

X(4360)

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

Seen in radiative return from e^+e^- collisions at $\sqrt{s} = 9.54\text{--}10.58$ GeV by AUBERT 07S and WANG 07D. See also the review under the X(3872) particle listings. (See the index for the page number.)

X(4360) MASS

<u>VALUE (MeV)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
4361 ± 9 ± 9	¹ WANG	07D BELL	10.58 $e^+e^- \rightarrow \gamma\pi^+\pi^-\psi(2S)$
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●			
4355 ⁺⁹ ₋₁₀ ± 9	² LIU	08H RVUE	10.58 $e^+e^- \rightarrow \psi(2S)\pi^+\pi^-\gamma$
4324 ± 24	³ AUBERT	07S BABR	10.58 $e^+e^- \rightarrow \gamma\pi^+\pi^-\psi(2S)$
¹ From a two-resonance fit.			
² From a combined fit of AUBERT 07S and WANG 07D data with two resonances.			
³ From a single-resonance fit. Systematic errors not estimated.			

X(4360) WIDTH

<u>VALUE (MeV)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
74 ± 15 ± 10	⁴ WANG	07D BELL	10.58 $e^+e^- \rightarrow \gamma\pi^+\pi^-\psi(2S)$
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●			
103 ⁺¹⁷ ₋₁₅ ± 11	⁵ LIU	08H RVUE	10.58 $e^+e^- \rightarrow \psi(2S)\pi^+\pi^-\gamma$
172 ± 33	⁶ AUBERT	07S BABR	10.58 $e^+e^- \rightarrow \gamma\pi^+\pi^-\psi(2S)$
⁴ From a two-resonance fit.			
⁵ From a combined fit of AUBERT 07S and WANG 07D data with two resonances.			
⁶ From a single-resonance fit. Systematic errors not estimated.			

X(4360) DECAY MODES

Mode	Fraction (Γ_i/Γ)
Γ_1 e^+e^-	
Γ_2 $\psi(2S)\pi^+\pi^-$	seen
Γ_3 $J/\psi\eta$	
Γ_4 $D^0D^{*-}\pi^+$	

X(4360) $\Gamma(i)\Gamma(e^+e^-)/\Gamma(\text{total})$

<u>VALUE (eV)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	$\Gamma_2\Gamma_1/\Gamma$
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●				
11.1 ^{+1.3} _{-1.2}	⁷ LIU	08H RVUE	10.58 $e^+e^- \rightarrow \psi(2S)\pi^+\pi^-\gamma$	
12.3 ± 1.2	⁸ LIU	08H RVUE	10.58 $e^+e^- \rightarrow \psi(2S)\pi^+\pi^-\gamma$	
10.4 ± 1.7 ± 1.5	⁹ WANG	07D BELL	10.58 $e^+e^- \rightarrow \gamma\pi^+\pi^-\psi(2S)$	
11.8 ± 1.8 ± 1.4	¹⁰ WANG	07D BELL	10.58 $e^+e^- \rightarrow \gamma\pi^+\pi^-\psi(2S)$	

⁷ Solution I in a combined fit of AUBERT 07S and WANG 07D data with two resonances.

⁸ Solution II in a combined fit of AUBERT 07S and WANG 07D data with two resonances.

⁹ Solution I of two equivalent solutions in a fit using two interfering resonances.

¹⁰ Solution II of two equivalent solutions in a fit using two interfering resonances.

$\Gamma(J/\psi\eta) \times \Gamma(e^+e^-)/\Gamma_{\text{total}}$ $\Gamma_3\Gamma_1/\Gamma$

VALUE (eV)	CL%	DOCUMENT ID	TECN	COMMENT
<6.8	90	WANG	13B BELL	$e^+e^- \rightarrow J/\psi\eta\gamma$

X(4360) BRANCHING RATIOS

$\Gamma(D^0 D^{*-} \pi^+)/\Gamma(\psi(2S)\pi^+\pi^-)$ Γ_4/Γ_2

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
<8	90	PAKHLOVA 09	BELL	$e^+e^- \rightarrow X(4360) \rightarrow D^0 D^{*-} \pi^+$

$\Gamma(D^0 D^{*-} \pi^+)/\Gamma_{\text{total}} \times \Gamma(e^+e^-)/\Gamma_{\text{total}}$ $\Gamma_4/\Gamma \times \Gamma_1/\Gamma$

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
<0.72 × 10 ⁻⁶	90	¹¹ PAKHLOVA 09	BELL	$e^+e^- \rightarrow X(4360) \rightarrow D^0 D^{*-} \pi^+$

¹¹ Using $4355^{+9}_{-10} \pm 9$ MeV for the mass of X(4360).

X(4360) REFERENCES

WANG	13B	PR D87 051101	X.L. Wang <i>et al.</i>	(BELLE Collab.)
PAKHLOVA	09	PR D80 091101	G. Pakhlova <i>et al.</i>	(BELLE Collab.)
LIU	08H	PR D78 014032	Z.Q. Liu, X.S. Qin, C.Z. Yuan	
AUBERT	07S	PRL 98 212001	B. Aubert <i>et al.</i>	(BABAR Collab.)
WANG	07D	PRL 99 142002	X.L. Wang <i>et al.</i>	(BELLE Collab.)