

# X(4660)

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

## OMITTED FROM SUMMARY TABLE

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

### X(4660) MASS

VALUE (MeV)	DOCUMENT ID	TECN	COMMENT
<b><math>4664 \pm 11 \pm 5</math></b>	WANG	07D BELL	10.58 $e^+e^- \rightarrow \psi(2S)\pi^+\pi^-\gamma$ ●●● We do not use the following data for averages, fits, limits, etc. ●●●
$4661_{-8}^{+9} \pm 6$	<sup>1</sup> LIU	08H RVUE	10.58 $e^+e^- \rightarrow \psi(2S)\pi^+\pi^-\gamma$

<sup>1</sup>From a combined fit of AUBERT 07S and WANG 07D data with two resonances.

### X(4660) WIDTH

VALUE (MeV)	DOCUMENT ID	TECN	COMMENT
<b><math>48 \pm 15 \pm 3</math></b>	WANG	07D BELL	10.58 $e^+e^- \rightarrow \psi(2S)\pi^+\pi^-\gamma$ ●●● We do not use the following data for averages, fits, limits, etc. ●●●
$42_{-12}^{+17} \pm 6$	<sup>2</sup> LIU	08H RVUE	10.58 $e^+e^- \rightarrow \psi(2S)\pi^+\pi^-\gamma$

<sup>2</sup>From a combined fit of AUBERT 07S and WANG 07D data with two resonances.

### X(4660) 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(4660) $\Gamma(i)\Gamma(e^+e^-)/\Gamma(\text{total})$

$\Gamma(\psi(2S)\pi^+\pi^-) \times \Gamma(e^+e^-)/\Gamma_{\text{total}}$	$\Gamma_2\Gamma_1/\Gamma$		
VALUE (eV)	DOCUMENT ID	TECN	COMMENT
$2.2_{-0.6}^{+0.7}$	<sup>3</sup> LIU	08H RVUE	10.58 $e^+e^- \rightarrow \psi(2S)\pi^+\pi^-\gamma$
$5.9 \pm 1.6$	<sup>4</sup> LIU	08H RVUE	10.58 $e^+e^- \rightarrow \psi(2S)\pi^+\pi^-\gamma$
$3.0 \pm 0.9 \pm 0.3$	<sup>5</sup> WANG	07D BELL	10.58 $e^+e^- \rightarrow \psi(2S)\pi^+\pi^-\gamma$
$7.6 \pm 1.8 \pm 0.8$	<sup>6</sup> WANG	07D BELL	10.58 $e^+e^- \rightarrow \psi(2S)\pi^+\pi^-\gamma$

<sup>3</sup>Solution I in a combined fit of AUBERT 07S and WANG 07D data with two resonances.

<sup>4</sup>Solution II in a combined fit of AUBERT 07S and WANG 07D data with two resonances.

<sup>5</sup>Solution I of two equivalent solutions in a fit using two interfering resonances.

<sup>6</sup>Solution II of two equivalent solutions in a fit using two interfering resonances.

### X(4660) 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>	
<10	90	PAKHLOVA 09	BELL	$e^+ e^- \rightarrow X(4660) \rightarrow D^0 D^{*-} \pi^+$	

$\Gamma(D^0 D^{*-} \pi^+)/\Gamma_{\text{total}} \times \Gamma(e^+ e^-)/\Gamma_{\text{total}}$					$\Gamma_3/\Gamma \times \Gamma_1/\Gamma$
<u>VALUE</u>	<u>CL%</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	
<0.37 $\times 10^{-6}$	90	<sup>7</sup> PAKHLOVA 09	BELL	$e^+ e^- \rightarrow X(4660) \rightarrow D^0 D^{*-} \pi^+$	

<sup>7</sup> Using  $4664 \pm 11 \pm 5$  MeV for the mass of X(4660).

### X(4660) 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.)