

**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**

VALUE (MeV)	DOCUMENT ID	TECN	COMMENT
<b><math>4361 \pm 9 \pm 9</math></b>	<sup>1</sup> 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. • • •			
$4355^{+9}_{-10} \pm 9$	<sup>2</sup> LIU	08H RVUE	10.58 $e^+e^- \rightarrow \psi(2S)\pi^+\pi^-\gamma$
$4324 \pm 24$	<sup>3</sup> AUBERT	07S BABR	10.58 $e^+e^- \rightarrow \gamma\pi^+\pi^-\psi(2S)$
<sup>1</sup> From a two-resonance fit.			
<sup>2</sup> From a combined fit of AUBERT 07S and WANG 07D data with two resonances.			
<sup>3</sup> From a single-resonance fit. Systematic errors not estimated.			

**X(4360) WIDTH**

VALUE (MeV)	DOCUMENT ID	TECN	COMMENT
<b><math>74 \pm 15 \pm 10</math></b>	<sup>4</sup> 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. • • •			
$103^{+17}_{-15} \pm 11$	<sup>5</sup> LIU	08H RVUE	10.58 $e^+e^- \rightarrow \psi(2S)\pi^+\pi^-\gamma$
$172 \pm 33$	<sup>6</sup> AUBERT	07S BABR	10.58 $e^+e^- \rightarrow \gamma\pi^+\pi^-\psi(2S)$
<sup>4</sup> From a two-resonance fit.			
<sup>5</sup> From a combined fit of AUBERT 07S and WANG 07D data with two resonances.			
<sup>6</sup> From a single-resonance fit. Systematic errors not estimated.			

**X(4360) DECAY MODES**

Mode	Fraction ( $\Gamma_i/\Gamma$ )
$\Gamma_1$ $e^+e^-$	
$\Gamma_2$ $\psi(2S)\pi^+\pi^-$	seen
$\Gamma_3$ $D^0 D^{*-} \pi^+$	

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

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

- <sup>7</sup> Solution I in a combined fit of AUBERT 07S and WANG 07D data with two resonances.  
<sup>8</sup> Solution II in a combined fit of AUBERT 07S and WANG 07D data with two resonances.  
<sup>9</sup> Solution I of two equivalent solutions in a fit using two interfering resonances.  
<sup>10</sup> Solution II of two equivalent solutions in a fit using two interfering resonances.

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### X(4360) BRANCHING RATIOS

$\Gamma(D^0 D^{*-} \pi^+)/\Gamma(\psi(2S)\pi^+\pi^-)$					$\Gamma_3/\Gamma_2$
<u>VALUE</u>	<u>CL%</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	
<8	90	PAKHLOVA 09	BELL	$e^+e^- \rightarrow X(4360) \rightarrow D^0 D^{*-} \pi^+$	

  

$\Gamma(D^0 D^{*-} \pi^+)/\Gamma_{\text{total}} \times \Gamma(e^+e^-)/\Gamma_{\text{total}}$					$\Gamma_3/\Gamma \times \Gamma_1/\Gamma$
<u>VALUE</u>	<u>CL%</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	
<0.72 × 10 <sup>-6</sup>	90	<sup>11</sup> PAKHLOVA 09	BELL	$e^+e^- \rightarrow X(4360) \rightarrow D^0 D^{*-} \pi^+$	

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

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### X(4360) REFERENCES

PAKHLOVA 09	PR D80 091101R	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.)

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