

DATA SHEET



Three Phase Induction Motor - Squirrel Cage

Customer								
Product line	: NEMA Premium Efficiency Three-Phase	Product code	: 12447791					
		Catalog #	: 02512ST3QIE324TC-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	: 566 lb					
Protection degree	: IP55	Moment of inertia (J)	: 11.5 sq.ft.lb					
Design	: B							
Output [HP]	25	20	20	20	25	25	25	
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]	30.4	30.0	29.4	28.6	36.3	35.1	34.2	
L. R. Amperes [A]	182	174	185	194	171	183	192	
LRC [A]	6.0x(Code G)	5.8x(Code G)	6.3x(Code H)	6.8x(Code H)	4.7x(Code D)	5.2x(Code F)	5.6x(Code F)	
No load current [A]	12.5	12.3	13.3	14.2	12.3	13.3	14.2	
Rated speed [RPM]	1175	970	975	980	965	970	975	
Slip [%]	2.08	3.00	2.50	2.00	3.50	3.00	2.50	
Rated torque [ft.lb]	112	108	108	107	136	135	135	
Locked rotor torque [%]	210	200	229	250	160	180	190	
Breakdown torque [%]	250	240	280	300	190	220	240	
Service factor	1.25	1.00	1.15	1.15	1.00	1.15	1.15	
Temperature rise	80 K	80 K	80 K	80 K	80 K	80 K	80 K	
Locked rotor time	46s (cold)	32s (cold)	32s (cold)	32s (cold)	32s (cold)	32s (cold)	32s (cold)	
	26s (hot)	18s (hot)	18s (hot)	18s (hot)	18s (hot)	18s (hot)	18s (hot)	
Noise level ²	62.0 dB(A)	60.0 dB(A)	60.0 dB(A)	60.0 dB(A)	60.0 dB(A)	60.0 dB(A)	60.0 dB(A)	
Efficiency (%)	25%	91.4	91.0	90.8	90.9	92.1	92.0	92.1
	50%	91.7	91.1	91.1	91.1	91.7	91.7	91.7
	75%	93.0	91.8	92.2	92.2	91.7	92.4	92.4
	100%	93.0	91.6	92.2	92.2	91.0	91.7	91.7
Power Factor	25%	0.41	0.40	0.37	0.34	0.47	0.44	0.41
	50%	0.65	0.63	0.60	0.57	0.71	0.68	0.65
	75%	0.77	0.76	0.74	0.71	0.81	0.79	0.77
	100%	0.82	0.83	0.80	0.79	0.85	0.83	0.82
Bearing type	: Drive end 6312 C3	Non drive end 6212 C3	Foundation loads					
Sealing	: Inpro/Seal	Inpro/Seal	Max. traction : 957 lb					
Lubrication interval	: 20000 h	20000 h	Max. compression : 1523 lb					
Lubricant amount	: 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.				
Rev.	Changes Summary			Performed	Checked	Date		
Performed by								
Checked by					Page	Revision		
Date	13/04/2022				1 / 36			

TORQUE AND CURRENT VS SPEED CURVE

Three Phase Induction Motor - Squirrel Cage



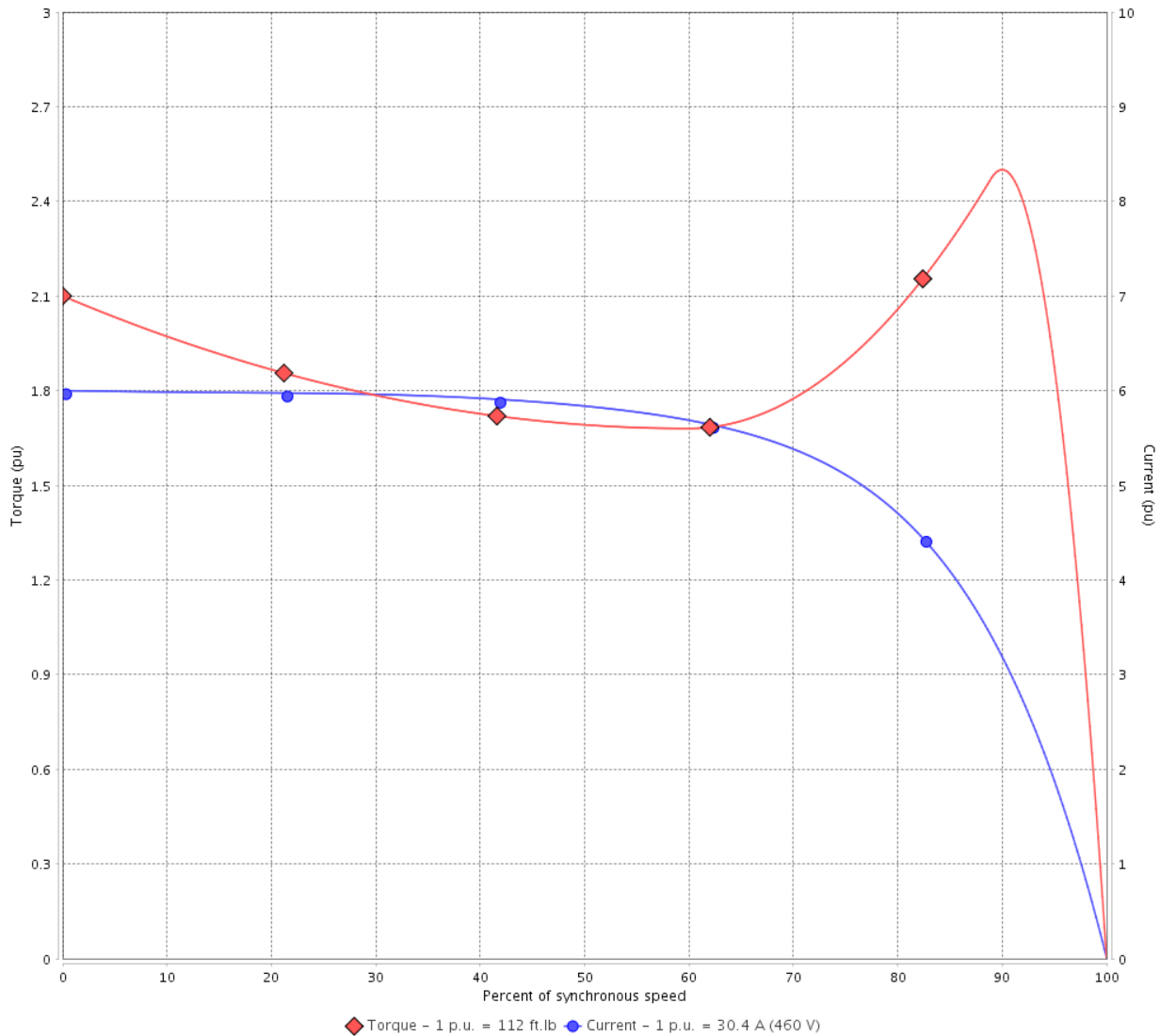
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12447791

Catalog # : 02512ST3QIE324TC-W22

TORQUE AND CURRENT VS SPEED CURVE



Performance : 460 V 60 Hz 6P

Rated current	: 30.4 A	Moment of inertia (J)	: 11.5 sq.ft.lb
LRC	: 6.0	Duty cycle	: Cont.(S1)
Rated torque	: 112 ft.lb	Insulation class	: F
Locked rotor torque	: 210 %	Service factor	: 1.25
Breakdown torque	: 250 %	Temperature rise	: 80 K
Rated speed	: 1175 rpm	Design	: B

Locked rotor time : 46s (cold) 26s (hot)

Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page 2 / 36	Revision
Checked by				
Date	13/04/2022			

TORQUE AND CURRENT VS SPEED CURVE



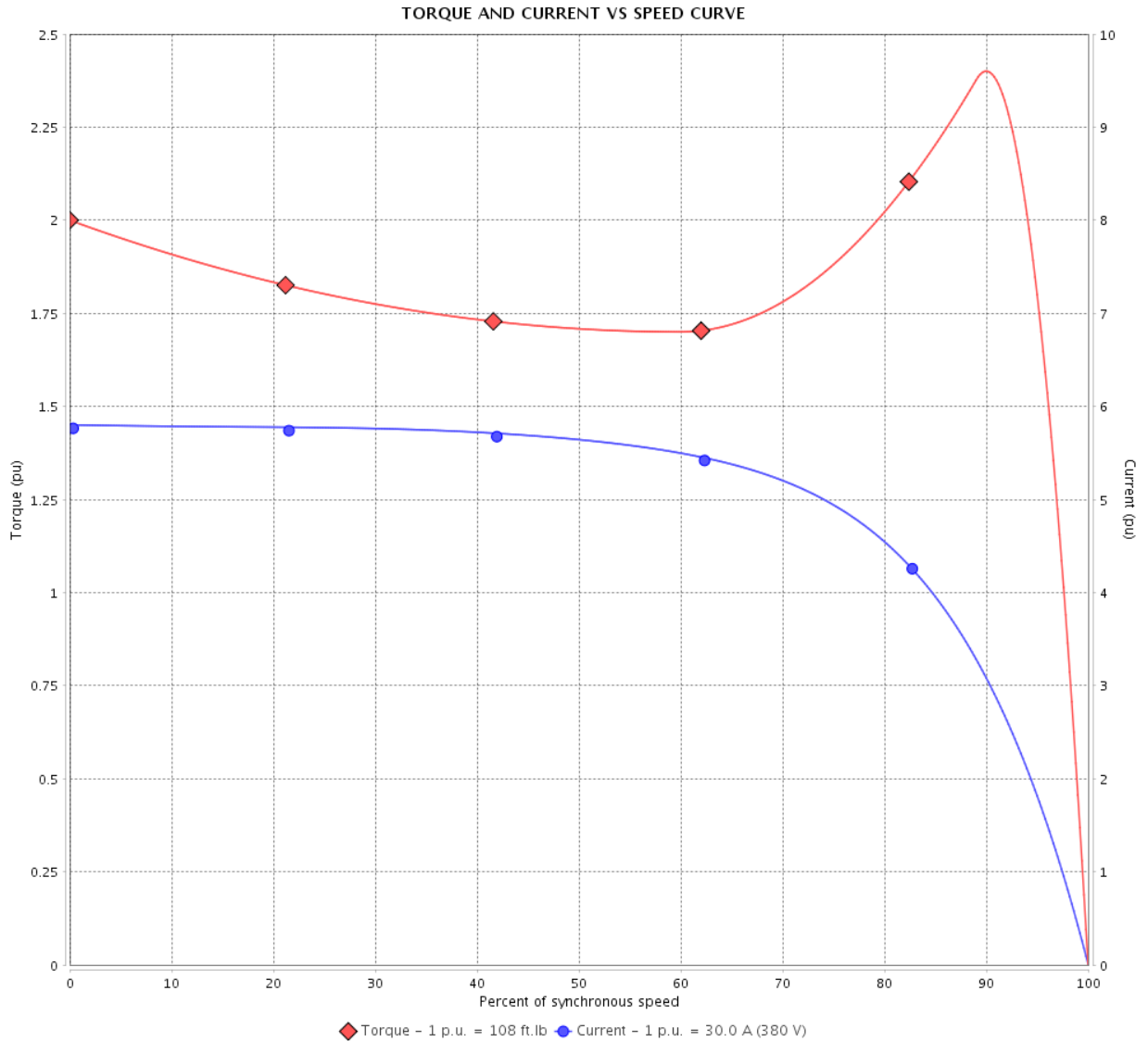
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Catalog # : 02512ST3QIE324TC-W22



Performance : 380 V 50 Hz 6P IE3

Rated current	: 30.0 A	Moment of inertia (J)	: 11.5 sq.ft.lb
LRC	: 5.8	Duty cycle	: Cont.(S1)
Rated torque	: 108 ft.lb	Insulation class	: F
Locked rotor torque	: 200 %	Service factor	: 1.00
Breakdown torque	: 240 %	Temperature rise	: 80 K
Rated speed	: 970 rpm	Design	: B

Locked rotor time : 32s (cold) 18s (hot)

Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page 3 / 36	Revision
Checked by				
Date	13/04/2022			

TORQUE AND CURRENT VS SPEED CURVE

Three Phase Induction Motor - Squirrel Cage



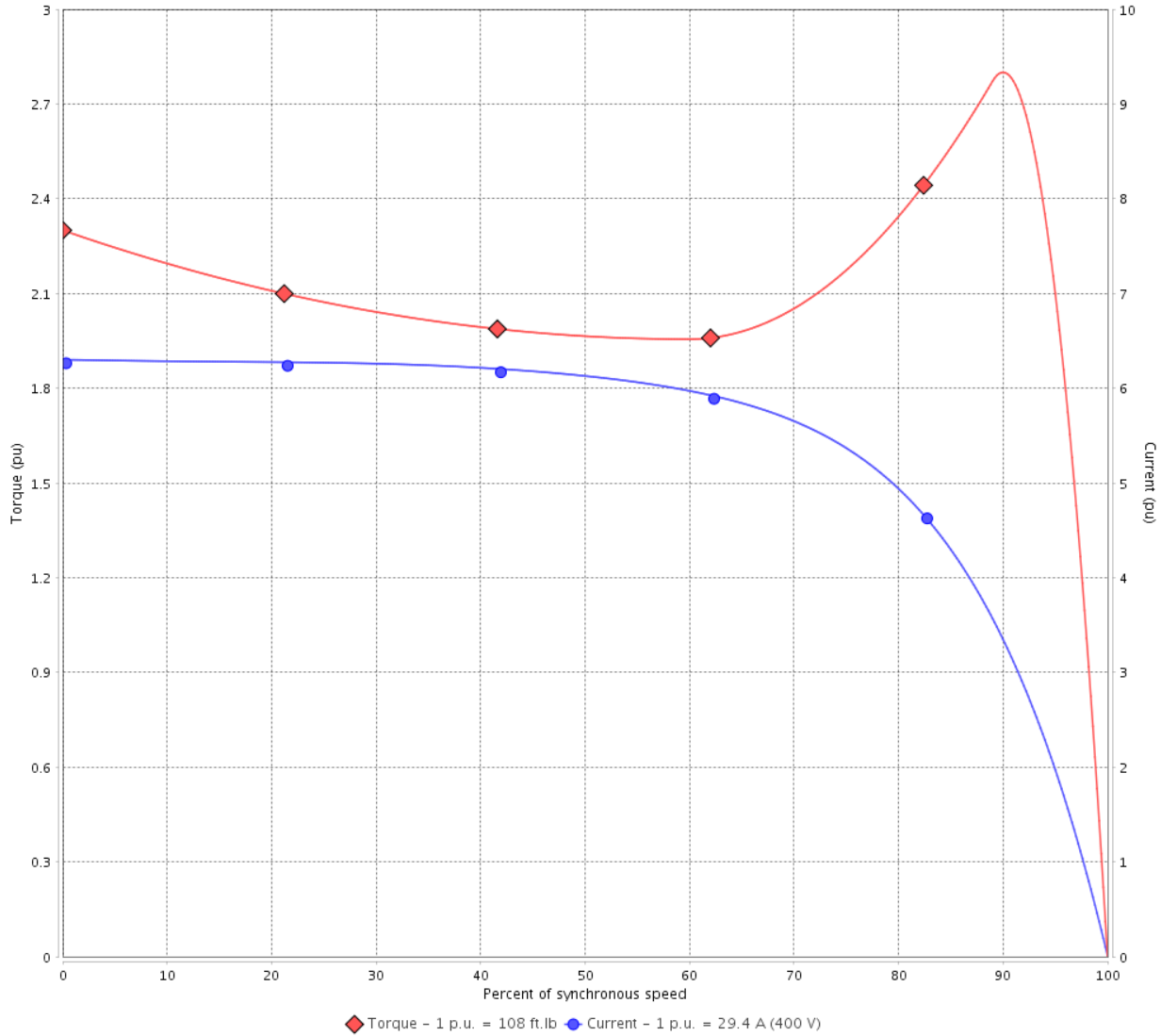
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TORQUE AND CURRENT VS SPEED CURVE



Performance : 400 V 50 Hz 6P IE3

Rated current	: 29.4 A	Moment of inertia (J)	: 11.5 sq.ft.lb
LRC	: 6.3	Duty cycle	: Cont.(S1)
Rated torque	: 108 ft.lb	Insulation class	: F
Locked rotor torque	: 229 %	Service factor	: 1.15
Breakdown torque	: 280 %	Temperature rise	: 80 K
Rated speed	: 975 rpm	Design	: B

Locked rotor time : 32s (cold) 18s (hot)

Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page	Revision
Checked by				
Date	13/04/2022			
			4 / 36	

TORQUE AND CURRENT VS SPEED CURVE



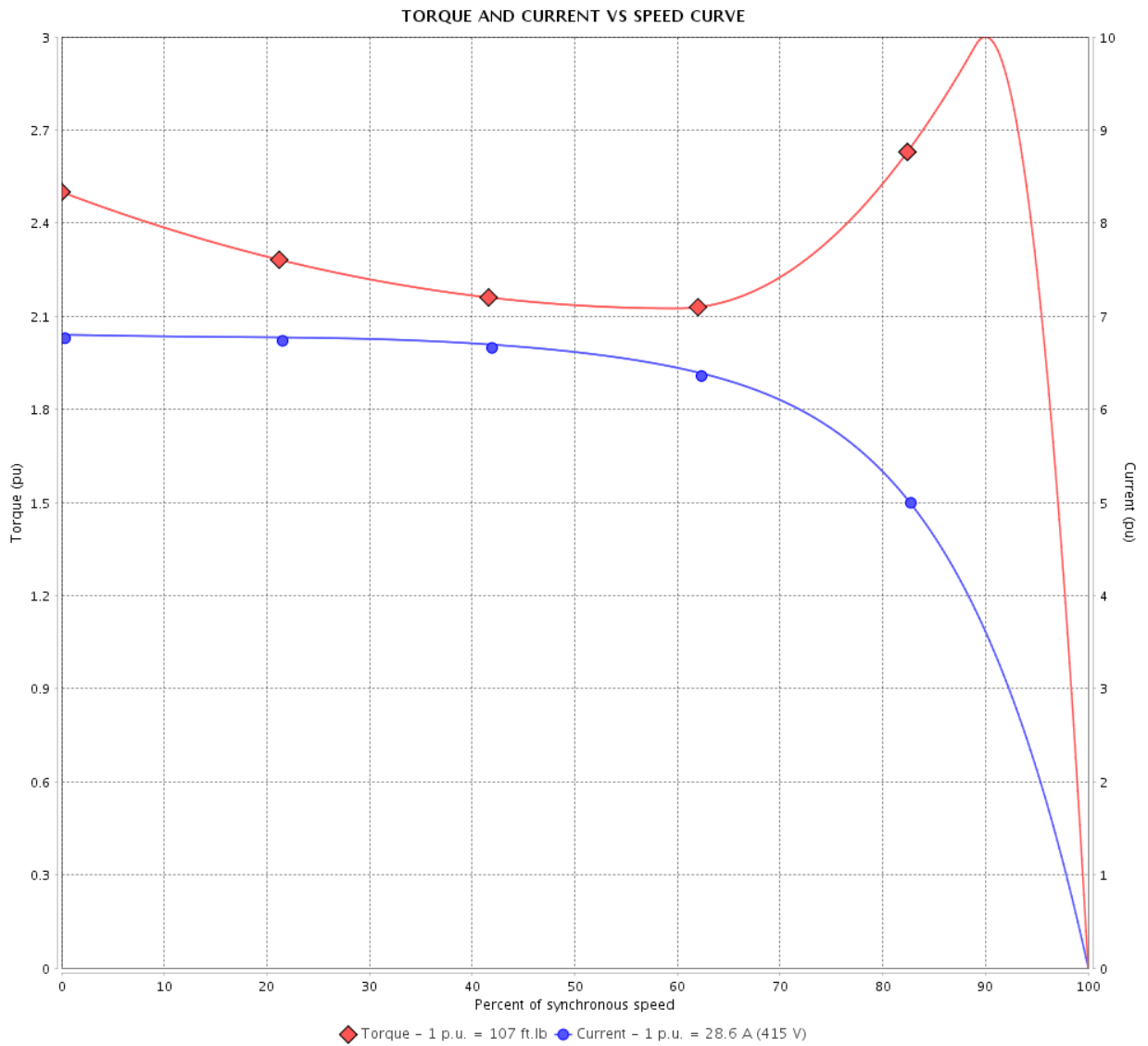
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Performance : 415 V 50 Hz 6P IE3

Rated current	: 28.6 A	Moment of inertia (J)	: 11.5 sq.ft.lb
LRC	: 6.8	Duty cycle	: Cont.(S1)
Rated torque	: 107 ft.lb	Insulation class	: F
Locked rotor torque	: 250 %	Service factor	: 1.15
Breakdown torque	: 300 %	Temperature rise	: 80 K
Rated speed	: 980 rpm	Design	: B

Locked rotor time : 32s (cold) 18s (hot)

Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page 5 / 36	Revision
Checked by				
Date	13/04/2022			

TORQUE AND CURRENT VS SPEED CURVE

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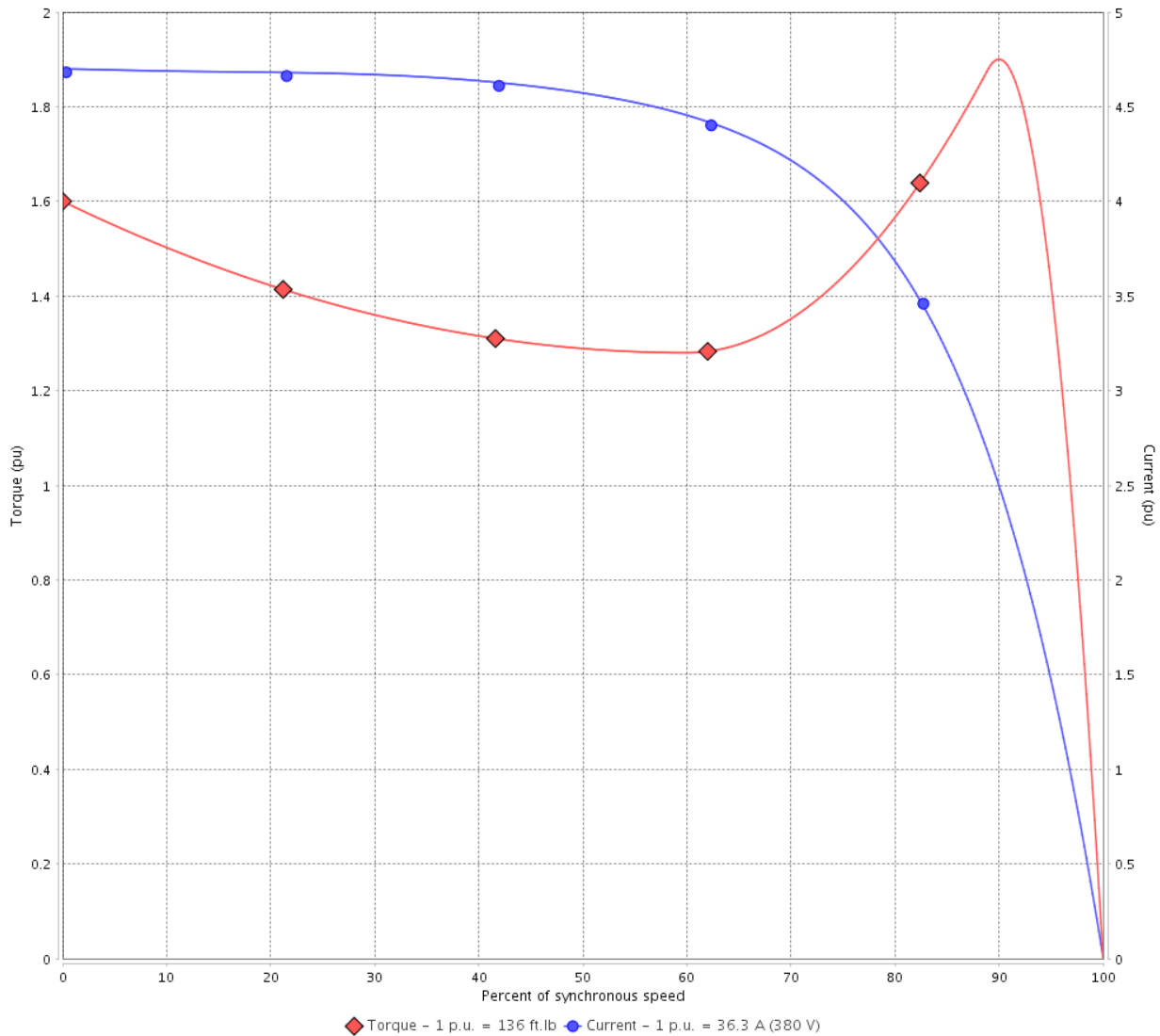
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TORQUE AND CURRENT VS SPEED CURVE



Performance : 380 V 50 Hz 6P IE2

Rated current	: 36.3 A	Moment of inertia (J)	: 11.5 sq.ft.lb
LRC	: 4.7	Duty cycle	: Cont.(S1)
Rated torque	: 136 ft.lb	Insulation class	: F
Locked rotor torque	: 160 %	Service factor	: 1.00
Breakdown torque	: 190 %	Temperature rise	: 80 K
Rated speed	: 965 rpm	Design	: B

Locked rotor time : 32s (cold) 18s (hot)

Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page 6 / 36	Revision
Checked by				
Date	13/04/2022			

TORQUE AND CURRENT VS SPEED CURVE



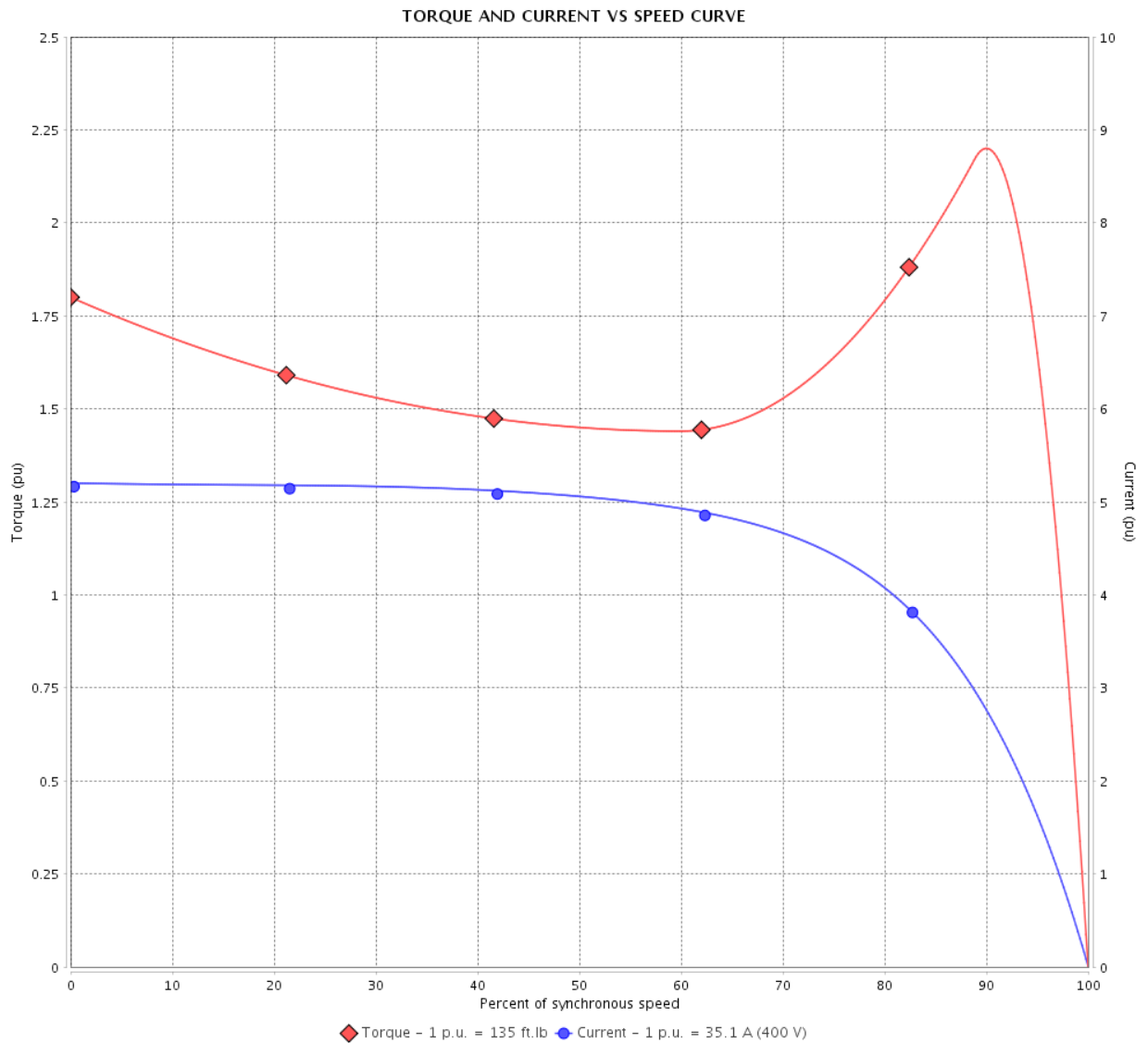
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Performance : 400 V 50 Hz 6P IE3

Rated current	: 35.1 A	Moment of inertia (J)	: 11.5 sq.ft.lb
LRC	: 5.2	Duty cycle	: Cont.(S1)
Rated torque	: 135 ft.lb	Insulation class	: F
Locked rotor torque	: 180 %	Service factor	: 1.15
Breakdown torque	: 220 %	Temperature rise	: 80 K
Rated speed	: 970 rpm	Design	: B

Locked rotor time : 32s (cold) 18s (hot)

Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page 7 / 36	Revision
Checked by				
Date	13/04/2022			

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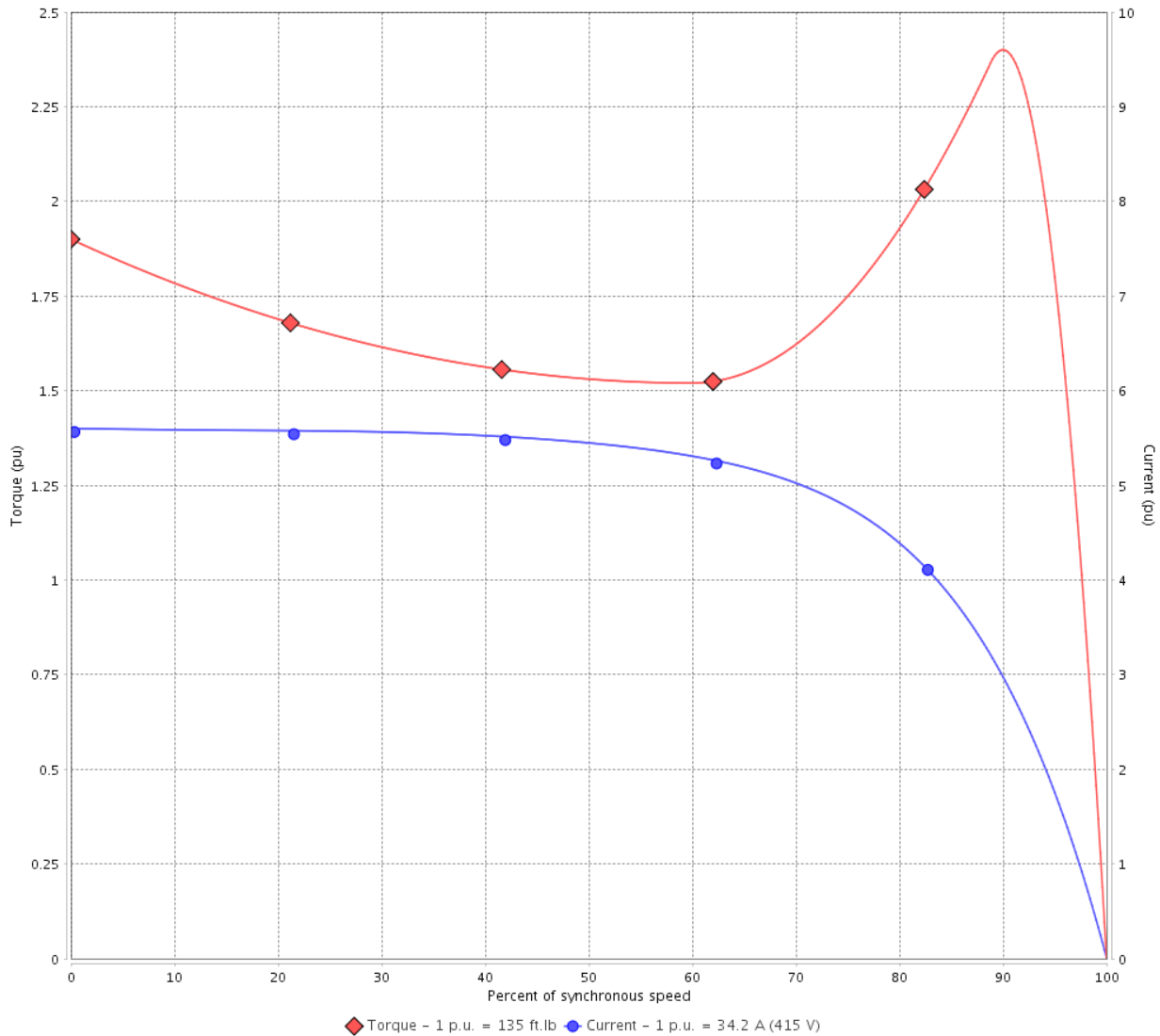
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TORQUE AND CURRENT VS SPEED CURVE



Performance : 415 V 50 Hz 6P IE3

Rated current	: 34.2 A	Moment of inertia (J)	: 11.5 sq.ft.lb
LRC	: 5.6	Duty cycle	: Cont.(S1)
Rated torque	: 135 ft.lb	Insulation class	: F
Locked rotor torque	: 190 %	Service factor	: 1.15
Breakdown torque	: 240 %	Temperature rise	: 80 K
Rated speed	: 975 rpm	Design	: B

Locked rotor time : 32s (cold) 18s (hot)

Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page 8 / 36	Revision
Checked by				
Date	13/04/2022			

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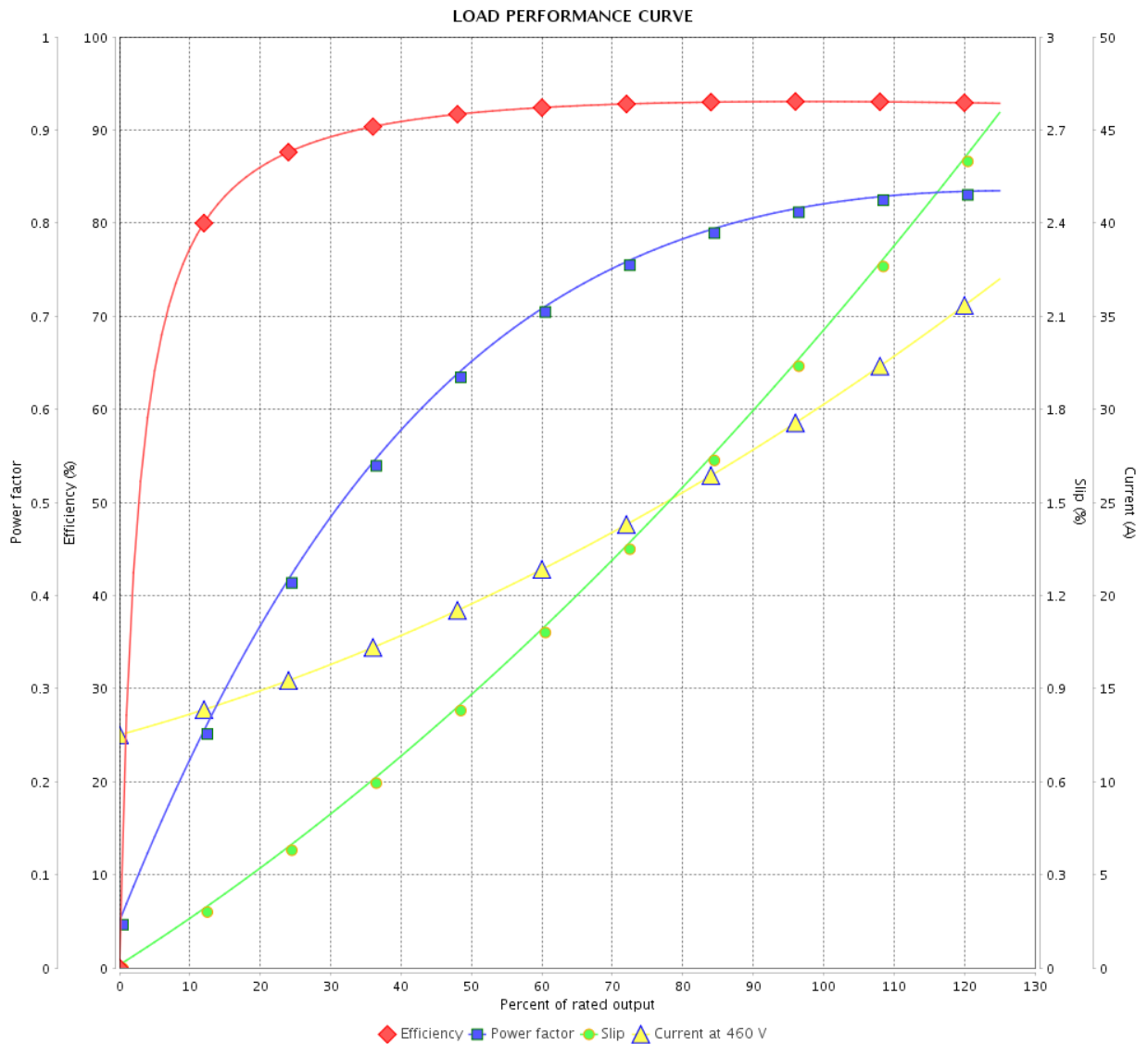


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Performance : 460 V 60 Hz 6P

Rated current : 30.4 A
 LRC : 6.0
 Rated torque : 112 ft.lb
 Locked rotor torque : 210 %
 Breakdown torque : 250 %
 Rated speed : 1175 rpm

Moment of inertia (J) : 11.5 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		13/04/2022		

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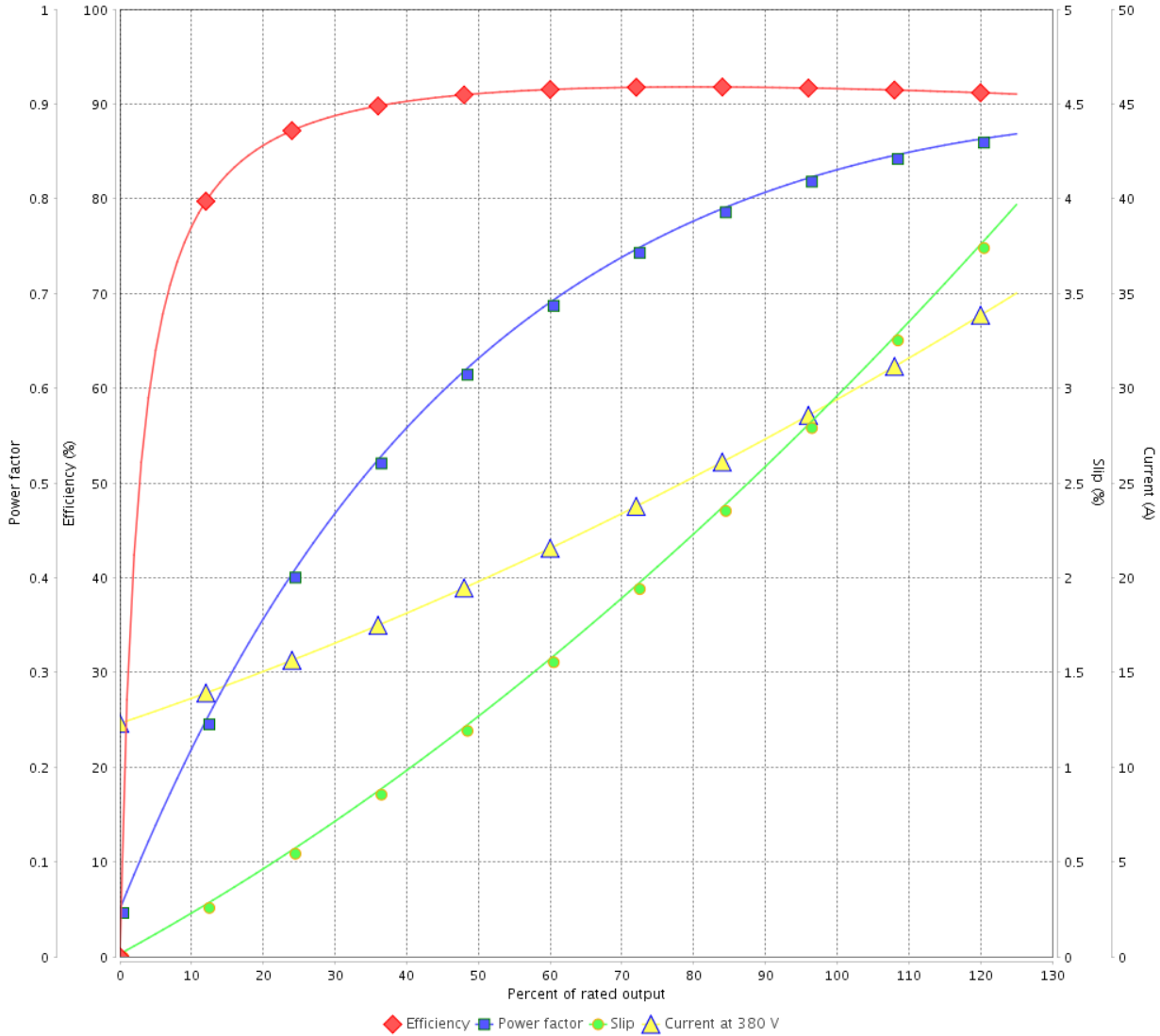
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Performance : 380 V 50 Hz 6P IE3

Rated current : 30.0 A
 LRC : 5.8
 Rated torque : 108 ft.lb
 Locked rotor torque : 200 %
 Breakdown torque : 240 %
 Rated speed : 970 rpm

Moment of inertia (J) : 11.5 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 10 / 36	Revision
Checked by				
Date	13/04/2022			

LOAD PERFORMANCE CURVE

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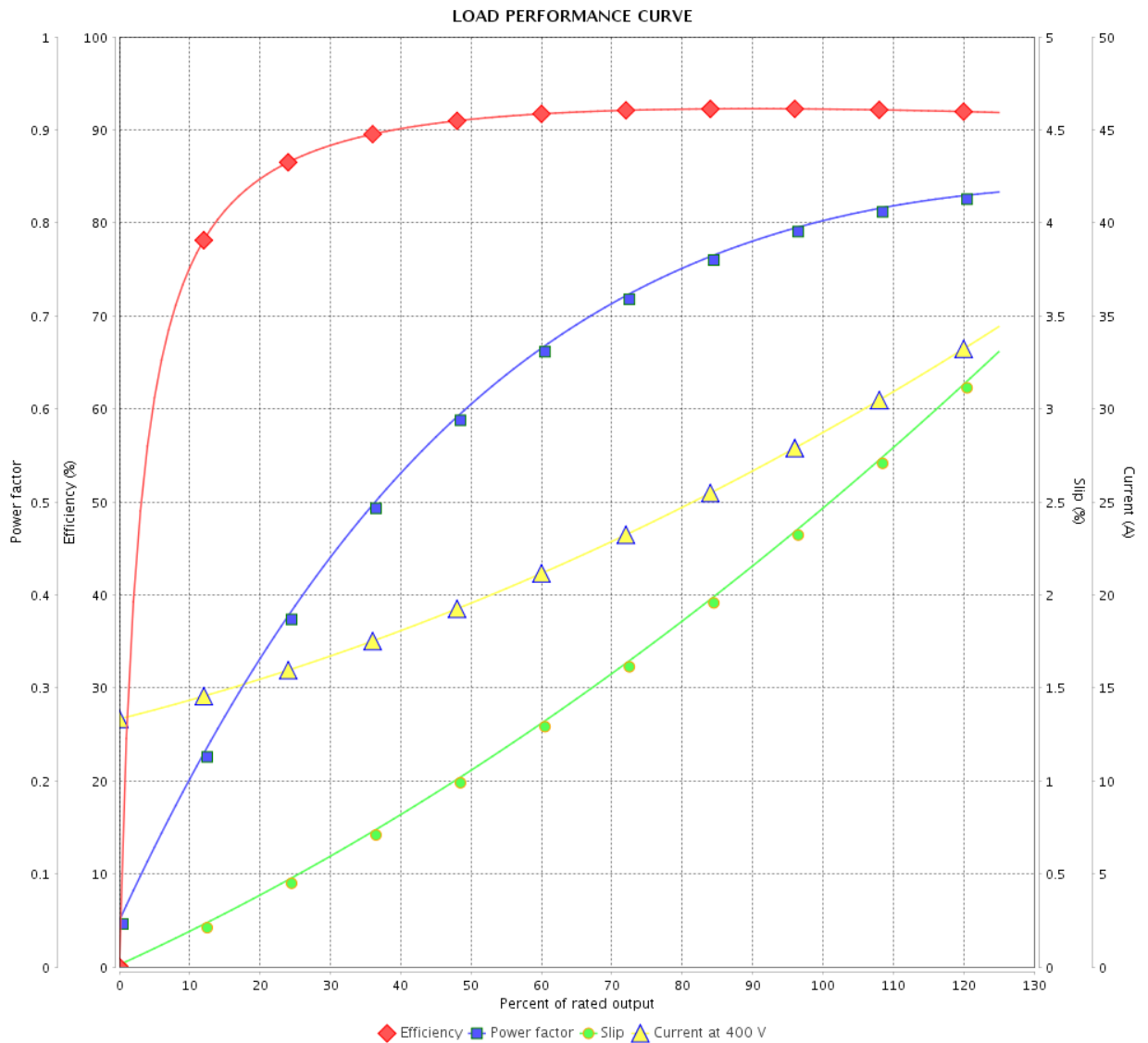


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Performance : 400 V 50 Hz 6P IE3

Rated current : 29.4 A
 LRC : 6.3
 Rated torque : 108 ft.lb
 Locked rotor torque : 229 %
 Breakdown torque : 280 %
 Rated speed : 975 rpm

Moment of inertia (J) : 11.5 sq.ft.lb
 Duty cycle : Cont.(S1)
 Insulation class : F
 Service factor : 1.15
 Temperature rise : 80 K
 Design : B

Rev.	Changes Summary	Performed	Checked	Date
Performed by		Page		Revision
Checked by		11 / 36		
Date		13/04/2022		

LOAD PERFORMANCE CURVE

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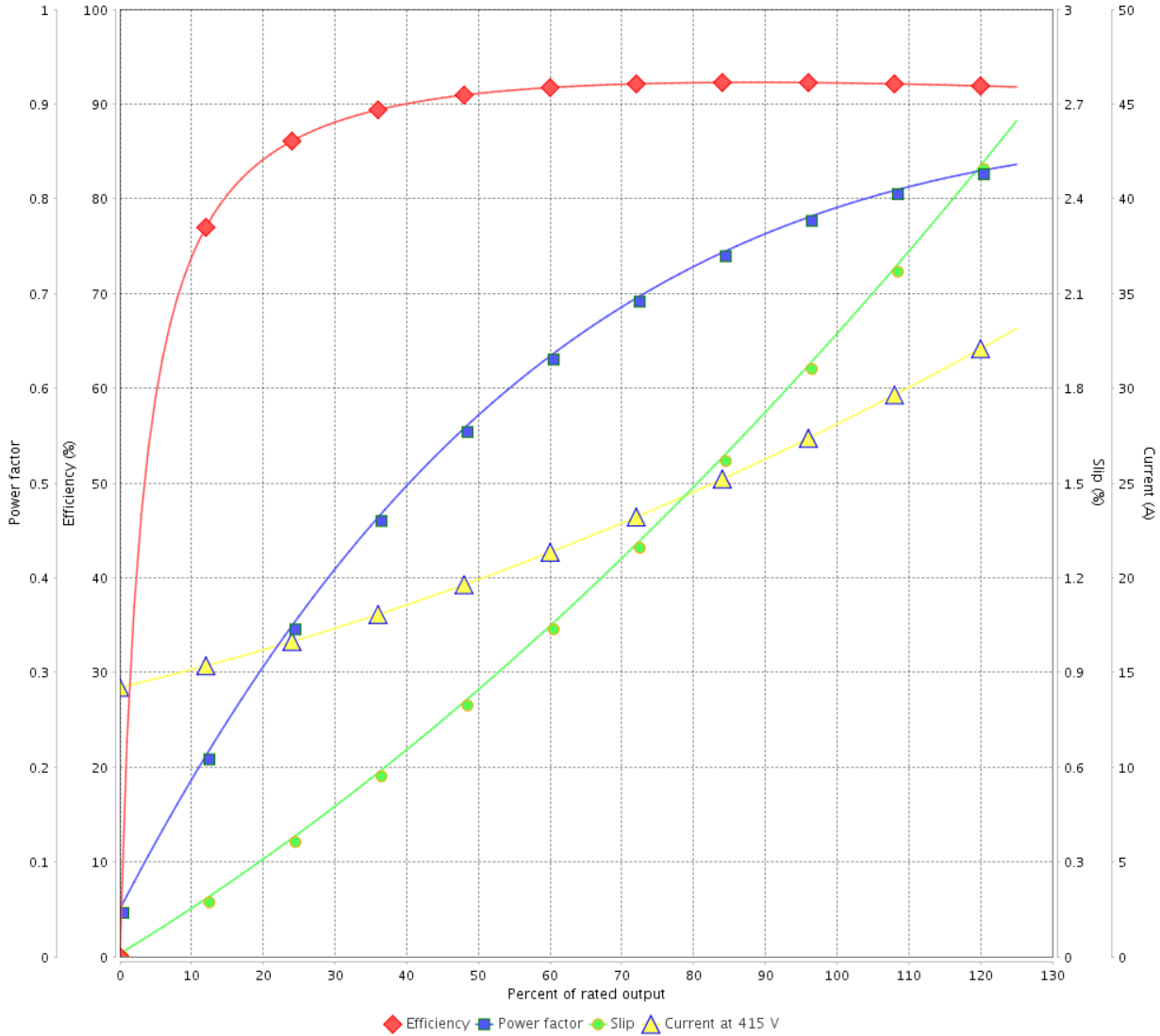
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Performance : 415 V 50 Hz 6P IE3

Rated current : 28.6 A
 LRC : 6.8
 Rated torque : 107 ft.lb
 Locked rotor torque : 250 %
 Breakdown torque : 300 %
 Rated speed : 980 rpm

Moment of inertia (J) : 11.5 sq.ft.lb
 Duty cycle : Cont.(S1)
 Insulation class : F
 Service factor : 1.15
 Temperature rise : 80 K
 Design : B

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

LOAD PERFORMANCE CURVE

Three Phase Induction Motor - Squirrel Cage

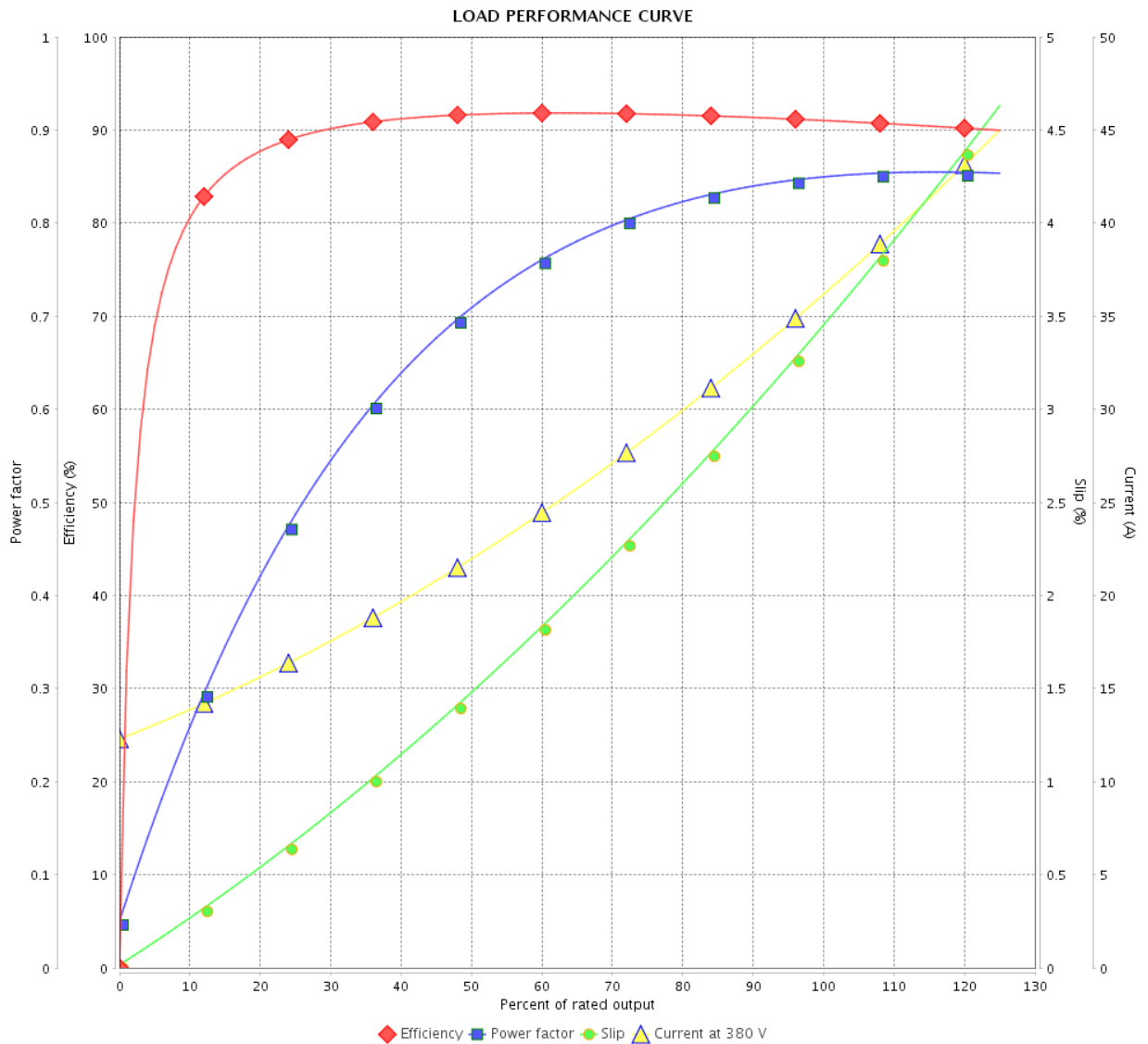


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Catalog # : 02512ST3QIE324TC-W22



Performance : 380 V 50 Hz 6P IE2

Rated current : 36.3 A
 LRC : 4.7
 Rated torque : 136 ft.lb
 Locked rotor torque : 160 %
 Breakdown torque : 190 %
 Rated speed : 965 rpm

Moment of inertia (J) : 11.5 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				
Date				
			13 / 36	

LOAD PERFORMANCE CURVE

Three Phase Induction Motor - Squirrel Cage



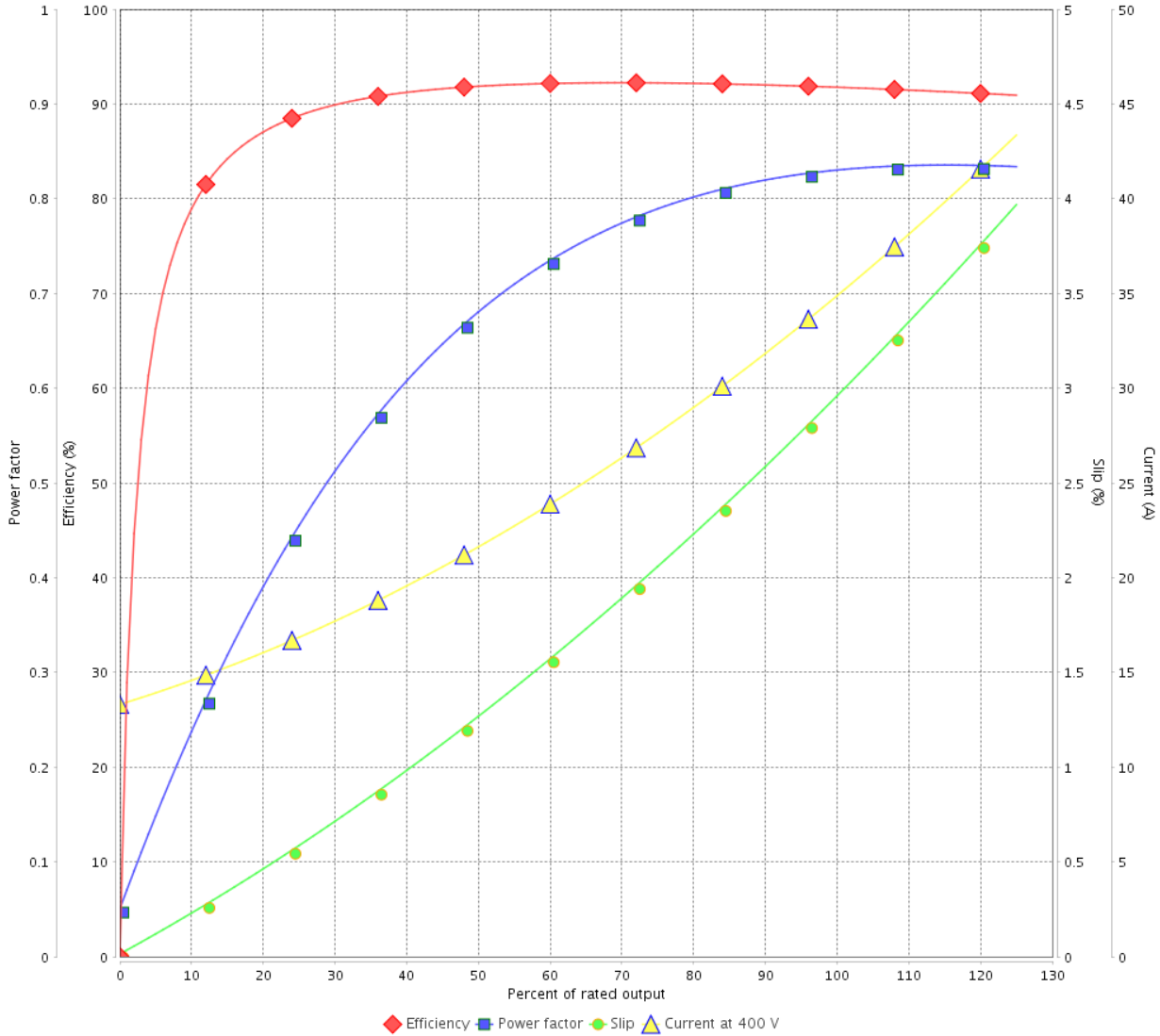
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Performance : 400 V 50 Hz 6P IE3

Rated current : 35.1 A
 LRC : 5.2
 Rated torque : 135 ft.lb
 Locked rotor torque : 180 %
 Breakdown torque : 220 %
 Rated speed : 970 rpm

Moment of inertia (J) : 11.5 sq.ft.lb
 Duty cycle : Cont.(S1)
 Insulation class : F
 Service factor : 1.15
 Temperature rise : 80 K
 Design : B

Rev.	Changes Summary	Performed	Checked	Date
Performed by		Page		Revision
Checked by		14 / 36		
Date		13/04/2022		

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Three Phase Induction Motor - Squirrel Cage

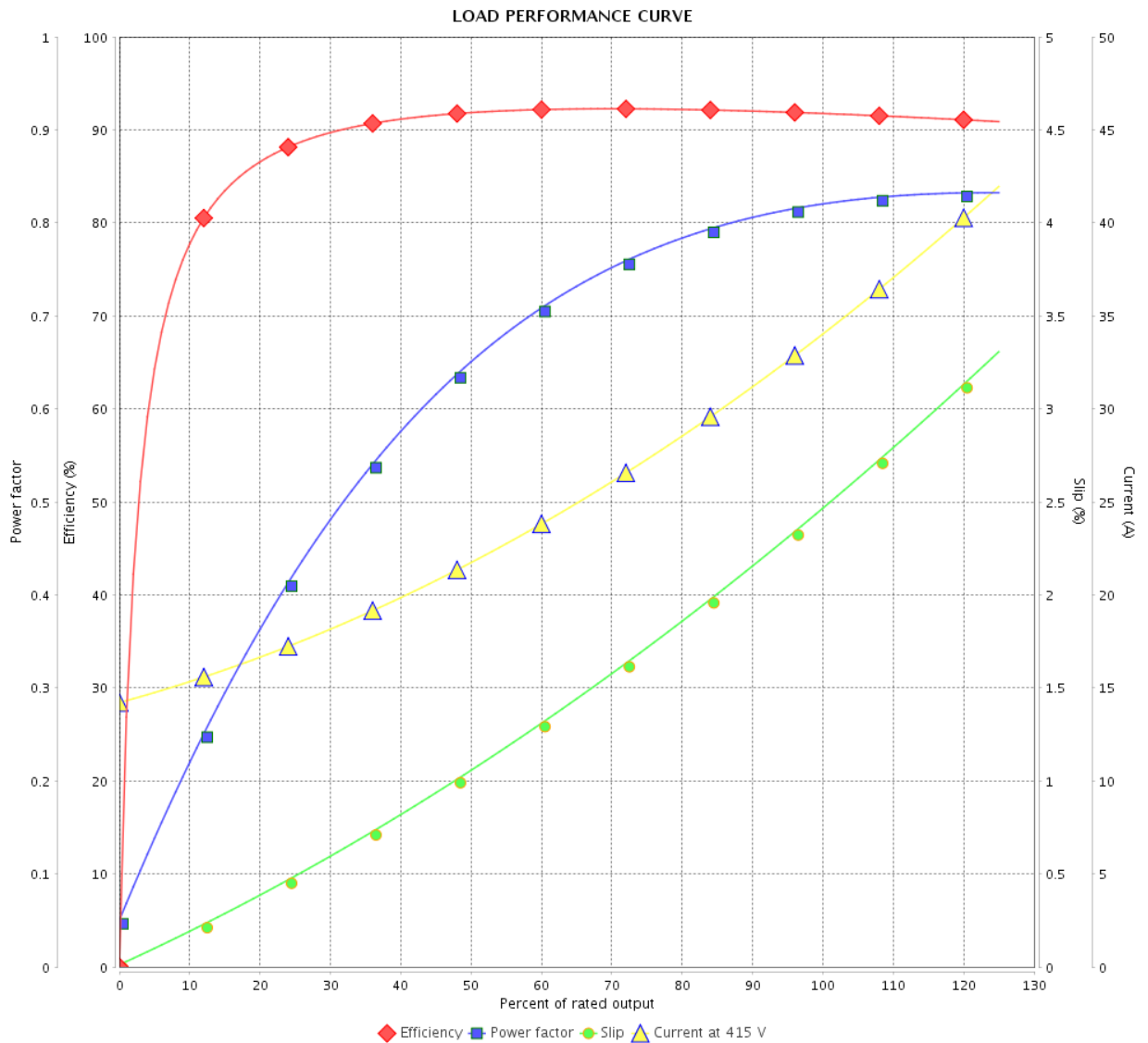


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Catalog # : 02512ST3QIE324TC-W22



Performance : 415 V 50 Hz 6P IE3

Rated current : 34.2 A
 LRC : 5.6
 Rated torque : 135 ft.lb
 Locked rotor torque : 190 %
 Breakdown torque : 240 %
 Rated speed : 975 rpm

Moment of inertia (J) : 11.5 sq.ft.lb
 Duty cycle : Cont.(S1)
 Insulation class : F
 Service factor : 1.15
 Temperature rise : 80 K
 Design : B

Rev.	Changes Summary	Performed	Checked	Date
Performed by		Page		Revision
Checked by		15 / 36		
Date		13/04/2022		

THERMAL LIMIT CURVE



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Performance : 460 V 60 Hz 6P

Rated current	: 30.4 A	Moment of inertia (J)	: 11.5 sq.ft.lb
LRC	: 6.0	Duty cycle	: Cont.(S1)
Rated torque	: 112 ft.lb	Insulation class	: F
Locked rotor torque	: 210 %	Service factor	: 1.25
Breakdown torque	: 250 %	Temperature rise	: 80 K
Rated speed	: 1175 rpm	Design	: B

Heating constant

Cooling constant

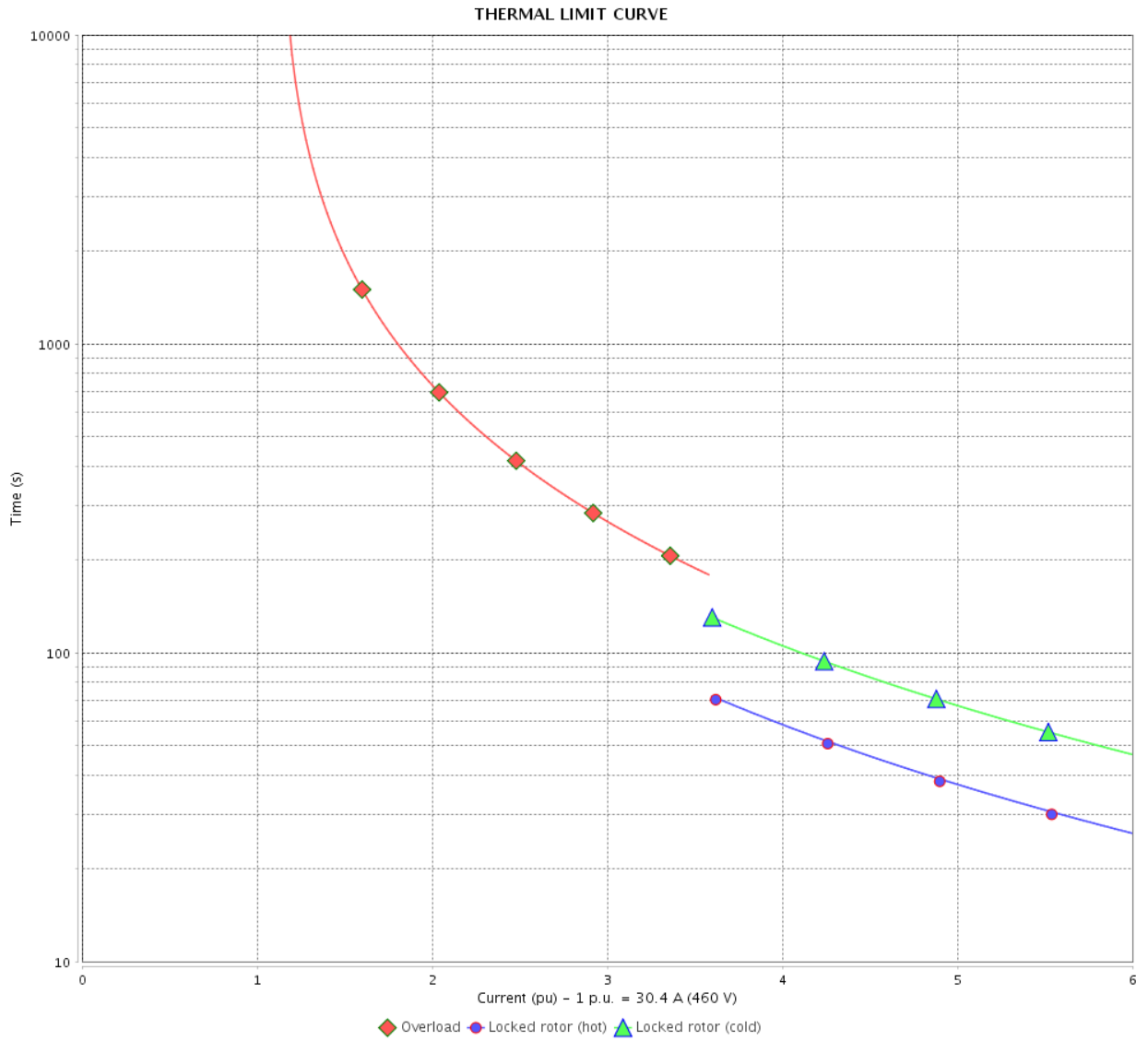
Rev.	Changes Summary	Performed	Checked	Date
Performed by				
Checked by			Page	Revision
Date	13/04/2022		16 / 36	

THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



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Rev.	Changes Summary	Performed	Checked	Date
Performed by		Page		Revision
Checked by		17 / 36		
Date		13/04/2022		

THERMAL LIMIT CURVE

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Customer :

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Performance : 380 V 50 Hz 6P IE3

Rated current	: 30.0 A	Moment of inertia (J)	: 11.5 sq.ft.lb
LRC	: 5.8	Duty cycle	: Cont.(S1)
Rated torque	: 108 ft.lb	Insulation class	: F
Locked rotor torque	: 200 %	Service factor	: 1.00
Breakdown torque	: 240 %	Temperature rise	: 80 K
Rated speed	: 970 rpm	Design	: B

Heating constant

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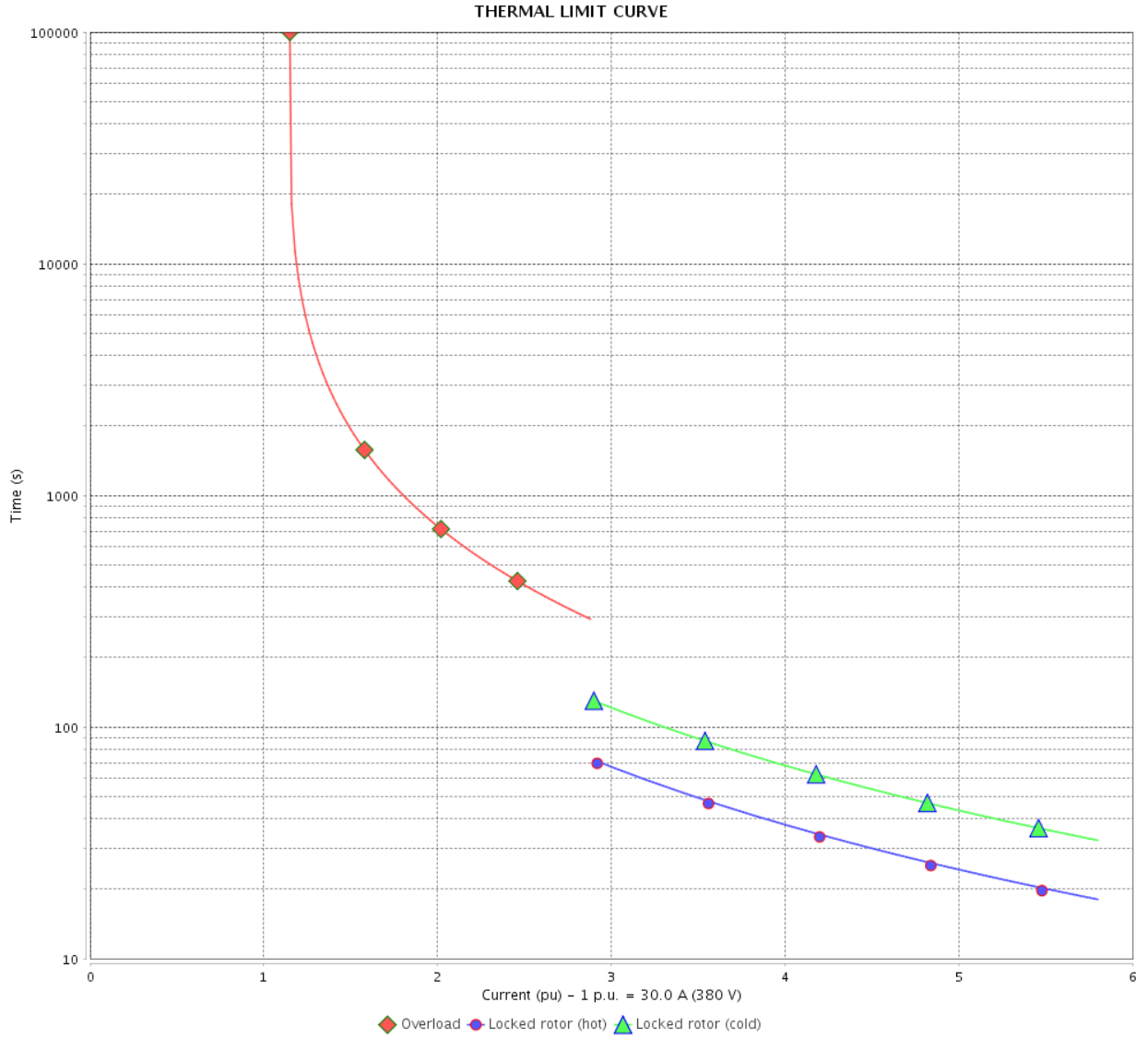
Rev.	Changes Summary	Performed	Checked	Date
Performed by				
Checked by			Page	Revision
Date	13/04/2022		18 / 36	

THERMAL LIMIT CURVE

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

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Performance : 400 V 50 Hz 6P IE3

Rated current	: 29.4 A	Moment of inertia (J)	: 11.5 sq.ft.lb
LRC	: 6.3	Duty cycle	: Cont.(S1)
Rated torque	: 108 ft.lb	Insulation class	: F
Locked rotor torque	: 229 %	Service factor	: 1.15
Breakdown torque	: 280 %	Temperature rise	: 80 K
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Heating constant

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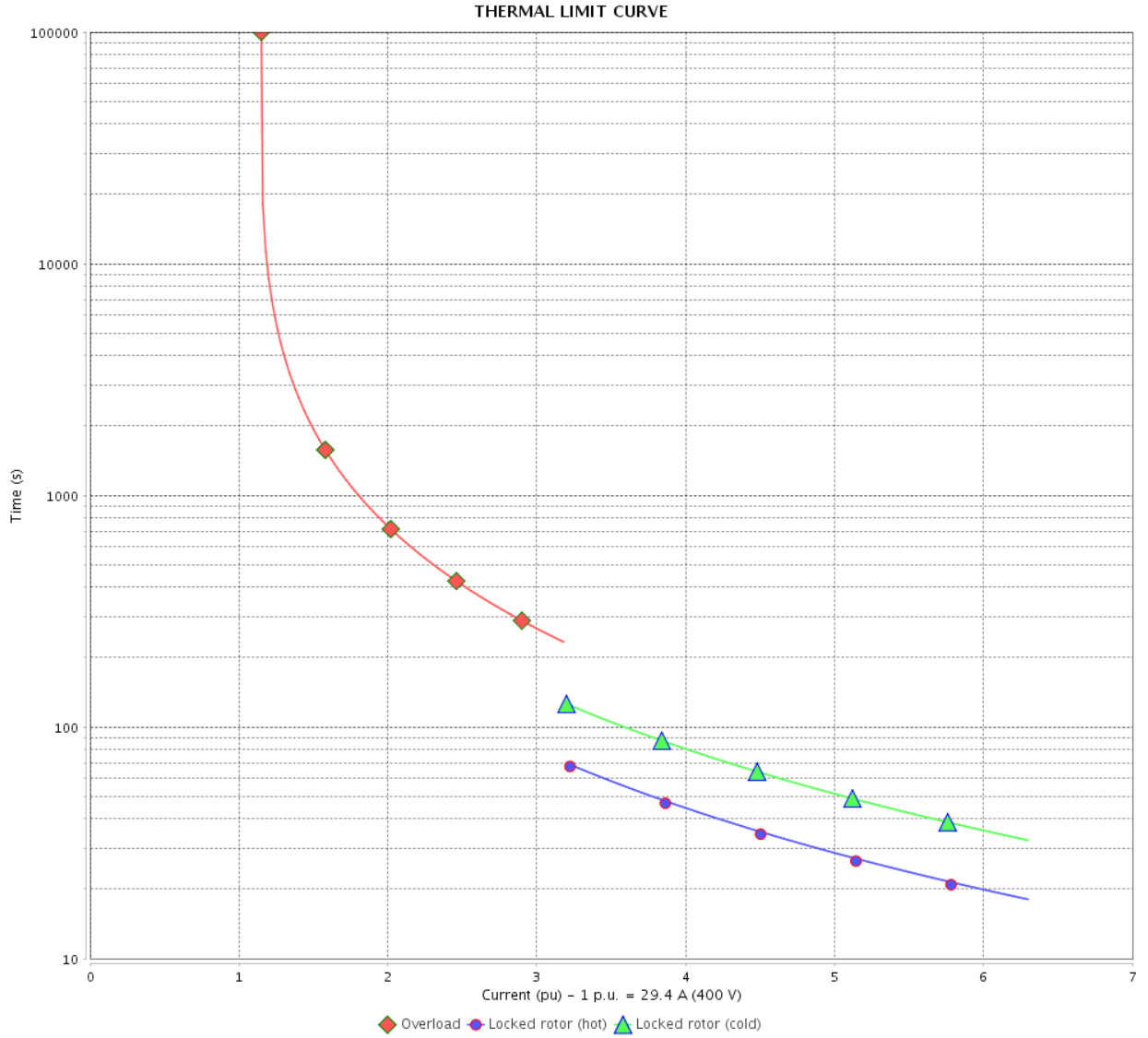
Rev.	Changes Summary	Performed	Checked	Date
Performed by				
Checked by			Page	Revision
Date	13/04/2022		20 / 36	

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

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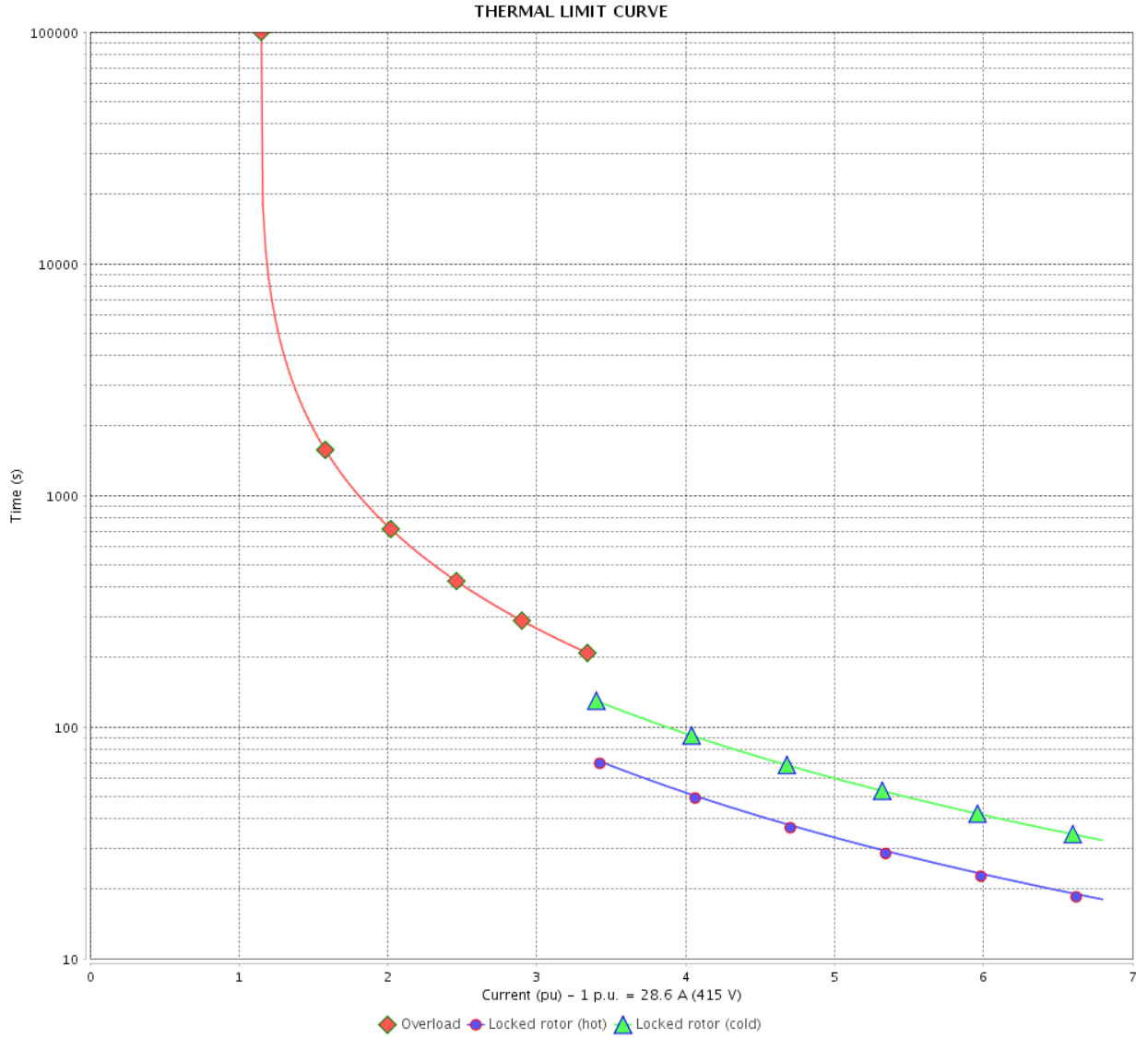
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Performed by				
Checked by			Page	Revision
Date	13/04/2022		22 / 36	

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

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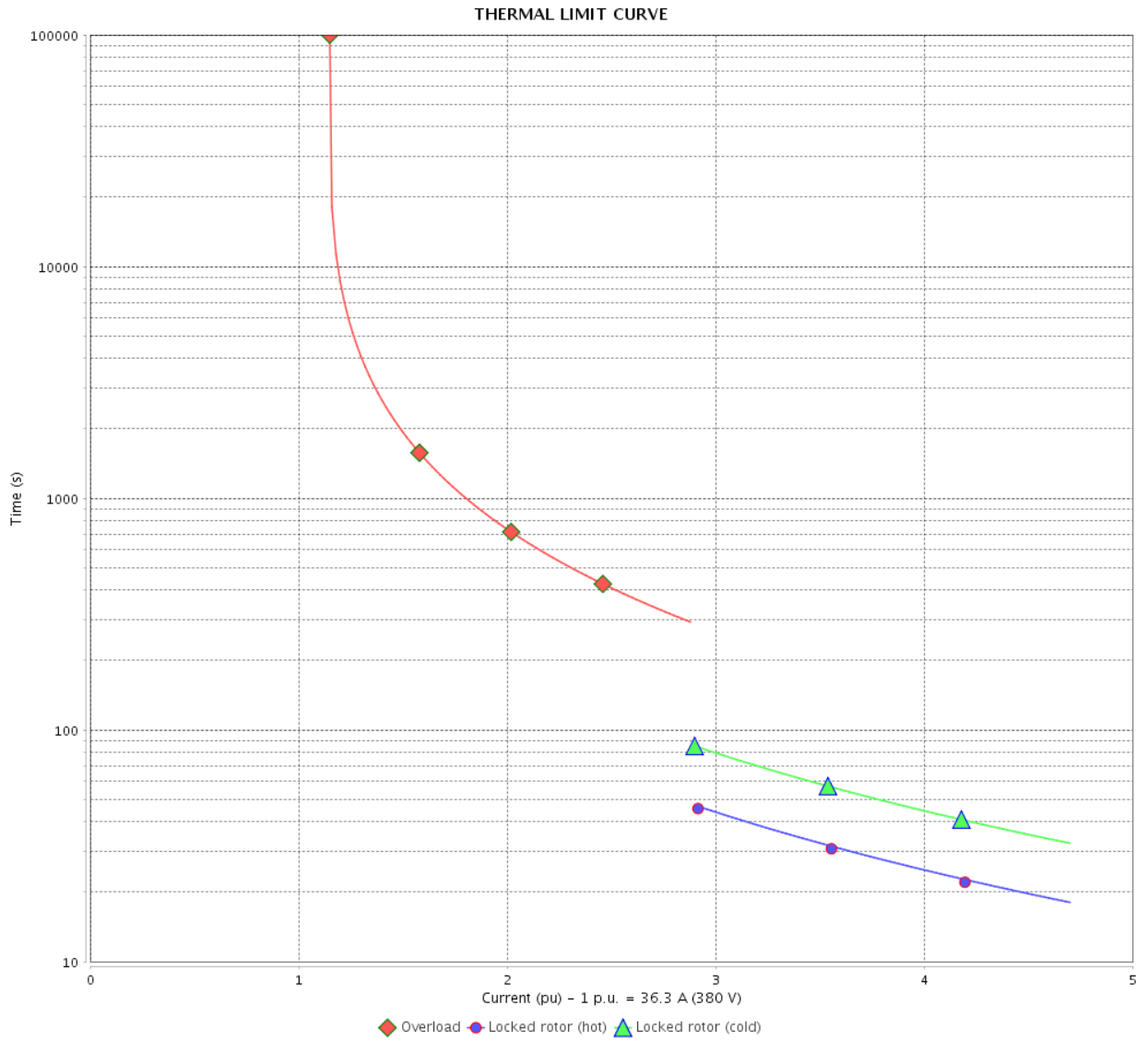
Rev.	Changes Summary	Performed	Checked	Date
Performed by				
Checked by			Page	Revision
Date	13/04/2022		24 / 36	

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Rev.	Changes Summary	Performed	Checked	Date
Performed by		Page 25 / 36		Revision
Checked by				
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Performance : 400 V 50 Hz 6P IE3

Rated current	: 35.1 A	Moment of inertia (J)	: 11.5 sq.ft.lb
LRC	: 5.2	Duty cycle	: Cont.(S1)
Rated torque	: 135 ft.lb	Insulation class	: F
Locked rotor torque	: 180 %	Service factor	: 1.15
Breakdown torque	: 220 %	Temperature rise	: 80 K
Rated speed	: 970 rpm	Design	: B

Heating constant

Cooling constant

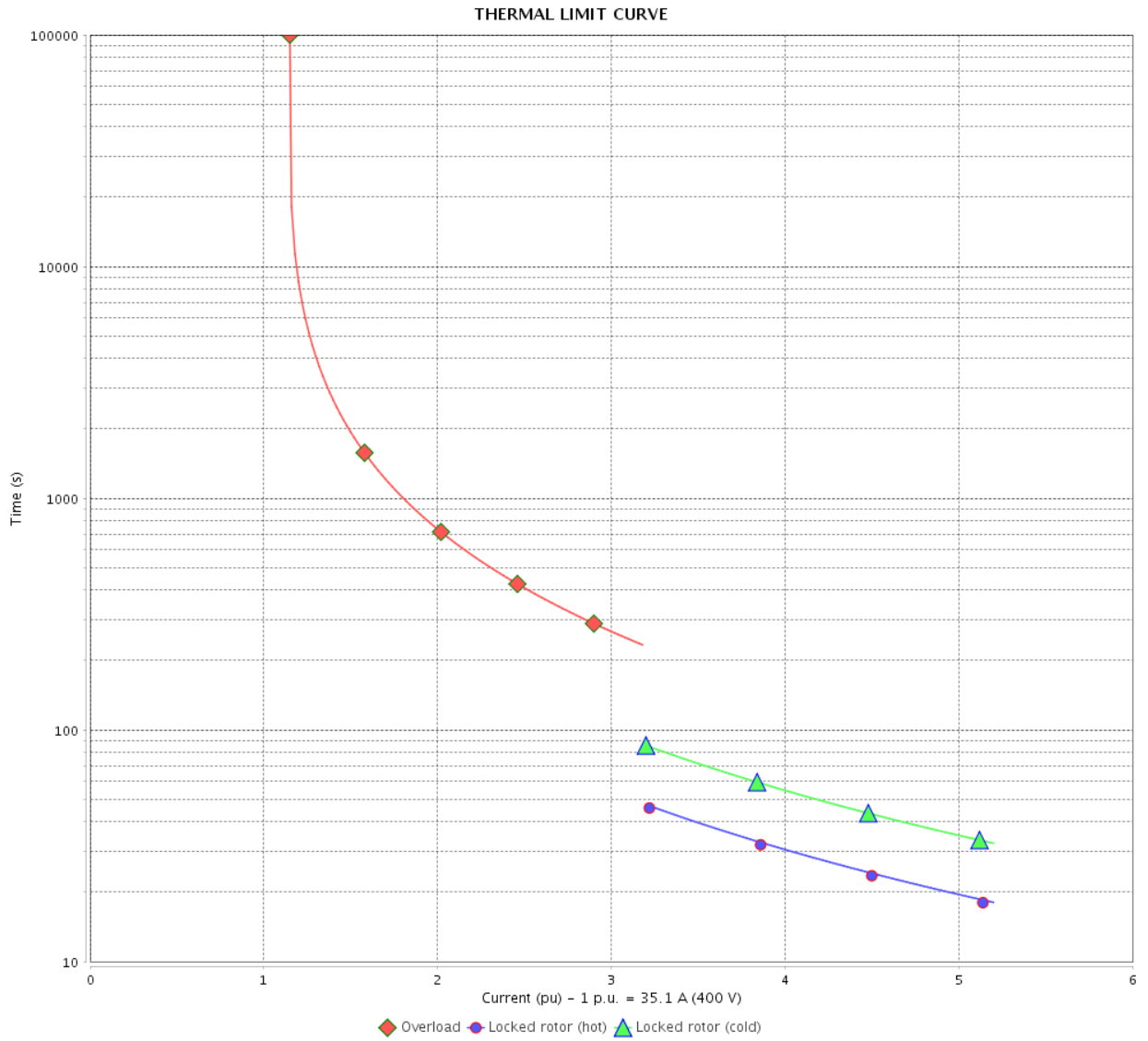
Rev.	Changes Summary	Performed	Checked	Date
Performed by				
Checked by			Page	Revision
Date	13/04/2022		26 / 36	

THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



Customer : _____



Rev.	Changes Summary	Performed	Checked	Date
Performed by		Page		Revision
Checked by		27 / 36		
Date		13/04/2022		

THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12447791

Catalog # : 02512ST3QIE324TC-W22

Performance : 415 V 50 Hz 6P IE3

Rated current	: 34.2 A	Moment of inertia (J)	: 11.5 sq.ft.lb
LRC	: 5.6	Duty cycle	: Cont.(S1)
Rated torque	: 135 ft.lb	Insulation class	: F
Locked rotor torque	: 190 %	Service factor	: 1.15
Breakdown torque	: 240 %	Temperature rise	: 80 K
Rated speed	: 975 rpm	Design	: B

Heating constant

Cooling constant

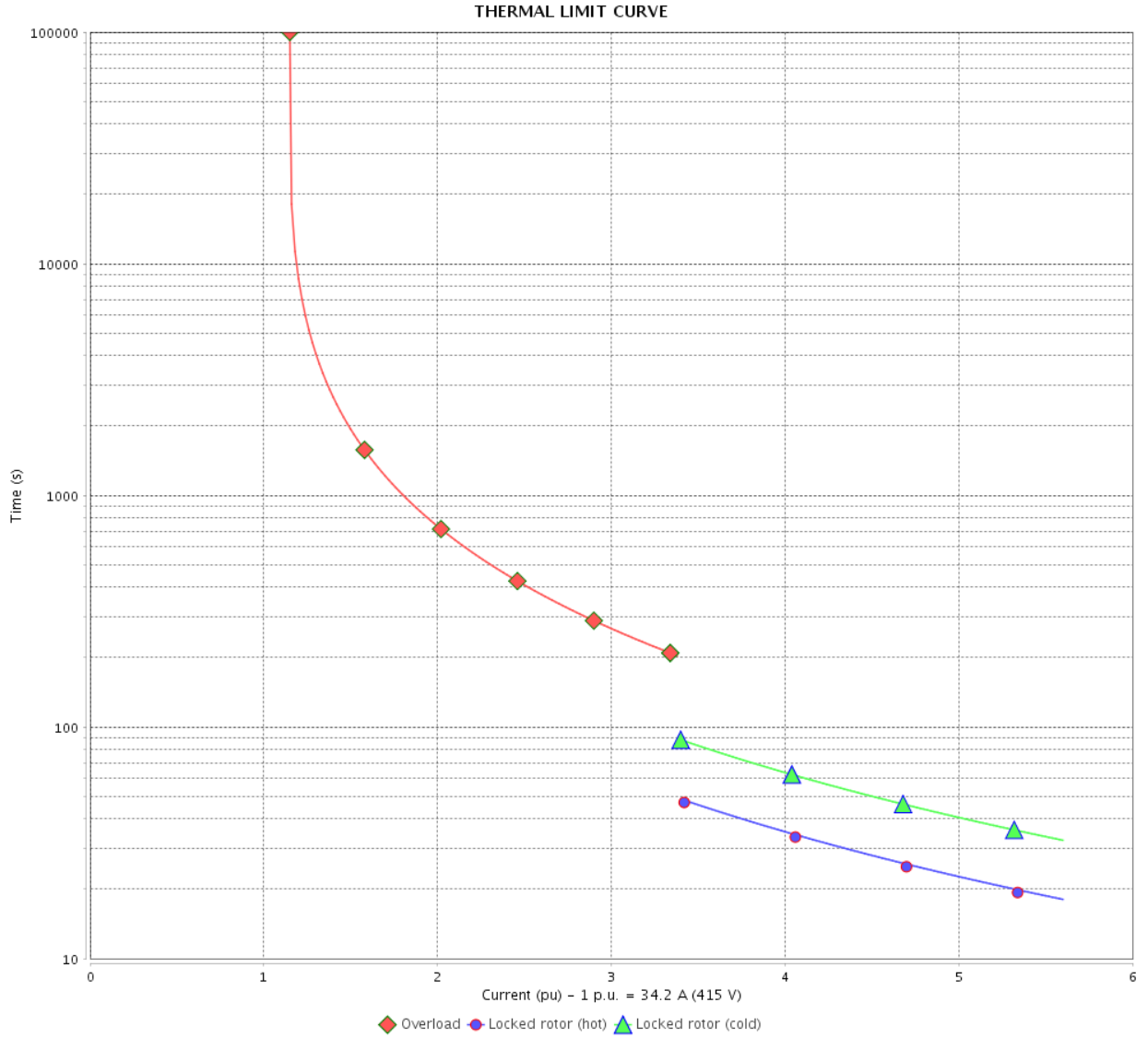
Rev.	Changes Summary	Performed	Checked	Date
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Checked by			Page	Revision
Date	13/04/2022		28 / 36	

THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



Customer : _____



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

VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage

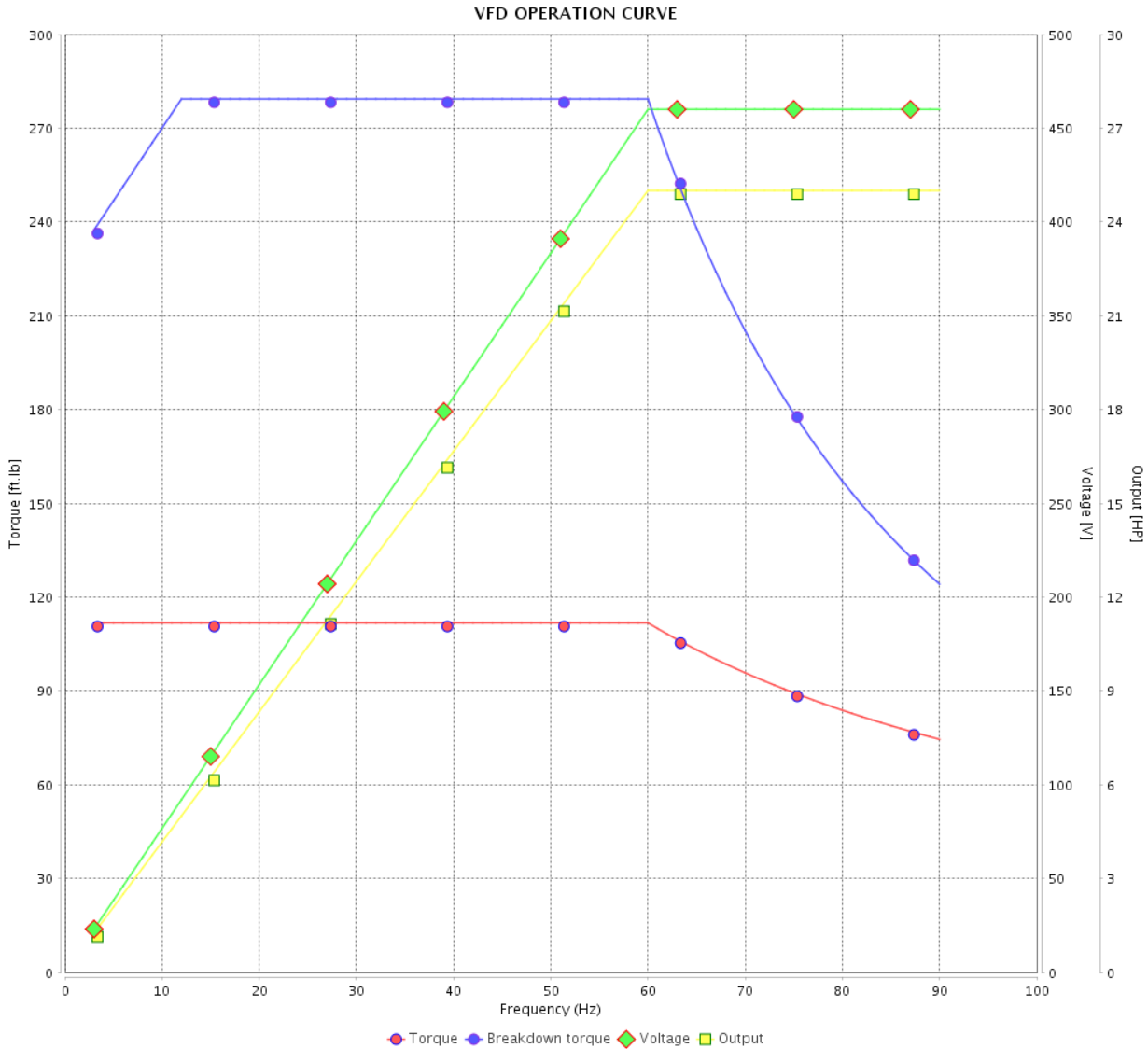


Customer : _____

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12447791

Catalog # : 02512ST3QIE324TC-W22



Performance : 460 V 60 Hz 6P

Rated current : 30.4 A
 LRC : 6.0
 Rated torque : 112 ft.lb
 Locked rotor torque : 210 %
 Breakdown torque : 250 %
 Rated speed : 1175 rpm

Moment of inertia (J) : 11.5 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	13/04/2022			

VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage

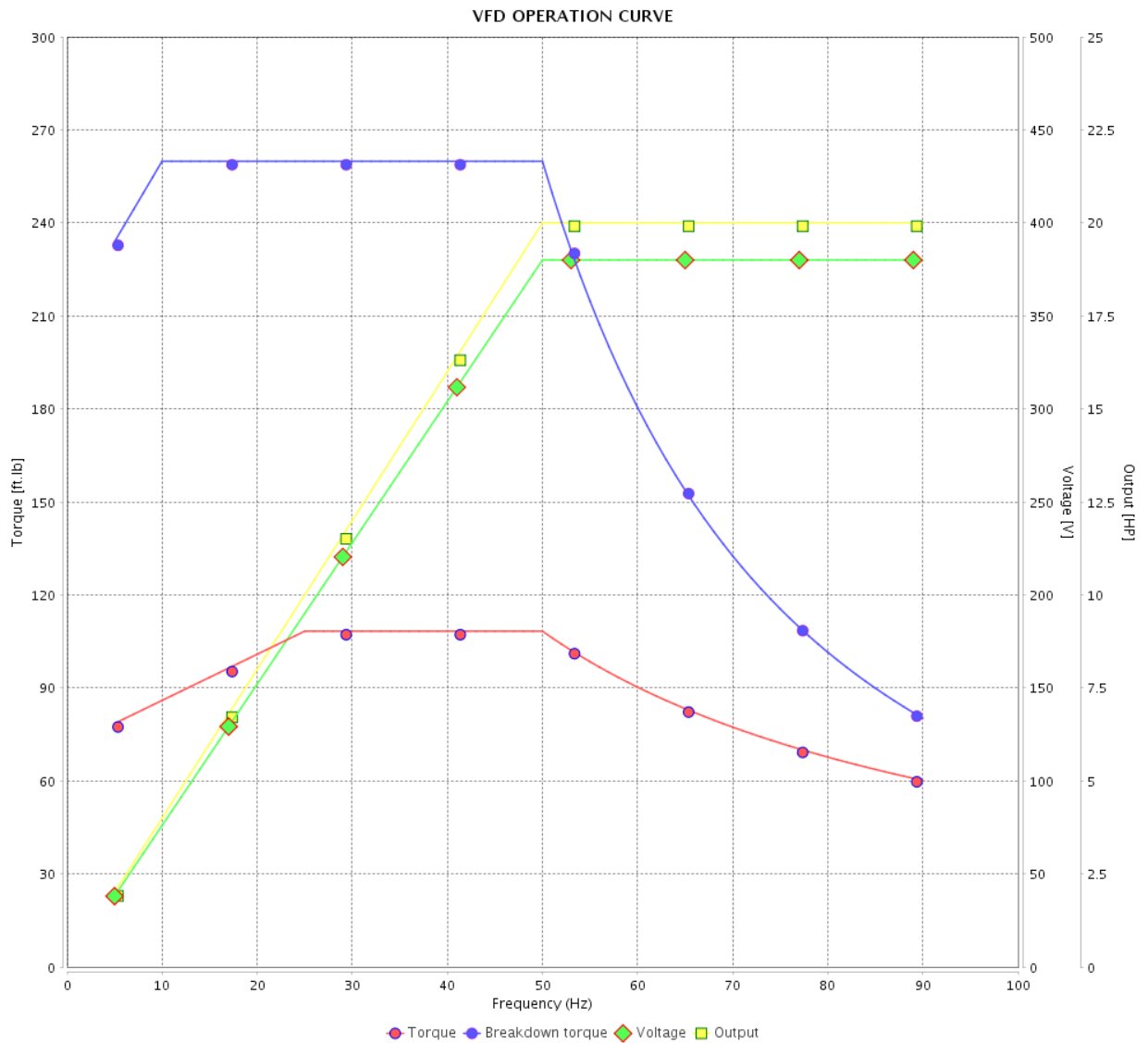


Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12447791

Catalog # : 02512ST3QIE324TC-W22



Performance : 380 V 50 Hz 6P IE3

Rated current : 30.0 A
 LRC : 5.8
 Rated torque : 108 ft.lb
 Locked rotor torque : 200 %
 Breakdown torque : 240 %
 Rated speed : 970 rpm

Moment of inertia (J) : 11.5 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		31 / 36		
Date		13/04/2022		

VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage



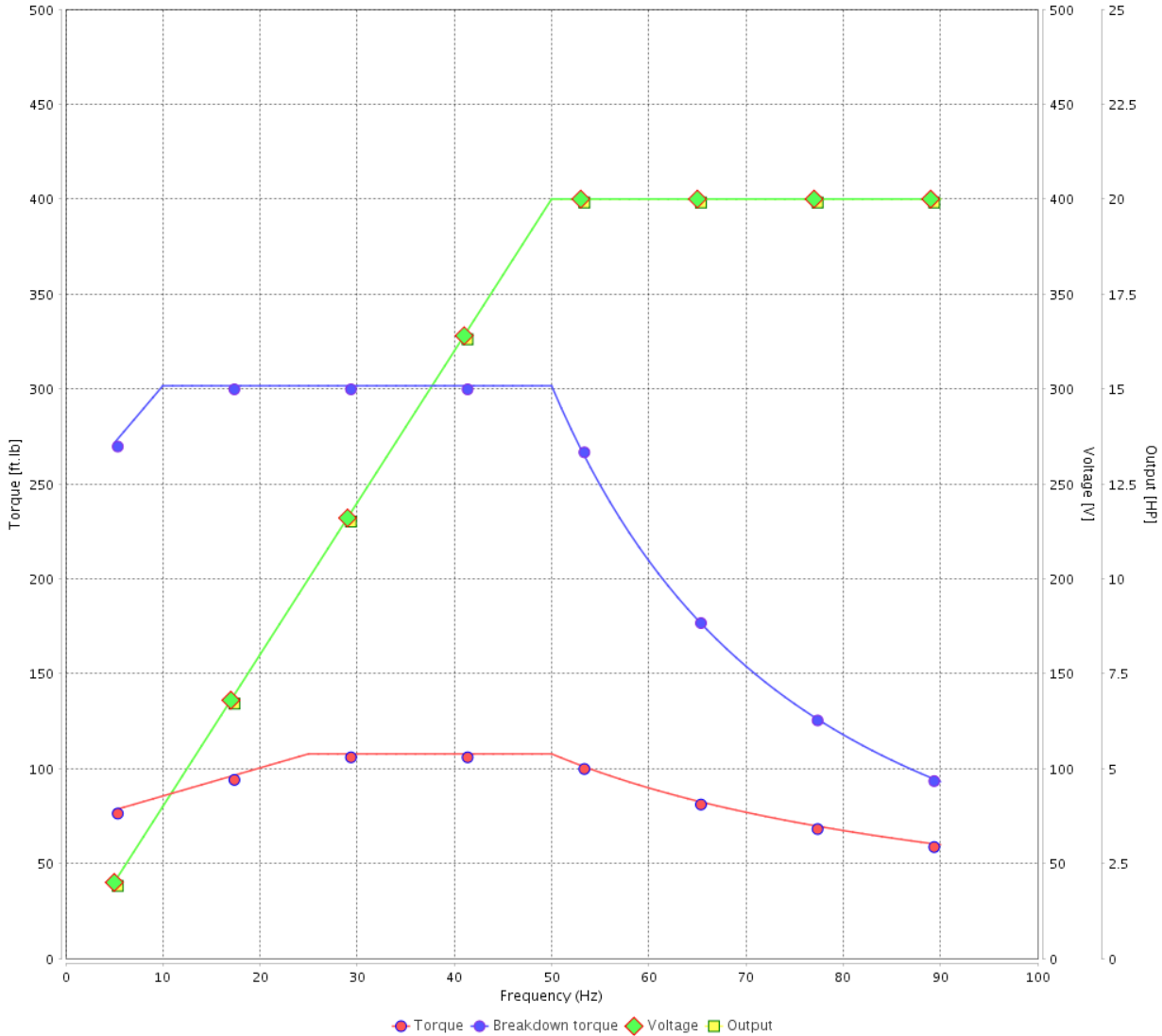
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12447791

Catalog # : 02512ST3QIE324TC-W22

VFD OPERATION CURVE



Performance : 400 V 50 Hz 6P IE3

Rated current : 29.4 A
 LRC : 6.3
 Rated torque : 108 ft.lb
 Locked rotor torque : 229 %
 Breakdown torque : 280 %
 Rated speed : 975 rpm

Moment of inertia (J) : 11.5 sq.ft.lb
 Duty cycle : Cont.(S1)
 Insulation class : F
 Service factor : 1.15
 Temperature rise : 80 K
 Design : B

Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page 32 / 36	Revision
Checked by				
Date	13/04/2022			

VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage

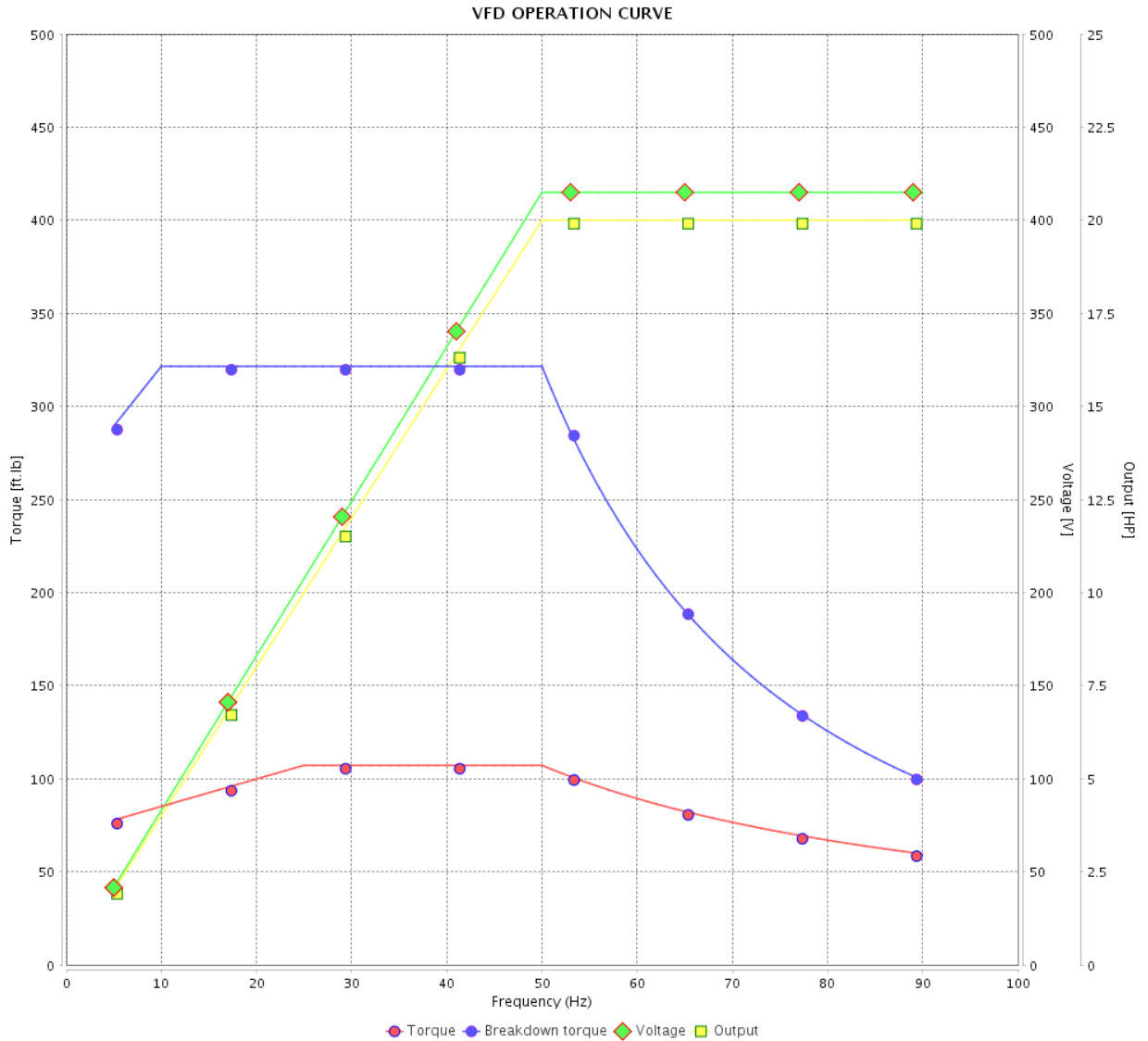


Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12447791

Catalog # : 02512ST3QIE324TC-W22



Performance : 415 V 50 Hz 6P IE3

Rated current : 28.6 A
 LRC : 6.8
 Rated torque : 107 ft.lb
 Locked rotor torque : 250 %
 Breakdown torque : 300 %
 Rated speed : 980 rpm

Moment of inertia (J) : 11.5 sq.ft.lb
 Duty cycle : Cont.(S1)
 Insulation class : F
 Service factor : 1.15
 Temperature rise : 80 K
 Design : B

Rev.	Changes Summary	Performed	Checked	Date
Performed by				Page 33 / 36
Checked by				
Date	13/04/2022			

VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage



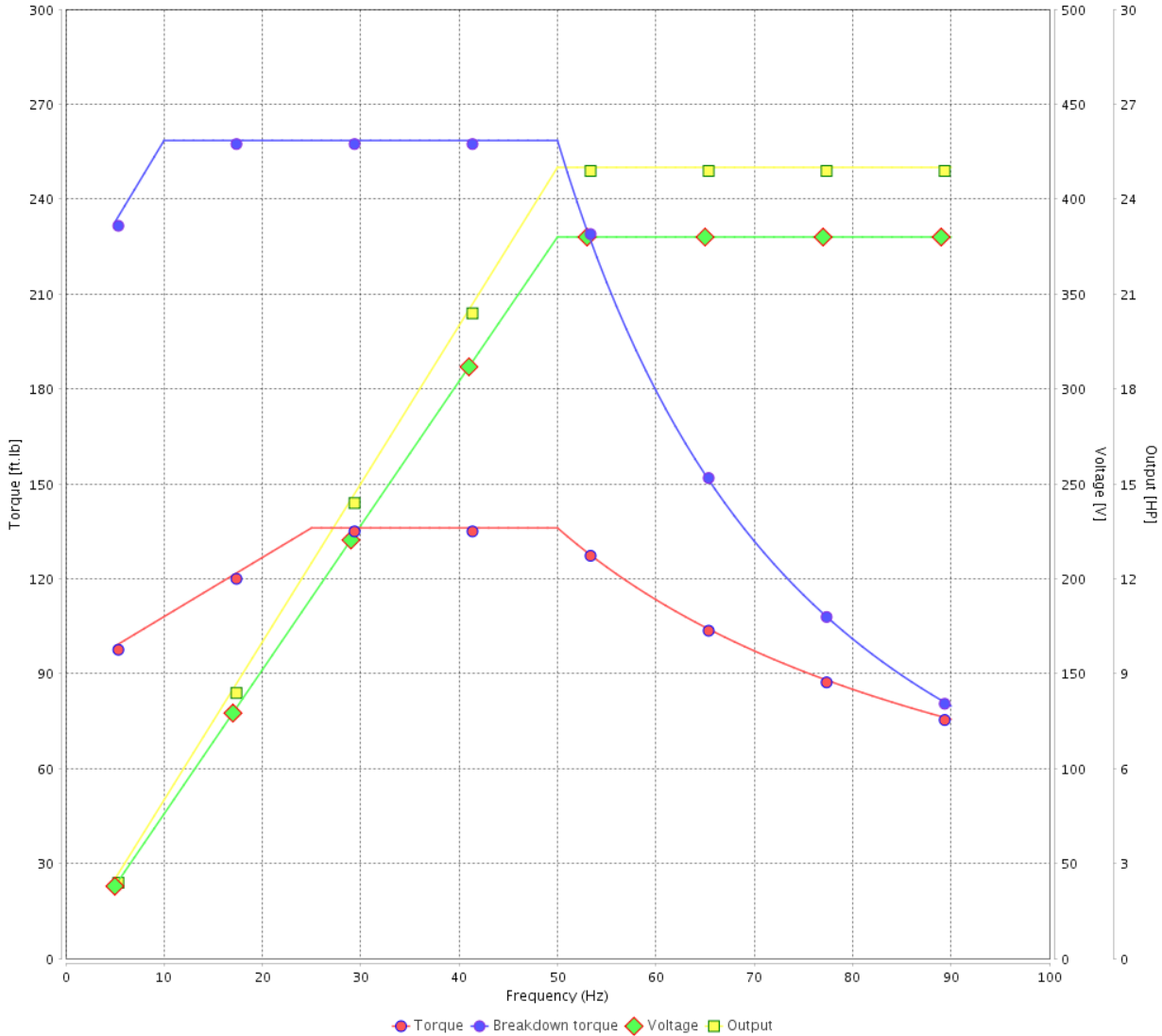
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12447791

Catalog # : 02512ST3QIE324TC-W22

VFD OPERATION CURVE



Performance : 380 V 50 Hz 6P IE2

Rated current	: 36.3 A	Moment of inertia (J)	: 11.5 sq.ft.lb
LRC	: 4.7	Duty cycle	: Cont.(S1)
Rated torque	: 136 ft.lb	Insulation class	: F
Locked rotor torque	: 160 %	Service factor	: 1.00
Breakdown torque	: 190 %	Temperature rise	: 80 K
Rated speed	: 965 rpm	Design	: B

Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page 34 / 36	Revision
Checked by				
Date	13/04/2022			

VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage

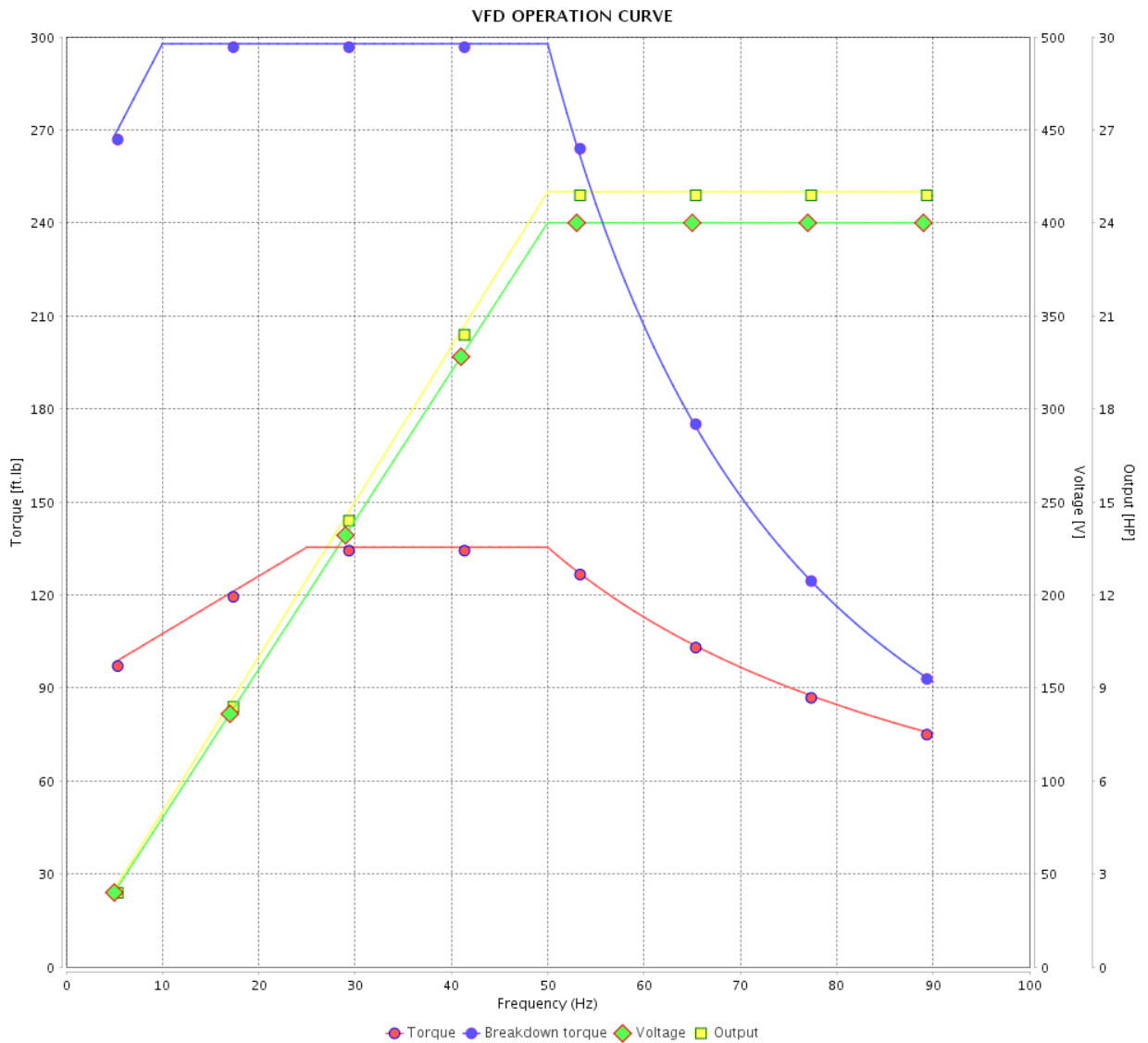


Customer : _____

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12447791

Catalog # : 02512ST3QIE324TC-W22



Performance : 400 V 50 Hz 6P IE3

Rated current : 35.1 A
 LRC : 5.2
 Rated torque : 135 ft.lb
 Locked rotor torque : 180 %
 Breakdown torque : 220 %
 Rated speed : 970 rpm

Moment of inertia (J) : 11.5 sq.ft.lb
 Duty cycle : Cont.(S1)
 Insulation class : F
 Service factor : 1.15
 Temperature rise : 80 K
 Design : B

Rev.	Changes Summary	Performed	Checked	Date
Performed by		Page		Revision
Checked by		35 / 36		
Date		13/04/2022		

VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage



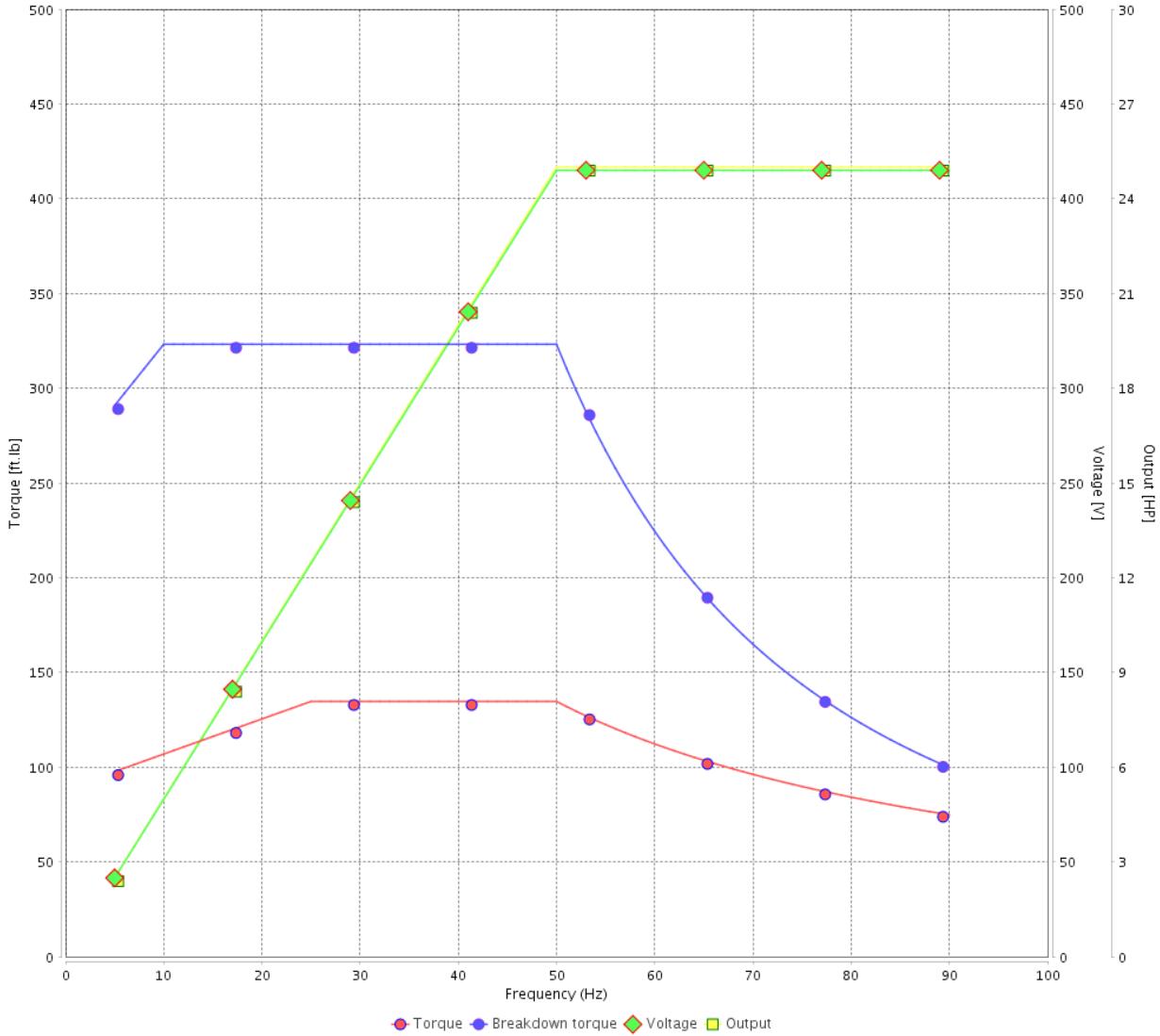
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Product line : NEMA Premium Efficiency Three-Phase

Product code : 12447791

Catalog # : 02512ST3QIE324TC-W22

VFD OPERATION CURVE



Performance : 415 V 50 Hz 6P IE3

Rated current : 34.2 A
 LRC : 5.6
 Rated torque : 135 ft.lb
 Locked rotor torque : 190 %
 Breakdown torque : 240 %
 Rated speed : 975 rpm

Moment of inertia (J) : 11.5 sq.ft.lb
 Duty cycle : Cont.(S1)
 Insulation class : F
 Service factor : 1.15
 Temperature rise : 80 K
 Design : B

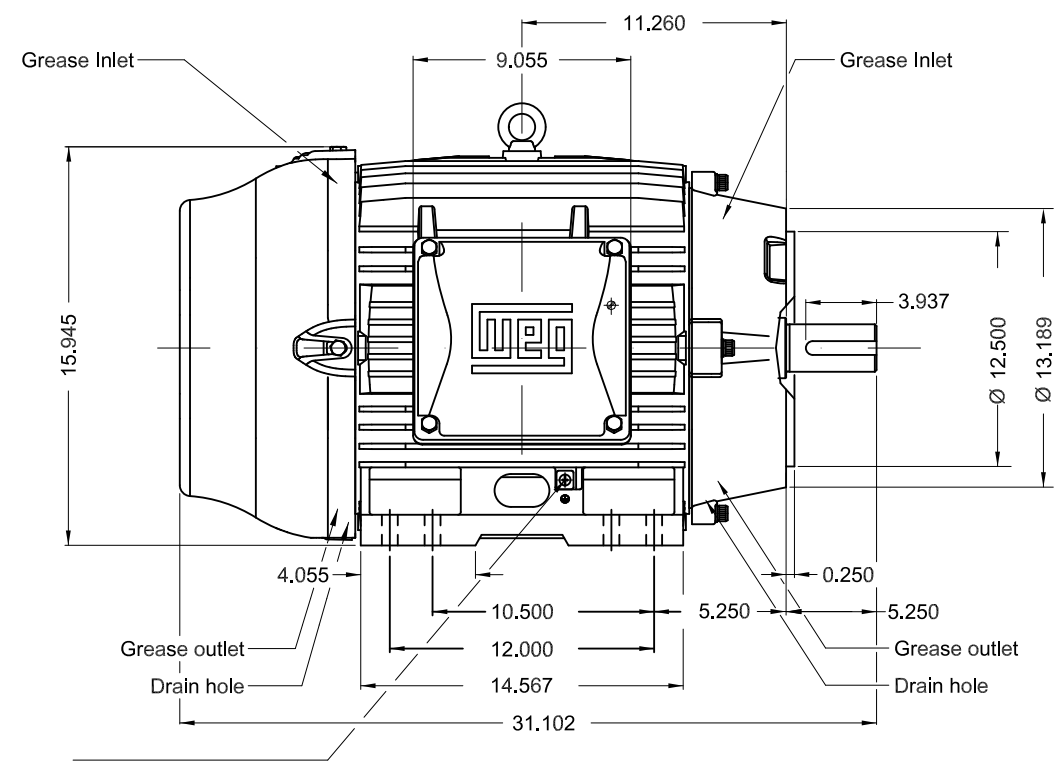
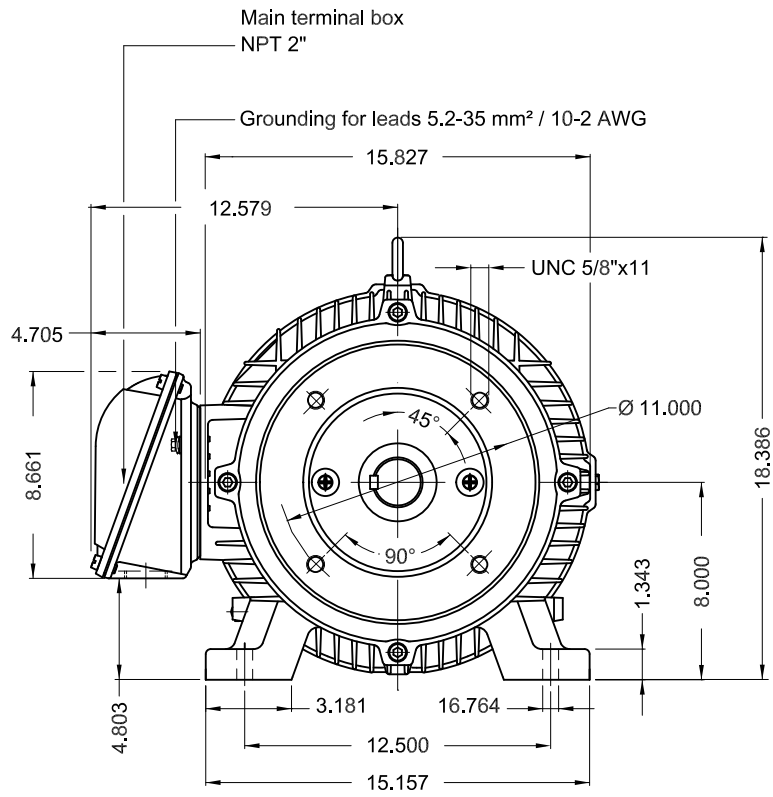
Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page 36 / 36	Revision
Checked by				
Date	13/04/2022			

1 2 3 4 5 6

A

B

C

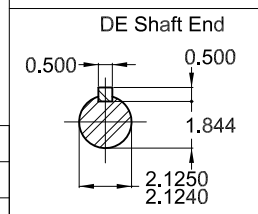


Grounding for leads 5.2-35 mm² / 10-2 AWG

D

E

Color RAL 5009
 Painting plan 202E
 Mounting B34R(D)



25 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 324/6TC 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 02512ST3QIE324TC-W22

Inverter Duty Motor
Severe Duty



PH3 60Hz Fr. 324/6TC 1000m.a.s.l. IP55 TEFC 567lb

V 460

A 30.4

HP 25

kW 18.5

SF 1.25

SFA 38.0

RPM 1175

PF 0.82

AMB 40°C

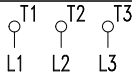
INS cl. F DT80K

NEMA NOM EFF 93.0%

DUTY CONT.

DES B Code G

GUARANT. EFF 91.7%



460V

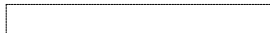


→ 6312-C3 (21g) 60BC03X30

→ 6212-C3 (13g) 60BC02X30



MOBIL POLYREX EM (20000h)



MADE IN BRAZIL
12447791