$f_1(1285)$

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

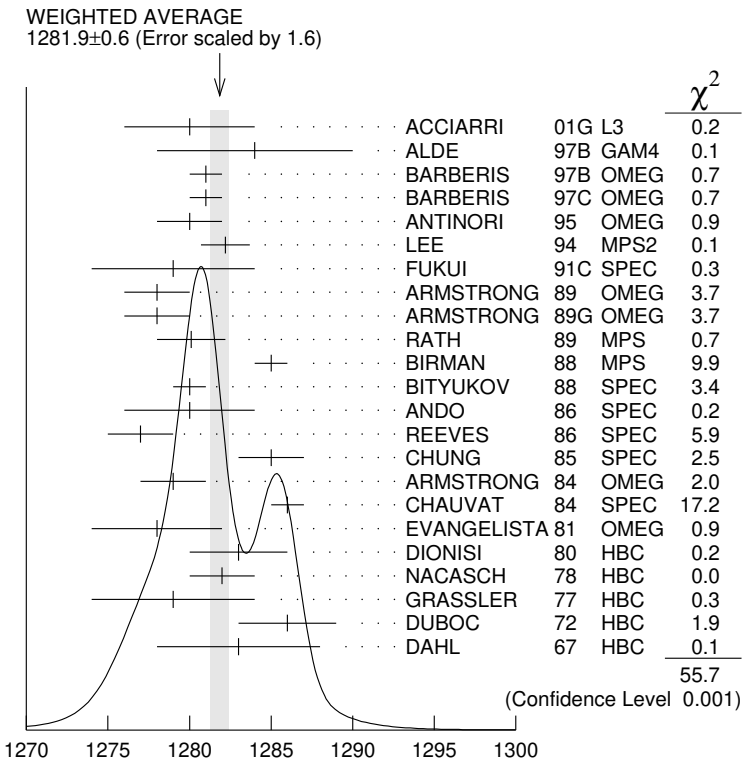
$f_1(1285)$ MASS

VALUE (MeV)	*CL%*	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
1281.9± 0.6 OUR AVERAGE Error includes scale factor of 1.6. See the ideogram below.						
1280 ± 4	95		ACCIARRI	01G	L3	
1284 ± 6		1400	ALDE	97B	GAM4	100 $\pi^- p \to \eta\pi^0\pi^0 n$
1281 ± 1			BARBERIS	97B	OMEG	450 $pp \to pp2(\pi^+\pi^-)$
1281 ± 1			BARBERIS	97C	OMEG	450 $pp \to pp K^0_S K^\pm \pi^\mp$
1280 ± 2			[1] ANTINORI	95	OMEG	300,450 $pp \to pp2(\pi^+\pi^-)$
1282.2± 1.5			LEE	94	MPS2	18 $\pi^- p \to K^+\overline{K}^0 2\pi^- p$
1279 ± 5			FUKUI	91C	SPEC	8.95 $\pi^- p \to \eta\pi^+\pi^- n$
1278 ± 2		140	ARMSTRONG	89	OMEG	300 $pp \to K\overline{K}\pi pp$
1278 ± 2			ARMSTRONG	89G	OMEG	85 $\pi^+ p \to 4\pi\pi p$, $pp \to 4\pi pp$
1280.1± 2.1		60	RATH	89	MPS	21.4 $\pi^- p \to K^0_S K^0_S \pi^0 n$
1285 ± 1		4750	[2] BIRMAN	88	MPS	8 $\pi^- p \to K^+\overline{K}^0\pi^- n$
1280 ± 1		504	BITYUKOV	88	SPEC	32.5 $\pi^- p \to K^+K^-\pi^0 n$
1280 ± 4			ANDO	86	SPEC	8 $\pi^- p \to \eta\pi^+\pi^- n$
1277 ± 2		420	REEVES	86	SPEC	6.6 $p\overline{p} \to K K\pi X$
1285 ± 2			CHUNG	85	SPEC	8 $\pi^- p \to N K\overline{K}\pi$
1279 ± 2		604	ARMSTRONG	84	OMEG	85 $\pi^+ p \to K\overline{K}\pi\pi p$, $pp \to K\overline{K}\pi pp$
1286 ± 1			CHAUVAT	84	SPEC	ISR 31.5 pp
1278 ± 4			EVANGELISTA	81	OMEG	12 $\pi^- p \to \eta\pi^+\pi^-\pi^- p$
1283 ± 3		103	DIONISI	80	HBC	4 $\pi^- p \to K\overline{K}\pi n$
1282 ± 2		320	NACASCH	78	HBC	0.7,0.76 $\overline{p}p \to K\overline{K}3\pi$
1279 ± 5		210	GRASSLER	77	HBC	16 $\pi^\mp p$
1286 ± 3		180	DUBOC	72	HBC	1.2 $\overline{p}p \to 2K4\pi$
1283 ± 5			DAHL	67	HBC	1.6–4.2 $\pi^- p$

• • • We do not use the following data for averages, fits, limits, etc. • • •

1281.9 ± 0.5			[3] SOSA	99	SPEC	$pp \to p_{\text{slow}} (K^0_S K^+ \pi^-) p_{\text{fast}}$
1282.8 ± 0.6			[3] SOSA	99	SPEC	$pp \to p_{\text{slow}} (K^0_S K^- \pi^+) p_{\text{fast}}$
1270	±10		AMELIN	95	VES	37 $\pi^- N \to \pi^- \pi^+ \pi^- \gamma N$
1280	± 2		ABATZIS	94	OMEG	450 $pp \to pp2(\pi^+\pi^-)$
1282	± 4		ARMSTRONG	93C	E760	$\overline{p}p \to \pi^0\eta\eta \to 6\gamma$
1270	± 6	±10	ARMSTRONG	92C	OMEG	300 $pp \to pp\pi^+\pi^-\gamma$
1264	± 8		AUGUSTIN	90	DM2	$J/\psi \to \gamma\eta\pi^+\pi^-$
1281	± 1		ARMSTRONG	89E	OMEG	300 $pp \to pp2(\pi^+\pi^-)$
1279	± 6	±10	16 BECKER	87	MRK3	$e^+e^- \to \phi K\overline{K}\pi$
1286	± 9		GIDAL	87	MRK2	$e^+e^- \to e^+e^-\eta\pi^+\pi^-$
1287	± 5		353 BITYUKOV	84B	SPEC	32 $\pi^- p \to K^+K^-\pi^0 n$
~ 1279			[4] TORNQVIST	82B	RVUE	
1275	± 6		31 BROMBERG	80	SPEC	100 $\pi^- p \to K\overline{K}\pi X$
1288	± 9		200 GURTU	79	HBC	4.2 $K^- p \to n\eta 2\pi$
~ 1275.0			46 [5] STANTON	79	CNTR	8.5 $\pi^- p \to n2\gamma 2\pi$
1271	±10		34 CORDEN	78	OMEG	12–15 $\pi^- p \to K^+K^-\pi n$
1295	±12		85 CORDEN	78	OMEG	12–15 $\pi^- p \to n5\pi$
1292	±10		150 DEFOIX	72	HBC	0.7 $\overline{p}p \to 7\pi$
1280	± 3		500 [6] THUN	72	MMS	13.4 $\pi^- p$
1303	± 8		BARDADIN-...	71	HBC	8 $\pi^+ p \to p6\pi$
1283	± 6		BOESEBECK	71	HBC	16.0 $\pi p \to p5\pi$
1270	±10		CAMPBELL	69	DBC	2.7 $\pi^+ d$
1285	± 7		LORSTAD	69	HBC	0.7 $\overline{p}p$, 4,5-body
1290	± 7		D'ANDLAU	68	HBC	1.2 $\overline{p}p$, 5–6 body

[1] Supersedes ABATZIS 94, ARMSTRONG 89E.
[2] From partial wave analysis of $K^+\overline{K}^0\pi^-$ system.
[3] No systematic error given.
[4] From a unitarized quark-model calculation.
[5] From phase shift analysis of $\eta\pi^+\pi^-$ system.
[6] Seen in the missing mass spectrum.



$f_1(1285)$ mass (MeV)

$f_1(1285)$ WIDTH

Only experiments giving width error less than 20 MeV are kept for averaging.

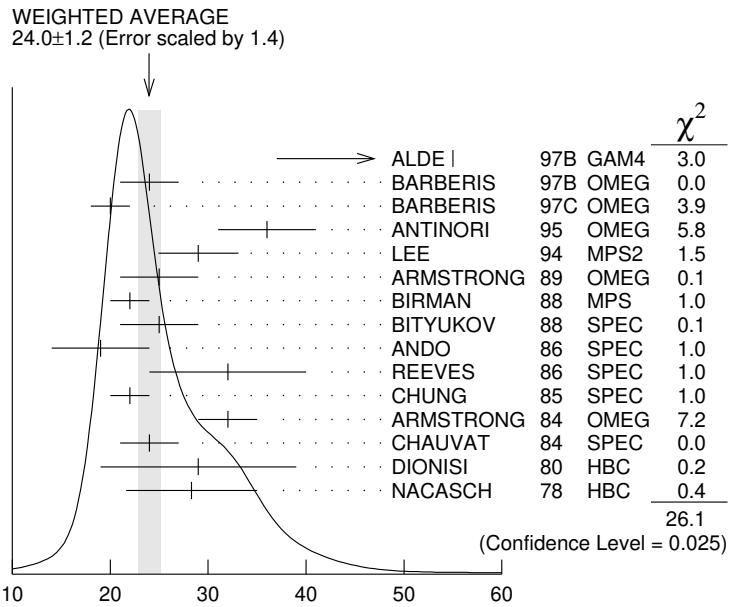
VALUE (MeV)	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
24.0± 1.2 OUR AVERAGE		Error includes scale factor of 1.4. See the ideogram below.			
55 ±18	1400	ALDE	97B	GAM4	100 $\pi^- p \rightarrow \eta \pi^0 \pi^0 n$
24 ± 3		BARBERIS	97B	OMEG	450 $pp \rightarrow pp2(\pi^+ \pi^-)$
20 ± 2		BARBERIS	97C	OMEG	450 $pp \rightarrow pp K^0_S K^\pm \pi^\mp$
36 ± 5		[7] ANTINORI	95	OMEG	300,450 $pp \rightarrow pp2(\pi^+ \pi^-)$
29.0± 4.1		LEE	94	MPS2	18 $\pi^- p \rightarrow K^+ \overline{K}^0 2\pi^- p$
25 ± 4	140	ARMSTRONG	89	OMEG	300 $pp \rightarrow K \overline{K} \pi pp$
22 ± 2	4750	[8] BIRMAN	88	MPS	8 $\pi^- p \rightarrow K^+ \overline{K}^0 \pi^- n$
25 ± 4	504	BITYUKOV	88	SPEC	32.5 $\pi^- p \rightarrow K^+ K^- \pi^0 n$

19 ± 5		ANDO	86	SPEC	8 $\pi^- p \to \eta\pi^+\pi^- n$
32 ± 8	420	REEVES	86	SPEC	6.6 $p\overline{p} \to K K \pi$X
22 ± 2		CHUNG	85	SPEC	8 $\pi^- p \to N K \overline{K} \pi$
32 ± 3	604	ARMSTRONG	84	OMEG	85 $\pi^+ p \to K\overline{K}\pi\pi p$, $pp \to K\overline{K}\pi pp$
24 ± 3		CHAUVAT	84	SPEC	ISR 31.5 pp
29 ±10	103	DIONISI	80	HBC	4 $\pi^- p \to K\overline{K}\pi n$
28.3± 6.7	320	NACASCH	78	HBC	0.7,0.76 $\overline{p}p \to K\overline{K}3\pi$

• • • We do not use the following data for averages, fits, limits, etc. • • •

18.2± 1.2	[9] SOSA	99	SPEC	$pp \to p_{\text{slow}} (K^0_S K^+ \pi^-)\, p_{\text{fast}}$
19.4± 1.5	[9] SOSA	99	SPEC	$pp \to p_{\text{slow}} (K^0_S K^- \pi^+)\, p_{\text{fast}}$
40 ± 5	ABATZIS	94	OMEG	450 $pp \to pp2(\pi^+\pi^-)$
44 ±20	AUGUSTIN	90	DM2	$J/\psi \to \gamma\eta\pi^+\pi^-$
31 ± 5	ARMSTRONG	89E	OMEG	300 $pp \to pp2(\pi^+\pi^-)$
41 ±12	ARMSTRONG	89G	OMEG	85 $\pi^+ p \to 4\pi\pi p$, $pp \to 4\pi pp$
17.9±10.9	60 RATH	89	MPS	21.4 $\pi^- p \to K^0_S K^0_S \pi^0 n$
14 $^{+20}_{-14}$ ±10	16 BECKER	87	MRK3	$e^+e^- \to \phi K\overline{K}\pi$
26 ±12	EVANGELISTA	81	OMEG	12 $\pi^- p \to \eta\pi^+\pi^-\pi^- p$
25 ±15	200 GURTU	79	HBC	4.2 $K^- p \to n\eta 2\pi$
~ 10	[10] STANTON	79	CNTR	8.5 $\pi^- p \to n2\gamma 2\pi$
24 ±18	210 GRASSLER	77	HBC	16 $\pi^\mp p$
28 ± 5	150 [11] DEFOIX	72	HBC	0.7 $\overline{p}p \to 7\pi$
46 ± 9	180 [11] DUBOC	72	HBC	1.2 $\overline{p}p \to 2K4\pi$
37 ± 5	500 [12] THUN	72	MMS	13.4 $\pi^- p$
10 ±10	BOESEBECK	71	HBC	16.0 $\pi p \to p5\pi$
30 ±15	CAMPBELL	69	DBC	2.7 $\pi^+ d$
60 ±15	[11] LORSTAD	69	HBC	0.7 $\overline{p}p$, 4,5-body
35 ±10	[11] DAHL	67	HBC	1.6–4.2 $\pi^- p$

[7] Supersedes ABATZIS 94, ARMSTRONG 89E.
[8] From partial wave analysis of $K^+\overline{K^0}\pi^-$ system.
[9] No systematic error given.
[10] From phase shift analysis of $\eta\pi^+\pi^-$ system.
[11] Resolution is not unfolded.
[12] Seen in the missing mass spectrum.



$f_1(1285)$ width (MeV)

$f_1(1285)$ DECAY MODES

	Mode	Fraction (Γ_i/Γ)	Scale factor/ Confidence level
Γ_1	4π	$(33.1^{+\ 2.1}_{-\ 1.8})$ %	S=1.3
Γ_2	$\pi^0\pi^0\pi^+\pi^-$	$(22.0^{+\ 1.4}_{-\ 1.2})$ %	S=1.3
Γ_3	$2\pi^+2\pi^-$	$(11.0^{+\ 0.7}_{-\ 0.6})$ %	S=1.3
Γ_4	$\rho^0\pi^+\pi^-$	$(11.0^{+\ 0.7}_{-\ 0.6})$ %	S=1.3
Γ_5	$\rho^0\rho^0$	seen	
Γ_6	$4\pi^0$	$< 7 \times 10^{-4}$	CL=90%
Γ_7	$\eta\pi\pi$	(52 ±16) %	
Γ_8	$a_0(980)\pi$ [ignoring $a_0(980) \to K\overline{K}$]	(36 ± 7) %	
Γ_9	$\eta\pi\pi$ [excluding $a_0(980)\pi$]	(16 ± 7) %	
Γ_{10}	$K\overline{K}\pi$	(9.0± 0.4) %	S=1.1
Γ_{11}	$K\overline{K}^*(892)$	not seen	
Γ_{12}	$\gamma\rho^0$	(5.5± 1.3) %	S=2.8
Γ_{13}	$\phi\gamma$	(7.4± 2.6) $\times 10^{-4}$	
Γ_{14}	$\gamma\gamma^*$		
Γ_{15}	$\gamma\gamma$		

CONSTRAINED FIT INFORMATION

An overall fit to 7 branching ratios uses 16 measurements and one constraint to determine 5 parameters. The overall fit has a $\chi^2 = 24.7$ for 12 degrees of freedom.

The following *off-diagonal* array elements are the correlation coefficients $\langle \delta x_i \delta x_j \rangle / (\delta x_i \cdot \delta x_j)$, in percent, from the fit to the branching fractions, $x_i \equiv \Gamma_i/\Gamma_{\text{total}}$. The fit constrains the x_i whose labels appear in this array to sum to one.

x_8	−17			
x_9	−8	−95		
x_{10}	46	−9	−4	
x_{12}	−36	−4	−2	−34
	x_1	x_8	x_9	x_{10}

$f_1(1285)$ Γ(i)Γ($\gamma\gamma$)/Γ(total)

$\Gamma(\eta\pi\pi) \times \Gamma(\gamma\gamma)/\Gamma_{\text{total}}$ $\Gamma_7\Gamma_{15}/\Gamma = (\Gamma_8+\Gamma_9)\Gamma_{15}/\Gamma$

VALUE (keV)	CL%	DOCUMENT ID		TECN	COMMENT
<0.62	95	GIDAL	87	MRK2	$e^+e^- \to e^+e^-\eta\pi^+\pi^-$

$\Gamma(\eta\pi\pi) \times \Gamma(\gamma\gamma^*)/\Gamma_{\text{total}}$ $\Gamma_7\Gamma_{14}/\Gamma = (\Gamma_8+\Gamma_9)\Gamma_{14}/\Gamma$

VALUE (keV)	EVTS	DOCUMENT ID		TECN	COMMENT
1.4 ±0.4 OUR AVERAGE Error includes scale factor of 1.4.					
1.18±0.25±0.20	26	[13,14] AIHARA	88B	TPC	$e^+e^- \to e^+e^-\eta\pi^+\pi^-$
2.30±0.61±0.42		[13,15] GIDAL	87	MRK2	$e^+e^- \to e^+e^-\eta\pi^+\pi^-$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
1.8 ±0.3 ±0.3	420	[16] ACHARD	02B	L3	183–209 $e^+e^- \to e^+e^-\eta\pi^+\pi^-$

[13] Assuming a ρ-pole form factor.
[14] Published value multiplied by $\eta\pi\pi$ branching ratio 0.49.
[15] Published value divided by 2 and multiplied by the $\eta\pi\pi$ branching ratio 0.49.
[16] Published value multiplied by the $\eta\pi\pi$ branching ratio 0.52.

$f_1(1285)$ BRANCHING RATIOS

$\Gamma(K\overline{K}\pi)/\Gamma(4\pi)$ Γ_{10}/Γ_1

VALUE	DOCUMENT ID		TECN	COMMENT
0.271±0.016 OUR FIT Error includes scale factor of 1.3.				
0.271±0.016 OUR AVERAGE Error includes scale factor of 1.2.				
0.265±0.014	[17] BARBERIS	97C	OMEG	450 $pp \to ppK^0_S K^\pm\pi^\mp$
0.28 ±0.05	[18] ARMSTRONG	89E	OMEG	300 $pp \to pp f_1(1285)$
0.37 ±0.03 ±0.05	[19] ARMSTRONG	89G	OMEG	85 $\pi p \to 4\pi X$

[17] Using $2(\pi^+\pi^-)$ data from BARBERIS 97B.
[18] Assuming $\rho\pi\pi$ and $a_0(980)\pi$ intermediate states.
[19] 4π consistent with being entirely $\rho\pi\pi$.

$\Gamma(\pi^0\pi^0\pi^+\pi^-)/\Gamma_{total}$ $\Gamma_2/\Gamma = \frac{2}{3}\Gamma_1/\Gamma$

VALUE	DOCUMENT ID
$0.220^{+0.014}_{-0.012}$ **OUR FIT** Error includes scale factor of 1.3.	

$\Gamma(2\pi^+2\pi^-)/\Gamma_{total}$ $\Gamma_3/\Gamma = \frac{1}{3}\Gamma_1/\Gamma$

VALUE	DOCUMENT ID
$0.110^{+0.007}_{-0.006}$ **OUR FIT** Error includes scale factor of 1.3.	

$\Gamma(\rho^0\pi^+\pi^-)/\Gamma_{total}$ $\Gamma_4/\Gamma = \frac{1}{3}\Gamma_1/\Gamma$

VALUE	DOCUMENT ID
$0.110^{+0.007}_{-0.006}$ **OUR FIT** Error includes scale factor of 1.3.	

$\Gamma(\rho^0\rho^0)/\Gamma_{total}$ Γ_5/Γ

VALUE	DOCUMENT ID	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •		
seen	BARBERIS 00C	450 $pp \to p_f 4\pi p_s$

$\Gamma(K\overline{K}\pi)/\Gamma(\eta\pi\pi)$ $\Gamma_{10}/\Gamma_7 = \Gamma_{10}/(\Gamma_8+\Gamma_9)$

VALUE	DOCUMENT ID	TECN	COMMENT
0.171 ± 0.013 OUR FIT Error includes scale factor of 1.1.			
0.170 ± 0.012 OUR AVERAGE			
$0.166\pm0.01\ \pm0.008$	BARBERIS 98C	OMEG	450 $pp \to p_f f_1(1285) p_s$
$0.42\ \pm0.15$	GURTU 79	HBC	4.2 $K^- p$
$0.5\ \pm0.2$	[20] CORDEN 78	OMEG	12–15 $\pi^- p$
$0.20\ \pm0.08$	[21] DEFOIX 72	HBC	0.7 $\overline{p}p \to 7\pi$
$0.16\ \pm0.08$	CAMPBELL 69	DBC	2.7 $\pi^+ d$

[20] CORDEN 78 assumes low-mass $\eta\pi\pi$ region is dominantly 1^{++}. See BARBERIS 98C and MANAK 00A for discussion.
[21] $K\overline{K}$ system characterized by the $I = 1$ threshold enhancement. (See under $a_0(980)$).

$\Gamma(a_0(980)\pi$ [ignoring $a_0(980) \to K\overline{K}$]$)/\Gamma(\eta\pi\pi)$ $\Gamma_8/\Gamma_7 = \Gamma_8/(\Gamma_8+\Gamma_9)$

VALUE	CL%	EVTS	DOCUMENT ID	TECN	COMMENT
0.69 ± 0.13 OUR FIT					
$0.69^{+0.13}_{-0.12}$ OUR AVERAGE					
0.72 ± 0.15			GURTU 79	HBC	4.2 $K^- p$
$0.6\ ^{+0.3}_{-0.2}$			CORDEN 78	OMEG	12–15 $\pi^- p$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
>0.69	95	318	ACHARD 02B	L3	183–209 $e^+e^- \to e^+e^-\eta\pi^+\pi^-$
0.28 ± 0.07		1400	ALDE 97B	GAM4	100 $\pi^- p \to \eta\pi^0\pi^0 n$
$1.0\ \pm0.3$			GRASSLER 77	HBC	16 $\pi^\mp p$

$\Gamma(4\pi)/\Gamma(\eta\pi\pi)$ $\Gamma_1/\Gamma_7 = \Gamma_1/(\Gamma_8+\Gamma_9)$

VALUE	DOCUMENT ID		TECN	COMMENT
0.63±0.06 OUR FIT Error includes scale factor of 1.2.				
0.41±0.14 OUR AVERAGE				
0.37±0.11±0.11	BOLTON	92	MRK3	$J/\psi \to \gamma f_1(1285)$
0.64±0.40	GURTU	79	HBC	4.2 $K^- p$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.93±0.30	[22] GRASSLER	77	HBC	16 $\pi^\mp p$

[22] Assuming $\rho\pi\pi$ and $a_0(980)\pi$ intermediate states.

$\Gamma(K\overline{K}^*(892))/\Gamma_{total}$ Γ_{11}/Γ

VALUE	DOCUMENT ID		TECN	COMMENT
not seen	NACASCH	78	HBC	0.7,0.76 $\overline{p}p \to K\overline{K}3\pi$

$\Gamma(\rho^0\pi^+\pi^-)/\Gamma(2\pi^+2\pi^-)$ Γ_4/Γ_3

VALUE	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
1.0±0.4	GRASSLER	77	HBC	16 GeV $\pi^\pm p$

$\Gamma(4\pi^0)/\Gamma_{total}$ Γ_6/Γ

VALUE (units 10^{-4})	CL%	DOCUMENT ID		TECN	COMMENT
<7	90	ALDE	87	GAM4	100 $\pi^- p \to 4\pi^0 n$

$\Gamma(\phi\gamma)/\Gamma(K\overline{K}\pi)$ Γ_{13}/Γ_{10}

VALUE (units 10^{-2})	CL%	EVTS	DOCUMENT ID		TECN	COMMENT
0.82±0.21±0.20		19	BITYUKOV	88	SPEC	32.5 $\pi^- p \to K^+ K^- \pi^0 n$
• • • We do not use the following data for averages, fits, limits, etc. • • •						
<0.50	95		BARBERIS	98C	OMEG	450 $pp \to p_f f_1(1285) p_s$
<0.93	95		AMELIN	95	VES	37 $\pi^- N \to \pi^-\pi^+\pi^-\gamma N$

$\Gamma(\gamma\rho^0)/\Gamma(K\overline{K}\pi)$ Γ_{12}/Γ_{10}

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •					
>0.035	90	[23] COFFMAN	90	MRK3	$J/\psi \to \gamma\gamma\pi^+\pi^-$

[23] Using B($J/\psi \to \gamma f_1(1285) \to \gamma\gamma\rho^0$)=0.25 × 10^{-4} and B($J/\psi \to \gamma f_1(1285) \to \gamma K\overline{K}\pi$)=< 0.72 × 10^{-3}.

$\Gamma(\gamma\rho^0)/\Gamma(2\pi^+2\pi^-)$ $\Gamma_{12}/\Gamma_3 = \Gamma_{12}/\frac{1}{3}\Gamma_1$

VALUE	DOCUMENT ID		TECN	COMMENT
0.50±0.13 OUR FIT Error includes scale factor of 2.5.				
0.45±0.18	[24] COFFMAN	90	MRK3	$J/\psi \to \gamma\gamma\pi^+\pi^-$

[24] Using B($J/\psi \to \gamma f_1(1285) \to \gamma\gamma\rho^0$)=0.25 × 10^{-4} and B($J/\psi \to \gamma f_1(1285) \to \gamma 2\pi^+ 2\pi^-$)=0.55 × 10^{-4} given by MIR 88.

$\Gamma(\gamma\rho^0)/\Gamma_{\text{total}}$ Γ_{12}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
0.055±0.013 OUR FIT Error includes scale factor of 2.8.					
0.028±0.007±0.006		AMELIN	95	VES	37 $\pi^- N \to \pi^-\pi^+\pi^-\gamma N$

• • • We do not use the following data for averages, fits, limits, etc. • • •

<0.05	95	BITYUKOV	91B	SPEC	32 $\pi^- p \to \pi^+\pi^-\gamma n$

$\Gamma(\eta\pi\pi)/\Gamma(\gamma\rho^0)$ $\Gamma_7/\Gamma_{12}=(\Gamma_8+\Gamma_9)/\Gamma_{12}$

VALUE	DOCUMENT ID		TECN	COMMENT
9.5±2.0 OUR FIT Error includes scale factor of 2.5.				
7.9±0.9 OUR AVERAGE				
10.0±1.0±2.0	BARBERIS	98C	OMEG	450 $pp \to p_f f_1(1285) p_s$
7.5±1.0	[25] ARMSTRONG	92C	OMEG	300 $pp \to pp\pi^+\pi^-\gamma$, $pp\eta\pi^+\pi^-$

[25] Published value multiplied by 1.5.

$f_1(1285)$ REFERENCES

ACHARD	02B	PL B526 269	P. Achard *et al.*	(L3 Collab.)
ACCIARRI	01G	PL B501 1	M. Acciarri *et al.*	(L3 Collab.)
BARBERIS	00C	PL B471 440	D. Barberis *et al.*	(WA 102 Collab.)
MANAK	00A	PR D62 012003	J.J. Manak *et al.*	
SOSA	99	PRL 83 913	M. Sosa *et al.*	
BARBERIS	98C	PL B440 225	D. Barberis *et al.*	(WA 102 Collab.)
ALDE	97B	PAN 60 386	D. Alde *et al.*	(GAMS Collab.)
		Translated from YAF 60 458.		
BARBERIS	97B	PL B413 217	D. Barberis *et al.*	(WA 102 Collab.)
BARBERIS	97C	PL B413 225	D. Barberis *et al.*	(WA 102 Collab.)
AMELIN	95	ZPHY C66 71	D.V. Amelin *et al.*	(VES Collab.)
ANTINORI	95	PL B353 589	F. Antinori *et al.*	(ATHU, BARI, BIRM+)
ABATZIS	94	PL B324 509	S. Abatzis *et al.*	(ATHU, BARI, BIRM+)
LEE	94	PL B323 227	J.H. Lee *et al.*	(BNL, IND, KYUN, MASD+)
ARMSTRONG	93C	PL B307 394	T.A. Armstrong *et al.*	(FNAL, FERR, GENO+)
ARMSTRONG	92C	ZPHY C54 371	T.A. Armstrong *et al.*	(ATHU, BARI, BIRM+)
BOLTON	92	PL B278 495	T. Bolton *et al.*	(Mark III Collab.)
BITYUKOV	91B	SJNP 54 318	S.I. Bityukov *et al.*	(SERP)
		Translated from YAF 54 529.		
FUKUI	91C	PL B267 293	S. Fukui *et al.*	(SUGI, NAGO, KEK, KYOT+)
AUGUSTIN	90	PR D42 10	J.E. Augustin *et al.*	(DM2 Collab.)
COFFMAN	90	PR D41 1410	D.M. Coffman *et al.*	(Mark III Collab.)
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