$\pi(1300)$

$I^G(J^{PC}) = 1^-(0^{-+})$

$\pi(1300)$ MASS

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
1300±100 OUR ESTIMATE					
• • • We do not use the following data for averages, fits, limits, etc. • • •					
1345± 8±10	18k	[1] SCHEGELSKY	06	RVUE	$\gamma\gamma \rightarrow \pi^+\pi^-\pi^0$
1200± 40	90k	SALVINI	04	OBLX	$\overline{p}p \rightarrow 2\pi^+2\pi^-$
1343± 15±24		CHUNG	02	B852	18.3 $\pi^- p \rightarrow \pi^+\pi^-\pi^- p$
1375± 40		ABELE	01	CBAR	0.0 $\overline{p}d \rightarrow \pi^- 4\pi^0 p$
1275± 15		BERTIN	97D	OBLX	0.05 $\overline{p}p \rightarrow 2\pi^+2\pi^-$
~ 1114		ABELE	96	CBAR	0.0 $\overline{p}p \rightarrow 5\pi^0$
1190± 30		ZIELINSKI	84	SPEC	200 $\pi^+ Z \rightarrow Z 3\pi$
1240± 30		BELLINI	82	SPEC	40 $\pi^- A \rightarrow A 3\pi$
1273± 50		[2] AARON	81	RVUE	
1342± 20		BONESINI	81	OMEG	12 $\pi^- p \rightarrow p 3\pi$
~ 1400		DAUM	81B	SPEC	63,94 $\pi^- p$

[1] From analysis of L3 data at 183–209 GeV.

[2] Uses multichannel Aitchison-Bowler model (BOWLER 75). Uses data from DAUM 80 and DANKOWYCH 81.

$\pi(1300)$ WIDTH

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
200 to 600 OUR ESTIMATE					
• • • We do not use the following data for averages, fits, limits, etc. • • •					
260± 20±30	18k	[3] SCHEGELSKY	06	RVUE	$\gamma\gamma \rightarrow \pi^+\pi^-\pi^0$
470±120	90k	SALVINI	04	OBLX	$\overline{p}p \rightarrow 2\pi^+2\pi^-$
449± 39±47		CHUNG	02	B852	18.3 $\pi^- p \rightarrow \pi^+\pi^-\pi^- p$
268± 50		ABELE	01	CBAR	0.0 $\overline{p}d \rightarrow \pi^- 4\pi^0 p$
218±100		BERTIN	97D	OBLX	0.05 $\overline{p}p \rightarrow 2\pi^+2\pi^-$
~ 340		ABELE	96	CBAR	0.0 $\overline{p}p \rightarrow 5\pi^0$
440± 80		ZIELINSKI	84	SPEC	200 $\pi^+ Z \rightarrow Z 3\pi$
360±120		BELLINI	82	SPEC	40 $\pi^- A \rightarrow A 3\pi$
580±100		[4] AARON	81	RVUE	
220± 70		BONESINI	81	OMEG	12 $\pi^- p \rightarrow p 3\pi$
~ 600		DAUM	81B	SPEC	63,94 $\pi^- p$

[3] From analysis of L3 data at 183–209 GeV.

[4] Uses multichannel Aitchison-Bowler model (BOWLER 75). Uses data from DAUM 80 and DANKOWYCH 81.

π(1300) DECAY MODES

	Mode	Fraction (Γ_i/Γ)
Γ_1	$\rho\pi$	seen
Γ_2	$\pi(\pi\pi)_{S\text{-wave}}$	seen
Γ_3	$\gamma\gamma$	

π(1300) Γ(i)Γ(γγ)/Γ(total)

$\Gamma(\rho\pi) \times \Gamma(\gamma\gamma)/\Gamma_{total}$ — $\Gamma_1\Gamma_3/\Gamma$

VALUE (keV)	CL%	DOCUMENT ID		TECN	COMMENT
<0.085	90	ACCIARRI	97T	L3	$e^+e^- \to e^+e^-\pi^+\pi^-\pi^0$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<0.8	95	[5] SCHEGELSKY	06	RVUE	$\gamma\gamma \to \pi^+\pi^-\pi^0$
<0.54	90	ALBRECHT	97B	ARG	$e^+e^- \to e^+e^-\pi^+\pi^-\pi^0$

[5] From analysis of L3 data at 183–209 GeV.

π(1300) BRANCHING RATIOS

$\Gamma(\pi(\pi\pi)_{S\text{-wave}})/\Gamma(\rho\pi)$ — Γ_2/Γ_1

VALUE	CL%	EVTS	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •						
2.2 ±0.4		90k	SALVINI	04	OBLX	$\overline{p}p \to 2\pi^+2\pi^-$
seen			CHUNG	02	B852	18.3 $\pi^-p \to \pi^+2\pi^-p$
<0.15	90		ABELE	01	CBAR	0.0 $\overline{p}d \to \pi^-4\pi^0p$
2.12			[6] AARON	81	RVUE	

[6] Uses multichannel Aitchison-Bowler model (BOWLER 75). Uses data from DAUM 80 and DANKOWYCH 81.

π(1300) REFERENCES

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SALVINI	04	EPJ C35 21	P. Salvini et al.	(OBELIX Collab.)
CHUNG	02	PR D65 072001	S.U. Chung et al.	(BNL E852 Collab.)
ABELE	01	EPJ C19 667	A. Abele et al.	(Crystal Barrel Collab.)
ACCIARRI	97T	PL B413 147	M. Acciarri et al.	(L3 Collab.)
ALBRECHT	97B	ZPHY C74 469	H. Albrecht et al.	(ARGUS Collab.)
BERTIN	97D	PL B414 220	A. Bertin et al.	(OBELIX Collab.)
ABELE	96	PL B380 453	A. Abele et al.	(Crystal Barrel Collab.)
ZIELINSKI	84	PR D30 1855	M. Zielinski et al.	(ROCH, MINN, FNAL)
BELLINI	82	PRL 48 1697	G. Bellini et al.	(MILA, BGNA, JINR)
AARON	81	PR D24 1207	R.A. Aaron, R.S. Longacre	(NEAS, BNL)
BONESINI	81	PL 103B 75	M. Bonesini et al.	(MILA, LIVP, DARE+)
DANKOWY...	81	PRL 46 580	J.A. Dankowych et al.	(TNTO, BNL, CARL+)
DAUM	81B	NP B182 269	C. Daum et al.	(AMST, CERN, CRAC, MPIM+)
DAUM	80	PL 89B 281	C. Daum et al.	(AMST, CERN, CRAC, MPIM+)
BOWLER	75	NP B97 227	M.G. Bowler et al.	(OXFTP, DARE)