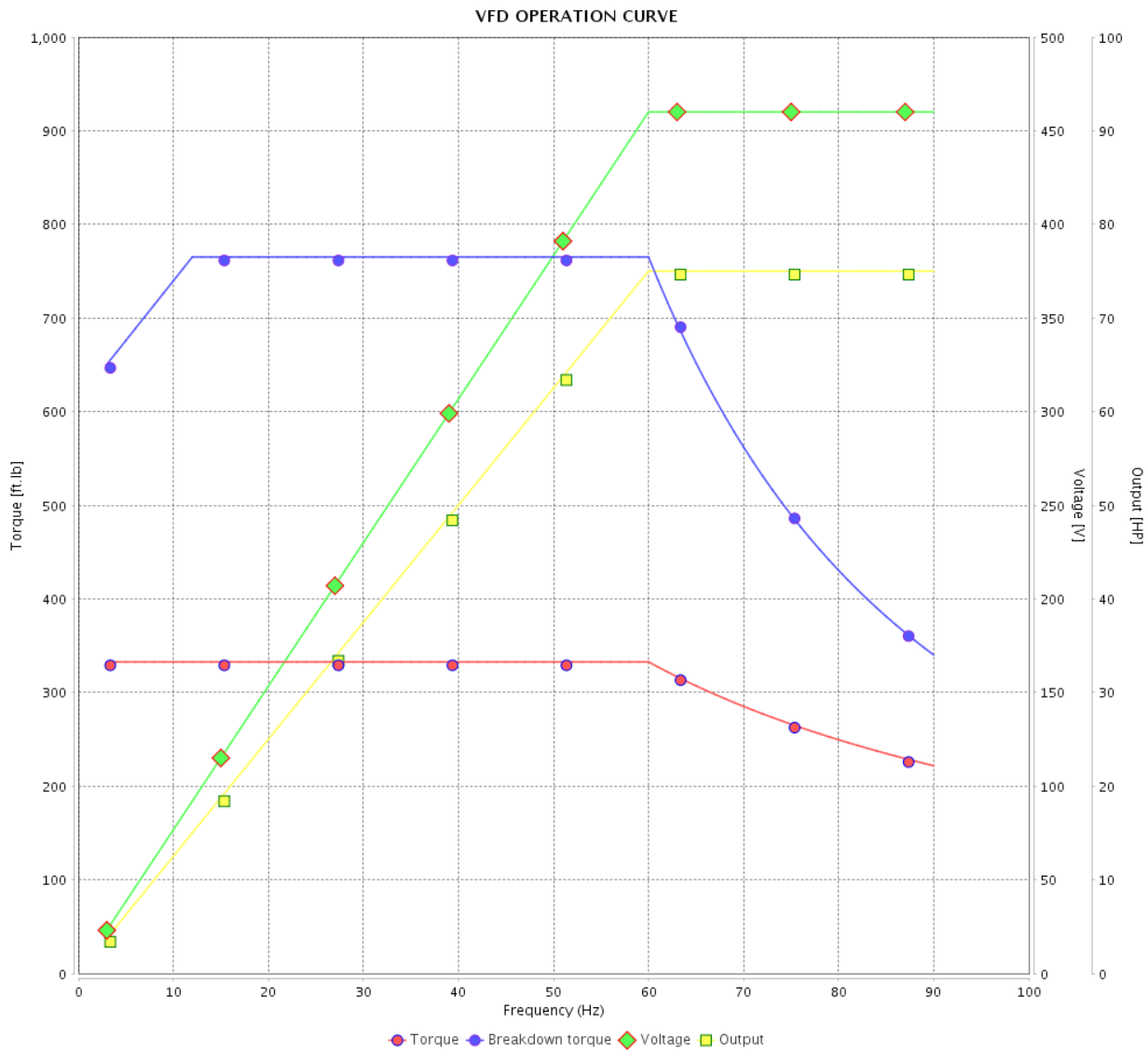


Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 11431307

Catalog # : 07512ST3QIE405T-W22



Performance : 460 V 60 Hz 6P

Rated current : 84.9 A
 LRC : 6.4
 Rated torque : 333 ft.lb
 Locked rotor torque : 200 %
 Breakdown torque : 229 %
 Rated speed : 1184 rpm

Moment of inertia (J) : 40.2 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				
Date				

VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage

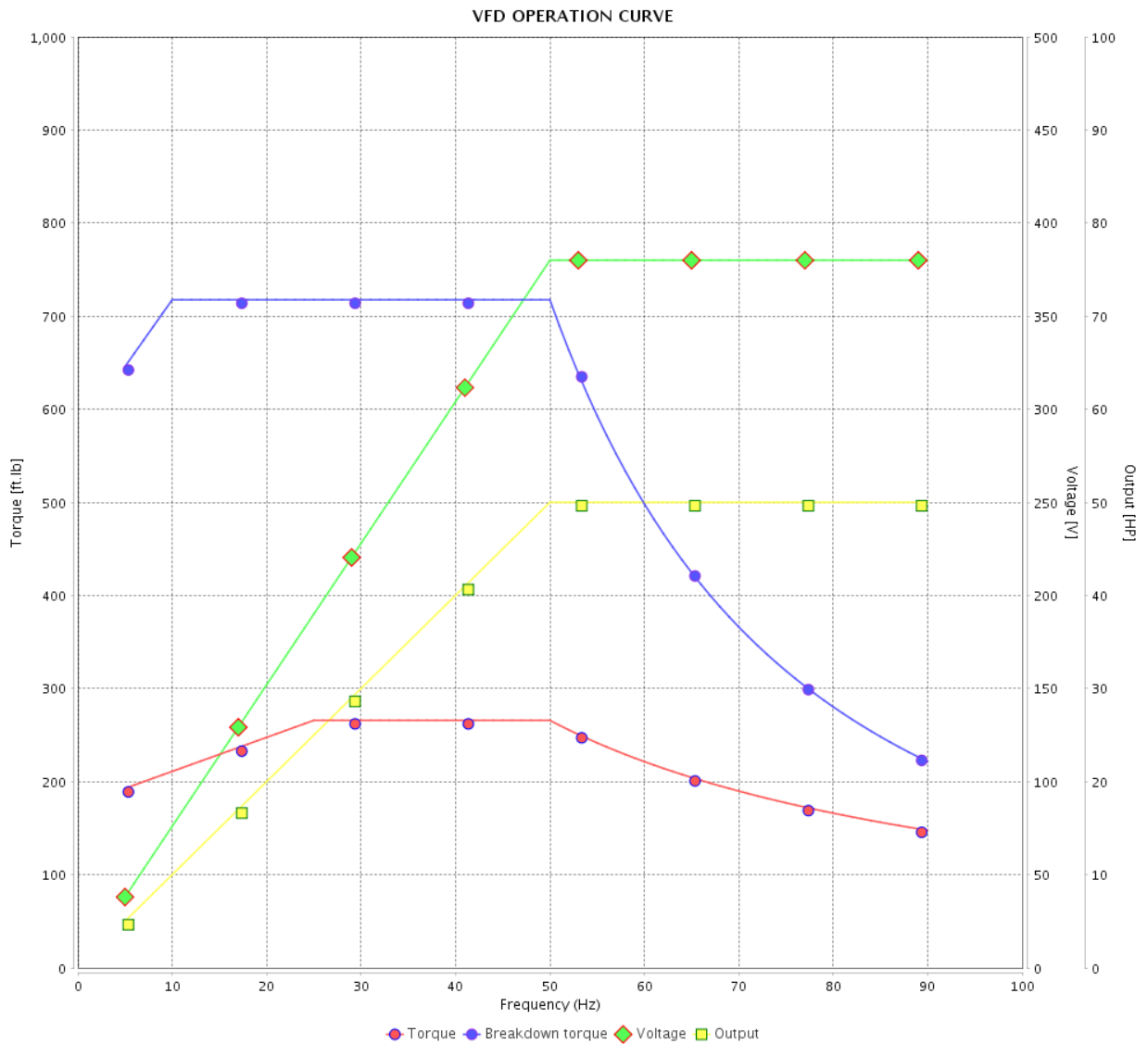


Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 11431307

Catalog # : 07512ST3QIE405T-W22



Performance : 380 V 50 Hz 6P IE3

Rated current : 70.9 A
 LRC : 7.2
 Rated torque : 266 ft.lb
 Locked rotor torque : 229 %
 Breakdown torque : 270 %
 Rated speed : 988 rpm

Moment of inertia (J) : 40.2 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
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Date	13/04/2022			

VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage



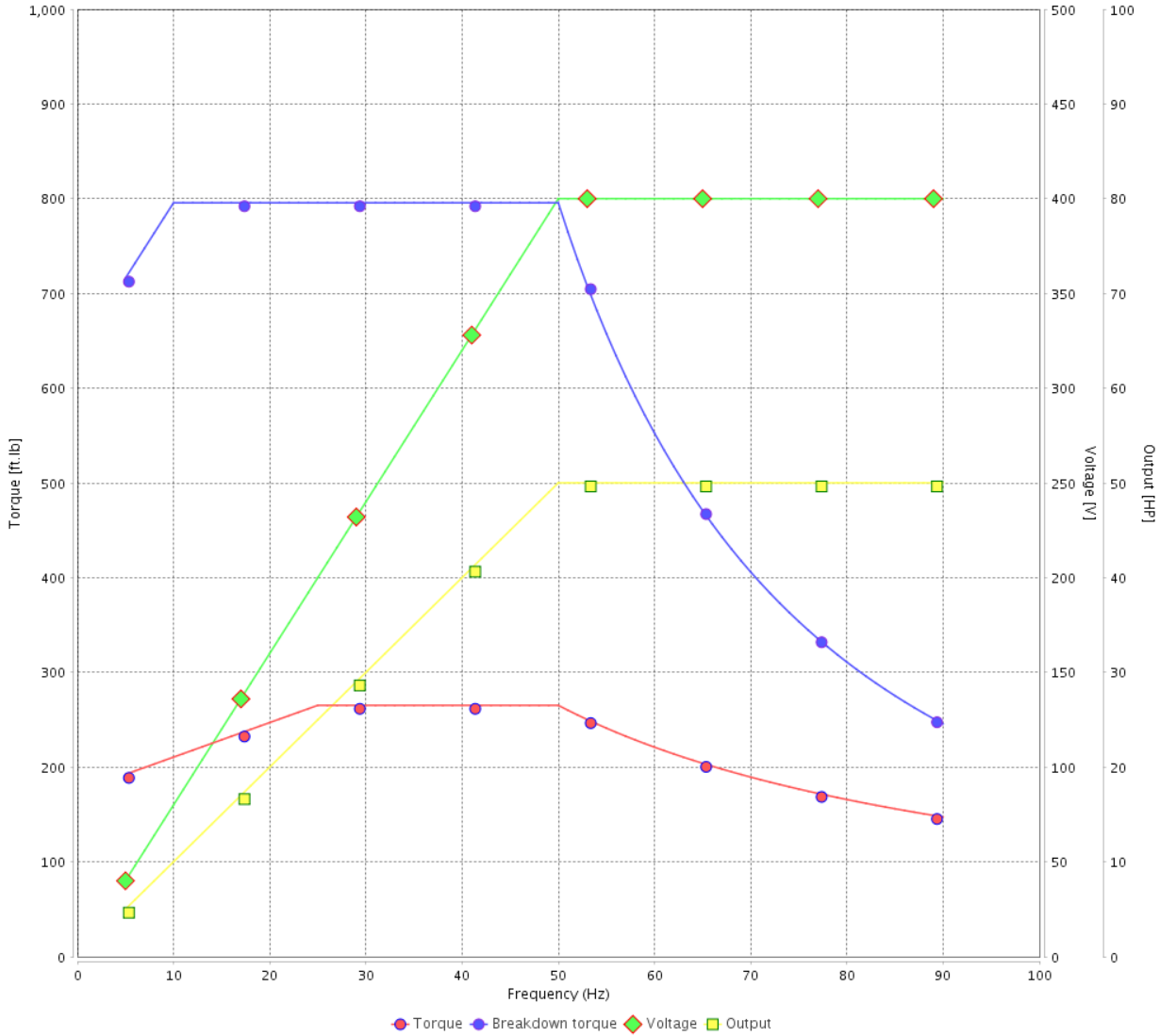
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 11431307

Catalog # : 07512ST3QIE405T-W22

VFD OPERATION CURVE



Performance : 400 V 50 Hz 6P IE3

Rated current : 69.0 A
 LRC : 7.9
 Rated torque : 265 ft.lb
 Locked rotor torque : 260 %
 Breakdown torque : 300 %
 Rated speed : 990 rpm

Moment of inertia (J) : 40.2 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 32 / 36	Revision
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Date	13/04/2022			

VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage

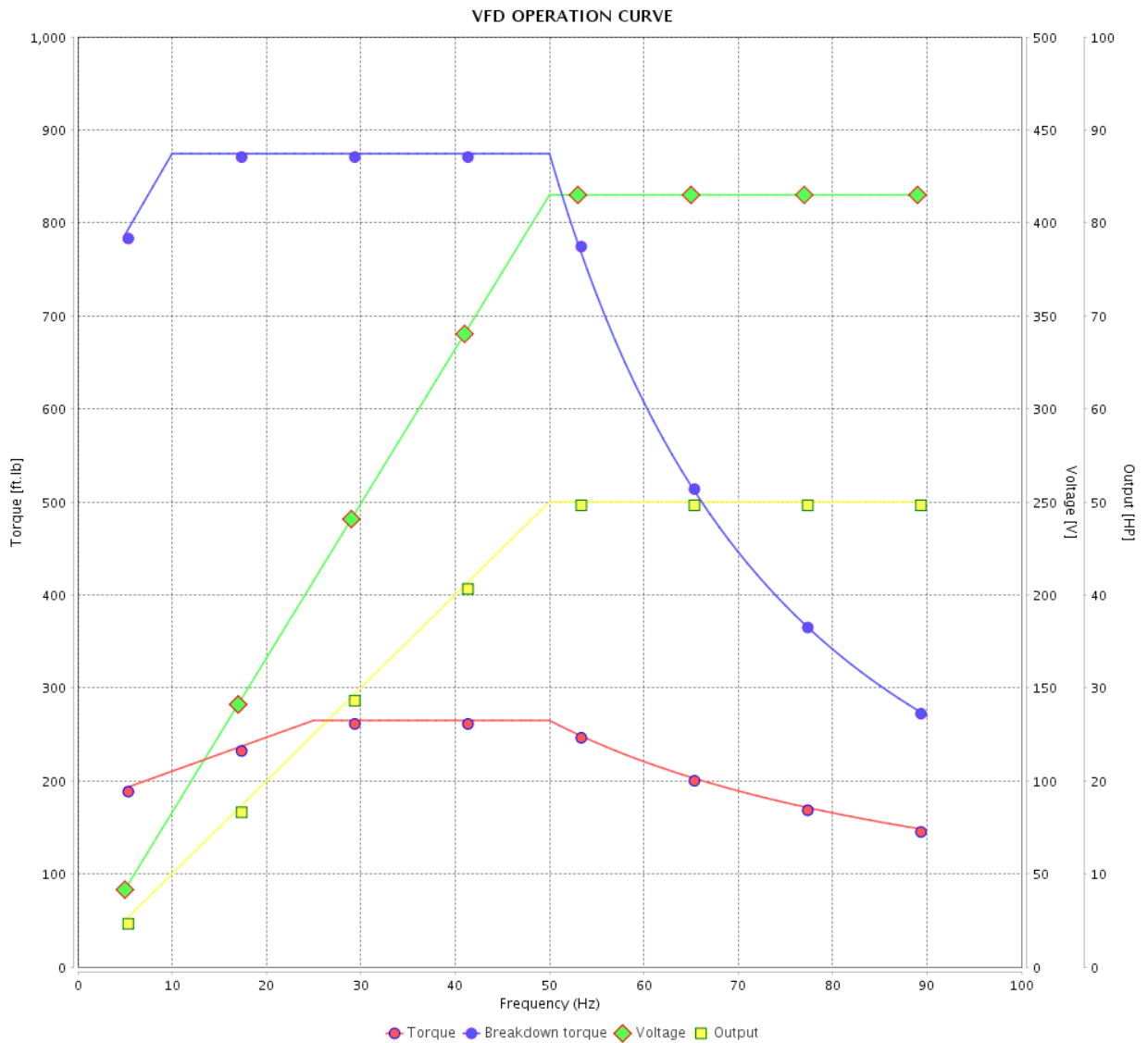


Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 11431307

Catalog # : 07512ST3QIE405T-W22



Performance : 415 V 50 Hz 6P IE3

Rated current : 68.1 A
 LRC : 8.5
 Rated torque : 265 ft.lb
 Locked rotor torque : 290 %
 Breakdown torque : 330 %
 Rated speed : 991 rpm

Moment of inertia (J) : 40.2 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 33 / 36	Revision
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Date	13/04/2022			

VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage



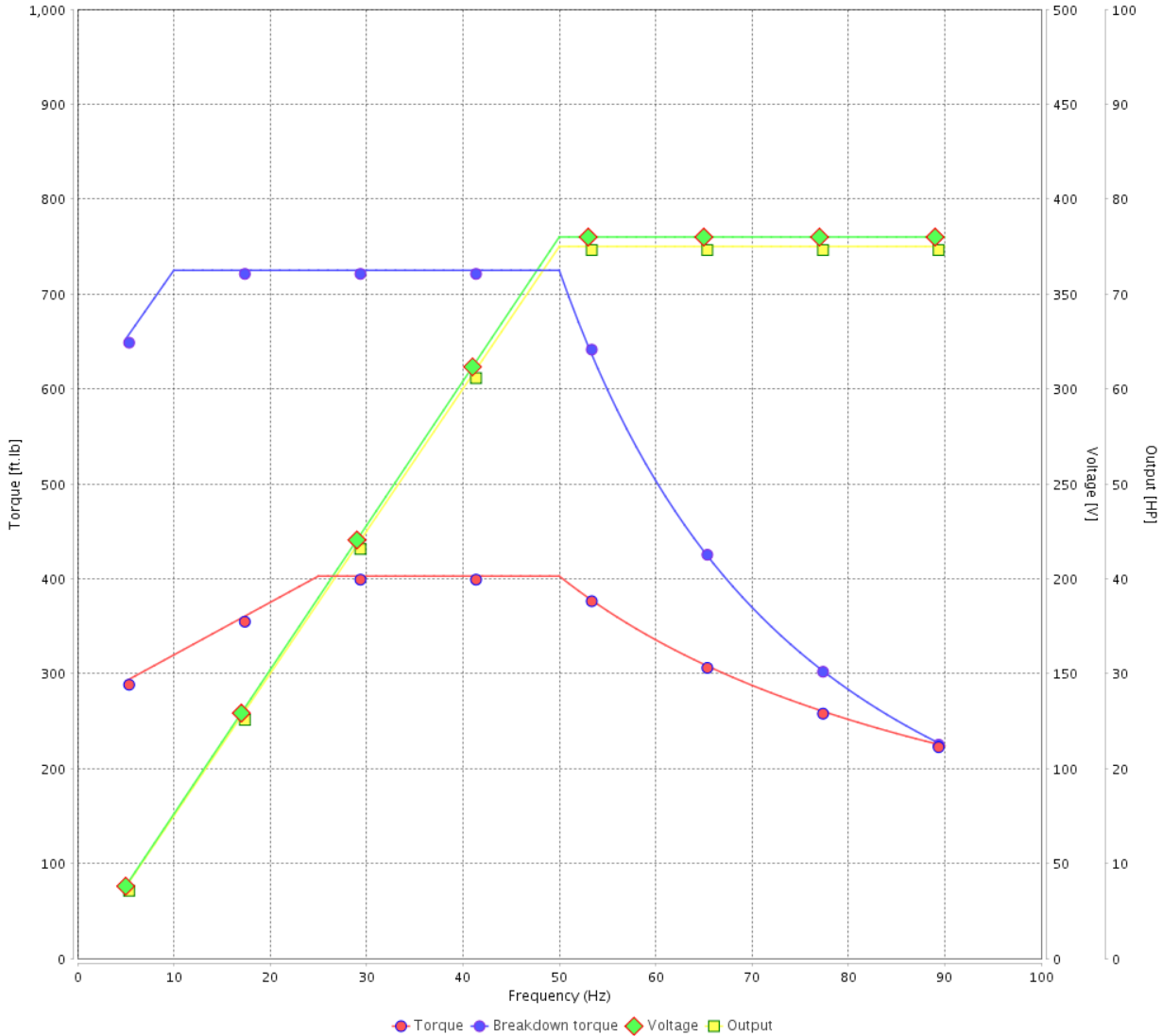
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 11431307

Catalog # : 07512ST3QIE405T-W22

VFD OPERATION CURVE



Performance : 380 V 50 Hz 6P IE1

Rated current	: 104 A	Moment of inertia (J)	: 40.2 sq.ft.lb
LRC	: 4.9	Duty cycle	: Cont.(S1)
Rated torque	: 403 ft.lb	Insulation class	: F
Locked rotor torque	: 150 %	Service factor	: 1.00
Breakdown torque	: 180 %	Temperature rise	: 105 K
Rated speed	: 978 rpm	Design	: B

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VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage

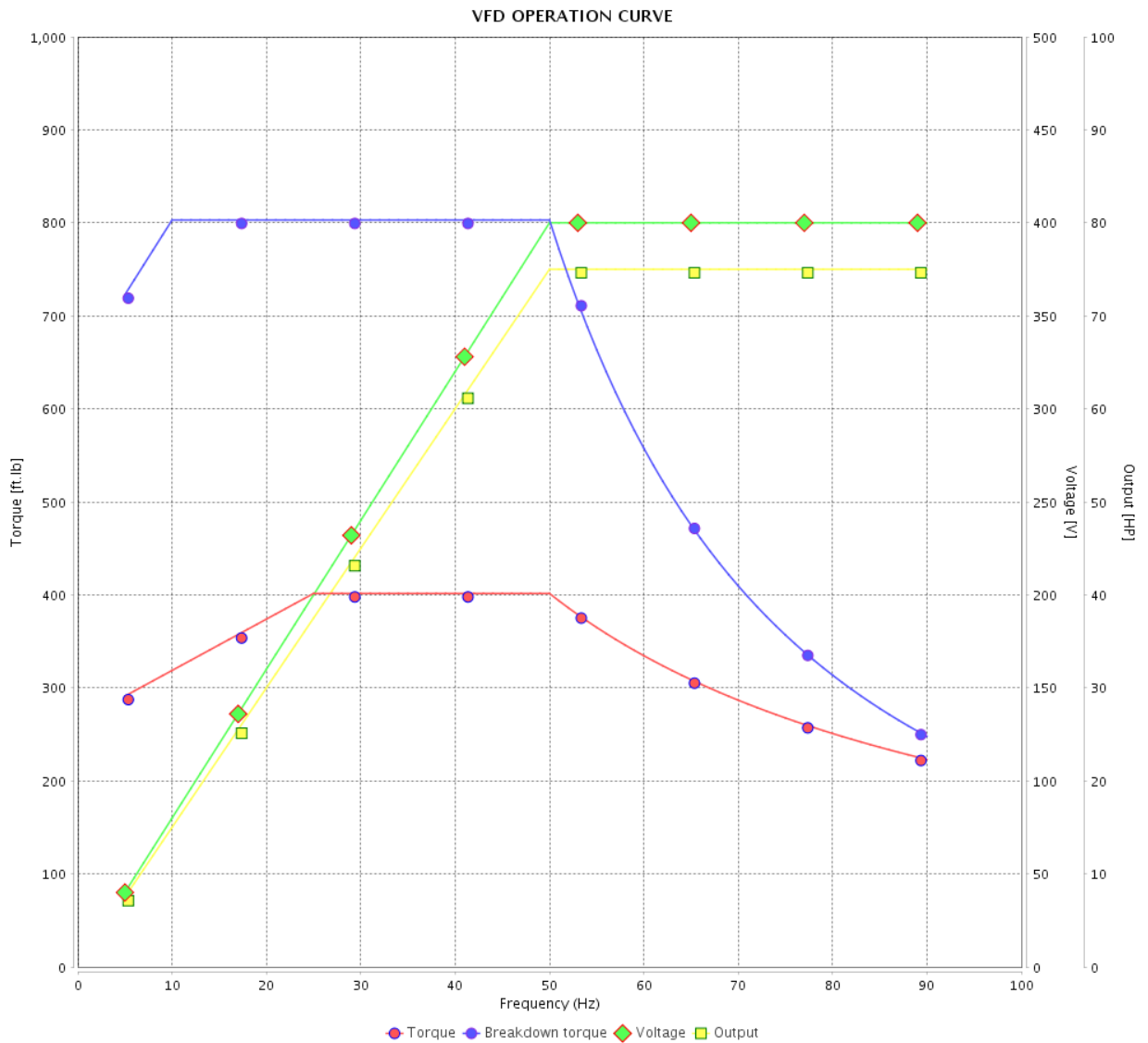


Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 11431307

Catalog # : 07512ST3QIE405T-W22



Performance : 400 V 50 Hz 6P IE1

Rated current : 98.1 A
 LRC : 5.5
 Rated torque : 401 ft.lb
 Locked rotor torque : 170 %
 Breakdown torque : 200 %
 Rated speed : 981 rpm

Moment of inertia (J) : 40.2 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	Revision
Checked by				
Date	13/04/2022			

VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage



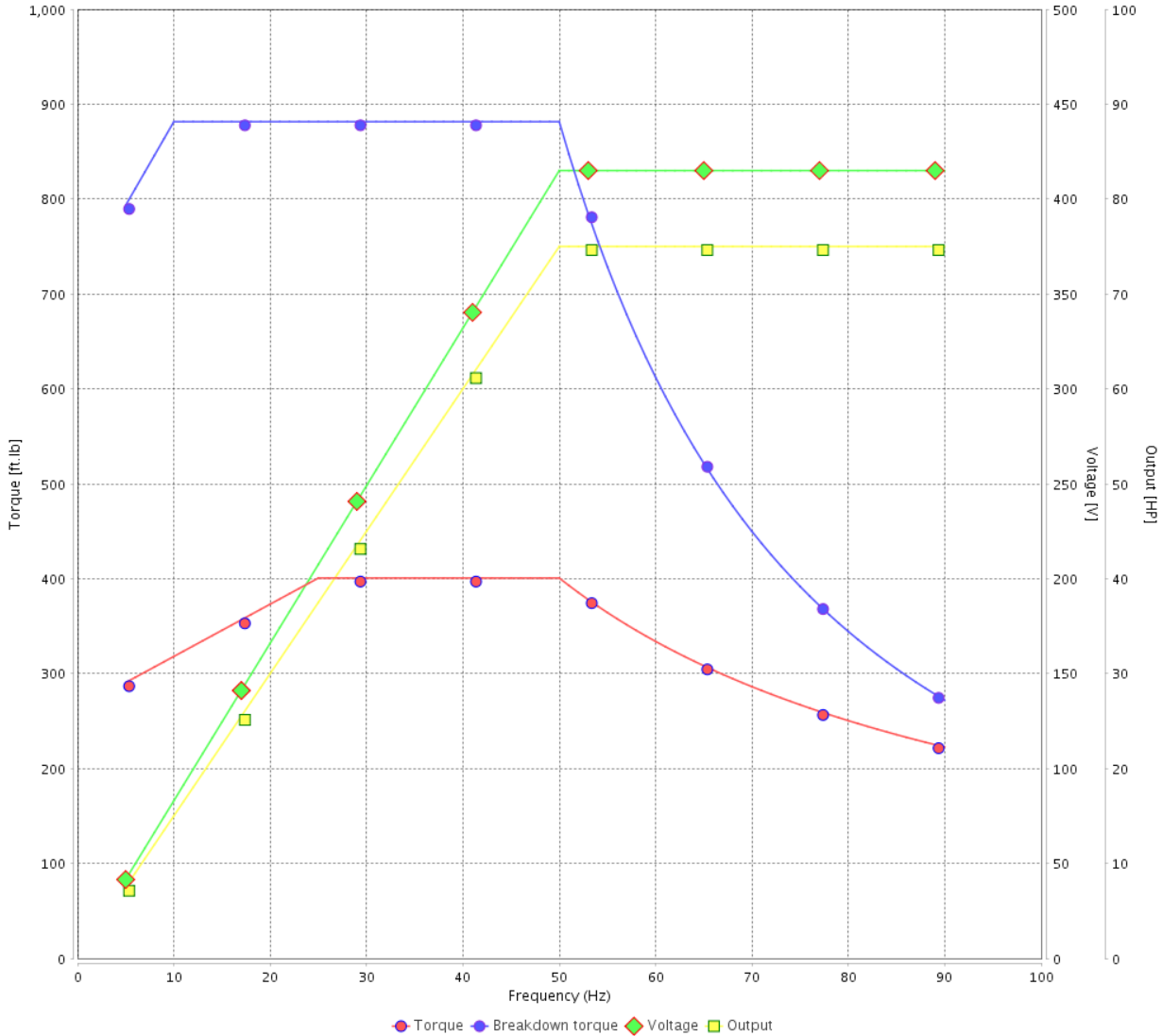
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 11431307

Catalog # : 07512ST3QIE405T-W22

VFD OPERATION CURVE



Performance : 415 V 50 Hz 6P IE1

Rated current : 95.7 A
 LRC : 6.0
 Rated torque : 401 ft.lb
 Locked rotor torque : 190 %
 Breakdown torque : 220 %
 Rated speed : 983 rpm

Moment of inertia (J) : 40.2 sq.ft.lb
 Duty cycle : Cont.(S1)
 Insulation class : F
 Service factor : 1.00
 Temperature rise : 105 K
 Design : B

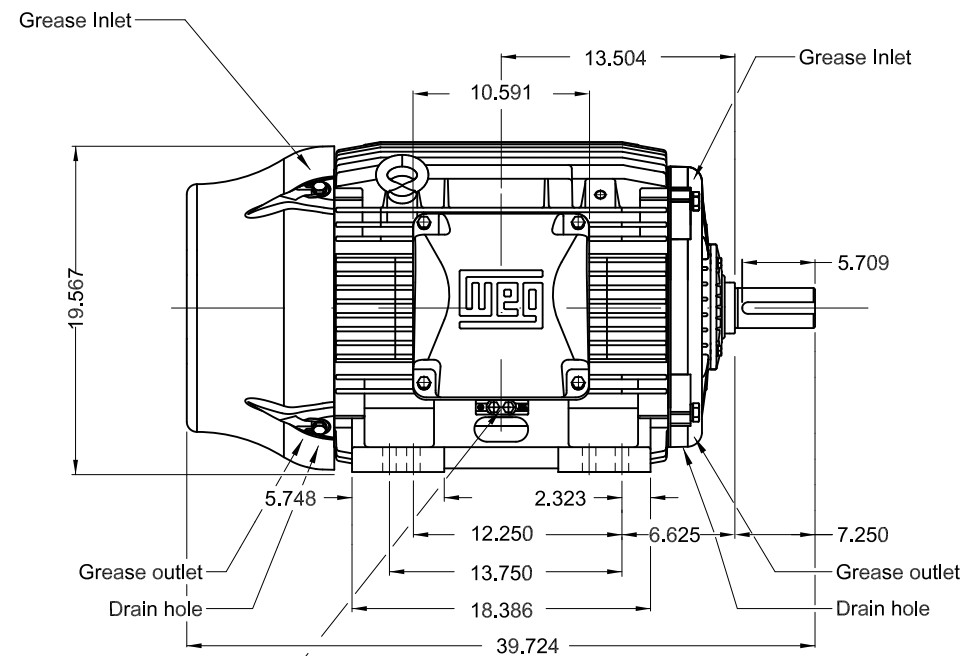
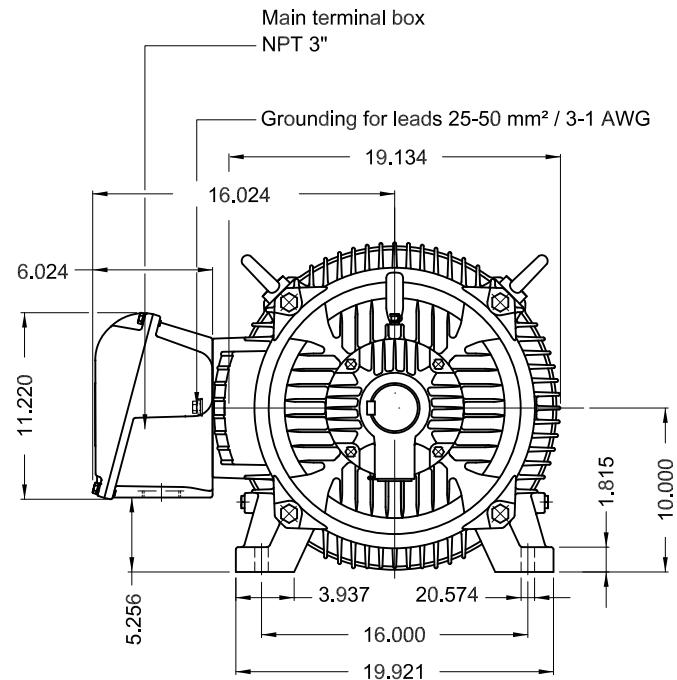
Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page	Revision
Checked by				
Date				

1 2 3 4 5 6

A

B

C

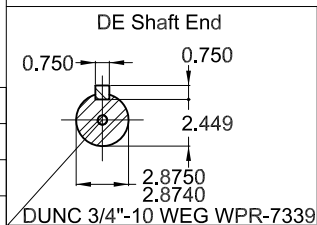


Grounding for leads 25-185 mm² / 3AWG-350MCM

D

E

Without vertical jackscrews
 Color RAL 5009
 Painting plan 202E
 Mounting B3R(D)



75 HP 06 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 404/5T 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 - T4
For use on PWM: Gr. A, B, C, D and F,
VT 1000:1, CT 20:1, 1.00SF - T3A

MODEL 07512ST3QIE405T-W22



Inverter Duty Motor
Severe Duty

MADE IN BRAZIL
11431307

PH3 60Hz Fr. 404/5T 1000m.a.s.l. IP55 TEFC 1212lb

V 460

A 84.9

HP 75

kW 55

SF 1.25

SFA 106

RPM 1184

PF 0.86

AMB 40°C

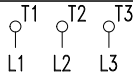
INS cl. F DT80K

NEMA NOM EFF 94.5%

DUTY CONT.

DES B Code G

GUARANT. EFF 93.6%



460V



→ 6316-C3 (34g) 80BC03X30

→ 6314-C3 (27g) 70BC03X30



MOBIL POLYREX EM (16000h)

