

Heptatonic Scales

175 Modes

Degree	Scale												
I	1	-	2	-	3	4	-	5	-	6	-	7	1
II	1	-	2	b3	-	4	-	5	-	6	b7	-	1
III	1	b2	-	b3	-	4	-	5	b6	-	b7	-	1
IV	1	-	2	-	3	-	#4	5	-	6	-	7	1
V	1	-	2	-	3	4	-	5	-	6	b7	-	1
VI	1	-	2	b3	-	4	-	5	b6	-	b7	-	1
VII	1	b2	-	b3	-	4	b5	-	b6	-	b7	-	1

Daniel Mura
2022-05

v.1.2

Contents

Introduction	0
25 Heptatonic scales / 175 modes	
Classification	3-4
Overview	5-6
Construction chart / Intervals	7
22 Tetrachords	8
16 Heptatonic scales / 112 modes :	
A1. Melodic major (Diatonic major modes)	9
B1. Harmonic major	10
C1. Melodic minor	11
D1. Harmonic minor	12
E1. Melodic mixed	13
F1. Harmonic mixed	14
O. Orphan mode	15
Structure	17-21
Altered greek modes scales	22-25
Chords	26-28

For more documents on *Scales*, click here :
[Docs, Charts & Diagrams \[Google Drive\]](#)

25 Heptatonic scales / 175 modes

Classification (1)

Division into various groups

Scales (24)		2 groups	3 groups	4 groups
A1	Melodic major (Diatonic major modes)	} Major Modes (Series A & B)	} Melodic Modes (Series A, C & E)	1. Basic Modes
A2	Melodic major $\flat 2$			2. Altered $\flat 2$ Modes
A3	Melodic major $\flat 5$			3. Altered $\flat 5$ Modes
A4	Melodic major $\flat 2 \flat 5$			4. Altered $\flat 2 \flat 5$ Modes
B1	Harmonic major		} Harmonic Modes (Series B, D & F)	1. Basic Modes
B2	Harmonic major $\flat 2$ (Byzantine scale)			2. Altered $\flat 2$ Modes
B3	Harmonic major $\flat 5$			3. Altered $\flat 5$ Modes
B4	Harmonic major $\flat 2 \flat 5$			4. Altered $\flat 2 \flat 5$ Modes
C1	Melodic minor	} Minor Modes (Series C & D)	} Melodic Modes (Series A, C & E)	1. Basic Modes
C2	Melodic minor $\flat 2$ (Neapolitan major scale)			2. Altered $\flat 2$ Modes
C3	Melodic minor $\flat 5$			3. Altered $\flat 5$ Modes
C4	Melodic minor $\flat 2 \flat 5$			4. Altered $\flat 2 \flat 5$ Modes
D1	Harmonic minor		} Harmonic Modes (Series B, D & F)	1. Basic Modes
D2	Harmonic minor $\flat 2$ (Neapolitan minor scale)			2. Altered $\flat 2$ Modes
D3	Harmonic minor $\flat 5$			3. Altered $\flat 5$ Modes
D4	Harmonic minor $\flat 2 \flat 5$			4. Altered $\flat 2 \flat 5$ Modes
E1	Melodic mixed	} Mixed Modes (Series E & F)	} Melodic Modes (Series A, C & E)	1. Basic Modes
E2	Melodic mixed $\flat 2$			2. Altered $\flat 2$ Modes
E3	Melodic mixed $\flat 5$			3. Altered $\flat 5$ Modes
E4	Melodic mixed $\flat 2 \flat 5$			4. Altered $\flat 2 \flat 5$ Modes
F1	Harmonic mixed		} Harmonic Modes (Series B, D & F)	1. Basic Modes
F2	Harmonic mixed $\flat 2$			2. Altered $\flat 2$ Modes
F3	Harmonic mixed $\flat 5$			3. Altered $\flat 5$ Modes
F4	Harmonic mixed $\flat 2 \flat 5$			4. Altered $\flat 2 \flat 5$ Modes
O	Orphan Mode	-	-	-

25 Heptatonic scales / 175 modes

Classification (2)

Combination of Modes

Modes		
Major Modes Minor Modes	Melodic Modes Harmonic Modes Mixed Modes	Basic Modes Altered $\flat 2$ Modes Altered $\flat 5$ Modes Altered $\flat 2 \flat 5$ Modes

Ces 24 échelles génèrent 168 modes heptatoniques (24 x 7) ne comportant pas plus de 3 demi-tons consécutifs ni d'écarts de plus de 3 demi-tons entre deux degrés.

Le mode du 1er degré donne son nom à l'échelle.

Il existe aussi une 25^e échelle orpheline générant 7 modes supplémentaires.

Soit 175 modes heptatoniques au total.

Common notes

Melodic Modes	6	}	All Modes :	7
Harmonic Modes	$\flat 6$			
Major Modes	3 4			
Minor Modes	$\flat 3$ 4			
Mixed Modes	$\flat 3$ $\flat 4$			
Basic Modes	2 5			
Altered $\flat 2$ Modes	$\flat 2$ 5			
Altered $\flat 5$ Modes	2 $\flat 5$			
Altered $\flat 2 \flat 5$ Modes	$\flat 2$ $\flat 5$			
Orphan Mode	-			

25 Heptatonic scales / 175 modes

Overview (1) [25 scales / 175 modes]

1. Basic Modes

6 scales (42 modes)

Scale / Mode	Scale												
A1/I Melodic major (Diatonic major modes)	1		2		3	4		5		6		7	1
B1/I Harmonic major	1		2		3	4		5	b6			7	1
C1/I Melodic minor	1		2	b3		4		5		6		7	1
D1/I Harmonic minor	1		2	b3		4		5	b6			7	1
E1/I Melodic mixed	1		2	b3	b4			5		6		7	1
F1/I Harmonic mixed	1		2	b3	b4			5	b6			7	1

2. Altered b2 Modes

6 scales (42 modes)

Scale / Mode	Scale												
A2/I Melodic major b2	1	b2			3	4		5		6		7	1
B2/I Harmonic major b2 (Byzantine scale)	1	b2			3	4		5	b6			7	1
C2/I Melodic minor b2 (Neapolitan major scale)	1	b2		b3		4		5		6		7	1
D2/I Harmonic minor b2 (Neapolitan mainor scale)	1	b2		b3		4		5	b6			7	1
E2/I Melodic mixed b2	1	b2		b3	b4			5		6		7	1
F2/I Harmonic mixed b2	1	b2		b3	b4			5	b6			7	1

3. Altered b5 Modes

6 scales (42 modes)

Scale / Mode	Scale												
A3/I Melodic major b5	1		2		3	4	b5			6		7	1
B3/I Harmonic major b5	1		2		3	4	b5		b6			7	1
C3/I Melodic minor b5	1		2	b3		4	b5			6		7	1
D3/I Harmonic minor b5	1		2	b3		4	b5		b6			7	1
E3/I Melodic mixed b5	1		2	b3	b4		b5			6		7	1
F3/I Harmonic mixed b5	1		2	b3	b4		b5		b6			7	1

4. Altered b2 b5 Modes

6 scales (42 modes)

Scale / Mode	Scale												
A4/I Melodic major b2 b5	1	b2			3	4	b5			6		7	1
B4/I Harmonic major b2 b5	1	b2			3	4	b5		b6			7	1
C4/I Melodic minor b2 b5	1	b2		b3		4	b5			6		7	1
D4/I Harmonic minor b2 b5	1	b2		b3		4	b5		b6			7	1
E4/I Melodic mixed b2 b5	1	b2		b3	b4		b5			6		7	1
F4/I Harmonic mixed b2 b5	1	b2		b3	b4		b5		b6			7	1

O. Orphan Mode

1 scale (7 modes)

Scale / Mode	Scale												
O/I Orphan Mode	1		2	b3	b4			5			#6	7	1

25 Heptatonic scales / 175 modes

Overview (2) [24 scales / 168 modes]

A. Melodic Major Modes

4 scales (28 modes)

Scale / Mode	Scale												
A1/I Melodic major (Diatonic major modes)	1		2		3	4		5		6		7	1
A2/I Melodic major $\flat 2$	1	$\flat 2$			3	4		5		6		7	1
A3/I Melodic major $\flat 5$	1		2		3	4	$\flat 5$			6		7	1
A4/I Melodic major $\flat 2 \flat 5$	1	$\flat 2$			3	4	$\flat 5$			6		7	1

B. Harmonic Major Modes

4 scales (28 modes)

Scale / Mode	Scale												
B1/I Harmonic major	1		2		3	4		5	$\flat 6$			7	1
B2/I Harmonic major $\flat 2$ (Byzantine scale)	1	$\flat 2$			3	4		5	$\flat 6$			7	1
B3/I Harmonic major $\flat 5$	1		2		3	4	$\flat 5$		$\flat 6$			7	1
B4/I Harmonic major $\flat 2 \flat 5$	1	$\flat 2$			3	4	$\flat 5$		$\flat 6$			7	1

C. Melodic Minor Modes

4 scales (28 modes)

Scale / Mode	Scale												
C1/I Melodic minor	1		2	$\flat 3$		4		5		6		7	1
C2/I Melodic minor $\flat 2$ (Neapolitan major scale)	1	$\flat 2$		$\flat 3$		4		5		6		7	1
C3/I Melodic minor $\flat 5$	1		2	$\flat 3$		4	$\flat 5$			6		7	1
C4/I Melodic minor $\flat 2 \flat 5$	1	$\flat 2$		$\flat 3$		4	$\flat 5$			6		7	1

D. Harmonic Minor Modes

4 scales (28 modes)

Scale / Mode	Scale												
D1/I Harmonic minor	1		2	$\flat 3$		4		5	$\flat 6$			7	1
D2/I Harmonic minor $\flat 2$ (Neapolitan mainor scale)	1	$\flat 2$		$\flat 3$		4		5	$\flat 6$			7	1
D3/I Harmonic minor $\flat 5$	1		2	$\flat 3$		4	$\flat 5$		$\flat 6$			7	1
D4/I Harmonic minor $\flat 2 \flat 5$	1	$\flat 2$		$\flat 3$		4	$\flat 5$		$\flat 6$			7	1

E. Melodic Mixed Modes

4 scales (28 modes)

Scale / Mode	Scale												
E1/I Melodic mixed	1		2	$\flat 3$	$\flat 4$			5		6		7	1
E2/I Melodic mixed $\flat 2$	1	$\flat 2$		$\flat 3$	$\flat 4$			5		6		7	1
E3/I Melodic mixed $\flat 5$	1		2	$\flat 3$	$\flat 4$		$\flat 5$			6		7	1
E4/I Melodic mixed $\flat 2 \flat 5$	1	$\flat 2$		$\flat 3$	$\flat 4$		$\flat 5$			6		7	1

F. Harmonic Mixed Modes

4 scales (28 modes)

Scale / Mode	Scale												
F1/I Harmonic mixed	1		2	$\flat 3$	$\flat 4$			5	$\flat 6$			7	1
F2/I Harmonic mixed $\flat 2$	1	$\flat 2$		$\flat 3$	$\flat 4$			5	$\flat 6$			7	1
F3/I Harmonic mixed $\flat 5$	1		2	$\flat 3$	$\flat 4$		$\flat 5$		$\flat 6$			7	1
F4/I Harmonic mixed $\flat 2 \flat 5$	1	$\flat 2$		$\flat 3$	$\flat 4$		$\flat 5$		$\flat 6$			7	1

25 Heptatonic scales / 175 modes

Construction Chart

Intervals Degrees	1	b2	2	#2	3	#3	#4	5	#5	6	#6	7	1	b2	2	#2	3	#3	#4	5	#5	6	#6	7	1
I	1	b2	2	b3	3	4	#4	5	b6	6	b7	7	1												
bII		1	b2	2	b3	3	4	#4	5	b6	6	b7	7	1											
II			1	b2	2	b3	3	4	#4	5	b6	6	b7	7	1										
bIII				1	b2	2	b3	3	4	#4	5	b6	6	b7	7	1									
III					1	b2	2	b3	3	4	#4	5	b6	6	b7	7	1								
IV						1	b2	2	b3	3	4	#4	5	b6	6	b7	7	1							
#IV / bV							1	b2	2	b3	3	4	#4	5	b6	6	b7	7	1						
V								1	b2	2	b3	3	4	#4	5	b6	6	b7	7	1					
#V / bVI									1	b2	2	b3	3	4	#4	5	b6	6	b7	7	1				
VI										1	b2	2	b3	3	4	#4	5	b6	6	b7	7	1			
bVII											1	b2	2	b3	3	4	#4	5	b6	6	b7	7	1		
VII												1	b2	2	b3	3	4	#4	5	b6	6	b7	7	1	

Example (Diatonic major scale)

Intervals Degrees	1	b2	2	#2	3	#3	#4	5	#5	6	#6	7	1	b2	2	#2	3	#3	#4	5	#5	6	#6	7	1
I	1	-	2	-	3	4	-	5	-	6	-	7	1												
II			1	-	2	b3	-	4	-	5	-	6	b7	-	1										
III					1	b2	-	b3	-	4	-	5	b6	-	b7	-	1								
IV						1	-	2	-	3	-	#4	5	-	6	-	7	1							
V								1	-	2	-	3	4	-	5	-	6	b7	-	1					
VI										1	-	2	b3	-	4	-	5	b6	-	b7	-	1			
VII												1	b2	-	b3	-	4	5	-	b6	-	b7	-	1	

Intervals

1	b2	2	#2	3	4	#4	5	#5	6	#6	7	1
			#2		#3	#4		#5		#6		
1		2		3	4		5		6		7	1
	b2		b3	b4		b5		b6		b7		
		bb3				bb6		bb7				
	b9	9	#9		11	#11		b13	13			

Complementary Intervals

	b2		2		b3		3		4		#4	
	7		b7		6		b6		5		b5	

25 Heptatonic scales / 175 modes

22 Tetrachords

2 Tones			1st (Lower)					2nd (Upper)					
Diminished	1-1-2	2T Dim	1	b2	bb3	-	b4		#5	6	b7	-	1
Phrygian	1-2-1	2T Phry	1	b2	-	b3	b4		#5	6	-	7	1
Minor	2-1-1	2T Min	1	-	2	b3	b4		#5	-	#6	7	1

2½ Tones			1st (Lower)					2nd (Upper)							
Diminished	1-1-3	2T½ Dim	1	b2	bb3	-	-	4		5	b6	bb7	-	-	1
Phrygian	1-2-2	2T½ Phry	1	b2	-	b3	-	4		5	b6	-	b7	-	1
Harmonic	1-3-1	2T½ Harm	1	b2	-	-	3	4		5	b6	-	-	7	1
Minor	2-1-2	2T½ Min	1	-	2	b3	-	4		5	-	6	b7	-	1
Major	2-2-1	2T½ Maj	1	-	2	-	3	4		5	-	6	-	7	1
Augmented	3-1-1	2T½ Aug	1	-	-	#2	3	4		5	-	#6	7	1	1

3 Tones			1st (Lower)					2nd (Upper)									
Phrygian	1-2-3	3T Phry	1	b2	-	b3	-	-	#4		b5	bb6	-	bb7	-	-	1
Harmonic	1-3-2	3T Harm	1	b2	-	-	3	-	#4		b5	bb6	-	-	b7	-	1
Minor	2-1-3	3T Min	1	-	2	b3	-	-	#4		b5	-	b6	bb7	-	-	1
Major	2-2-2	3T Maj	1	-	2	-	3	-	#4		b5	-	b6	-	b7	-	1
Major +	2-3-1	3T Maj+	1	-	2	-	-	#3	#4		b5	-	b6	-	-	7	1
Augmented 1	3-1-2	3T Aug1	1	-	-	#2	3	-	#4		b5	-	-	6	b7	-	1
Augmented 2	3-2-1	3T Aug2	1	-	-	#2	-	#3	#4		b5	-	-	6	-	7	1

3½ Tones (Atypical scales)			1st (Lower)					2nd (Upper)											
Harmonic	1-3-3	3T½ Harm	1	b2	-	-	3	-	-	5		4	b5	-	-	6	-	-	1
Major	2-2-3	3T½ Maj	1	-	2	-	3	-	-	5		4	-	5	-	6	-	-	1
Major +	2-3-2	3T½ Maj+	1	-	2	-	-	#3	-	5		4	-	5	-	-	b7	-	1
Augmented 1	3-1-3	3T½ Aug1	1	-	-	#2	3	-	-	5		4	-	-	#5	6	-	-	1
Augmented 2	3-2-2	3T½ Aug2	1	-	-	#2	-	#3	-	5		4	-	-	#5	-	b7	-	1
Augmented 3	3-3-1	3T½ Aug3	1	-	-	#2	-	-	#4	5		4	-	-	#5	-	-	7	1

Combination of Tetrachords

1st Tetrachord	2nd Tetrachord				Exceptions
2T	-	2T½	3T	3T½	Toute combinaison générant plus de 3 demi-tons consécutifs, par exemple : M7 avec 1, b2, bb3 #2, 3, 4 avec b5
2T½	2T	2T½	3T	-	
3T	2T	2T½	-	-	
3T½	2T	-	-	-	

Ces 22 tétracordes permettent d'élaborer 175 modes heptatoniques ne comportant pas plus de 3 demi-tons consécutifs ni d'écart de plus de 3 demi-tons entre deux degrés

25 Heptatonic scales / 175 modes

A. Melodic major modes

A1. Melodic major (Diatonic major modes / Greek modes)

Name	Degr.	Chord	Scale										Tetrachords				
Ionian (<i>Melodic major</i>)	I	M7	1		2		3	4		5		6		7	1	2T½ Maj	2T½ Maj
Dorian	II	m7	1		2	b3		4		5		6	b7		1	2T½ Min	2T½ Min
Phrygian	III	m7	1	b2		b3		4		5	b6		b7		1	2T½ Phry	2T½ Phry
Lydian	IV	M7	1		2		3		#4	5		6		7	1	3T Maj	2T½ Maj
Mixolydian	V	7	1		2		3	4		5		6	b7		1	2T½ Maj	2T½ Min
Aeolian (<i>Natural minor scale</i>)	VI	m7	1		2	b3		4		5	b6		b7		1	2T½ Min	2T½ Phry
Locrian	VII	m7b5	1	b2		b3		4	b5		b6		b7		1	2T½ Phry	3T Maj

I. Diatonic major scale - VI. Relative minor scale / Descending melodic minor scale

A2. Melodic major b2

Name	Degr.	Chord	Scale										Tetrachords				
Melodic major b2 (Ionian b2)	I	M7	1	b2			3	4		5		6		7	1	2T½ Harm	2T½ Maj
Aug. Dorian	bII	M7 #5	1			#2	3		#4		#5		#6	7	1	3T Aug1	2T Min
Phrygian b7	III	m6	1	b2		b3		4		5	b6	b7			1	2T½ Phry	2T½ Dim
Lydian b6	IV	M7	1		2		3		#4	5	b6			7	1	3T Maj	2T½ Harm
Mixolydian b5	V	7b5	1		2		3	4	b5			6	b7		1	2T½ Maj	3T Aug1
Aeolian b4	VI	m7	1		2	b3	b4			5	b6		b7		1	2T Min	2T½ Phry
Locrian bb3	VII	-	1	b2	bb3			4	b5		b6		b7		1	2T½ Dim	3T Maj

A3. Melodic major b5

Name	Degr.	Chord	Scale										Tetrachords				
Melodic major b5 (Ionian b5)	I	M7b5	1		2		3	4	b5			6		7	1	2T½ Maj	3T Aug2
Dorian b4	II	m7	1		2	b3	b4			5		6	b7		1	2T Min	2T½ Min
Phrygian bb3	III	7sus4	1	b2	bb3			4		5	b6		b7		1	2T½ Dim	2T½ Phry
Lydian b2	IV	M7	1	b2			3		#4	5		6		7	1	3T Harm	2T½ Maj
Aug. Mixolydian	bV	m7b5	1			#2		#3	#4		#5		#6	7	1	3T Aug2	2T Min
Aeolian bb7	VI	m6	1		2	b3		4		5	b6	bb7			1	2T½ Min	2T½ Dim
Locrian bb6	VII	m7b5	1	b2		b3		4	b5	bb6			b7		1	2T½ Phry	3T Harm

A4. Melodic major b2 b5

Name	Degr.	Chord	Scale										Tetrachords				
Melodic major b2 b5	I	M7b5	1	b2			3	4	b5			6		7	1	2T½ Harm	3T Aug2
Aug. Dorian b4	bII	M7 #5	1			2#	3	4			#5		#6	7	1	2T½ Aug	2T Min
Phrygian bb3 bb7	III	sus4	1	b2	bb3			4		5	b6	bb7			1	2T½ Dim	2T½ Dim
Lydian b2 b6	IV	M7	1	b2			3		#4	5	b6			7	1	3T Harm	2T½ Harm
Aug. Mixolydian b5	bV	mM7	1			2#		#3	#4	5			#6	7	1	3T Aug2	2T½ Aug
Aeolian b4 bb7	VI	m6	1		2	3m	b4			5	b6	bb7			1	2T Min	2T½ Dim
Locrian bb3 bb6	VII	7sus4	1	b2	bb3			4	b5	bb6			b7		1	2T½ Dim	3T Harm

I. Ionian b2 b5

25 Heptatonic scales / 175 modes

B. Harmonic major modes

B1. Harmonic major

Name	Degr.	Chord	Scale											Tetrachords			
Harmonic major (Ionian $\flat 6$)	I	M7	1		2		3	4		5	$\flat 6$			7	1	2T $\frac{1}{2}$ Maj	2T $\frac{1}{2}$ Harm
Dorian $\flat 5$	II	m7 $\flat 5$	1		2	$\flat 3$		4	$\flat 5$			6	$\flat 7$		1	2T $\frac{1}{2}$ Min	3T Aug1
Phrygian $\flat 4$	III	m7 (7)	1	$\flat 2$		$\flat 3$	$\flat 4$			5	$\flat 6$		$\flat 7$		1	2T Phry	2T $\frac{1}{2}$ Phry
Lydian $\flat 3$	IV	mM7	1		2	$\flat 3$			$\sharp 4$	5		6		7	1	3T Min	2T $\frac{1}{2}$ Maj
Mixolydian $\flat 2$	V	7	1	$\flat 2$			3	4		5		6	$\flat 7$		1	2T $\frac{1}{2}$ Harm	2T $\frac{1}{2}$ Min
Lydian $\sharp 2$ $\flat 5$ (Aug. Aeolian)	\flat VI	M7 $\sharp 5$	1			$\sharp 2$	3		$\sharp 4$		$\sharp 5$	6		7	1	3T Aug1	2T Phry
Locrian $\flat \flat 7$	VII	dim7	1	$\flat 2$		$\flat 3$		4	$\flat 5$		$\flat 6$	$\flat \flat 7$			1	2T $\frac{1}{2}$ Phry	3T Min

B2. Harmonic major $\flat 2$ (Byzantine mode)

Name	Degr.	Chord	Scale											Tetrachords			
Harmonic major $\flat 2$ (Ionian $\flat 2$ $\flat 6$)	I	M7	1	$\flat 2$			3	4		5	$\flat 6$			7	1	2T $\frac{1}{2}$ Harm	2T $\frac{1}{2}$ Harm
Lydian $\sharp 2$ $\sharp 6$	\flat II	M7 (7)	1			$\sharp 2$	3		$\sharp 4$	5			$\sharp 6$	7	1	3T Aug1	2T $\frac{1}{2}$ Aug
Phrygian $\flat 4$ $\flat \flat 7$	III	m6 (M6)	1	$\flat 2$		$\flat 3$	$\flat 4$			5	$\flat 6$	$\flat \flat 7$			1	2T Phry	2T $\frac{1}{2}$ Dim
Lydian $\flat 3$ $\flat 6$	IV	mM7	1		2	$\flat 3$			$\sharp 4$	5	$\flat 6$			7	1	3T Min	2T $\frac{1}{2}$ Harm
Mixolydian $\flat 2$ $\flat 5$	V	7 $\flat 5$	1	$\flat 2$			3	4	$\flat 5$			6	$\flat 7$		1	2T $\frac{1}{2}$ Harm	3T Aug1
Ionian $\sharp 2$ $\sharp 5$	VI -	M7 $\sharp 5$	1			$\sharp 2$	3	4			$\sharp 5$	6		7	1	2T $\frac{1}{2}$ Aug	2T Phry
Locrian $\flat 3$ $\flat 7$	VII	-	1	$\flat 2$	$\flat \flat 3$			4	$\flat 5$		$\flat 6$	$\flat \flat 7$			1	2T $\frac{1}{2}$ Dim	3T Min

I. Byzantine scale / Double harmonic major - IV. Hungarian / Gypsy minor / Double harmonic minor - V. Oriental scale

B3. Harmonic major $\flat 5$

Name	Degr.	Chord	Scale											Tetrachords			
Harmonic major $\flat 5$ (Ionian $\flat 5$ $\flat 6$)	I	M7 $\flat 5$	1		2		3	4	$\flat 5$		6			7	1	2T $\frac{1}{2}$ Maj	3T Maj+
Dorian $\flat 4$ $\flat 5$	II	m7 $\flat 5$	1		2	$\flat 3$	$\flat 4$		$\flat 5$			6	$\flat 7$		1	2T Min	3T Aug1
Phrygian $\flat \flat 3$ $\flat 4$	\flat III	7	1	$\flat 2$	$\flat \flat 3$		$\flat 4$			5	$\flat 6$		$\flat 7$		1	2T Dim	2T $\frac{1}{2}$ Phry
Lydian $\flat 2$ $\flat 3$	IV	mM7	1	$\flat 2$		$\flat 3$			$\sharp 4$	5		6		7	1	3T Phry	2T $\frac{1}{2}$ Maj
Aug. Mixolydian $\flat 2$	\flat V	-	1		2		$\flat 3$	$\sharp 4$		$\sharp 5$		$\sharp 6$	7	1	3T Maj+	Mixolydian $\flat 2$	
Aug. Aeolian $\flat 7$	\flat VI	7 $\sharp 5$	1			$\sharp 2$	3		$\sharp 4$		$\sharp 5$	6	$\flat 7$		1	3T Aug1	2T Dim
Locrian $\flat \flat 6$ $\flat \flat 7$	VII	dim7	1	$\flat 2$		$\flat 3$		4	$\flat 5$	$\flat \flat 6$		$\flat \flat 7$			1	2T $\frac{1}{2}$ Phry	3T Phry

B4. Harmonic major $\flat 2$ $\flat 5$

Name	Degr.	Chord	Scale											Tetrachords			
Harmonic major $\flat 2$ $\flat 5$	I	M7 $\flat 5$	1	$\flat 2$			3	4	$\flat 5$		$\flat 6$			7	1	2T $\frac{1}{2}$ Harm	3T Maj+
Ionian $\sharp 2$ $\sharp 6$	\flat II	M7	1			$\sharp 2$	3	4		5			$\sharp 6$	7	1	2T $\frac{1}{2}$ Aug	2T $\frac{1}{2}$ Aug
Dim. Dorian $\flat 5$	III	M6	1	$\flat 2$	$\flat \flat 3$		$\flat 4$			5	$\flat 6$	$\flat \flat 7$			1	2T Dim	2T $\frac{1}{2}$ Dim
Phrygian $\sharp 4$ $\flat 7$	IV	mM7	1	$\flat 2$		$\flat 3$			$\sharp 4$	5	$\flat 6$			7	1	3T Phry	2T $\frac{1}{2}$ Harm
Lydian $\sharp 3$ $\sharp 6$	\flat V	M7sus4	1		2			$\flat 3$	$\sharp 4$	5			$\sharp 6$	7	1	3T Maj+	2T $\frac{1}{2}$ Aug
Mixolydian $\sharp 2$ $\sharp 5$	\flat VI	7 $\sharp 5$	1			$\sharp 2$	3	4			$\sharp 5$	6	$\flat 7$		1	2T $\frac{1}{2}$ Aug	2T Dim
Dim. Aeolian $\flat 4$	VII	sus4	1	$\flat 2$	$\flat \flat 3$			4	$\flat 5$	$\flat \flat 6$		$\flat \flat 7$			1	2T $\frac{1}{2}$ Dim	3T Phry

I. Persian scale / Locrian $\flat 3$ $\flat 7$

25 Heptatonic scales / 175 modes

C. Melodic minor modes

C1. Melodic minor

Name	Degr.	Chord	Scale										Tetrachords				
Melodic minor (Ionian $\flat 3$ /Dorian $\natural 7$)	I	mM7	1		2	$\flat 3$		4		5		6		7	1	2T $\frac{1}{2}$ Min	2T $\frac{1}{2}$ Maj
Dorian $\flat 2$ (Phrygian $\flat 6$)	II	m7	1	$\flat 2$		$\flat 3$		4		5		6	$\flat 7$		1	2T $\frac{1}{2}$ Phry	2T $\frac{1}{2}$ Min
Lydian $\sharp 5$ (Aug. Phrygian)	\flat III	M7 $\sharp 5$	1		2		3		$\sharp 4$		$\sharp 5$	6		7	1	3T Maj	2T Phry
Lydian $\flat 7$ (Mixolydian $\sharp 4$)	IV	7	1		2		3		$\sharp 4$	5		6	$\flat 7$		1	3T Maj	2T $\frac{1}{2}$ Min
Mixolydian $\flat 6$ (Aeolian $\flat 3$)	V	7	1		2		3	4		5	$\flat 6$		$\flat 7$		1	2T $\frac{1}{2}$ Maj	2T $\frac{1}{2}$ Phry
Aeolian $\flat 5$ (Locrian $\flat 2$)	VI	m7 $\flat 5$	1		2	$\flat 3$		4	$\flat 5$		$\flat 6$		$\flat 7$		1	2T $\frac{1}{2}$ Min	3T Maj
Locrian $\flat 4$ (Dim. Ionian)	VII	m7 $\flat 5$	1	$\flat 2$		$\flat 3$	$\flat 4$		$\flat 5$		$\flat 6$		$\flat 7$		1	2T Phry	3T Maj

I. Ascending melodic minor scale - II. Cappadocian scale - IV. Acoustic scale / Bartok - VII. Altered Scale / Superlocrian

C2. Melodic minor $\flat 2$ (Neapolitan major mode)

Name	Degr.	Chord	Scale										Tetrachords				
Melodic minor $\flat 2$ (Ionian $\flat 2$ $\flat 3$)	I	mM7	1	$\flat 2$		$\flat 3$		4		5		6		7	1	2T $\frac{1}{2}$ Phry	2T $\frac{1}{2}$ Maj
Lydian $\sharp 5$ $\sharp 6$	\flat II	M7 $\sharp 5$	1		2		3		$\sharp 4$		$\sharp 5$		$\sharp 6$	7	1	3T Maj	2T Min
Mixolydian $\sharp 4$ $\sharp 5$	\flat III	7 $\sharp 5$	1		2		3		$\sharp 4$		$\sharp 5$	6	$\flat 7$		1	3T Maj	2T Dim
Lydian $\flat 6$ $\flat 7$	IV	7	1		2		3		$\sharp 4$	5	$\flat 6$		$\flat 7$		1	3T Maj	2T $\frac{1}{2}$ Phry
Mixolydian $\flat 5$ $\flat 6$	V	7 $\flat 5$	1		2		3	4	$\flat 5$		$\flat 6$		$\flat 7$		1	2T $\frac{1}{2}$ Maj	3T Maj
Aeolian $\flat 4$ $\flat 5$	VI		1		2	$\flat 3$	$\flat 4$		$\flat 5$		$\flat 6$		$\flat 7$		1	2T Min	3T Maj
Locrian $\flat\flat 3$ $\flat 4$	VII	7 $\flat 5$	1	$\flat 2$	$\flat\flat 3$		$\flat 4$		$\flat 5$		$\flat 6$		$\flat 7$		1	2T Dim	3T Maj

I. Neapolitan major scale

C3. Melodic minor $\flat 5$

Name	Degr.	Chord	Scale										Tetrachords				
Melodic minor $\flat 5$ (Ionian $\flat 3$ $\flat 5$)	I	mM7 $\flat 5$	1		2	$\flat 3$		4	$\flat 5$			6		7	1	2T $\frac{1}{2}$ Min	3T Aug2
Dim. Harmonic major	II	m7 $\flat 5$	1	$\flat 2$		$\flat 3$	$\flat 4$		$\flat 5$	$\flat\flat 6$			$\flat 7$		1	2T Phry	3T Harm
Lydian $\flat 3$ $\sharp 5$	\flat III	m7 $\flat 5$	1		2	$\flat 3$			$\sharp 4$		$\sharp 5$	6		7	1	3T Min	2T Phry
Mixolydian $\flat 2$ $\sharp 4$ (Lydian $\flat 2$ $\flat 7$)	IV	7	1	$\flat 2$			3		$\sharp 4$	5		6	$\flat 7$		1	3T Harm	2T $\frac{1}{2}$ Min
Aug. Aeolian $\flat 3$	\flat V	mM7 $\sharp 5$	1			$\sharp 2$		$\sharp 3$	$\sharp 4$		$\sharp 5$	6		7	1	3T Aug2	2T Phry
Locrian $\flat 2$ $\flat\flat 7$	VI	dim7	1		2	$\flat 3$		4	$\flat 5$		$\flat 6$	$\flat\flat 7$			1	2T $\frac{1}{2}$ Min	3T Min
Phrygian $\flat 4$ $\flat 6$	VII	m7	1	$\flat 2$		$\flat 3$	$\flat 4$			5		6	$\flat 7$		1	2T Phry	2T $\frac{1}{2}$ Min

C4. Melodic minor $\flat 2$ $\flat 5$

Name	Degr.	Chord	Scale										Tetrachords				
Melodic minor $\flat 2$ $\flat 5$ (Locrian $\flat 6$ $\flat 7$)	I	mM7 $\flat 5$	1	$\flat 2$		$\flat 3$		4	$\flat 5$			6		7	1	2T $\frac{1}{2}$ Phry	3T Aug2
Ionian $\sharp 5$ $\sharp 6$	\flat II	M7 $\sharp 5$	1		2		3	4			$\sharp 5$		$\sharp 6$	7	1	2T $\frac{1}{2}$ Maj	2T Min
Dorian $\sharp 4$ $\sharp 5$	\flat III	m7 $\sharp 5$	1		2	$\flat 3$			$\sharp 4$		$\sharp 5$	6	$\flat 7$		1	3T Min	2T Dim
Phrygian $\flat 3$ $\sharp 4$	IV	7	1	$\flat 2$			3		$\sharp 4$	5	$\flat 6$		$\flat 7$		1	3T Harm	2T $\frac{1}{2}$ Phry
Lydian $\sharp 2$ $\sharp 3$	\flat V	mM7	1			$\sharp 2$		$\sharp 3$	$\sharp 4$	5		6		7	1	3T Aug2	2T $\frac{1}{2}$ Maj
Dim. Mixolydian $\flat 2$	VI	dim7	1		2	$\flat 3$	$\flat 4$		$\flat 5$		$\flat 6$	$\flat\flat 7$			1	2T Min	3T Min
Dim. Aeolian $\flat 7$	VII	7 $\flat 5$	1	$\flat 2$	$\flat\flat 3$		$\flat 4$		$\flat 5$	$\flat\flat 6$			$\flat 7$		1	2T Dim	3T Harm

I. Persian scale - VII Dim. Harmonic minor

25 Heptatonic scales / 175 modes

D. Harmonic minor modes

D1. Harmonic minor

Name	Degr.	Chord	Scale										Tetrachords				
Harmonic minor (Aeolian ♭7)	I	mM7	1		2	♭3		4		5	♭6			7	1	2T½ Min	2T½ Harm
Locrian ♭6	II	m7♭5	1	♭2		♭3		4	♭5			6	♭7		1	2T½ Phry	3T Aug1
Ionian #5	♭III	M7 #5	1		2		3	4			#5	6		7	1	2T½ Maj	2T Phry
Dorian #4	IV	m7	1		2	♭3			#4	5		6	♭7		1	3T Min	2T½ Min
Phrygian ♭3	V	7	1	♭2			3	4		5	♭6		♭7		1	2T½ Harm	2T½ Phry
Lydian #2	♭VI	M7	1			#2	3		#4	5		6		7	1	3T Aug1	2T½ Maj
Locrian ♭4 ♭♭7 (Dim. Mixolydian)	VII	dim7	1	♭2		♭3	♭4		♭5		♭6	♭♭7			1	2T Phry	3T Min

I. Ionian ♭3 ♭6 - IV. Romanian scale - V. Phrygian dominant scale / Spanish Phrygian scale / Spanish Gypsy scale / Jewish scale

D2. Harmonic minor ♭2 (Neapolitan minor mode)

Name	Degr.	Chord	Scale										Tetrachords				
Harmonic minor ♭2 (Phrygian ♭7)	I	mM7	1	♭2		♭3		4		5	♭6			7	1	2T½ Phry	2T½ Harm
Lydian #6	♭II	M7 (7)	1		2		3		#4	5			#6	7	1	3T Maj	2T½ Aug
Mixolydian #5	♭III	7 #5	1		2		3	4			#5	6	♭7		1	2T½ Maj	2T Dim
Aeolian #4	IV	m7	1		2	♭3			#4	5	♭6		♭7		1	3T Min	2T½ Phry
Locrian ♭3	V	7♭5	1	♭2			3	4	♭5		♭6		♭7		1	2T½ Harm	3T Maj
Ionian #2	♭VI	M7	1			#2	3	4		5		6		7	1	2T½ Aug	2T½ Maj
Dim. Dorian	VII	Aug	1	♭2	♭♭3		4♭		♭5		♭6	♭♭7			1	2T Dim	3T Min

I. Neapolitan minor scale - IV. Hungarian Gypsy scale

D3. Harmonic minor ♭5

Name	Degr.	Chord	Scale										Tetrachords				
Harmonic minor ♭5 (Aeolian ♭5 ♭7)	I	mM7♭5	1		2	♭3		4	♭5		♭6			7	1	2T½ Min	3T Maj+
Locrian ♭4 ♭6	II	m7♭5	1	♭2		♭3	4♭		♭5			6	♭7		1	2T Phry	3T Aug1
Ionian ♭3 #5	♭III	mM7 #5	1		2	♭3		4			#5	6		7	1	2T½ Min	2T Phry
Dorian ♭2 #4 (Phrygian #4 ♭6)	IV	m7	1	♭2		♭3			#4	5		6	♭7		1	3T Phry	2T½ Min
Lydian #3 #5	♭V	-	1		2			3#	#4	#5	6		7	1	3T Maj+	2T Phry	
Mixolydian #2 #4	♭VI	7	1			#2	3		#4	5		6	♭7		1	3T Aug1	2T½ Min
Dim. Aeolian ♭3	VII	dim7	1	♭2		♭3	4♭		♭5	♭♭6		♭♭7			1	2T Phry	3T Phry

♭VI. Hungarian major scale

D4. Harmonic minor ♭2 ♭5

Name	Degr.	Chord	Scale										Tetrachords				
Harmonic minor ♭2 ♭5 (Locrian ♭7)	I	mM7♭5	1	♭2		♭3		4	♭5		♭6			7	1	2T½ Phry	3T Maj+
Ionian #6	♭II	M7	1		2		3	4		5			#6	7	1	2T½ Maj	2T½ Aug
Dorian #5	♭III	m7 #5	1		2	♭3		4			#5	6	♭7		1	2T½ Min	2T Dim
Phrygian #4	IV	m7	1	♭2		♭3			#4	5	♭6		♭7		1	3T Phry	2T½ Phry
Lydian #3	♭V	M7sus4	1		2			3#	#4	5		6		7	1	3T Maj+	2T½ Maj
Mixolydian #2	♭VI	7	1			#2	3	4		5		6	♭7		1	2T½ Aug	2T½ Min
Dim. Aeolian	VII	M6	1	♭2	♭♭3		4♭		♭5	♭♭6		♭♭7			1	2T Dim	3T Phry

25 Heptatonic scales / 175 modes

E. Melodic mixed modes

E1. Melodic mixed

Name	Degr.	Chord	Scale										Tetrachords				
Melodic mixed	I	mM7	1		2	b3	b4			5		6		7	1	2T Min	2T½ Maj
Mixolydian b2 bb3	II	7sus4	1	b2	bb3			4		5		6	b7		1	2T½ Dim	2T½ Min
Lydian b2 #5	bIII	M7 #5	1	b2			3		#4		#5	6		7	1	3T Harm	2T Phry
(Atypical scale)	bIV	mM7 (m7)	1			b3		4		5	b6		b7	7	1	3T½	2T Min
Mixolydian b6 bb7	V	M6	1		2		3	4		5	b6	bb7			1	2T½ Maj	2T½ Dim
Aeolian b5 bb6	VI	m7	1		2	b3		4	b5	bb6			b7		1	2T½ Min	3T Harm
(Atypical scale)	VII	m7 #5	1	b2		b3	3	4			#5		b7		1	2T Phry	3T½

E2. Melodic mixed b2

Name	Degr.	Chord	Scale										Tetrachords				
Melodic mixed b2	I	mM7	1	b2		b3	b4			5		6		7	1	2T Phry	2T½ Maj
-	bII	mM7 #5	1		2	b3			#4		#5		#6	7	1	3T Min	2T Min
-	bIII	7 #5	1	b2			3		#4		#5	6	b7		1	3T Harm	2T Dim
(Atypical scale)	bIV	mM7	1			b3		4		5	#5	6		7	1	3T½	2T Phry
-	V	Aug	1		2		3	4	b5		b6	bb7			1	2T½ Maj	3T Min
-	VI	m7	1		2	b3	b4		b5	bb6			b7		1	2T Min	3T Harm
(Atypical scale)	VII	7 #5	1	b2	2		3	4			#5		b7		1	2T Dim	3T½

E3. Melodic mixed b5

Name	Degr.	Chord	Scale										Tetrachords				
Melodic mixed b5	I	mM7b5	1		2	b3	b4		b5			6		7	1	2T Min	3T Aug2
-	II	7	1	b2	bb3		b4			5		6	b7		1	2T Dim	2T½ Min
-	bIII	mM7 #5	1	b2		b3			#4		#5	6		7	1	3T Phry	2T Phry
(Atypical scale)	bIV	(7)7Msus4	1		2			4		5	b6		b7	7	1	3T½	2T Min
-	bV	M7b5 (#5)	1			#2		#3	#4		#5	6	b7		1	3T Aug2	2T Dim
-	VI	dim7	1		2	b3		4	b5	bb6		bb7			1	2T½ Min	3T Phry
(Atypical scale)	VII	m7 (7)	1	b2		b3	3	4		5			b7		1	2T Phry	3T½

E4. Melodic mixed b2 b5

Name	Degr.	Chord	Scale										Tetrachords				
Melodic mixed b2 b5	I	mM7b5	1	b2		b3	b4		b5			6		7	1	2T Phry	3T Aug2
Dorian #5 #6	bII	M7 #5	1		2	b3		4			#5		#6	7	1	2T½ Min	2T Min
-	bIII	m7 #5	1	b2		b3			#4		#5	6	b7		1	3T Phry	2T Dim
(Atypical scale)	bIV	M7sus4	1		2			4		5	b6			7	1	3T½	2T Phry
Blues scale	bV	m7	1			#2		#3	#4	5		6	b7		1	3T Aug2	2T½ Min
-	VI	dim7	1		2	b3	b4		b5	bb6		bb7			1	2T Min	3T Phry
(Atypical scale)	VII	7	1	b2	2		3	4		5			b7		1	2T Dim	3T½

25 Heptatonic scales / 175 modes

F. Harmonic mixed modes

F1. Harmonic mixed

Name	Degr.	Chord	Scale										Tetrachords				
Harmonic mixed	I	mM7	1		2	b3	b4			5	b6			7	1	2T Min	2T½ Harm
Locrian b3 b6	II	-	1	b2	bb3			4	b5			6	b7		1	2T½ Dim	3T Aug1
Ionian b2 #5	bIII	M7 #5	1	b2			3	4			#5	6		7	1	2T½ Harm	2T Phry
(Atypical scale)	bIV	mM7 (m7)	1			#2	3			5	#5		b7	7	1	3T½	2T Min
Phrygian b3 b7	V	M6	1	b2			3	4		5	b6	bb7			1	2T½ Harm	2T½ Dim
Lydian #2 b6	bVI	M7	1			#2	3		#4	5	b6			7	1	3T Aug1	2T½ Harm
(Atypical scale)	VII	Aug	1	b2		b3	3	4			#5	6			1	2T Phry	3T½

F2. Harmonic mixed b2

Name	Degr.	Chord	Scale										Tetrachords				
Harmonic mixed b2	I	mM7	1	b2		b3	b4			5	b6			7	1	2T Phry	2T½ Harm
Lydian b3 #6	bII	mM7	1		2	b3			#4	5			#6	7	1	3T Min	2T½ Aug
Mixolydian b2 #5	bIII	7 #5	1	b2			3	4			#5	6	b7		1	2T½ Harm	2T Dim
(Atypical scale)	bIV	mM7	1			#2	3			5	#5	6		7	1	3T½	2T Phry
Locrian b3 bb7	V	Aug	1	b2			3	4	b5		b6	bb7			1	2T½ Harm	3T Min
Ionian #2 b6	bVI	M7	1			#2	3	4		5	b6			7	1	2T½ Aug	2T½ Harm
(Atypical scale)	VII	Aug	1	b2	2		3	4			#5	6			1	2T Dim	3T½

F3. Harmonic mixed b5

Name	Degr.	Chord	Scale										Tetrachords				
Harmonic mixed b5	I	mM7b5	1		2	b3	b4		b5		b6			7	1	2T Min	3T Maj+
-	II	7b5	1	b2	bb3		b4		b5			6	b7		1	2T Dim	3T Aug1
Phrygian #5 b6	bIII	mM7#5	1	b2		b3		4			#5	6		7	1	2T½ Phry	2T Phry
(Atypical scale)	bIV	M7 (7)	1		2		3			5	b6		b7	7	1	3T½	2T Min
-	bV	-	1		2			#3	#4		#5	6	b7		1	3T Maj+	2T Dim
-	bVI	7	1			#2	3		#4	5	b6		b7		1	3T Aug1	2T½ Phry
(Atypical scale)	VII	m6 (M6)	1	b2		b3	3	4		5		6			1	2T Phry	3T½

F4. Harmonic mixed b2 b5

Name	Degr.	Chord	Scale										Tetrachords				
Harmonic mixed b2 b5	I	mM7b5	1	b2		b3	b4		b5		b6			7	1	2T Phry	3T Maj+
Dorian #6 b7	bII	mM7	1		2	b3		4		5			#6	7	1	2T½ Min	2T½ Aug
Dorian b2 #5	bIII	m7 #5	1	b2		b3		4			#5	6	b7		1	2T½ Phry	2T Dim
(Atypical scale)	bIV	M7	1		2		3			5	#5	6		7	1	3T½	2T Phry
Mixolydian #3 #4	bV	7sus4	1		2			#3	#4	5		6	b7		1	3T Maj+	2T½ Min
Mixolydian #2 b6	bVI	7	1			#2	3	4		5	b6		b7		1	2T½ Aug	2T½ Phry
(Atypical scale)	VII	M6	1	b2	2		3	4		5		6			1	2T Dim	3T½

25 Heptatonic scales / 175 modes

O. Orphan mode

O. Orphan mode

Name	Degr.	Chord	Scale											Tetrachords			
Orphan mode	I	(m)M7	1		2	b3	b4			5			#6	7	1	2T Min	2T½ Aug
-	II	-	1	b2	bb3			4			#5	6	b7		1	2T½ Dim	2T Dim
(Atypical scale)	bIII	M7	1	b2			3			5	#5	6		7	1	3T½	2T Phry
(Atypical scale)	bIV	(7)mM7	1			b3			#4	5	#5		b7	7	1	3T½	2T Min
(Melakarta #31 : Yagapriya)	V	m6 (M6)	1			#2	3	4		5	b6	bb7			1	2T½ Aug	2T½ Dim
(Atypical scale)	#VI	-	1	b2	2		3	4	b5			6			1	2T Dim	3T½
(Atypical scale)	VII	(m)M7#5	1	b2		b3	3	4			#5			7	1	2T Phry	3T½

I. Harmonic analysis : 1 - 2 - b3 - 3 - 5 - b7 - 7

I. Chords : M7, mM7, 7, m7

25 Heptatonic scales / 175 modes

Structure (1)

1	b2	2	#2	3	#3	#4	5	#5	6	#6	7	1	Mode	Name	Tetrachords	
		b3	b3	b4	4	b5	b6	b6	b7	b7						
1	b2	2	-	3	4	b5	-	-	6	-	-	1	O / #VI	(Atypical scale)	2T Dim	3T½
1	b2	2	-	3	4	-	5	-	6	-	-	1	F4 / VII	(Atypical scale)	2T Dim	3T½
1	b2	2	-	3	4	-	5	-	-	b7	-	1	E4 / VII	(Atypical scale)	2T Dim	3T½
1	b2	2	-	3	4	-	-	#5	6	-	-	1	F2 / VII	(Atypical scale)	2T Dim	3T½
1	b2	2	-	3	4	-	-	#5	-	b7	-	1	E2 / VII	(Atypical scale)	2T Dim	3T½
1	b2	b3	-	b4	-	b5	b6	-	b7	-	-	1	D4 / VII	Dim. Aeolian	2T Dim	3T Phry
1	b2	b3	-	b4	-	b5	b6	-	-	b7	-	1	C4 / VII	Dim. Aeolian b7 (Dim. Harmonic minor)	2T Dim	3T Harm
1	b2	b3	-	b4	-	b5	-	b6	b7	-	-	1	D2 / VII	Dim. Dorian	2T Dim	3T Min
1	b2	b3	-	b4	-	b5	-	b6	-	b7	-	1	C2 / VII	Locrian b3 b4	2T Dim	3T Maj
1	b2	b3	-	b4	-	b5	-	-	6	b7	-	1	F3 / II	-	2T Dim	3T Aug1
1	b2	b3	-	b4	-	-	5	b6	b7	-	-	1	B4 / III	Dim. Dorian b5	2T Dim	2T½ Dim
1	b2	b3	-	b4	-	-	5	b6	-	b7	-	1	B3 / IIIb	Phrygian b3 b4	2T Dim	2T½ Phry
1	b2	b3	-	b4	-	-	5	-	6	b7	-	1	E3 / II	-	2T Dim	2T½ Min
1	b2	b3	-	-	4	b5	b6	-	b7	-	-	1	B4 / VII	Dim. Aeolian b4	2T½ Dim	3T Phry
1	b2	b3	-	-	4	b5	b6	-	-	b7	-	1	A4 / VII	Locrian b3 b6	2T½ Dim	3T Harm
1	b2	b3	-	-	4	b5	-	b6	b7	-	-	1	B2 / VII	Locrian b3 b7	2T½ Dim	3T Min
1	b2	b3	-	-	4	b5	-	b6	-	b7	-	1	A2 / VII	Locrian b3	2T½ Dim	3T Maj
1	b2	b3	-	-	4	b5	-	-	6	b7	-	1	F1 / II	Locrian b3 b6	2T½ Dim	3T Aug1
1	b2	b3	-	-	4	-	5	b6	b7	-	-	1	A4 / III	Phrygian b3 b7	2T½ Dim	2T½ Dim
1	b2	b3	-	-	4	-	5	b6	-	b7	-	1	A3 / III	Phrygian b3	2T½ Dim	2T½ Phry
1	b2	b3	-	-	4	-	5	-	6	b7	-	1	E1 / II	Mixolydian b2 b3	2T½ Dim	2T½ Min
1	b2	b3	-	-	4	-	-	#5	6	b7	-	1	O / II	-	2T½ Dim	2T Dim
1	b2	-	b3	3	4	-	5	-	6	-	-	1	F3 / VII	(Atypical scale)	2T Phry	3T½
1	b2	-	b3	3	4	-	5	-	-	b7	-	1	E3 / VII	(Atypical scale)	2T Phry	3T½
1	b2	-	b3	3	4	-	-	#5	6	-	-	1	F1 / VII	(Atypical scale)	2T Phry	3T½
1	b2	-	b3	3	4	-	-	#5	-	b7	-	1	E1 / VII	(Atypical scale)	2T Phry	3T½
1	b2	-	b3	3	4	-	-	#5	-	-	7	1	O / bVII	(Atypical scale)	2T Phry	3T½
1	b2	-	b3	b4	-	b5	b6	-	b7	-	-	1	D3 / VII	Dim. Aeolian b3	2T Phry	3T Phry
1	b2	-	b3	b4	-	b5	-	b6	b7	-	-	1	C3 / II	Dim. Harmonic major	2T Phry	3T Harm
1	b2	-	b3	b4	-	b5	-	b6	b7	-	-	1	D1 / VII	Locrian b4 b7 (Dim. Mixolydian)	2T Phry	3T Min
1	b2	-	b3	b4	-	b5	-	b6	-	b7	-	1	C1 / VII	Locrian b4 (Dim. Ionian)	2T Phry	3T Maj
1	b2	-	b3	b4	-	b5	-	b6	-	-	7	1	F4 / I	Harmonic mixed b2 b5	2T Phry	3T Maj+
1	b2	-	b3	b4	-	b5	-	-	6	b7	-	1	D3 / II	Locrian b4 b6	2T Phry	3T Aug1
1	b2	-	b3	b4	-	b5	-	-	6	-	7	1	E4 / I	Melodic mixed b2 b5	2T Phry	3T Aug2
1	b2	-	b3	b4	-	-	5	b6	b7	-	-	1	B2 / III	Phrygian b4 b7	2T Phry	2T½ Dim
1	b2	-	b3	b4	-	-	5	b6	-	b7	-	1	B1 / III	Phrygian b4	2T Phry	2T½ Phry
1	b2	-	b3	b4	-	-	5	b6	-	-	7	1	F2 / I	Harmonic mixed b2	2T Phry	2T½ Harm
1	b2	-	b3	b4	-	-	5	-	6	b7	-	1	C3 / VII	Phrygian b4 b6	2T Phry	2T½ Min
1	b2	-	b3	b4	-	-	5	-	6	-	7	1	E2 / I	Melodic mixed b2	2T Phry	2T½ Maj

25 Heptatonic scales / 175 modes

Structure (2)

1	b2	2	#2	3	#3	#4	5	#5	6	#6	7	1	Mode	Name	Tetrachords	
		bb3	b3	b4	4	b5	bb6	b6	bb7	b7						
1	b2	-	b3	-	4	b5	bb6	-	bb7	-	-	1	B3 / VII	Locrian bb6 bb7	2T½ Phry	3T Phry
1	b2	-	b3	-	4	b5	bb6	-	-	b7	-	1	A3 / VII	Locrian bb6	2T½ Phry	3T Harm
1	b2	-	b3	-	4	b5	-	b6	bb7	-	-	1	B1 / VII	Locrian bb7	2T½ Phry	3T Min
1	b2	-	b3	-	4	b5	-	b6	-	b7	-	1	A1 / VII	Locrian	2T½ Phry	3T Maj
1	b2	-	b3	-	4	b5	-	b6	-	-	7	1	D4 / I	Harmonic minor b2 b5 (Locrian ♯7)	2T½ Phry	3T Maj+
1	b2	-	b3	-	4	b5	-	-	6	b7	-	1	D1 / II	Locrian ♯6	2T½ Phry	3T Aug1
1	b2	-	b3	-	4	b5	-	-	6	-	7	1	C4 / I	Melodic minor b2 b5 (Locrian ♯6 ♯7)	2T½ Phry	3T Aug2
1	b2	-	b3	-	4	-	5	b6	bb7	-	-	1	A2 / III	Phrygian ♯7	2T½ Phry	2T½ Dim
1	b2	-	b3	-	4	-	5	b6	-	b7	-	1	A1 / III	Phrygian	2T½ Phry	2T½ Phry
1	b2	-	b3	-	4	-	5	b6	-	-	7	1	D2 / I	Harmonic minor b2 (Phrygian ♯7)	2T½ Phry	2T½ Harm
1	b2	-	b3	-	4	-	5	-	6	b7	-	1	C1 / II	Dorian b2 (Phrygian ♯6)	2T½ Phry	2T½ Min
1	b2	-	b3	-	4	-	5	-	6	-	7	1	C2 / I	Melodic minor b2 (Ionian b2 b3)	2T½ Phry	2T½ Maj
1	b2	-	b3	-	4	-	-	#5	6	b7	-	1	F4 / bIII	Dorian b2 #5	2T½ Phry	2T Dim
1	b2	-	b3	-	4	-	-	#5	6	-	7	1	F3 / bIII	Phrygian #5 ♯6	2T½ Phry	2T Phry
1	b2	-	b3	-	-	#4	5	b6	-	b7	-	1	D4 / IV	Phrygian #4	3T Phry	2T½ Phry
1	b2	-	b3	-	-	#4	5	b6	-	-	7	1	B4 / IV	Phrygian #4 ♯7	3T Phry	2T½ Harm
1	b2	-	b3	-	-	#4	5	-	6	b7	-	1	D3 / IV	Dorian b2 #4 (Phrygian #4 ♯6)	3T Phry	2T½ Min
1	b2	-	b3	-	-	#4	5	-	6	-	7	1	B3 / IV	Lydian b2 b3	3T Phry	2T½ Maj
1	b2	-	b3	-	-	#4	-	#5	6	b7	-	1	E4 / bIII	-	3T Phry	2T Dim
1	b2	-	b3	-	-	#4	-	#5	6	-	7	1	E3 / bIII	-	3T Phry	2T Phry
1	b2	-	-	3	4	b5	-	b6	bb7	-	-	1	F2 / V	Locrian ♯3 bb7	2T½ Harm	3T Min
1	b2	-	-	3	4	b5	-	b6	-	b7	-	1	D2 / V	Locrian ♯3	2T½ Harm	3T Maj
1	b2	-	-	3	4	b5	-	b6	-	-	7	1	B4 / I	Harmonic major b2 b5 (Locrian ♯3 ♯7)	2T½ Harm	3T Maj+
1	b2	-	-	3	4	b5	-	-	6	b7	-	1	B2 / V	Mixolydian b2 b5	2T½ Harm	3T Aug1
1	b2	-	-	3	4	b5	-	-	6	-	7	1	A4 / I	Melodic major b2 b5 (Ionian b2 b5)	2T½ Harm	3T Aug2
1	b2	-	-	3	4	-	5	b6	bb7	-	-	1	F1 / V	Phrygian ♯3 bb7	2T½ Harm	2T½ Dim
1	b2	-	-	3	4	-	5	b6	-	b7	-	1	D1 / V	Phrygian ♯3	2T½ Harm	2T½ Phry
1	b2	-	-	3	4	-	5	b6	-	-	7	1	B2 / I	Harmonic major b2 (Ionian b2 b6)	2T½ Harm	2T½ Harm
1	b2	-	-	3	4	-	5	-	6	b7	-	1	B1 / V	Mixolydian b2	2T½ Harm	2T½ Min
1	b2	-	-	3	4	-	5	-	6	-	7	1	A2 / I	Melodic major b2 (Ionian b2)	2T½ Harm	2T½ Maj
1	b2	-	-	3	4	-	-	#5	6	b7	-	1	F2 / bIII	Mixolydian b2 #5	2T½ Harm	2T Dim
1	b2	-	-	3	4	-	-	#5	6	-	7	1	F1 / bIII	Ionian b2 #5	2T½ Harm	2T Phry
1	b2	-	-	3	-	#4	5	b6	-	b7	-	1	C4 / IV	Phrygian ♯3 #4	3T Harm	2T½ Phry
1	b2	-	-	3	-	#4	5	b6	-	-	7	1	A4 / IV	Lydian b2 b6	3T Harm	2T½ Harm
1	b2	-	-	3	-	#4	5	-	6	b7	-	1	C3 / IV	Mixolydian b2 #4 (Lydian b2 b7)	3T Harm	2T½ Min
1	b2	-	-	3	-	#4	5	-	6	-	7	1	A3 / IV	Lydian b2	3T Harm	2T½ Maj
1	b2	-	-	3	-	#4	-	#5	6	b7	-	1	E2 / bIII	-	3T Harm	2T Dim
1	b2	-	-	3	-	#4	-	#5	6	-	7	1	E1 / bIII	Lydian b2 #5	3T Harm	2T Phry
1	b2	-	-	3	-	-	5	#5	6	-	7	1	O / bIII	(Atypical scale)	3T½	2T Phry

25 Heptatonic scales / 175 modes

Structure (3)

1	b2	2	#2	3	#3	#4	5	#5	6	#6	7	1	Mode	Name	Tetrachords	
1	b2	bb3	b3	b4	4	b5	bb6	b6	bb7	b7	7	1	Mode	Name	Tetrachords	
1	-	2	b3	b4	-	b5	bb6	-	bb7	-	-	1	E4 / VI	-	2T Min	3T Phry
1	-	2	b3	b4	-	b5	bb6	-	-	b7	-	1	E2 / VI	-	2T Min	3T Harm
1	-	2	b3	b4	-	b5	-	b6	bb7	-	-	1	C4 / VI	Dim. Mixolydian ♭2	2T Min	3T Min
1	-	2	b3	b4	-	b5	-	b6	-	b7	-	1	C2 / VI	Aeolian ♭4 ♭5	2T Min	3T Maj
1	-	2	b3	b4	-	b5	-	b6	-	-	7	1	F3 / I	Harmonic mixed ♭5	2T Min	3T Maj+
1	-	2	b3	b4	-	b5	-	-	6	b7	-	1	B3 / II	Dorian ♭4 ♭5	2T Min	3T Aug1
1	-	2	b3	b4	-	b5	-	-	6	-	7	1	E3 / I	Melodic mixed ♭5	2T Min	3T Aug2
1	-	2	b3	b4	-	-	5	b6	bb7	-	-	1	A4 / VI	Aeolian ♭4 bb7	2T Min	2T½ Dim
1	-	2	b3	b4	-	-	5	b6	-	b7	-	1	A2 / VI	Aeolian ♭4	2T Min	2T½ Phry
1	-	2	b3	b4	-	-	5	b6	-	-	7	1	F1 / I	Harmonic mixed	2T Min	2T½ Harm
1	-	2	b3	b4	-	-	5	-	6	b7	-	1	A3 / II	Dorian ♭4	2T Min	2T½ Min
1	-	2	b3	b4	-	-	5	-	6	-	7	1	E1 / I	Melodic mixed	2T Min	2T½ Maj
1	-	2	b3	b4	-	-	5	-	-	#6	7	1	O / I	Orphan mode	2T Min	2T½ Aug
1	-	2	b3	-	4	b5	bb6	-	bb7	-	-	1	E3 / VI	-	2T½ Min	3T Phry
1	-	2	b3	-	4	b5	bb6	-	-	b7	-	1	E1 / VI	Aeolian ♭5 bb6	2T½ Min	3T Harm
1	-	2	b3	-	4	b5	-	b6	bb7	-	-	1	C3 / VI	Locrian ♭2 bb7	2T½ Min	3T Min
1	-	2	b3	-	4	b5	-	b6	-	b7	-	1	C1 / VI	Aeolian ♭5 (Locrian ♭2)	2T½ Min	3T Maj
1	-	2	b3	-	4	b5	-	b6	-	-	7	1	D3 / I	Harmonic minor ♭5 (Aeolian ♭5 ♭7)	2T½ Min	3T Maj+
1	-	2	b3	-	4	b5	-	-	6	b7	-	1	B1 / II	Dorian ♭5	2T½ Min	3T Aug1
1	-	2	b3	-	4	b5	-	-	6	-	7	1	C3 / I	Melodic minor ♭5 (Ionian ♭3 ♭5)	2T½ Min	3T Aug2
1	-	2	b3	-	4	-	5	b6	bb7	-	-	1	A3 / VI	Aeolian bb7	2T½ Min	2T½ Dim
1	-	2	b3	-	4	-	5	b6	-	b7	-	1	A1 / VI	Aeolian (<i>Natural minor scale</i>)	2T½ Min	2T½ Phry
1	-	2	b3	-	4	-	5	b6	-	-	7	1	D1 / I	Harmonic minor (Aeolian ♭7)	2T½ Min	2T½ Harm
1	-	2	b3	-	4	-	5	-	6	b7	-	1	A1 / II	Dorian	2T½ Min	2T½ Min
1	-	2	b3	-	4	-	5	-	6	-	7	1	C1 / I	Melodic minor (Ionian -3 / Dorian =7)	2T½ Min	2T½ Maj
1	-	2	b3	-	4	-	-	-	#6	7	1	F4 / bII	Dorian #6 ♭7	2T½ Min	2T½ Aug	
1	-	2	b3	-	4	-	-	#5	6	b7	-	1	D4 / bIII	Dorian #5	2T½ Min	2T Dim
1	-	2	b3	-	4	-	-	#5	6	-	7	1	D3 / bIII	Ionian ♭3 #5	2T½ Min	2T Phry
1	-	2	b3	-	4	-	-	#5	-	#6	7	1	E4 / bII	Dorian #5 #6	2T½ Min	2T Min
1	-	2	b3	-	-	#4	5	b6	-	b7	-	1	D2 / IV	Aeolian #4	3T Min	2T½ Phry
1	-	2	b3	-	-	#4	5	b6	-	-	7	1	B2 / IV	Lydian ♭3 ♭6	3T Min	2T½ Harm
1	-	2	b3	-	-	#4	5	-	6	b7	-	1	D1 / IV	Dorian #4	3T Min	2T½ Min
1	-	2	b3	-	-	#4	5	-	-	6	7	1	B1 / IV	Lydian ♭3	3T Min	2T½ Maj
1	-	2	b3	-	-	#4	5	-	-	#6	7	1	F2 / bII	Lydian ♭3 #6	3T Min	2T½ Aug
1	-	2	b3	-	-	#4	-	#5	6	b7	-	1	C4 / bIII	Dorian #4 #5	3T Min	2T Dim
1	-	2	b3	-	-	#4	-	#5	6	-	7	1	C3 / bIII	Lydian ♭3 #5	3T Min	2T Phry
1	-	2	b3	-	-	#4	-	#5	-	#6	7	1	E2 / bII	-	3T Min	2T Min

25 Heptatonic scales / 175 modes

Structure (4)

1	b2	2	#2	3	#3	#4	5	#5	6	#6	7	1	Mode	Name	Tetrachords	
	b3	b3	b3	b4	4	b5	b6	b6	b7	b7						
1	-	2	-	3	4	b5	-	b6	b7	-	-	1	E2 / V	-	2T½ Maj	3T Min
1	-	2	-	3	4	b5	-	b6	-	b7	-	1	C2 / V	Mixolydian b5 b6	2T½ Maj	3T Maj
1	-	2	-	3	4	b5	-	b6	-	-	7	1	B3 / I	Harmonic major b5 (Ionian b5 b6)	2T½ Maj	3T Maj+
1	-	2	-	3	4	b5	-	-	6	b7	-	1	A2 / V	Mixolydian b5	2T½ Maj	3T Aug1
1	-	2	-	3	4	b5	-	-	6	-	7	1	A3 / I	Melodic major b5 (Ionian b5)	2T½ Maj	3T Aug2
1	-	2	-	3	4	-	5	b6	b7	-	-	1	E1 / V	Mixolydian b6 b7	2T½ Maj	2T½ Dim
1	-	2	-	3	4	-	5	b6	-	b7	-	1	C1 / V	Mixolydian b6 (Aeolian b3)	2T½ Maj	2T½ Phry
1	-	2	-	3	4	-	5	b6	-	-	7	1	B1 / I	Harmonic major (Ionian b6)	2T½ Maj	2T½ Harm
1	-	2	-	3	4	-	5	-	6	b7	-	1	A1 / V	Mixolydian	2T½ Maj	2T½ Min
1	-	2	-	3	4	-	5	-	6	-	7	1	A1 / I	Ionian (<i>Melodic major</i>)	2T½ Maj	2T½ Maj
1	-	2	-	3	4	-	5	-	-	#6	7	1	D4 / bII	Ionian #6	2T½ Maj	2T½ Aug
1	-	2	-	3	4	-	-	#5	6	b7	-	1	D2 / bIII	Mixolydian #5	2T½ Maj	2T Dim
1	-	2	-	3	4	-	-	#5	6	-	7	1	D1 / bIII	Ionian #5	2T½ Maj	2T Phry
1	-	2	-	3	4	-	-	#5	-	#6	7	1	C4 / bII	Ionian #5 #6	2T½ Maj	2T Min
1	-	2	-	3	-	#4	5	b6	-	b7	-	1	C2 / IV	Lydian b6 b7	3T Maj	2T½ Phry
1	-	2	-	3	-	#4	5	b6	-	-	7	1	A2 / IV	Lydian b6	3T Maj	2T½ Harm
1	-	2	-	3	-	#4	5	-	6	b7	-	1	C1 / IV	Lydian b7 (Mixolydian #4)	3T Maj	2T½ Min
1	-	2	-	3	-	#4	5	-	6	-	7	1	A1 / IV	Lydian	3T Maj	2T½ Maj
1	-	2	-	3	-	#4	5	-	-	#6	7	1	D2 / bIII	Lydian #6	3T Maj	2T½ Aug
1	-	2	-	3	-	#4	-	#5	6	b7	-	1	C2 / bIII	Mixolydian #4 #5	3T Maj	2T Dim
1	-	2	-	3	-	#4	-	#5	6	-	7	1	C1 / bIII	Lydian #5 (Aug. Phrygian)	3T Maj	2T Phry
1	-	2	-	3	-	#4	-	#5	-	#6	7	1	C2 / bII	Lydian #5 #6	3T Maj	2T Min
1	-	2	-	3	-	-	5	#5	6	-	7	1	F4 / bIV	(<i>Atypical scale</i>)	3T½	2T Phry
1	-	2	-	3	-	-	5	#5	-	b7	7	1	F3 / bIV	(<i>Atypical scale</i>)	3T½	2T Min
1	-	2	-	-	#3	#4	5	-	6	b7	-	1	F4 / bV	Mixolydian #3 #4	3T Maj+	2T½ Min
1	-	2	-	-	#3	#4	5	-	6	-	7	1	D4 / bV	Lydian #3	3T Maj+	2T½ Maj
1	-	2	-	-	#3	#4	5	-	-	#6	7	1	B4 / bV	Lydian #3 #6	3T Maj+	2T½ Aug
1	-	2	-	-	#3	#4	-	#5	6	b7	-	1	F3 / bV	-	3T Maj+	2T Dim
1	-	2	-	-	#3	#4	-	#5	6	-	7	1	D3 / bV	Lydian #3 #5	3T Maj+	2T Phry
1	-	2	-	-	#3	#4	-	#5	-	#6	7	1	B3 / bV	Aug. Mixolydian b2	3T Maj+	2T Min
1	-	2	-	-	4	-	5	#5	6	-	7	1	E4 / bIV	(<i>Atypical scale</i>)	3T½	2T Phry
1	-	2	-	-	4	-	5	#5	-	b7	7	1	E3 / bIV	(<i>Atypical scale</i>)	3T½	2T Min

25 Heptatonic scales / 175 modes

Structure (5)

1	b2	2	#2	3	#3	#4	5	#5	6	#6	7	1	Mode	Name	Tetrachords	
1	b2	bb3	b3	b4	4	b5	bb6	b6	bb7	b7	7	1				
1	-	-	#2	3	4	-	5	b6	bb7	-	-	1	O / V	(Melakarta #31 : Yagapriya)	2T½ Aug	2T½ Dim
1	-	-	#2	3	4	-	5	b6	-	b7	-	1	F4 / bVI	Mixolydian #2 b6	2T½ Aug	2T½ Phry
1	-	-	#2	3	4	-	5	b6	-	-	7	1	F2 / bVI	Ionian #2 b6	2T½ Aug	2T½ Harm
1	-	-	#2	3	4	-	5	-	6	b7	-	1	D4 / bVI	Mixolydian #2	2T½ Aug	2T½ Min
1	-	-	#2	3	4	-	5	-	6	-	7	1	D2 / bVI	Ionian #2	2T½ Aug	2T½ Maj
1	-	-	#2	3	4	-	5	-	-	#6	7	1	B4 / bII	Ionian #2 #6	2T½ Aug	2T½ Aug
1	-	-	#2	3	4	-	-	#5	6	b7	-	1	B4 / bVI	Mixolydian #2 #5	2T½ Aug	2T Dim
1	-	-	#2	3	4	-	-	#5	6	-	7	1	B2 / bVI	Ionian #2 #5	2T½ Aug	2T Phry
1	-	-	#2	3	4	-	-	#5	-	#6	7	1	A4 / bII	Aug. Dorian b4	2T½ Aug	2T Min
1	-	-	#2	3	-	#4	5	b6	-	b7	-	1	F3 / bVI	-	3T Aug1	2T½ Phry
1	-	-	#2	3	-	#4	5	b6	-	-	7	1	F1 / bVI	Lydian #2 b6	3T Aug1	2T½ Harm
1	-	-	#2	3	-	#4	5	-	6	b7	-	1	D3 / bVI	Mixolydian #2 #4	3T Aug1	2T½ Min
1	-	-	#2	3	-	#4	5	-	6	-	7	1	D1 / bVI	Lydian #2	3T Aug1	2T½ Maj
1	-	-	#2	3	-	#4	5	-	-	#6	7	1	B2 / bII	Lydian #2 #6	3T Aug1	2T½ Aug
1	-	-	#2	3	-	#4	-	#5	6	b7	-	1	B3 / bVI	Aug. Aeolian b7	3T Aug1	2T Dim
1	-	-	#2	3	-	#4	-	#5	6	-	7	1	B1 / bVI	Lydian #2 b5 (Aug. Aeolian)	3T Aug1	2T Phry
1	-	-	#2	3	-	#4	-	#5	-	#6	7	1	A2 / bII	Aug. Dorian	3T Aug1	2T Min
1	-	-	#2	3	-	-	5	#5	6	-	7	1	F2 / bIV	(Atypical scale)	3T½	2T Phry
1	-	-	#2	3	-	-	5	#5	-	b7	7	1	F1 / bIV	(Atypical scale)	3T½	2T Min
1	-	-	#2	-	#3	#4	5	-	6	b7	-	1	E4 / bV	Blues scale	3T Aug2	2T½ Min
1	-	-	#2	-	#3	#4	5	-	6	-	7	1	C4 / bV	Lydian #2 #3	3T Aug2	2T½ Maj
1	-	-	#2	-	#3	#4	5	-	-	#6	7	1	A4 / bV	Aug. Mixolydian b5	3T Aug2	2T½ Aug
1	-	-	#2	-	#3	#4	-	#5	6	b7	-	1	E3 / bV	-	3T Aug2	2T Dim
1	-	-	#2	-	#3	#4	-	#5	6	-	7	1	C3 / bV	Aug. Aeolian b3	3T Aug2	2T Phry
1	-	-	#2	-	#3	#4	-	#5	-	#6	7	1	A3 / bV	Aug. Mixolydian	3T Aug2	2T Min
1	-	-	b3	-	4	-	5	#5	6	-	7	1	E2 / bIV	(Atypical scale)	3T½	2T Phry
1	-	-	b3	-	4	-	5	#5	-	b7	7	1	E1 / bIV	(Atypical scale)	3T½	2T Min
1	-	-	b3	-	-	#4	5	#5	-	b7	7	1	O / bIV	(Atypical scale)	3T½	2T Min

25 Heptatonic scales / 175 modes

Altered greek modes scales (1)

I. Ionian

Alt.	Resulting scale	Mode
♭2	Melodic major ♭2 (Ionian ♭2)	A2 / I
♭2 ♭3	Melodic minor ♭2 (Ionian ♭2 ♭3)	C2 / I
♭2 ♯4	Lydian ♭2 (Ionian ♭2 ♯4)	A3 / IV
♭2 ♭5	Melodic major ♭2 ♭5 (Ionian ♭2 ♭5)	A4 / I
♭2 ♯5	Ionian ♭2 ♯5	F1 / ♭III
♭2 ♭6	Harmonic major ♭2 (Ionian ♭2 ♭6)	B2 / I
♭2 ♭7	Mixolydian ♭2 (Ionian ♭2 ♭7)	B1 / V
♯2	Ionian ♯2	D2 / ♭VI
♯2 ♯4	Lydian ♯2	D1 / ♭VI
♯2 ♯5	Ionian ♯2 ♯5	B2 / ♭VI
♯2 ♭6	Ionian ♯2 ♭6	F2 / ♭VI
♯2 ♯6	Ionian ♯2 ♯6	B4 / ♭II
♯2 ♭7	Mixolydian ♯2	D4 / ♭VI
♭3	Melodic minor (Ionian ♭3)	C1 / I
♭3 ♭5	Melodic minor ♭5 (Ionian ♭3 ♭5)	C3 / I
♭3 ♯5	Ionian ♭3 ♯5	D3 / ♭III
♭3 ♭6	Harmonic minor (Ionian ♭3 ♭6)	D1 / I
♭3 ♭7	Dorian	A1 / II
♯4	Lydian	A1 / IV
♯4 ♯5	Lydian ♯5 (Aug. Phrygian)	C1 / ♭III
♯4 ♭6	Lydian ♭6 (Harmonic major ♯4)	A2 / IV
♯4 ♭7	Lydian ♭7 (Mixolydian ♯4)	C1 / IV
♭5	Melodic major ♭5 (Ionian ♭5)	A3 / I
♭5 ♭6	Harmonic major ♭5 (Ionian ♭5 ♭6)	B3 / I
♭5 ♭7	Mixolydian ♭5	A2 / V
♯5	Ionian ♯5	D1 / ♭III
♯5 ♯6	Ionian ♯5 ♯6	B4 / ♭II
♯5 ♭7	Mixolydian ♯5	D2 / ♭III
♭6	Harmonic major (Ionian ♭6)	B1 / I
♭6 ♭7	Mixolydian ♭6	C1 / V
♯6	Ionian ♯6	D4 / -II
♭7	Mixolydian	A1 / V

II. Dorian

Alt.	Resulting scale	Mode
♭2	Dorian ♭2 (Phrygian ♭6)	C1 / II
♭2 ♯3	Mixolydian ♭2 (Ionian ♭2 ♭7)	B1 / V
♭2 ♯4	Dorian ♭2 ♯4 (Phrygian ♯4 ♭6)	D3 / IV
♭2 ♭5	Locrian ♯6 (Dorian ♭2 ♭5)	D1 / II
♭2 ♯5	Dorian ♭2 ♯5	F4 / ♭III
♭2 ♭6	Phrygian	A1 / III
♯3	Mixolydian	A1 / V
♯3 ♯4	Ionian	A1 / I
♭4	Dorian ♭4	A3 / II
♭4 ♭5	Dorian ♭4 ♭5	B3 / II
♯4	Dorian ♯4 (Romanian scale)	D1 / IV
♯4 ♯5	Lydian ♭3 ♯5 (Dorian ♯4 ♯5)	C4 / ♭III
♭5	Dorian ♭5	B1 / II
♯5	Dorian ♯5	D4 / ♭III
♯5 ♯6	Dorian ♯5 ♯6	E4 / ♭II
♭6	Aeolian	A1 / VI
♭6 ♯7	Harmonic minor	D1 / I
♯6 ♯7	Dorian ♯6 ♯7	F4 / ♭II
♯7	Melodic minor	C1 / I

25 Heptatonic scales / 175 modes

Altered greek modes scales (2)

III. Phrygian

Alt.	Resulting scale	Mode
♮2	Aeolian	A1 / VI
♭♭3	Phrygian ♭♭3	A3 / III
♭♭3 ♭4	Phrygian ♭♭3 ♭4	B3 / ♭III
♭♭3 ♭♭7	Phrygian ♭♭3 ♭♭7	A4 / III
♮3	Phrygian =3 (Spanish / Jewish scale)	D1 / V
♮3 #4	Phrygian ♮3 #4	C4 / IV
♮3 ♭♭7	Phrygiann ♮3 ♭♭7	F1 / V
♭4	Phrygian ♭4	B1 / III
♭4 ♮6	Phrygian ♭4 ♮6	C3 / VII
♮4	Phrygian #4	D4 / IV
♮4 ♮6	Dorian ♭2 #4 (Phrygian #4 ♮6)	D3 / IV
♮4 ♮7	Phrygian #4 ♮7	B4 / IV
♭5	Locrian	A1 / VII
♮5 ♮6	Phrygian #5 ♮6	F3 / ♭III
♮6	Dorian ♭2 (Phrygian ♮6)	C1 / II
♭♭7	Phrygian ♭♭7	A2 / III
♮7	Harmonic minor ♭2 (Neapolitan min.)	D2 / I

IV. Lydian

Alt.	Resulting scale	Mode
♭2	Lydian ♭2 (Ionian ♭2 #4)	A3 / IV
♭2 ♭3	Lydian ♭2 ♭3	B3 / IV
♭2 #5	Lydian ♭2 #5	E1 / ♭III
♭2 ♭6	Lydian ♭2 ♭6	A4 / IV
♭2 ♭7	Mixolydian ♭2 #4 (Lydian ♭2 ♭7)	C3 / IV
#2	Lydian #2 (Ionian #2 #4)	D1 / ♭VI
#2 #3	Lydian #2 #3	C4 / ♭V
#2 #5	Lydian #2 #5	B1 / ♭VI
#2 ♭6	Lydian #2 ♭6	F1 / ♭VI
#2 #6	Lydian #2 #6	B2 / ♭II
#2 ♭7	Mixolydian #2 #4 (Lydian #2 ♭7)	D3 / ♭VI
♭3	Lydian ♭3 (Melodic minor #4)	B1 / IV
♭3 #5	Lydian ♭3 #5	C3 / ♭III
♭3 ♭6	Lydian ♭3 ♭6 (Harmonic Minor #4)	B2 / IV
♭3 ♭7	Dorian #4 (Lydian ♭3 ♭7)	D1 / IV
#3	Lydian #3	D4 / ♭V
#3 #5	Lydian #3 #5	D3 / ♭V
#3 #6	Lydian #3 #6	B4 / ♭V
♮4	Ionian	A1 / I
#5	Lydian #5	C1 / ♭III
#5 #6	Lydian #5 #6	C2 / ♭II
#5 ♭7	Mixolydian #4 #5 (Lydian #5 ♭7)	C2 / ♭III
♭6	Lydian ♭6 (Melodic major #4)	A2 / IV
♭6 ♭7	Lydian ♭6 ♭7 (Mixolydian #4 ♭6)	C2 / IV
#6	Lydian #6	D2 / ♭II
♭7	Lydian ♭7 (Mixolydian #4)	C1 / IV

25 Heptatonic scales / 175 modes

Altered greek modes scales (3)

V. Mixolydian

Alt.	Resulting scale	Mode
b2	Mixolydian b2 (Ionian b2 b7)	B1 / V
b2 bb3	Mixolydian b2 bb3	E1 / II
b2 #4	Mixolydian b2 #4 (Lydian b2 b7)	C3 / IV
b2 b5	Mixolydian b2 b5	B2 / V
b2 #5	Mixolydian b2 #5	F2 / bIII
b2 b6	Phrygian =3 (Spanish / Jewish scale)	D1 / V
#2	Mixolydian #2	D4 / bVI
#2 #4	Mixolydian #2 #4 (Lydian #2 b7)	D3 / bVI
#2 #5	Mixolydian #2 #5	B4 / bVI
#2 b6	Mixolydian #2 b6	F4 / bVI
#2 b7	Ionian #2	D2 / bVI
b3	Dorian	A1 / II
b3 b5	Dorian b5	B1 / II
b3 #5	Dorian #5	D4 / bIII
b3 b6	Aeolian	A1 / VI
b3 b7	Melodic minor	C1 / I
#3 #4	Mixolydian #3 #4	F4 / bV
#4	Lydian b7 (Mixolydian #4)	C1 / IV
#4 #5	Mixolydian #4 #5	C2 / bIII
#4 b6	Lydian b6 b7 (Mixolydian #4 b6)	C2 / IV
#4 b7	Lydian	A1 / IV
b5	Mixolydian b5	A2 / V
b5 b6	Mixolydian b5 b6 (Aeolian b3 b5)	C2 / V
b5 b7	Melodic major b5 (Ionian b5)	A3 / I
#5	Mixolydian #5	D2 / bIII
#5 b7	Ionian #5	D1 / bIII
b6	Mixolydian b6 (Aeolian b3)	C1 / V
b6 bb7	Mixolydian b6 bb7	E1 / V
b6 b7	Harmonic major (Ionian b6)	B1 / I
b7	Ionian	A1 / I

VI. Aeolian

Alt.	Resulting scale	Mode
b2	Phrygian	A1 / III
b2 b3	Phrygian =3 (Spanish / Jewish scale)	D1 / V
b2 #4	Phrygian #4	D4 / IV
b2 b5	Locrian	A1 / VII
b3	Mixolydian b6 (Aeolian b3)	C1 / V
b3 #4	Lydian b6 b7 (Mixolydian #4 b6)	C2 / IV
b3 b5	Mixolydian b5 b6 (Aeolian b3 b5)	C2 / V
b3 b6	Mixolydian	A1 / V
b3 b7	Harmonic major (Ionian b6)	B1 / I
b4	Aeolian b4	A2 / VI
b4 b5	Aeolian b4 b5	C2 / VI
b4 bb7	Aeolian b4 bb7	A4 / VI
#4	Aeolian #4 (Hungarian Gypsy scale)	D2 / IV
b5	Aeolian b5 (Locrian b2)	C1 / VI
b5 bb6	Aeolian b5 bb6	E1 / VI
b5 b7	Harmonic minor b5 (Aeolian b5 b7)	D3 / I
b6	Dorian	A1 / II
b6 b7	Melodic minor	C1 / I
bb7	Aeolian bb7	A3 / VI
b7	Harmonic minor	D1 / I

25 Heptatonic scales / 175 modes

Altered greek modes scales (4)

VII. Locrian

Alt.	Resulting scale	Mode
♯2	Aeolian ♭5 (Locrian ♯2)	C1 / VI
♯2 ♭♭7	Locrian ♯2 ♭♭7	C3 / VI
♯2 ♯7	Harmonic minor ♭5 (Aeolian ♭5 ♯7)	D3 / I
♭♭3	Locrian ♭♭3	A2 / VII
♭♭3 ♭4	Locrian ♭♭3 ♭4	C2 / VII
♭♭3 ♯6	Locrian ♭♭3 ♯6	F1 / II
♭♭3 ♭♭7	Locrian ♭♭3 ♭♭7	B2 / VII
♯3	Locrian ♯3	D2 / V
♯3 ♯7	Harmonic major ♭2 ♭5 (Locrian ♯3 ♯7)	B4 / I
♭4	Locrian ♭4 (Superlocrian)	C1 / VII
♭4 ♯6	Locrian ♭4 ♯6	D3 / II
♭4 ♭♭7	Locrian ♭4 ♭♭7 (Dim. Mixolydian)	D1 / VII
♯5	Phrygian	A1 / III
♭♭6	Locrian ♭♭6	A3 / VII
♭♭6 ♭♭7	Locrian ♭♭6 ♭♭7	B2 / VII
♯6	Locrian ♯6 (Dorian ♭2 ♭5)	D1 / II
♯6 ♯7	Melodic minor ♭2 ♭5	C4 / I
♭♭7	Locrian ♭♭7	B1 / VII
♯7	Harmonic minor ♭2 ♭5	D4 / I
♯3 ♭♭7	Locrian ♯3 ♭♭7	F2 / V

Greek modes

Degree	Mode	Equivalences
I	Ionian	Lydian ♯4 - Mixolydian ♯7
II	Dorian	Mixolydian ♭3 - Aeolian ♯6
III	Phrygian	Aeolian ♭2 - Locrian ♯5
IV	Lydian	Ionian ♯4 - Aug. Locrian
V	Mixolydian	Ionian ♯7 - Dorian ♯3
VI	Aeolian	Dorian ♭6 - Phrygian ♯2
VII	Locrian	Phrygian ♭5 - Dim. Lydian

25 Heptatonic scales / 175 modes

Chords (1)

A1. Melodic major		
Degr.	Chord	Extensions
I	M7	9 11 13
II	m7	9 11 13
III	m7	b9 11 b13
IV	M7	9 #11 13
V	7	9 11 13
VI	m7	9 11 b13
VII	m7b5	b9 11 b13

B1. Harmonic major		
Degr.	Chord	Extensions
I	M7	9 11 b13
II	m7b5	9 11 13
III	m7 (7)	b9 - b13
IV	mM7	9 #11 13
V	7	b9 11 13
bVI	M7#5	b9 #11 13
VII	dim7	- 11 b13

A2. Melodic major b2		
Degr.	Chord	Extensions
I	M7	b9 11 13
bII	M7#5 (7#5)	#9 #11 -
III	m6	- - -
IV	M7	9 #11 b13
V	7b5	9 11 b13
VI	M7#5 (7#5)	9 - b13
VII	-	- - -

B2. Harmonic major b2		
Degr.	Chord	Extensions
I	M7	b9 11 b13
bII	M7 (7)	#9 #11 -
III	m6 (M6)	- - -
IV	mM7	9 #11 b13
V	7b5	9 11 b13
VIb	M7#5	#9 11 13
VII	-	- - -

A3. Melodic major b5		
Degr.	Chord	Extensions
I	M7b5	9 11 13
II	m7	9 - 13
III	7sus4	b9 - b13
IV	M7	b9 #11 13
bV	m7b5	- #11 -
VI	m6	- - -
VII	m7b5 (m7)	b9 - -

B3. Harmonic major b5		
Degr.	Chord	Extensions
I	M7b5	9 11 b13
II	m7b5 (7b5)	9 - 13
III	7	b9 - b13
IV	mM7	b9 #11 13
bV	-	- - -
bVI	7#5	#9 #11 13
VII	dim7 (m6)	- 11 -

A4. Melodic major b2 b5		
Degr.	Chord	Extensions
I	M7b5	b9 11 13
bII	M7#5 (7#5)	#9 11 -
III	sus4	- - -
IV	M7	b9 #11 b13
bV	mM7 (m7)	- #11 -
VI	m6 (M6)	- - -
VII	7sus4	b9 - -

B4. Harmonic major b2 b5		
Degr.	Chord	Extensions
I	M7b5	b9 11 b13
bII	M7 (7)	#9 11 -
III	M6	- - -
IV	mM7	b9 #11 b13
bV	7Msus4 (7sus4)	9 - -
bVI	7#5	#9 11 13
VII	sus4	- - -

25 Heptatonic scales / 175 modes

Chords (2)

C1. Melodic minor		
Degr.	Chord	Extensions
I	mM7	9 11 13
II	m7	b9 11 13
bIII	M7#5	9 #11 13
IV	7	9 #11 13
V	7	9 11 b13
VI	m7b5	9 11 b13
VII	m7b5	b9 #11 b13

D1. Harmonic minor		
Degr.	Chord	Extensions
I	mM7	9 11 b13
II	m7b5	b9 11 13
bIII	M7#5	9 11 13
IV	m7	9 #11 13
V	7	b9 11 b13
bVI	M7	#9 #11 13
VII	dim7	- - b13

C2. Melodic minor b2 (Neapolitan maj.)		
Degr.	Chord	Extensions
I	mM7	b9 11 13
bII	M7#5 (7#5)	9 #11 -
bIII	7#5	9 #11 13
IV	7	9 #11 b13
V	7b5	9 11 b13
VI	m7b5 (7b5)	9 - b13
VII	7b5	b9 - b13

D2. Harmonic minor b2 (Neapolitan min.)		
Degr.	Chord	Extensions
I	mM7	b9 11 b13
bII	M7 (7)	9 #11 -
bIII	7#5	9 11 13
IV	m7	9 #11 b13
V	7b5	b9 11 b13
bVI	M7	#9 11 13
VII	Aug	- - -

C3. Melodic minor b5		
Degr.	Chord	Extensions
I	mM7b5	9 11 13
II	m7b5 (7b5)	b9 - 13
bIII	mM7#5	9 #11 13
IV	7	b9 #11 13
bV	mM7#5	- #11 13
VI	dim7	9 11 b13
VII	m7 (7)	b9 - 13

D3. Harmonic minor b5		
Degr.	Chord	Extensions
I	mM7b5	9 11 b13
II	m7b5 (7b5)	b9 - 13
bIII	mM7#5	9 11 13
IV	m7	b9 #11 13
bV	-	- - -
bVI	7	#9 #11 13
VII	dim7 (m6 / M6)	- - -

C4. Melodic minor b2 b5		
Degr.	Chord	Extensions
I	mM7b5	b9 11 13
bII	M7#5 (7#5)	9 11 -
bIII	m7#5	9 #11 13
IV	7	b9 #11 b13
bV	mM7	- #11 13
VI	dim7	9 - b13
VII	7b5 (7)	b9 #11 -

D4. Harmonic minor b2 b5		
Degr.	Chord	Extensions
I	mM7b5	b9 11 b13
bII	M7 (7)	9 11 -
bIII	m7#5	9 11 13
IV	m7	b9 #11 b13
bV	M7sus4	9 #11 13
bVI	7	#9 11 13
VII	M6	- - -

25 Heptatonic scales / 175 modes

Chords (3)

E1. Melodic mixed

Degr.	Chord	Extensions
I	mM7	
II	7sus4	
♭III	M7 #5	
♭IV	mM7 (m7)	
V	M6	
VI	m7	
VII	m7 #5	

F1. Harmonic mixed

Degr.	Chord	Extensions
I	mM7	
II	-	
♭III	M7 #5	
♭IV	mM7 (m7)	
V	M6	
♭VI	M7	
VII	Aug	

E2. Melodic mixed ♭2 (Neapolitan maj.)

Degr.	Chord	Extensions
I	mM7	
♭II	mM7 #5	
♭III	7 #5	
♭IV	mM7	
V	Aug	
VI	m7	
VII	7 #5	

F2. Harmonic mixed ♭2

Degr.	Chord	Extensions
I	mM7	
♭II	mM7	
♭III	7 #5	
♭IV	mM7	
V	Aug	
♭VI	M7	
VII	Aug	

E3. Melodic mixed ♭5

Degr.	Chord	Extensions
I	mM7 ♭5	
II	7	
♭III	mM7 #5	
♭IV	(7)7Msus4	
♭V	M7 ♭5 (#5)	
VI	dim7	
VII	m7 (7)	

F3. Harmonic mixed ♭5

Degr.	Chord	Extensions
I	mM7 ♭5	
II	7 ♭5	
♭III	mM7 #5	
♭IV	M7 (7)	
♭V	-	
♭VI	7	
VII	m6 (M6)	

E4. Melodic mixed ♭2 ♭5

Degr.	Chord	Extensions
I	mM7 ♭5	
♭II	M7 #5	
♭III	m7 #5	
♭IV	M7sus4	
♭V	m7	
VI	dim7	
VII	7	

F4. Harmonic mixed ♭2 ♭5

Degr.	Chord	Extensions
I	mM7 ♭5	
♭II	mM7	
♭III	m7 #5	
♭IV	M7	
♭V	7sus4	
♭VI	7	
VII	M6	