$a_1(1260)$ MASS

VALUE (MeV)		DOCUMENT ID		TECN	CHG	COMMENT
1230 ±40 OUR ESTIMATE						
• • • We do not use the following data for averages, fits, limits, etc. • • •						
1211 ± 7		ALBRECHT	93C	ARG		$\tau^+ \to \pi^+\pi^+\pi^-\nu$
1121 ± 8		[1] ANDO	92	SPEC		$8\ \pi^- p \to \pi^+\pi^-\pi^0 n$
1242 ±37		[2] IVANOV	91	RVUE		$\tau \to \pi^+\pi^+\pi^-\nu$
1260 ±14		[3] IVANOV	91	RVUE		$\tau \to \pi^+\pi^+\pi^-\nu$
1250 ± 9		[4] IVANOV	91	RVUE		$\tau \to \pi^+\pi^+\pi^-\nu$
1208 ±15		ARMSTRONG	90	OMEG	0	$300.0 pp \to pp\pi^+\pi^-\pi^0$
1220 ±15		[5] ISGUR	89	RVUE		$\tau^+ \to \pi^+\pi^+\pi^-\nu$
1260 ±25		[6] BOWLER	88	RVUE		
1166 ±18	±11	BAND	87	MAC		$\tau^+ \to \pi^+\pi^+\pi^-\nu$
1164 ±41	±23	BAND	87	MAC		$\tau^+ \to \pi^+\pi^0\pi^0\nu$
1250 ±40		[5] TORNQVIST	87	RVUE		
1046 ±11		ALBRECHT	86B	ARG		$\tau^+ \to \pi^+\pi^+\pi^-\nu$
1056 ±20	±15	RUCKSTUHL	86	DLCO		$\tau^+ \to \pi^+\pi^+\pi^-\nu$
1194 ±14	±10	SCHMIDKE	86	MRK2		$\tau^+ \to \pi^+\pi^+\pi^-\nu$
1240.0±80.0		[7] DANKOWY...	81	SPEC	0	$8.45\ \pi^- p \to n3\pi$
1280.0±30.0		[7] DAUM	81B	CNTR		$63{,}94\ \pi^- p \to p3\pi$
1041.0±13.0		[8] GAVILLET	77	HBC	+	$4.2\ K^- p \to \Sigma 3\pi$

[1] Average and spread of values using 2 variants of the model of BOWLER 75.
[2] Reanalysis of RUCKSTUHL 86.
[3] Reanalysis of SCHMIDKE 86.
[4] Reanalysis of ALBRECHT 86B.
[5] From a combined reanalysis of ALBRECHT 86B, SCHMIDKE 86, and RUCKSTUHL 86.
[6] From a combined reanalysis of ALBRECHT 86B and DAUM 81B.
[7] Uses the model of BOWLER 75.
[8] Produced in K^- backward scattering.

$a_1(1260)$ WIDTH

VALUE (MeV)		DOCUMENT ID		TECN	CHG	COMMENT
~ 400 OUR ESTIMATE						
• • • We do not use the following data for averages, fits, limits, etc. • • •						
446 ± 21		ALBRECHT	93C	ARG		$\tau^+ \to \pi^+\pi^+\pi^-\nu$
239 ± 11		ANDO	92	SPEC		$8\ \pi^- p \to \pi^+\pi^-\pi^0 n$
266 ± 13	± 4	[9] ANDO	92	SPEC		$8\ \pi^- p \to \pi^+\pi^-\pi^0 n$
465 $^{+228}_{-143}$		[10] IVANOV	91	RVUE		$\tau \to \pi^+\pi^+\pi^-\nu$
298 $^{+40}_{-34}$		[11] IVANOV	91	RVUE		$\tau \to \pi^+\pi^+\pi^-\nu$
488 ± 32		[12] IVANOV	91	RVUE		$\tau \to \pi^+\pi^+\pi^-\nu$
430 ± 50		ARMSTRONG	90	OMEG	0	$300.0 pp \to pp\pi^+\pi^-\pi^0$
420 ± 40		[13] ISGUR	89	RVUE		$\tau^+ \to \pi^+\pi^+\pi^-\nu$
396 ± 43		[14] BOWLER	88	RVUE		
405 ± 75	±25	BAND	87	MAC		$\tau^+ \to \pi^+\pi^+\pi^-\nu$
419 ±108	±57	BAND	87	MAC		$\tau^+ \to \pi^+\pi^0\pi^0\nu$
521 ± 27		ALBRECHT	86B	ARG		$\tau^+ \to \pi^+\pi^+\pi^-\nu$
476 $^{+132}_{-120}$	±54	RUCKSTUHL	86	DLCO		$\tau^+ \to \pi^+\pi^+\pi^-\nu$
462 ± 56	±30	SCHMIDKE	86	MRK2		$\tau^+ \to \pi^+\pi^+\pi^-\nu$
380.0±100.0		[15] DANKOWY...	81	SPEC	0	$8.45\ \pi^- p \to n3\pi$
300.0± 50.0		[15] DAUM	81B	CNTR		$63{,}94\ \pi^- p \to p3\pi$
230.0± 50.0		[16] GAVILLET	77	HBC	+	$4.2\ K^- p \to \Sigma 3\pi$

[9] Average and spread of values using 2 variants of the model of BOWLER 75.
[10] Reanalysis of RUCKSTUHL 86.
[11] Reanalysis of SCHMIDKE 86.
[12] Reanalysis of ALBRECHT 86B.
[13] From a combined reanalysis of ALBRECHT 86B, SCHMIDKE 86, and RUCKSTUHL 86.
[14] From a combined reanalysis of ALBRECHT 86B and DAUM 81B.
[15] Uses the model of BOWLER 75.
[16] Produced in K^- backward scattering.

$a_1(1260)$ DECAY MODES

	Mode	Fraction (Γ_i/Γ)	Confidence level
Γ_1	$\rho\pi$	dominant	
Γ_2	$\pi\gamma$	seen	
Γ_3	$\pi(\pi\pi)_{S\text{-wave}}$	[a] <0.7 %	90%

[a] This is only an educated guess; the error given is larger than the error on the average of the published values.

$a_1(1260)$ PARTIAL WIDTHS

$\Gamma(\pi\gamma)$ Γ_2

VALUE (keV)	DOCUMENT ID		TECN	COMMENT
640.0±246.0	ZIELINSKI	84C	SPEC	$200\ \pi^+ Z \to Z 3\pi$

$a_1(1260)$ BRANCHING RATIOS

$\Gamma(\pi(\pi\pi)_{S\text{-wave}})/\Gamma(\rho\pi)$ Γ_3/Γ_1

VALUE	DOCUMENT ID		TECN
0.003 ±0.003	[17] LONGACRE	82	RVUE

[17] Uses multichannel Aitchison-Bowler model (BOWLER 75). Uses data from GAVILLET 77, DAUM 80, and DANKOWYCH 81.

$a_1(1260)$ REFERENCES

ALBRECHT	93C	ZPHY C58 61	+Ehrlichmann, Hamacher+	(ARGUS Collab.)
ANDO	92	PL B291 496	+Imai+	(KEK, KYOT, NIRS, SAGA, INUS, AKIT)
IVANOV	91	ZPHY C49 563	+Osipov, Volkov	(JINR)
ARMSTRONG	90	ZPHY C48 213	+Benayoun, Beusch	(WA76 Collab.)
ISGUR	89	PR D39 1357	+Morningstar, Reader	(TNTO)
BOWLER	88	PL B209 99		(OXF)
BAND	87	PL B198 297	+Camporesi, Chadwick, Delfino+	(MAC Collab.)
TORNQVIST	87	ZPHY C36 695		(HELS)
ALBRECHT	86B	ZPHY C33 7	+Donker, Gabriel, Edwards+	(ARGUS Collab.)
RUCKSTUHL	86	PRL 56 2132	+Stroynowski, Atwood, Barish+	(DELCO Collab.)
SCHMIDKE	86	PRL 57 527	+Abrams, Matteuzzi, Amidei+	(Mark II Collab.)
ZIELINSKI	84C	PRL 52 1195	+Berg, Chandlee, Cihangir+	(ROCH, MINN, FNAL)
LONGACRE	82	PR D26 83		(BNL)
DANKOWY...	81	PRL 46 580	Dankowych+	(TNTO, BNL, CARL, MCGI, OHIO)
DAUM	81B	NP B182 269	+Hertzberger+	(AMST, CERN, CRAC, MPIM, OXF+)
DAUM	80	PL 89B 281	+Hertzberger+	(AMST, CERN, CRAC, MPIM, OXF+) JP
GAVILLET	77	PL 69B 119	+Blockzijl, Engelen+	(AMST, CERN, NIJM, OXF) JP
BOWLER	75	NP B97 227	+Game, Aitchison, Dainton	(OXFTP, DARE)

OTHER RELATED PAPERS

IIZUKA	89	PR D39 3357	+Koibuchi, Masuda	(NAGO, IBAR, TSUK)
TORNQVIST	87	ZPHY C36 695		(HELS)
ADERHOLZ	64	PL 10 226	+	(AACH3, BERL, BIRM, BONN, DESY, HAMB+)
GOLDHABER	64	PRL 12 336	+Brown, Kadyk, Shen+	(LRL, UCB)
LANDER	64	PRL 13 346A	+Abolins, Carmony, Hendricks, Xuong+	(UCSD) JP
BELLINI	63	NC 29 896	+Fiorini, Herz, Negri, Ratti	(MILA)

$f_2(1270)$

$I^G(J^{PC}) = 0^+(2^{++})$

See also minireview under non-$q\overline{q}$ candidates.

$f_2(1270)$ MASS

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
1275 ± 5 OUR ESTIMATE					
1274.9± 1.2 OUR AVERAGE					
1269.7± 5.2	5730	AUGUSTIN	89	DM2	$e^+e^- \to 5\pi$
1283 ± 8	400±50	[1] ALDE	87	GAM4	$100\ \pi^- p \to 4\pi^0 n$
1274 ± 5		[1] AUGUSTIN	87	DM2	$J/\psi \to \gamma\pi^+\pi^-$
1283 ± 6		[2] LONGACRE	86	MPS	$22\ \pi^- p \to n2K^0_S$
1276 ± 7		COURAU	84	DLCO	$e^+e^- \to e^+e^-\pi^+\pi^-$
1273.3± 2.3		[3] CHABAUD	83	ASPK	$17\ \pi^- p$ polarized
1280 ± 4		[4] CASON	82	STRC	$8\ \pi^+ p \to p\pi^+ 2\pi^0$
1281 ± 7	11600±1000	GIDAL	81	MRK2	J/ψ decay
1282 ± 5		[5] CORDEN	79	OMEG	$12\text{–}15\ \pi^- p \to n2\pi$
1269 ± 4	10k	APEL	75	NICE	$40\ \pi^- p \to n2\pi^0$
1272 ± 4	4600	ENGLER	74	DBC	$6\ \pi^+ n \to \pi^+\pi^- p$
1277 ± 4	5300	FLATTE	71	HBC	$7.0\ \pi^+ p$
1273 ± 8		[1] STUNTEBECK	70	HBC	$8\ \pi^- p$, $5.4\ \pi^+ d$
1265 ± 8		BOESEBECK	68	HBC	$8\ \pi^+ p$