

$\omega(2220)$

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

OMITTED FROM SUMMARY TABLE

$\omega(2220)$ MASS

VALUE (MeV)	DOCUMENT ID	TECN	COMMENT
2232±19±27	¹ ABLIKIM	23G BES3	2.0–3.1 $e^+e^- \rightarrow \omega\pi\pi$
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●			
2250±25±27	² ABLIKIM	23G BES3	2.0–3.1 $e^+e^- \rightarrow \omega\pi^+\pi^-$
2222±7±2	³ ABLIKIM	22I BES3	2.0–3.8 $e^+e^- \rightarrow \omega\pi^0\pi^0$
2205±30	⁴ ANISOVICH	02B SPEC	0.6–1.9 $p\bar{p} \rightarrow \omega\eta, \omega\pi^0\pi^0$
¹ From a fit to $\omega\pi^+\pi^-$ and $\omega\pi^0\pi^0$ with a Breit-Wigner resonance interfering with the continuum. Supersedes ABLIKIM 22I.			
² From a fit to $\omega\pi^+\pi^-$ with a Breit-Wigner resonance interfering with the continuum.			
³ From the fit to the cross section by the coherent sum of resonant component parametrized by a modified Breit-Wigner amplitude and a phase-space contribution for the continuum.			
⁴ From the combined analysis of ANISOVICH 00D, ANISOVICH 01C, and ANISOVICH 02B.			

$\omega(2220)$ WIDTH

VALUE (MeV)	DOCUMENT ID	TECN	COMMENT
93±53±20	⁵ ABLIKIM	23G BES3	2.0–3.1 $e^+e^- \rightarrow \omega\pi\pi$
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●			
125±43±15	⁶ ABLIKIM	23G BES3	2.0–3.1 $e^+e^- \rightarrow \omega\pi^+\pi^-$
59±30±6	⁷ ABLIKIM	22I BES3	2.0–3.8 $e^+e^- \rightarrow \omega\pi^0\pi^0$
350±90	⁸ ANISOVICH	02B SPEC	0.6–1.9 $p\bar{p} \rightarrow \omega\eta, \omega\pi^0\pi^0$
⁵ From a fit to $\omega\pi^+\pi^-$ and $\omega\pi^0\pi^0$ with a Breit-Wigner resonance interfering with the continuum. Supersedes ABLIKIM 22I.			
⁶ From a fit to $\omega\pi^+\pi^-$ with a Breit-Wigner resonance interfering with the continuum.			
⁷ From the fit to the cross section by the coherent sum of resonant component parametrized by a modified Breit-Wigner amplitude and a phase-space contribution for the continuum.			
⁸ From the combined analysis of ANISOVICH 00D, ANISOVICH 01C, and ANISOVICH 02B.			

$\omega(2220)$ DECAY MODES

Mode	Fraction (Γ_i/Γ)
Γ_1 $\omega\pi\pi$	seen
Γ_2 $\omega\pi^+\pi^-$	seen
Γ_3 $\omega\pi^0\pi^0$	seen
Γ_4 e^+e^-	seen

$\omega(2220) \Gamma(i)\Gamma(e^+e^-)/\Gamma(\text{total})$

$$\Gamma(\omega\pi^0\pi^0) \times \Gamma(e^+e^-)/\Gamma_{\text{total}} \quad \Gamma_3\Gamma_4/\Gamma$$

VALUE (eV)	DOCUMENT ID	TECN	COMMENT
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• • • We do not use the following data for averages, fits, limits, etc. • • •

$0.3 \pm 0.1 \pm 0.1$	⁹ ABLIKIM	22I	BES3	$2.0\text{--}3.8 e^+e^- \rightarrow \omega\pi^0\pi^0$
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⁹ Superseded by ABLIKIM 23G.

$$\Gamma(\omega\pi^+\pi^-) \times \Gamma(e^+e^-)/\Gamma_{\text{total}} \quad \Gamma_2\Gamma_4/\Gamma$$

VALUE (eV)	DOCUMENT ID	TECN	COMMENT
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• • • We do not use the following data for averages, fits, limits, etc. • • •

$0.9 \pm 0.4 \pm 0.4$	¹⁰ ABLIKIM	23G	BES3	$2.0\text{--}3.1 e^+e^- \rightarrow \omega\pi^+\pi^-$
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¹⁰ From a fit to $\omega\pi^+\pi^-$ with a Breit-Wigner resonance interfering with the continuum. Solution with constructive interference: $52.9 \pm 17.0 \pm 13.1$ eV.

$$\Gamma(\omega\pi\pi) \times \Gamma(e^+e^-)/\Gamma_{\text{total}} \quad \Gamma_1\Gamma_4/\Gamma$$

VALUE (eV)	DOCUMENT ID	TECN	COMMENT
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$0.9 \pm 0.5 \pm 0.2$	¹¹ ABLIKIM	23G	BES3	$2.0\text{--}3.1 e^+e^- \rightarrow \omega\pi\pi$
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¹¹ From a fit to $\omega\pi^+\pi^-$ and $\omega\pi^0\pi^0$ with a Breit-Wigner resonance interfering with the continuum. Solution with constructive interference: $61.1 \pm 32.1 \pm 15.4$ eV. Supersedes ABLIKIM 22I.

 $\omega(2220)$ REFERENCES

ABLIKIM	23G	JHEP 2301 111	M. Ablikim <i>et al.</i>	(BESIII Collab.)
Also		JHEP 2303 093 (errat.)	M. Ablikim, <i>et. al.</i>	(BESIII Collab.)
ABLIKIM	22I	PR D105 032005	M. Ablikim <i>et al.</i>	(BESIII Collab.)
ANISOVICH	02B	PL B542 19	A.V. Anisovich <i>et al.</i>	
ANISOVICH	01C	PL B507 23	A.V. Anisovich <i>et al.</i>	
ANISOVICH	00D	PL B476 15	A.V. Anisovich <i>et al.</i>	