



ROUNDWOUND



COPPER TIN
PHOSPHOR



HEX CORE



STRING TENSION

GUIDE FOR ACOUSTIC GUITAR

UPDATED MAY, 2020

Foreward

Whether you are a luthier, a repair tech, or someone looking to find your “ideal” set for your acoustic guitar, string tension will play a role. It is with this in mind that we at GHS have put together our String Tension Guide for Acoustic Guitar, as a resource to help you find the information you are looking for to help you in whatever role you fall.

PLEASE NOTE: This guide as a reference of the tension of our strings at various pitches. Please use caution when making sets that have extremely high tensions, as the set as a whole may put undue stress on the neck, as well as snap the core of the strings prematurely.

Table of Contents

String Tension	pg. 3
How to Calculate Tension	
Frequency Chart	
String Construction - At A Glance	pg. 3
Winding Techniques	
String Materials	
String Geometry	
String Lengths	
String Tension Charts	pg. 4
Bright Bronze™	pg. 4
Contact Core™ Bright Bronze™	pg. 5
Bright Bronze™ Rollerwound	
Ground Phosphor Bronze	
Phosphor Bronze	pg. 6
Thin Core Phosphor Bronze	pg. 7
Americana Acoustic Guitar	pg. 8
White Bronze™	pg. 9
Infinity Bronze™	pg. 10
Silk and Bronze	
Silk and Steel	pg. 11
Vintage Bronze™	pg. 12
Plain Steel Strings	pg. 13
Final Thoughts	pg. 13

How to Calculate Tension

String tension is the amount of force a string has when tuned to a specific pitch. To find out the tension of a particular string, you need three variables: the **Unit Weight**, the **Scale Length**, and the **Frequency or Pitch** of the string you will be using. This guide provides you with a comprehensive list of all our current acoustic guitar strings, listed in singles and pre-packaged sets. The formulas used are the industry standard, and can be used to approximate other string tensions.

For those that prefer to use altered or down tunings, we present our tension guide in such a way as to help you choose the ideal set of strings for your application.

- UW** **UNIT WEIGHT:** The weight of the string, measured in pounds per linear inch (lb/in).
- L** **SCALE LENGTH:** The vibrating length of a string. Measure the distance from the nut to the bridge of the instrument to find the scale length. **GHS has used the 25.5" scale length** (typical for Fender) in the enclosed guide. Your individual instrument may vary.
- F** **FREQUENCY or PITCH:** The specific pitch at which each note is expressed, represented in cycles per second (Hertz).

To calculate the tension of a particular string in pounds, use the formula below, inserting the three needed variables.

$$T (\text{Tension}) = (UW \times (2 \times L \times F)^2) / 386.4$$

For those looking for a specific tension, you can use the formula below to get the unit weight for your particular needs. With that, compare the unit weight against the ones listed in the following pages to find the string gauge that meets your needs.

$$UW (\text{Unit Weight}) = (T \times 386.4) / (2 \times L \times F)^2$$

Frequency Chart

The chart below represents the frequency or pitch of each note, as it relates to the guitar fretboard. Standard tunings are shown in bold type; use the additional frequencies to calculate tension for strings when using altered tunings.

Nut / Open						Fret
E2 82.4 Hz	A2 110.0 Hz	D3 146.8 Hz	G3 196.0 Hz	B3 246.9 Hz	E4 329.6 Hz	
F2 87.3 Hz	A#2 116.5 Hz	D#3 155.6 Hz	G#3 207.7 Hz	C4 261.6 Hz	F4 349.2 Hz	
F#2 92.5 Hz	B2 123.5 Hz	E3 164.8 Hz	A3 220.0 Hz	C#4 277.2 Hz	F#4 369.9 Hz	
G2 98.0 Hz	C3 130.8 Hz	F3 174.6 Hz	A#3 233.1 Hz	D4 293.7 Hz	G4 392.0 Hz	
G#2 103.8 Hz	C#3 138.6 Hz	F#3 185.0 Hz	B3 246.9 Hz	D#4 311.1 Hz	G#4 415.3 Hz	
A2 110.0 Hz	D3 146.8 Hz	G3 196.0 Hz	C4 261.6 Hz	E4 329.6 Hz	A4 440.0 Hz	Fifth Fret

String Construction - At A Glance

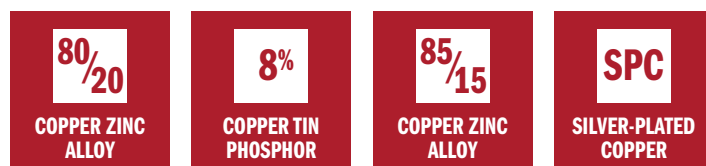
The biggest thing to understand is that the "tension" of a string is not the same as the "feel" of the string under your fingers. String tension plays a part, but there are a number of other factors involved as well.

We've created these "at a glance" icons for you to quickly see/understand how our strings are made, and what makes each one unique.

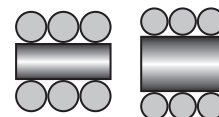
Winding Techniques: There are four types of winding techniques used for strings. The type providing the brightest tone (all else being equal) is the roundwound string. Next is the rollerwound, followed by the groundwound (also called a halfwound) and finally a flatwound.



String Materials: The hardness of common materials used in the cover wire of strings affects both the tone and "feel" of a string. Usually, with all else remaining constant, the harder the material the brighter the string. Common cover wire materials include (ranked by order of brightness) stainless steel, Alloy 52, nickel plated steel, pure nickel, and for acoustics, brass and bronze.



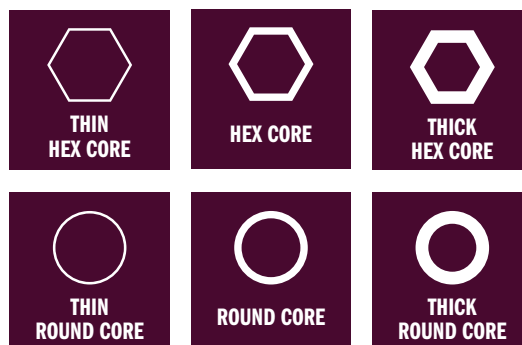
String Geometry: "String Geometry" refers to the ratio of the core wire diameter to the cover wire diameter. These two parameters are used to come up with the final string gauge.



A string with a **thin core** will have a small core-to-cover ratio, resulting in greater flexibility and a brighter tone.

Small Ratio **Large Ratio**

A string with a **thick core** will have a larger core-to-cover ratio, which gives a stiffer feel with a beefier tone and sustain.



String Lengths: Unless otherwise mentioned, all of our strings are made to the winding lengths listed below:

Plain Steel - 42" overall length

Wound Strings - 38" winding length (ball to taper), 40" overall length

BRIGHT BRONZE™

- Roundwound 80/20 Copper Zinc Alloy over a Hex Core
- Rich Acoustic Tones
- Crisp Sparkle to the Top End



By Individual String

Cat. No.	Unit Weight	G4	F#4	F4	E4	D#4	D4	C#4	C4	B3	A#3	A3	G#3	G3	F#3	F3	E3	D#3	D3	C#3	C3	B2	A#2	A2	G#2	G2	F#2	F2	E2	D#2	D2	C#2	C2	B1	A#1	A1	G#1			
008	.00001609	16.5	14.7	13.1	11.7	10.4	9.3	8.3																																
009	.00001810	18.6	16.5	14.7	13.1	11.7	10.4	9.3	8.3																															
010	.00002270	23.3	20.7	18.5	16.5	14.7	13.1	11.7	10.4	9.2	8.2																													
011	.00002950	30.3	27.0	24.0	21.4	19.1	17.0	15.1	13.5	12.0	10.7	9.5	8.5																											
012	.00003400	34.9	31.1	27.7	24.7	22.0	19.6	17.5	15.5	13.9	12.3	11.0	9.8	8.7																										
013	.00003860		35.3	31.4	28.0	25.0	22.2	19.8	17.7	15.7	14.0	12.5	11.1	9.9	8.8																									
013 1/2	.00004008		36.6	32.6	29.1	25.9	23.1	20.6	18.3	16.3	14.5	13.0	11.5	10.3	9.2	8.2																								
014	.00004770				34.6	30.8	27.5	24.5	21.8	19.4	17.3	15.4	13.7	12.2	10.9	9.7	8.7																							
015	.00005280					34.1	30.4	27.1	24.1	21.5	19.2	17.1	15.2	13.6	12.1	10.8	9.6	8.5																						
016	.00005900						34.0	30.3	27.0	24.0	21.4	19.1	17.0	15.1	13.5	12.0	10.7	9.5	8.5																					
017	.00006810							35.0	31.1	27.7	24.7	22.0	19.6	17.5	15.6	13.9	12.4	11.0	9.8	8.7																				
018	.00007270							37.3	33.2	29.6	26.4	23.5	20.9	18.7	16.6	14.8	13.2	11.8	10.5	9.3	8.3																			
BB18	.00007672					44.2	39.4	35.1	31.3	27.8	24.8	22.1	19.7	17.5	15.6	13.9	12.4	11.1																						
BB20	.00009339								42.7	38.0	33.9	30.2	26.9	24.0	21.4	19.0	16.9	15.1	13.5	12.0	10.7																			
BB22	.00010530									42.9	38.2	34.0	30.3	27.0	24.1	21.4	19.1	17.0	15.2	13.5	12.0	10.7																		
BB24	.00011360										41.2	36.7	32.7	29.2	26.0	23.1	20.6	18.4	16.4	14.6	13.0	11.6	10.3																	
BB26	.00013380											43.3	38.5	34.3	30.6	27.2	24.3	21.6	19.3	17.2	15.3	13.6	12.1	10.8																
BB28	.00015880													40.7	36.3	32.3	28.8	25.7	22.9	20.4	18.2	16.2	14.4	12.8	11.4	10.2														
BB30	.00017570														40.2	35.8	31.9	28.4	25.3	22.5	20.1	17.9	15.9	14.2	12.7	11.3	10.0													
BB32	.00020840															42.4	37.8	33.7	30.0	26.7	23.8	21.2	18.9	16.8	15.0	13.4	11.9	10.6												
BB34	.00025420																41.1	36.6	32.6	29.1	25.9	23.1	20.5	18.3	16.3	14.5	12.9	11.5	10.3											
BB36	.00025840																	41.8	37.2	33.2	29.5	26.3	23.4	20.9	18.6	16.6	14.8	13.2	11.7	10.4										
BB38	.00027920																		40.2	35.8	31.9	28.4	25.3	22.6	20.1	17.9	16.0	14.2	12.7	11.3	10.1									
BB40	.00031810																			40.8	36.4	32.4	28.9	25.7	22.9	20.4	18.2	16.2	14.4	12.9	11.5	10.2								
BB42	.00035280																				40.3	35.9	32.0	28.5	25.4	22.6	20.2	18.0	16.0	14.3	12.7	11.3	10.1							
BB44	.00039310																					40.0	35.7	31.8	28.3	25.2	22.5	20.0	17.8	15.9	14.2	12.6	11.2	10.0						
BB46	.00042570																						43.3	38.6	34.4	30.7	27.3	24.3	21.7	19.3	17.2	15.3	13.7	12.2	10.8					
BB48	.00044940																							40.8	36.3	32.4	28.8	25.7	22.9	20.4	18.2	16.2	14.4	12.8	11.4	10.2				
BB50	.00049490																								44.9	40.0	35.6	31.7	28.3	25.2	22.5	20.0	17.8	15.9	14.1	12.6	11.2	10.0		
BB52	.00051610																									41.7	37.2	33.1	29.5	26.3	23.4	20.9	18.6	16.6	14.8	13.1	11.7	10.4		
BB54	.00055610																										40.0	35.7	31.8	28.3	25.2	22.5	20.0	17.8	15.9	14.2	12.6	11.2	10.0	
BB56	.00060780																											43.8	39.0	34.7	30.9	27.6	24.6	21.9	19.5	17.4	15.5	13.8	12.3	10.9
BB60	.00078760																												45.0	40.1	35.7	31.8	28.4	25.3	22.5	20.1	17.9	15.9	14.2	

By Available Sets

Cat. No.	TOTAL	1-E	2-B	3-G	4-D	5-A	6-E
BB10U Ultra Light	116.2	010 16.5	013½ 16.3	BB20 24.0	BB26 19.3	BB36 20.9	BB46 19.3
BB20X Extra Light	138.2	011 21.4	014 19.4	BB22 27.0	BB30 25.3	BB38 22.6	BB50 22.5
BB30L Light	161.6	012 24.7	016 24.0	BB24 29.2	BB32 30.0	BB42 28.5	BB54 25.2
BB40M Medium	189.2	013 28.0	017 27.7	BB26 34.3	BB36 37.2	BB46 34.4	BB56 27.6
BB50H Heavy	217.2	014 34.6	018 29.6	BB28 40.7	BB38 40.2	BB48 36.3	BB60 35.7

12 STRING SETS							
Cat. No.	TOTAL	1-E	2-B	3-G	4-D	5-A	6-E
BB60X Extra Light	191.3	009 13.1 009 13.1	012 13.9 012 13.9	015 13.6 008 16.5	BB26 19.3 011 17.0	BB34 20.5 014 15.4	BB42 16.0 BB22 19.1
BB80 Light	258.5	011 21.4 011 21.4	014 19.4 014 19.4	BB20 24.0 009 18.6	BB30 25.3 012 19.6	BB40 25.7 016 19.1	BB48 20.4 BB26 24.3
BB100 Medium	324.4	012 24.7 012 24.7	016 24.0 016 24.0	BB26 34.3 010 23.3	BB34 36.6 013 22.2	BB44 31.8 018 23.5	BB52 23.4 BB30 31.9

CONTACT CORE™ BRIGHT BRONZE™

- Roundwound 80/20 Copper Zinc Alloy over a Hex Core
- Rich Acoustic Tones with a Crisp Sparkle to the Top End
- Exposed Core for Defined Bass Tones and Piano-Like Clarity



By Individual String

Cat. No.	Unit Weight	G4	F#4	F4	E4	D#4	D4	C#4	C4	B3	A#3	A3	G#3	G3	F#3	F3	E3	D#3	D3	C#3	C3	B2	A#2	A2	G#2	G2	F#2	F2	E2	D#2	D2	C#2	C2	B1	A#1	A1	G#1	
010	.00002270	23.3	20.7	18.5	16.5	14.7	13.1	11.7	10.4	9.2	8.2																											
011	.00002950	30.3	27.0	24.0	21.4	19.1	17.0	15.1	13.5	12.0	10.7	9.5	8.5																									
012	.00003400	34.9	31.1	27.7	24.7	22.0	19.6	17.5	15.5	13.9	12.3	11.0	9.8	8.7																								
013	.00003860		35.3	31.4	28.0	25.0	22.2	19.8	17.7	15.7	14.0	12.5	11.1	9.9	8.8																							
014	.00004770					34.6	30.8	27.5	24.5	21.8	19.4	17.3	15.4	13.7	12.2	10.9	9.7	8.7																				
016	.00005900						34.0	30.3	27.0	24.0	21.4	19.1	17.0	15.1	13.5	12.0	10.7	9.5	8.5																			
017	.00006810							35.0	31.1	27.7	24.7	22.0	19.6	17.5	15.6	13.9	12.4	11.0	9.8	8.7																		
CBB20	.00009339								42.7	38.0	33.9	30.2	26.9	24.0	21.4	19.0	16.9	15.1	13.5	12.0	10.7																	
CBB22	.00010530									42.9	38.2	34.0	30.3	27.0	24.1	21.4	19.1	17.0	15.2	13.5	12.0	10.7																
CBB24	.00011360										36.7	32.7	29.2	26.0	23.1	20.6	18.4	16.4	14.6	13.0	11.6	10.3																
CBB26	.00013380											34.3	30.6	27.2	24.3	21.6	19.3	17.2	15.3	13.6	12.1	10.8																
CBB30	.00017570														35.8	31.9	28.4	25.3	22.5	20.1	17.9	15.9	14.2	12.7	11.3	10.0												
CBB32	.00020840															42.4	37.8	33.7	30.0	26.7	23.8	21.2	18.9	16.8	15.0	13.4	11.9	10.6										
CBB36	.00025840																41.8	37.2	33.2	29.5	26.3	23.4	20.9	18.6	16.6	14.8	13.2	11.7	10.4									
CBB38	.00027920																	40.2	35.8	31.9	28.4	25.3	22.6	20.1	17.9	16.0	14.2	12.7	11.3	10.0								
CBB42	.00035280																			40.3	35.9	32.0	28.5	25.4	22.6	20.2	18.0	16.0	14.3	12.7	11.3	10.1						
CBB46	.00042570																				43.3	38.6	34.4	30.7	27.3	24.3	21.7	19.3	17.2	15.3	13.7	12.2	10.8					
CBB50	.00049490																					44.9	40.0	35.6	31.7	28.3	25.2	22.5	20.0	17.8	15.9	14.1	12.6	11.2	10.0			
CBB54	.00055610																						44.9	40.0	35.7	31.8	28.3	25.2	22.5	20.0	17.8	15.9	14.2	12.6	11.2	10.0		
CBB56	.00060780																							39.0	34.7	30.9	27.6	24.6	21.9	19.5	17.4	15.5	13.8	12.3	10.9			

By Available Sets

Cat. No.	TOTAL	1-E	2-B	3-G	4-D	5-A	6-E
CCBB10	115.6	010	013	CBB20	CBB26	CBB36	CBB46
Ultra Light		16.5	15.7	24.0	19.3	20.9	19.3
CCBB20	138.2	011	014	CBB22	CBB30	CBB38	CBB50
Extra Light		21.4	19.4	27.0	25.3	22.6	22.5

Cat. No.	TOTAL	1-E	2-B	3-G	4-D	5-A	6-E
CBB30	161.6	012	016	CBB24	CBB32	CBB42	CBB54
Light		24.7	24.0	29.2	30.0	28.5	25.2
CBB40	189.2	013	017	CBB26	CBB36	CBB46	CBB56
Medium		28.0	27.7	34.3	37.2	34.4	27.6

BRIGHT BRONZE™ ROLLERWOUND

- Roundwound 80/20 Copper Zinc Alloy over a Hex Core
- Rich Acoustic Tones with a Crisp Sparkle to the Top End
- Rollerwound for a Smooth Feel with Minimal Finger Noise



By Individual String

Cat. No.	Unit Weight	G4	F#4	F4	E4	D#4	D4	C#4	C4	B3	A#3	A3	G#3	G3	F#3	F3	E3	D#3	D3	C#3	C3	B2	A#2	A2	G#2	G2	F#2	F2	E2	D#2	D2	C#2	C2	B1	A#1	A1	G#1	
RB26	.00015890													40.7	36.2	32.3	28.8	25.6	22.8	20.3	18.1	16.1	14.4	12.8	11.4	10.2												
RB34	.00026017																	42.1	37.5	33.4	29.7	26.5	23.6	21.0	18.7	16.7	14.9	13.3	11.8	10.5								
RB44	.00040969																				41.7	37.2	33.1	29.5	26.3	23.4	20.9	18.6	16.6	14.8	13.1	11.7	10.4					
RB54	.00058911																					42.4	37.8	33.7	30.0	26.7	23.8	21.2	18.9	16.8	15.0	13.4	11.9	10.6				

BRIGHT BRONZE™ GROUND

- Roundwound 80/20 Copper Zinc Alloy over a Hex Core
- Rich Acoustic Tones with a Crisp Sparkle to the Top End
- Ground Smooth for a Mellow Tone with No Finger Noise



By Individual String

Cat. No.	Unit Weight	G4	F#4	F4	E4	D#4	D4	C#4	C4	B3	A#3	A3	G#3	G3	F#3	F3	E3	D#3	D3	C#3	C3	B2	A#2	A2	G#2	G2	F#2	F2	E2	D#2	D2	C#2	C2	B1	A#1	A1	G#1
SFB24	.00013889												40.0	35.6	31.8	28.3	25.2	22.5	20.0	17.8	15.9	14.1	12.6	11.2	10.0												
SFB28	.00017909													45.0	40.9	36.5	32.5	28.9	25.79	23.0	20.5	18.2	16.2	14.5	12.9	11.5	10.2										
SFB36	.00027778														40.0	35.6	31.7	28.3	25.2	22.5	20.0	17.8	15.9	14.1	12.6	11.2	10.0										
SFB46	.00046053																					41.8	37.2	33.2	29.5	26.3	23.5	20.9	18.6	16.6	14.8	13.2	11.7	10.4			
SFB56	.00065205																						41.8	37.3	33.2	29.6	26.4	23.5	20.9	18.6	16.6	14.8	13.2	11.7			

PHOSPHOR BRONZE

- Roundwound 8% Copper Tin Phosphor over a Hex Core
- Full, Rich Acoustic Tones
- High End Shimmer without Harsh Overtones



By Individual String

Cat. No.	Unit Weight	G4	F#4	F4	E4	D#4	D4	C#4	C4	B3	A#3	A3	G#3	G3	F#3	F3	E3	D#3	D3	C#3	C3	B2	A#2	A2	G#2	G2	F#2	F2	E2	D#2	D2	C#2	C2	B1	A#1	A1	G#1
008	.00001609	16.5	14.7	13.1	11.7	10.4	9.3	8.3																													
009	.00001810	18.6	16.5	14.7	13.1	11.7	10.4	9.3	8.3																												
010	.00002270	23.3	20.7	18.5	16.5	14.7	13.1	11.7	10.4	9.2	8.2																										
011	.00002950	30.3	27.0	24.0	21.4	19.1	17.0	15.1	13.5	12.0	10.7	9.5	8.5																								
011 1/2	.00003080	31.6	28.2	25.1	22.4	19.9	17.7	15.8	14.1	12.5	11.2	10.0	8.9																								
012	.00003400	34.9	31.1	27.7	24.7	22.0	19.6	17.5	15.5	13.9	12.3	11.0	9.8	8.7																							
013	.00003860		35.3	31.4	28.0	25.0	22.2	19.8	17.7	15.7	14.0	12.5	11.1	9.9	8.8																						
014	.00004770				34.6	30.8	27.5	24.5	21.8	19.4	17.3	15.4	13.7	12.2	10.9	9.7	8.7																				
015	.00005280					34.1	30.4	27.1	24.1	21.5	19.2	17.1	15.2	13.6	12.1	10.8	9.6	8.5																			
016	.00005900						34.0	30.3	27.0	24.0	21.4	19.1	17.0	15.1	13.5	12.0	10.7	9.5	8.5																		
017	.00006810							35.0	31.1	27.7	24.7	22.0	19.6	17.5	15.6	13.9	12.4	11.0	9.8	8.7																	
018	.00007270								37.3	33.2	29.6	26.4	23.5	20.9	18.7	16.6	14.8	13.2	11.8	10.5	9.3	8.3															
B18	.00007394					42.6	37.9	33.8	30.1	26.8	23.9	21.3	19.0	16.9	15.1	13.4	12.0	10.7																			
B20	.00008506						43.7	38.9	34.6	30.9	27.5	24.5	21.8	19.4	17.3	15.4	13.8	12.3	10.9																		
B22	.00009971							40.6	36.2	32.2	28.7	25.6	22.8	20.3	18.1	16.1	14.4	12.8	11.4	10.2																	
B24	.00012470								40.3	35.9	32.0	28.5	25.4	22.6	20.2	18.0	16.0	14.3	12.7	11.3	10.1																
B26	.00015560									44.8	39.9	35.6	31.7	28.2	25.2	22.4	20.0	17.8	15.8	14.1	12.6	11.2	10.0														
B28	.00016440										42.2	37.6	33.5	29.8	26.6	23.7	21.1	18.8	16.7	14.9	13.3	11.8	10.5														
B30	.00020620											42.0	37.4	33.3	29.7	26.5	23.6	21.0	18.7	16.7	14.9	13.2	11.8	10.5													
B32	.00021390												43.6	38.8	34.6	30.8	27.4	24.4	21.8	19.4	17.3	15.4	13.7	12.2	10.9												
B34	.00024310													44.1	39.3	35.0	31.2	27.8	24.8	22.1	19.7	17.5	15.6	13.9	12.4	11.0											
B36	.00026110														42.2	37.6	33.5	29.8	26.6	23.7	21.1	18.8	16.8	14.9	13.3	11.8	10.6										
B38	.00029310															42.2	37.6	33.5	29.8	26.6	23.7	21.1	18.8	16.8	14.9	13.3	11.8	10.6									
B40	.00031460																40.4	36.0	32.0	28.5	25.4	22.7	20.2	18.0	16.0	14.3	12.7	11.3	10.1								
B42	.00035900																	41.0	36.6	32.6	29.0	25.9	23.0	20.5	18.3	16.3	14.5	12.9	11.5	10.3							
B44	.00038680																		44.2	39.4	35.1	31.3	27.9	24.8	22.1	19.7	17.5	15.6	13.9	12.4	11.1						
B46	.00039870																			40.6	36.2	32.2	28.7	25.6	22.8	20.3	18.1	16.1	14.4	12.8	11.4	10.2					
B48	.00047160																				42.8	38.1	34.0	30.3	27.0	24.0	21.4	19.1	17.0	15.1	13.5	12.0	10.7				
B50	.00050050																					40.5	36.0	32.1	28.6	25.5	22.7	20.2	18.0	16.1	14.3	12.7	11.4	10.1			
B52	.00051050																						41.3	36.8	32.7	29.2	26.0	23.2	20.6	18.4	16.4	14.6	13.0	11.6	10.3		
B54	.00061160																							44.0	39.2	35.0	31.1	27.7	24.7	22.0	19.6	17.5	15.6	13.9	12.4	11.0	
B56	.00062830																								40.3	35.9	32.0	28.5	25.4	22.6	20.2	18.0	16.0	14.3	12.7	11.3	
B58	.00064800																									41.6	37.0	33.0	29.4	26.2	23.3	20.8	18.5	16.5	14.7	13.1	11.7

By Available Sets

Cat. No.	TOTAL	1-E	2-B	3-G	4-D	5-A	6-E
DDS325 Doyle Dykes, Light	155.9	011½ 22.4	015 21.5	B22 25.6	B30 29.7	B42 29.0	B54 27.7
S305 Ultra Light	116.2	010 16.5	013½ 16.3	B20 21.8	B26 22.4	B36 21.1	B46 18.1
S315 Extra Light	142.5	011 21.4	014 19.4	B22 25.6	B30 29.7	B38 23.7	B50 22.7
S325 Light	168.2	012 24.7	016 24.0	B24 32.0	B32 30.8	B42 29.0	B54 27.7
TM335 True Medium	176.0	013 28.0	017 27.7	B24 32.0	B32 30.8	B42 29.0	B56 28.5
S335 Medium	194.0	013 28.0	017 27.7	B26 40.0	B36 37.6	B46 32.2	B56 28.5
340 Heavy	216.1	014 34.6	018 29.6	B28 42.2	B38 42.2	B48 38.1	B58 29.4

12 STRING SETS							
Cat. No.	TOTAL	1-E	2-B	3-G	4-D	5-A	6-E
605 Extra Light	192.9	009 13.1 009 13.1	012 13.9 012 13.9	015 13.6 008 16.5	B26 22.4 011 17.0	B34 19.7 014 15.4	B42 16.3 B22 18.1
615 Light	265.4	011 21.4 011 21.4	014 19.4 014 19.4	B20 21.8 009 18.6	B30 29.7 012 19.6	B40 25.4 016 19.1	B48 21.4 B26 28.2
625 Medium	333.2	012 24.7 012 24.7	016 24.0 016 24.0	B26 40.0 010 23.3	B34 35.0 013 22.2	B44 31.3 018 23.5	B52 23.2 B30 37.4

THIN CORE PHOSPHOR BRONZE

- Roundwound 8% Copper Tin Phosphor over a Round Core
- Full, Even Tonality Across the Entire Fretboard
- Lower Tension ideal for Vintage Instruments



By Individual String

Cat. No.	Unit Weight	G4	F#4	F4	E4	D#4	D4	C#4	C4	B3	A#3	A3	G#3	G3	F#3	F3	E3	D#3	D3	C#3	C3	B2	A#2	A2	G#2	G2	F#2	F2	E2	D#2	D2	C#2	C2	B1	A#1	A1	G#1
010	.00002270	23.3	20.7	18.5	16.5	14.7	13.1	11.7	10.4	9.2	8.2																										
011	.00002950	30.3	27.0	24.0	21.4	19.1	17.0	15.1	13.5	12.0	10.7	9.5	8.5																								
012	.00003400	34.9	31.1	27.7	24.7	22.0	19.6	17.5	15.5	13.9	12.3	11.0	9.8	8.7																							
013	.00003860		35.3	31.4	28.0	25.0	22.2	19.8	17.7	15.7	14.0	12.5	11.1	9.9	8.8																						
015	.00005280					34.1	30.4	27.1	24.1	21.5	19.2	17.1	15.2	13.6	12.1	10.8	9.6	8.5																			
016	.00005900						34.0	30.3	27.0	24.0	21.4	19.1	17.0	15.1	13.5	12.0	10.7	9.5	8.5																		
017	.00006810							35.0	31.1	27.7	24.7	22.0	19.6	17.5	15.6	13.9	12.4	11.0	9.8	8.7																	
B18	.00007394						42.6	37.9	33.8	30.1	26.8	23.9	21.3	19.0	16.9	15.1	13.4	12.0	10.7																		
B20	.00008506							43.7	38.9	34.6	30.9	27.5	24.5	21.8	19.4	17.3	15.4	13.8	12.3	10.9																	
TCB21	.00010625									43.6	38.9	34.6	30.8	27.5	24.5	21.8	19.4	17.3	15.4	13.7	12.2	10.9															
TCB24	.00012324											40.2	35.7	31.8	28.4	25.3	22.5	20.1	17.9	15.9	14.2	12.7	11.3	10.0													
TCB27	.00014561												42.3	37.7	33.6	29.9	26.6	23.7	21.1	18.8	16.8	14.9	13.3	11.9	10.6												
TCB32	.00020110														41.3	36.8	32.8	29.2	26.0	23.2	20.6	18.4	16.4	14.6	13.0	11.6	10.3										
TCB35	.00024643															45.1	40.1	35.8	31.9	28.4	25.3	22.5	20.1	17.9	15.9	14.2	12.7	11.3	10.0								
TCB38	.00028902																42.0	37.4	33.3	29.7	26.4	23.5	21.0	18.7	16.7	14.8	13.2	11.8	10.5								
TCB41	.00036742																	42.3	37.7	33.6	29.9	26.7	23.8	21.2	18.9	16.8	15.0	13.3	11.9	10.6							
TCB46	.00041673																		42.8	38.1	33.9	30.2	26.9	24.0	21.4	19.1	17.0	15.1	13.5	12.0	10.7						
TCB52	.00050411																				41.1	36.6	32.6	29.0	25.9	23.1	20.5	18.3	16.3	14.5	12.9	11.5	10.3				
TCB56	.00059374																					43.1	38.4	34.2	30.5	27.1	24.2	21.5	19.2	17.1	15.2	13.6	12.1	10.8			

By Available Sets

Cat. No.	TOTAL	1-E	2-B	3-G	4-D	5-A	6-E	Cat. No.	TOTAL	1-E	2-B	3-G	4-D	5-A	6-E
TCBUL Ultra Light	99.8	010 16.5	013 15.7	B18 19.0	TCB21 15.4	TCB32 16.4	TCB41 16.8	TCB-L Light	138.2	012 24.7	016 24.0	B20 21.8	TCB27 21.1	TCB38 23.5	TCB52 23.1
TCB-XL Extra Light	121.8	011 21.4	015 21.5	B20 21.8	TCB24 17.9	TCB35 20.1	TCB46 19.1	TCB-M Medium	166.6	013 28.0	017 27.7	TCB21 27.5	TCB32 29.2	TCB41 27.1	TCB56 27.1

AMERICANA ACOUSTIC GUITAR

- Roundwound 8% Copper Tin Phosphor over a Hex Core
- Cryogenically Treated for Brighter Tone and Extended Longevity
- Bronze-Plated Plain Strings for Warmer, Even Sound



By Individual String

Cat. No.	Unit Weight	G4	F#4	F4	E4	D#4	D4	C#4	C4	B3	A#3	A3	G#3	G3	F#3	F3	E3	D#3	D3	C#3	C3	B2	A#2	A2	G#2	G2	F#2	F2	E2	D#2	D2	C#2	C2	B1	A#1	A1	G#1		
LJ10	.00003607	37.3	33.2	29.6	26.4	23.5	20.9	18.6	16.6	14.8	13.2	11.8	10.5	9.3	8.3																								
LJ11	.00003968		36.3	32.3	28.8	25.7	22.9	20.4	18.1	16.2	14.4	12.8	11.4	10.2	9.1	8.1																							
LJ12	.00004027		36.8	32.8	29.2	26.0	23.2	20.7	18.4	16.4	14.6	13.0	11.6	10.3	9.2	8.2																							
LJ13	.00004599			37.5	33.4	29.7	26.5	23.6	21.0	18.7	16.7	14.9	13.2	11.8	10.5	9.4	8.3																						
LJ14	.00005411					35.0	31.2	27.8	24.7	22.0	19.6	17.5	15.6	13.9	12.4	11.0	9.8	8.7																					
LJ16	.00006494						37.4	33.3	29.7	26.5	23.6	21.0	18.7	16.7	14.8	13.2	11.8	10.5	9.4	8.3																			
LJ17	.00007275							37.3	33.3	29.6	26.4	23.5	21.0	18.7	16.6	14.8	13.2	11.8	10.5	9.3	8.3																		
LJ19	.00008929									36.4	32.4	28.9	25.7	22.9	20.4	18.2	16.2	14.4	12.9	11.5	10.2	9.1	8.1																
LJ22	.00010810										44.0	39.3	34.9	31.1	27.7	24.7	22.0	19.6	17.5	15.6	13.9	12.4	11.0																
LJ24	.00011080											40.2	35.8	31.9	28.4	25.3	22.6	20.1	17.9	16.0	14.2	12.7	11.3	10.1															
LJ26	.00012830												41.5	37.0	32.9	29.3	26.1	23.3	20.7	18.5	16.5	14.7	13.1	11.6	10.4														
LJ30	.00017568														40.2	35.8	31.9	28.4	25.3	22.5	20.1	17.9	15.9	14.2	12.7	11.3	10.0												
LJ32	.00020842															42.4	37.8	33.7	30.0	26.7	23.8	21.2	18.9	16.8	15.0	13.4	11.9	10.6											
LJ36	.00025841																41.8	37.2	33.2	29.5	26.3	23.4	20.9	18.6	16.6	14.8	13.2	11.7	10.4										
LJ38	.00027924																	40.2	35.8	31.9	28.4	25.3	22.6	20.1	17.9	16.0	14.2	12.7	11.3	10.0									
LJ42	.00037287																			42.6	38.0	33.8	30.1	26.9	23.9	21.3	19.0	16.9	15.1	13.4	12.0	10.7							
LJ46	.00042565																				43.3	38.6	34.4	30.7	27.3	24.3	21.7	19.3	17.2	15.3	13.7	12.2	10.8						
LJ50	.00049489																						40.0	35.6	31.7	28.3	25.2	22.5	20.0	17.8	15.9	14.1	12.6	11.2	10.0				
LJ54	.00055614																							40.0	35.7	31.8	28.3	25.2	22.5	20.0	17.8	15.9	14.2	12.6	11.2	10.0			
LJ56	.00063939																								41.0	36.5	32.6	29.0	25.8	23.0	20.5	18.3	16.3	14.5	12.9	11.5			

By Available Sets

Cat. No.	TOTAL	1-E	2-B	3-G	4-D	5-A	6-E
S405 Ultra Light	126.7	LJ10 26.4	LJ13 18.7	LJ19 22.9	LJ26 18.5	LJ36 20.9	LJ46 19.3
S415 Extra Light	148.9	LJ11 28.8	LJ14 22.0	LJ22 27.7	LJ30 25.3	LJ38 22.6	LJ50 22.5
S425 Light	169.5	LJ12 29.2	LJ16 26.5	LJ24 28.4	LJ32 30.0	LJ42 30.0	LJ54 25.2

Cat. No.	TOTAL	1-E	2-B	3-G	4-D	5-A	6-E
S435TM True Medium	180.6	LJ13 33.4	LJ17 29.6	LJ24 28.4	LJ32 30.0	LJ42 30.1	LJ56 29.0
S435 Medium	196.5	LJ13 33.4	LJ17 29.6	LJ26 32.9	LJ36 37.2	LJ46 34.4	LJ56 29.0

WHITE BRONZE™

- Roundwound Nickel-Iron over a Hex Core
- Increased Volume, Clarity and Definition
- Ideal for Acoustic/Electric Guitars



By Individual String

Cat. No.	Unit Weight	G4	F#4	F4	E4	D#4	D4	C#4	C4	B3	A#3	A3	G#3	G3	F#3	F3	E3	D#3	D3	C#3	C3	B2	A#2	A2	G#2	G2	F#2	F2	E2	D#2	D2	C#2	C2	B1	A#1	A1	G#1
009	.00001810	18.6	16.5	14.7	13.1	11.7	10.4	9.3	8.3																												
011	.00002950	30.3	27.0	24.0	21.4	19.1	17.0	15.1	13.5	12.0	10.7	9.5	8.5																								
012	.00003400	34.9	31.1	27.7	24.7	22.0	19.6	17.5	15.5	13.9	12.3	11.0	9.8	8.7																							
013	.00003860		35.3	31.4	28.0	25.0	22.2	19.8	17.7	15.7	14.0	12.5	11.1	9.9	8.8																						
014	.00004770				34.6	30.8	27.5	24.5	21.8	19.4	17.3	15.4	13.7	12.2	10.9	9.7	8.7																				
015	.00005280					34.1	30.4	27.1	24.1	21.5	19.2	17.1	15.2	13.6	12.1	10.8	9.6	8.5																			
016	.00005900						34.0	30.3	27.0	24.0	21.4	19.1	17.0	15.1	13.5	12.0	10.7	9.5	8.5																		
017	.00006810							35.0	31.1	27.7	24.7	22.0	19.6	17.5	15.6	13.9	12.4	11.0	9.8	8.7																	
WB20	.00007687						44.3	39.4	35.1	31.1	27.9	24.9	22.1	19.7	17.6	15.7	13.9	12.4	11.1																		
WB22	.00010700									43.6	38.8	34.6	30.8	27.4	24.5	21.8	19.4	17.3	15.4	13.7	12.2	10.9															
WB24	.00010970										39.8	35.5	31.6	28.2	25.1	22.3	19.9	17.7	15.8	14.1	12.5	11.2	10.0														
WB26	.00013440										43.4	38.7	34.5	30.7	27.4	24.4	21.7	19.4	17.2	15.4	13.7	12.2	10.9														
WB30	.00016600											42.6	37.9	33.8	30.1	26.8	23.9	21.3	19.0	16.9	15.1	13.4	12.0	10.7													
WB32	.00020020														40.8	36.3	32.4	28.8	25.7	22.9	20.4	18.2	16.2	14.4	12.8	11.4	10.2										
WB36	.00022650															41.1	36.6	32.6	29.1	25.9	23.1	20.6	18.3	16.3	14.5	12.9	11.5	10.3									
WB38	.00027860																40.1	35.7	31.8	28.4	25.3	22.5	20.1	17.9	15.9	14.2	12.6	11.3	10.0								
WB42	.00032390																	41.6	37.0	33.0	29.4	26.2	23.3	20.9	18.5	16.5	14.7	13.1	11.7	10.4							
WB46	.00040110																		40.8	36.4	32.4	28.9	25.7	22.9	20.4	18.2	16.2	14.4	12.9	11.5	10.2						
WB48	.00047340																			42.9	38.3	34.1	30.4	27.1	24.1	21.5	19.1	17.0	15.2	13.5	12.1	10.7					
WB50	.00049640																				40.1	35.7	31.8	28.4	25.3	22.5	20.1	17.9	15.9	14.2	12.6	11.3	10.0				
WB52	.00057720																					41.6	37.0	33.0	29.4	26.2	23.3	20.8	18.5	16.5	14.7	13.1	11.7	10.4			
WB54	.00059560																						42.9	38.2	34.0	30.3	27.0	24.1	21.4	19.1	17.0	15.2	13.5	12.0	10.7		
WB56	.00062090																							39.8	35.5	31.6	28.2	25.1	22.4	19.9	17.7	15.8	14.1	12.5	11.2		

By Available Sets

Cat. No.	TOTAL	1-E	2-B	3-G	4-D	5-A	6-E
WB-XL Extra Light	119.7	011 21.4	014 19.4	WB20 19.7	WB26 19.4	WB36 18.3	WB48 21.5
WB-TL True Light	142.6	012 24.7	015 21.5	WB22 27.5	WB30 23.9	WB38 22.5	WB50 22.5
WB-L Light	158.9	012 24.7	016 24.0	WB24 28.2	WB32 28.8	WB42 26.2	WB54 27.0
WB-M Medium	180.1	012 24.7	017 27.7	WB26 34.5	WB36 32.6	WB46 32.4	WB56 28.2

12 STRING SETS

Cat. No.	TOTAL	1-E	2-B	3-G	4-D	5-A	6-E
WB-12L Light	264.6	011 21.4 011 21.4	014 19.4 014 19.4	WB20 19.7 009 18.6	WB30 23.9 014 27.5	WB38 22.5 WB20 24.9	WB48 21.5 WB26 24.4

INFINITY BRONZE™

- Roundwound 80/20 Copper Zinc Alloy over a Hex Core
- Coated for Extended Longevity w/Bronze Plated Plain Strings
- Uncoated Tonality and Brightness



By Individual String

Cat. No.	Unit Weight	G4	F#4	F4	E4	D#4	D4	C#4	C4	B3	A#3	A3	G#3	G3	F#3	F3	E3	D#3	D3	C#3	C3	B2	A#2	A2	G#2	G2	F#2	F2	E2	D#2	D2	C#2	C2	B1	A#1	A1	G#1
LJ11	.00003968		36.3	32.3	28.8	25.7	22.9	20.4	18.1	16.2	14.4	12.8	11.4	10.2	9.1	8.1																					
LJ12	.00004027		36.8	32.8	29.2	26.0	23.2	20.7	18.4	16.4	14.6	13.0	11.6	10.3	9.2	8.2																					
LJ13	.00004599			37.5	33.4	29.7	26.5	23.6	21.0	18.7	16.7	14.9	13.2	11.8	10.5	9.4	8.3																				
LJ14	.00005411					35.0	31.2	27.8	24.7	22.0	19.6	17.5	15.6	13.9	12.4	11.0	9.8	8.7																			
LJ16	.00006494						37.4	33.3	29.7	26.5	23.6	21.0	18.7	16.7	14.8	13.2	11.8	10.5	9.4	8.3																	
LJ17	.00007275							37.3	33.3	29.6	26.4	23.5	21.0	18.7	16.6	14.8	13.2	11.8	10.5	9.3	8.3																
LJ19	.00008929									36.4	32.4	28.9	25.7	22.9	20.4	18.2	16.2	14.4	12.9	11.5	10.2	9.1	8.1														
IB22	.00012821											41.4	36.9	32.9	29.3	26.1	23.3	20.7	18.5	16.5	14.7	13.0	11.6	10.4													
IB24	.00013986												40.3	35.9	32.0	28.5	25.4	22.6	20.1	17.9	16.0	14.2	12.7	11.3	10.1												
IB26	.00015152												43.6	38.9	34.6	30.9	27.5	24.5	21.8	19.4	17.3	15.4	13.7	12.2	10.9												
IB30	.00020559														41.9	37.3	33.2	29.6	26.4	23.5	20.9	18.7	16.6	14.8	13.2	11.8	10.5										
IB32	.00021930														44.7	39.8	35.4	31.6	28.1	25.1	22.3	19.9	17.7	15.8	14.1	12.5	11.2	10.0									
IB36	.00024671															39.9	35.5	31.7	28.2	25.1	22.4	19.9	17.8	15.8	14.1	12.6	11.2	10.0									
IB38	.00031415																		40.3	35.9	32.0	28.5	25.4	22.6	20.2	18.0	16.0	14.3	12.7	11.3	10.1						
IB42	.00034722																		44.5	39.7	35.4	31.5	28.1	25.0	22.3	19.8	17.7	15.8	14.0	12.5	11.1	10.0					
IB46	.00041980																			42.7	38.1	33.9	30.2	26.9	24.0	21.4	19.0	17.0	15.1	13.5	12.0	10.7					
IB50	.00050596																				40.9	36.4	32.5	28.9	25.8	23.0	20.4	18.2	16.2	14.5	12.9	11.5	10.2				
IB54	.00059211																					42.6	38.0	33.8	30.2	26.9	23.9	21.3	19.0	16.9	15.1	13.4	12.0	10.7			
IB56	.00061404																						44.2	39.4	35.1	31.3	27.9	24.8	22.1	19.7	17.6	15.6	13.9	12.4	11.1		

By Available Sets

Cat. No.	TOTAL	1-E	2-B	3-G	4-D	5-A	6-E
IB 20X Ultra Light	161.7	LJ11 28.8	LJ14 22.0	IB22 32.9	IB30 29.6	IB38 25.4	IB50 23.0
IB30L Light	178.0	LJ12 29.2	LJ16 26.5	IB24 35.9	IB32 31.6	IB42 28.1	IB54 26.9

Cat. No.	TOTAL	1-E	2-B	3-G	4-D	5-A	6-E
IB40M Medium	199.2	LJ13 33.4	LJ17 29.6	IB26 38.9	IB36 35.5	IB46 33.9	IB56 27.9

SILK and BRONZE

- Roundwound 8% Copper Tin Phosphor over a Round Core
- Silk & Steel Core for Mellow Sound and Lighter Tension
- Sweet, Warm Tonality with a Hint of Brightness



By Individual String

Cat. No.	Unit Weight	G4	F#4	F4	E4	D#4	D4	C#4	C4	B3	A#3	A3	G#3	G3	F#3	F3	E3	D#3	D3	C#3	C3	B2	A#2	A2	G#2	G2	F#2	F2	E2	D#2	D2	C#2	C2	B1	A#1	A1	G#1		
009	.00001810	18.6	16.5	14.7	13.1	11.7	10.4	9.3	8.3																														
011	.00002950	30.3	27.0	24.0	21.4	19.1	17.0	15.1	13.5	12.0	10.7	9.5	8.5																										
012	.00003400	34.9	31.1	27.7	24.7	22.0	19.6	17.5	15.5	13.9	12.3	11.0	9.8	8.7																									
014	.00004770					34.6	30.8	27.5	24.5	21.8	19.4	17.3	15.4	13.7	12.2	10.9	9.7	8.7																					
016	.00005900						34.0	30.3	27.0	24.0	21.4	19.1	17.0	15.1	13.5	12.0	10.7	9.5	8.5																				
SB23	.00013060											42.2	37.6	33.5	29.9	26.6	23.7	21.1	18.8	16.8	14.9	13.3	11.9	10.6															
SB24	.00013580											43.9	39.1	34.8	31.0	27.7	24.6	22.0	19.6	17.4	15.5	13.8	12.3	11.0															
SB29	.00018300														41.8	37.3	33.2	29.6	26.4	23.5	20.9	18.6	16.6	14.8	13.2	11.7	10.5												
SB32	.00022270															40.4	36.0	32.1	28.6	25.5	22.7	20.2	18.0	16.0	14.3	12.7	11.3	10.1											
SB39	.00034720																			44.5	39.7	35.4	31.5	28.1	25.0	22.3	19.8	17.7	15.8	14.0	12.5	11.1							
SB42	.00039790																				40.5	36.1	32.2	28.7	25.5	22.7	20.3	18.1	16.1	14.3	12.8	11.4	10.1						
SB49	.00053680																							43.4	38.7	34.4	30.7	27.3	24.4	21.7	19.3	17.2	15.3	13.7	12.2	10.8			
SB54	.00058830																								42.4	37.7	33.6	30.0	26.7	23.8	21.2	18.9	16.8	15.0	13.3	11.9	10.6		

By Available Sets

Cat. No.	TOTAL	1-E	2-B	3-G	4-D	5-A	6-E
370 Light	153.1	011 21.4	014 19.4	SB23 33.5	SB29 26.4	SB39 28.1	SB49 24.4
370 Medium Light	174.4	012 24.7	016 24.0	SB24 34.8	SB32 32.1	SB42 32.2	SB54 26.7

12 STRING SETS							
Cat. No.	TOTAL	1-E	2-B	3-G	4-D	5-A	6-E
370-12L Light	213.8	011 21.4	014 19.4	SB23 33.5	SB29 26.4	SB39 28.1	SB49 24.4
		011 21.4	014 19.4	090 18.6	014 27.5	SB23 42.2	SB29 33.2

SILK and STEEL

- Roundwound Silver-Plated Copper over a Round Core
- Silk & Steel Core for Mellow Sound and Lighter Tension
- Classical Guitar Richness and Tonality



By Individual String

Cat. No.	Unit Weight	G4	F#4	F4	E4	D#4	D4	C#4	C4	B3	A#3	A3	G#3	G3	F#3	F3	E3	D#3	D3	C#3	C3	B2	A#2	A2	G#2	G2	F#2	F2	E2	D#2	D2	C#2	C2	B1	A#1	A1	G#1
009	.00001810	18.6	16.5	14.7	13.1	11.7	10.4	9.3	8.3																												
010	.00002270	23.3	20.7	18.5	16.5	14.7	13.1	11.7	10.4	9.2	8.2																										
011	.00002950	30.3	27.0	24.0	21.4	19.1	17.0	15.1	13.5	12.0	10.7	9.5	8.5																								
012	.00003400	34.9	31.1	27.7	24.7	22.0	19.6	17.5	15.5	13.9	12.3	11.0	9.8	8.7																							
013	.00003860		35.3	31.4	28.0	25.0	22.2	19.8	17.7	15.7	14.0	12.5	11.1	9.9	8.8																						
014	.00004770					34.6	30.8	27.5	24.5	21.8	19.4	17.3	15.4	13.7	12.2	10.9	9.7	8.7																			
015	.00005280					34.1	30.4	27.1	24.1	21.5	19.2	17.1	15.2	13.6	12.1	10.8	9.6	8.5																			
018	.00007270						37.3	33.2	29.6	26.4	23.5	20.9	18.7	16.6	14.8	13.2	11.8	10.5	9.3	8.3																	
S20	.00008228						42.2	37.6	33.5	29.9	26.6	23.7	21.1	18.8	16.8	14.9	13.3	11.9	10.6																		
S22	.00009971							40.6	36.2	32.2	28.7	25.6	22.8	20.3	18.1	16.1	14.4	12.8	11.4	10.2																	
S26	.00013860								39.9	35.6	31.7	28.2	25.1	22.4	20.0	17.8	15.8	14.1	12.6	11.2	10.0																
S28	.00016080									41.3	36.8	32.7	29.2	26.0	23.2	20.6	18.4	16.4	14.6	13.0	11.6	10.3															
S30	.00019170										43.8	39.0	34.8	31.0	27.6	24.6	21.9	19.5	17.4	15.5	13.8	12.3	11.0														
S34	.00025050											40.5	36.1	32.1	28.6	25.5	22.7	20.2	18.0	16.1	14.3	12.8	11.4	10.1													
S38	.00032270												41.4	36.9	32.9	29.3	26.1	23.2	20.7	18.4	16.4	14.6	13.0	11.6	10.4												
S40	.00035840													41.0	36.5	32.5	29.0	25.8	23.0	20.5	18.3	16.3	14.5	12.9	11.5	10.2											
S42	.00038400														43.9	39.1	34.8	31.0	27.7	24.6	21.9	19.6	17.4	15.5	13.8	12.3	11.0										
S48	.00053680																43.4	38.7	34.4	30.7	27.3	24.4	21.7	19.3	17.2	15.3	13.7	12.2	10.8								
S50	.00055917																	40.3	35.9	32.0	28.5	25.4	22.6	20.1	17.9	16.0	14.2	12.7	11.3	10.1							

By Available Sets

Cat. No.	TOTAL	1-E	2-B	3-G	4-D	5-A	6-E
345	110.9	010	013	S20	S26	S34	S42
Light		16.5	15.7	21.1	20.0	20.2	17.4
350	140.0	011	014	S22	S28	S38	S48
Medium		21.4	19.4	25.6	23.2	26.1	24.4

12 STRING SETS							
Cat. No.	TOTAL	1-E	2-B	3-G	4-D	5-A	6-E
600	213.8	010	013	S20	S26	S34	S42
Light		16.5	15.7	21.1	20.0	20.2	17.4
		010	013	090	011	015	S22
		16.5	15.7	18.6	17.0	17.1	18.1
610	272.3	011	014	S22	S28	S38	S48
Medium		21.4	19.4	25.6	23.2	26.1	24.4
		011	014	010	012	018	S26
		21.4	19.4	23.3	19.6	23.5	25.1

VINTAGE BRONZE™

- Roundwound 85/15 Copper Zinc Alloy over a Hex Core
- Warm, Rich Tonality with Depth
- Perfect for Overly Bright Guitars



By Individual String

Cat. No.	Unit Weight	G4	F#4	F4	E4	D#4	D4	C#4	C4	B3	A#3	A3	G#3	G3	F#3	F3	E3	D#3	D3	C#3	C3	B2	A#2	A2	G#2	G2	F#2	F2	E2	D#2	D2	C#2	C2	B1	A#1	A1	G#1	
009	.00001810	18.6	16.5	14.7	13.1	11.7	10.4	9.3	8.3																													
010	.00002270	23.3	20.7	18.5	16.5	14.7	13.1	11.7	10.4	9.2	8.2																											
011	.00002950	30.3	27.0	24.0	21.4	19.1	17.0	15.1	13.5	12.0	10.7	9.5	8.5																									
012	.00003400	34.9	31.1	27.7	24.7	22.0	19.6	17.5	15.5	13.9	12.3	11.0	9.8	8.7																								
013	.00003860		35.3	31.4	28.0	25.0	22.2	19.8	17.7	15.7	14.0	12.5	11.1	9.9	8.8																							
013 1/2	.00004008		36.6	32.6	29.1	25.9	23.1	20.6	18.3	16.3	14.5	13.0	11.5	10.3	9.2	8.2																						
014	.00004770			34.6	30.8	27.5	24.5	21.8	19.4	17.3	15.4	13.7	12.2	10.9	9.7	8.7																						
016	.00005900					34.0	30.3	27.0	24.0	21.4	19.1	17.0	15.1	13.5	12.0	10.7	9.5	8.5																				
017	.00006810						35.0	31.1	27.7	24.7	22.0	19.6	17.5	15.6	13.9	12.4	11.0	9.8	8.7																			
VN20	.00009061							41.4	36.9	32.9	29.3	26.1	23.2	20.7	18.5	16.4	14.6	13.1	11.6	10.4																		
VN22	.00009971								40.6	36.2	32.2	28.7	25.6	22.8	20.3	18.1	16.1	14.4	12.8	11.4	10.2																	
VN24	.00011360								41.2	36.7	32.7	29.2	26.0	23.1	20.6	18.4	16.4	14.6	13.0	11.6	10.3																	
VN26	.00013340									43.1	38.4	34.2	30.5	27.2	24.2	21.6	19.2	17.1	15.3	13.6	12.1	10.8																
VN28	.00016710											42.9	38.2	34.0	30.3	27.0	24.1	21.4	19.1	17.0	15.2	13.5	12.0	10.7														
VN30	.00018960												43.3	38.6	34.4	30.6	27.3	24.3	21.7	19.3	17.2	15.3	13.7	12.2	10.8													
VN32	.00022290													40.4	36.0	32.1	28.6	25.5	22.7	20.2	18.0	16.1	14.3	12.7	11.4	10.1												
VN34	.00025420														41.1	36.6	32.6	29.1	25.9	23.1	20.5	18.3	16.3	14.5	12.9	11.5	10.3											
VN36	.00025900															41.9	37.3	33.2	29.6	26.4	23.5	20.9	18.7	16.6	14.8	13.2	11.8	10.5										
VN38	.00029310																42.2	37.6	33.5	29.8	26.6	23.7	21.1	18.8	16.8	14.9	13.3	11.8	10.6									
VN40	.00030780																	44.3	39.5	35.2	31.3	27.9	24.9	22.2	19.7	17.6	15.7	14.0	12.4	11.1								
VN42	.00036810																		42.1	37.5	33.4	29.8	26.5	23.6	21.0	18.7	16.7	14.9	13.3	11.8	10.5							
VN46	.00041160																			41.9	37.3	33.3	29.6	26.4	23.5	21.0	18.7	16.6	14.8	13.2	11.8	10.5						
VN48	.00046610																				42.3	37.7	33.6	29.9	26.6	23.7	21.1	18.8	16.8	15.0	13.3	11.9	10.6					
VN50	.00049770																					40.2	35.8	31.9	28.4	25.3	22.6	20.1	17.9	16.0	14.2	12.7	11.3	10.1				
VN54	.00060050																						43.2	38.5	34.3	30.6	27.2	24.3	21.6	19.3	17.2	15.3	13.6	12.1	10.8			
VN56	.00063280																							40.6	36.2	32.2	28.7	25.6	22.8	20.3	18.1	16.1	14.4	12.8	11.4			
VN58	.00065150																								41.8	37.2	33.2	29.6	26.3	23.5	20.9	18.6	16.6	14.8	13.2	11.7		

By Available Sets

Cat. No.	TOTAL	1-E	2-B	3-G	4-D	5-A	6-E
VN-UL Ultra Light	114.8	010 16.5	013½ 16.3	VN20 23.3	VN26 19.2	VN36 20.9	VN46 18.7
VN-XL Extra Light	140.0	011 21.4	014 19.4	VN22 25.6	VN30 27.3	VN38 23.7	VN50 22.6
VN-L Light	166.9	012 24.7	016 24.0	VN24 29.2	VN32 32.1	VN42 29.8	VN54 27.2
VN-B Bluegrass	182.2	012 24.7	016 24.0	VN26 34.2	VN36 37.3	VN46 33.3	VN56 28.7
VN-M Medium	189.2	013 28.0	017 27.7	VN26 34.2	VN36 37.3	VN46 33.3	VN56 28.7

12 STRING SETS

Cat. No.	TOTAL	1-E	2-B	3-G	4-D	5-A	6-E
VN-12CL Custom Light	219.7	010 16.5 010 16.5	013 15.7 013 15.7	VN20 23.3 009 18.6	VN26 19.2 011 17.0	VN36 20.9 015 17.1	VN46 18.7 VN24 20.6
VN-12L Light	259.7	011 21.4 011 21.4	014 19.4 014 19.4	VN20 23.3 009 18.6	VN30 27.3 012 19.6	VN40 24.9 016 19.1	VN48 21.1 VN26 24.2

PLAIN STEEL STRINGS

- High-Grade Carbon Steel Wire
- Proprietary Lock-Twist™ on Ball End
- Incredible Stability and Durability



By Individual String

Cat. No.	Unit Weight	G4	F#4	F4	E4	D#4	D4	C#4	C4	B3	A#3	A3	G#3	G3	F#3	F3	E3	D#3	D3	C#3	C3	B2	A#2	A2	G#2	G2	F#2	F2	E2	D#2	D2	C#2	C2	B1	A#1	A1	G#1
008	.00001609	16.6	14.8	13.2	11.8	10.5	9.3	8.3																													
008 1/2	.00001709	17.7	15.7	14.0	12.5	11.1	9.9	8.8																													
009	.00001810	18.7	16.7	14.9	13.2	11.8	10.5	9.4	8.3																												
009 1/2	.00002159	22.3	19.9	17.7	15.8	14.1	12.5	11.2	9.9	8.9																											
010	.00002270	23.5	20.9	18.6	16.6	14.8	13.2	11.7	10.5	9.3	8.3																										
010 1/2	.00002500	25.9	23.0	20.5	18.3	16.3	14.5	12.9	11.5	10.3	9.1	8.1																									
011	.00002950	30.5	27.2	24.2	21.6	19.2	17.1	15.3	13.6	12.1	10.8	9.6	8.6																								
011 1/2	.00003080	31.9	28.4	25.3	22.5	20.1	17.9	15.9	14.2	12.6	11.3	10.0	8.9																								
012	.00003400	35.2	31.3	27.9	24.9	22.1	19.7	17.6	15.7	13.9	12.4	11.1	9.9	8.8																							
012 1/2	.00003540	36.6	32.6	29.1	25.9	23.1	20.6	18.3	16.3	15.5	12.9	11.5	10.3	9.2	8.2																						
013	.00003860		35.6	31.7	28.2	25.2	22.4	19.9	17.8	15.8	14.1	12.6	11.2	9.9	8.9																						
013 1/2	.00004008		36.9	32.9	29.3	26.2	23.3	20.7	18.5	16.5	14.7	13.1	11.6	10.4	9.2	8.2																					
014	.00004770			34.9	31.1	27.7	24.7	21.9	19.6	17.4	15.5	13.8	12.3	11.0	9.8	8.7																					
015	.00005280				34.4	30.7	27.3	24.3	21.7	19.3	17.2	15.3	13.7	12.2	10.8	9.6	8.6																				
016	.00005900					24.3	30.5	27.2	24.2	21.6	19.2	17.1	15.3	13.6	12.1	10.8	9.6	8.6																			
017	.00006810						35.2	31.4	27.9	24.9	22.2	19.8	17.6	15.7	13.9	12.4	11.1	9.9	8.8																		
018	.00007270						37.6	33.5	29.8	26.6	23.7	21.1	18.8	16.7	14.9	13.3	11.8	10.6	9.4	8.4																	
019	.00007720							35.6	31.7	28.2	25.2	22.4	19.9	17.8	15.8	14.1	12.6	11.2	10.0	8.9																	
020	.00008410								34.5	30.7	27.4	24.4	21.7	19.4	17.3	15.4	13.7	12.2	10.9	9.7	8.6																
021	.00009320									34.1	30.4	27.0	24.1	21.5	19.1	17.0	15.2	13.5	12.1	10.7	9.6	8.5															
022	.00011590										37.8	33.6	29.9	26.7	23.8	21.2	18.9	16.8	15.0	13.4	11.9	10.6	9.4	8.4													
024	.00014320												37.0	32.9	29.4	26.2	23.3	20.8	18.5	16.5	14.7	13.1	11.7	10.4	9.3	8.3											
026	.00015680													36.1	32.2	28.7	25.5	22.7	20.3	18.1	16.1	14.3	12.8	11.4	10.1	9.0	8.0										

Final Thoughts

This tension guide is just that; a guide. You're the expert at your own personal playing style and needs, so if something doesn't feel/sound right, you can change it. Music is a very organic art form, so while you can start with science, you perfect it by touch and feel.

If you're perfectly happy with playing a pre-packaged set of strings, *GREAT!*

If you're excited about putting together that balanced tension set, *GREAT!*

If you want to try a set with less/more tension than what you're used to, *GREAT!*

You're playing. You're learning. That's the important part. We'll provide the strings; you provide the inspiration.



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