

$\omega_3(1670)$

$$I^G(J^{PC}) = 0^-(3^--)$$

$\omega_3(1670)$ MASS

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
1667 ± 4 OUR AVERAGE				
1665.3± 5.2±4.5	23400	AMELIN	96 VES	36 $\pi^- p \rightarrow \pi^+ \pi^- \pi^0 n$
1685 ±20	60	BAUBILLIER	79 HBC	8.2 $K^- p$ backward
1673 ±12	430	^{1,2} BALTAY	78E HBC	15 $\pi^+ p \rightarrow \Delta 3\pi$
1650 ±12		CORDEN	78B OMEG	8–12 $\pi^- p \rightarrow N 3\pi$
1669 ±11	600	² WAGNER	75 HBC	7 $\pi^+ p \rightarrow \Delta^{++} 3\pi$
1678 ±14	500	DIAZ	74 DBC	6 $\pi^+ n \rightarrow p 3\pi^0$
1660 ±13	200	DIAZ	74 DBC	6 $\pi^+ n \rightarrow p \omega \pi^0 \pi^0$
1679 ±17	200	MATTHEWS	71D DBC	7.0 $\pi^+ n \rightarrow p 3\pi^0$
1670 ±20		KENYON	69 DBC	8 $\pi^+ n \rightarrow p 3\pi^0$
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●				
~ 1700	110	¹ CERRADA	77B HBC	4.2 $K^- p \rightarrow \Lambda 3\pi$
1695 ±20		BARNES	69B HBC	4.6 $K^- p \rightarrow \omega 2\pi X$
1636 ±20		ARMENISE	68B DBC	5.1 $\pi^+ n \rightarrow p 3\pi^0$
¹ Phase rotation seen for $J^P = 3^- \rho\pi$ wave.				
² From a fit to $I(J^P) = 0(3^-) \rho\pi$ partial wave.				

$\omega_3(1670)$ WIDTH

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
168±10 OUR AVERAGE				
149±19±7	23400	AMELIN	96 VES	36 $\pi^- p \rightarrow \pi^+ \pi^- \pi^0 n$
160±80	60	³ BAUBILLIER	79 HBC	8.2 $K^- p$ backward
173±16	430	^{4,5} BALTAY	78E HBC	15 $\pi^+ p \rightarrow \Delta 3\pi$
253±39		CORDEN	78B OMEG	8–12 $\pi^- p \rightarrow N 3\pi$
173±28	600	^{3,5} WAGNER	75 HBC	7 $\pi^+ p \rightarrow \Delta^{++} 3\pi$
167±40	500	DIAZ	74 DBC	6 $\pi^+ n \rightarrow p 3\pi^0$
122±39	200	DIAZ	74 DBC	6 $\pi^+ n \rightarrow p \omega \pi^0 \pi^0$
155±40	200	³ MATTHEWS	71D DBC	7.0 $\pi^+ n \rightarrow p 3\pi^0$
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●				
90±20		BARNES	69B HBC	4.6 $K^- p \rightarrow \omega 2\pi$
100±40		KENYON	69 DBC	8 $\pi^+ n \rightarrow p 3\pi^0$
112±60		ARMENISE	68B DBC	5.1 $\pi^+ n \rightarrow p 3\pi^0$
³ Width errors enlarged by us to $4\Gamma/\sqrt{N}$; see the note with the $K^*(892)$ mass.				
⁴ Phase rotation seen for $J^P = 3^- \rho\pi$ wave.				
⁵ From a fit to $I(J^P) = 0(3^-) \rho\pi$ partial wave.				

$\omega_3(1670)$ DECAY MODES

Mode	Fraction (Γ_i/Γ)
$\Gamma_1 \quad \rho \pi$	seen
$\Gamma_2 \quad \omega \pi \pi$	seen
$\Gamma_3 \quad b_1(1235) \pi$	possibly seen

$\omega_3(1670)$ BRANCHING RATIOS

$\Gamma(\omega \pi \pi)/\Gamma(\rho \pi)$					Γ_2/Γ_1
VALUE	EVTS	DOCUMENT ID	TECN	COMMENT	
• • • We do not use the following data for averages, fits, limits, etc. • • •					
0.71 ± 0.27	100	DIAZ	74	DBC	$6 \pi^+ n \rightarrow p 5 \pi^0$
$\Gamma(b_1(1235) \pi)/\Gamma(\rho \pi)$					Γ_3/Γ_1
VALUE		DOCUMENT ID	TECN	COMMENT	
possibly seen		DIAZ	74	DBC	$6 \pi^+ n \rightarrow p 5 \pi^0$
$\Gamma(b_1(1235) \pi)/\Gamma(\omega \pi \pi)$					Γ_3/Γ_2
VALUE	CL%	DOCUMENT ID	TECN	COMMENT	
• • • We do not use the following data for averages, fits, limits, etc. • • •					
>0.75	68	BAUBILLIER	79	HBC	$8.2 K^- p$ backward

$\omega_3(1670)$ REFERENCES

AMELIN	96	ZPHY C70 71	D.V. Amelin <i>et al.</i>	(SERP, TBIL)
BAUBILLIER	79	PL 89B 131	M. Baubillier <i>et al.</i>	(BIRM, CERN, GLAS+)
BALTAY	78E	PRL 40 87	C. Baltay, C.V. Cautis, M. Kalelkar	(COLU) JP
CORDEN	78B	NP B138 235	M.J. Corden <i>et al.</i>	(BIRM, RHEL, TELA+)
CERRADA	77B	NP B126 241	M. Cerrada <i>et al.</i>	(AMST, CERN, NIJM+) JP
WAGNER	75	PL 58B 201	F. Wagner, M. Tabak, D.M. Chew	(LBL) JP
DIAZ	74	PRL 32 260	J. Diaz <i>et al.</i>	(CASE, CMU)
MATTHEWS	71D	PR D3 2561	J.A.J. Matthews <i>et al.</i>	(TNTO, WISC)
BARNES	69B	PRL 23 142	V.E. Barnes <i>et al.</i>	(BNL)
KENYON	69	PRL 23 146	I.R. Kenyon <i>et al.</i>	(BNL, UCND, ORNL)
ARMENISE	68B	PL 26B 336	N. Armenise <i>et al.</i>	(BARI, BGNA, FIRZ+)