

X(4660)

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

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

<u>VALUE (MeV)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
4664 ± 11 ± 5	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 ± 6	¹ LIU	08H RVUE	10.58 $e^+e^- \rightarrow \psi(2S)\pi^+\pi^-\gamma$

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

X(4660) WIDTH

<u>VALUE (MeV)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
48 ± 15 ± 3	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 ± 6	² LIU	08H RVUE	10.58 $e^+e^- \rightarrow \psi(2S)\pi^+\pi^-\gamma$

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

X(4660) DECAY MODES

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

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

<u>VALUE (eV)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	$\Gamma_2\Gamma_1/\Gamma_{\text{total}}$
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●				
2.2 ⁺ _{0.6} ± 0.7	³ LIU	08H RVUE	10.58 $e^+e^- \rightarrow \psi(2S)\pi^+\pi^-\gamma$	
5.9 ± 1.6	⁴ LIU	08H RVUE	10.58 $e^+e^- \rightarrow \psi(2S)\pi^+\pi^-\gamma$	
3.0 ± 0.9 ± 0.3	⁵ WANG	07D BELL	10.58 $e^+e^- \rightarrow \psi(2S)\pi^+\pi^-\gamma$	
7.6 ± 1.8 ± 0.8	⁶ WANG	07D BELL	10.58 $e^+e^- \rightarrow \psi(2S)\pi^+\pi^-\gamma$	

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

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

⁵Solution I of two equivalent solutions in a fit using two interfering resonances.

⁶Solution II of two equivalent solutions in a fit using two interfering resonances.

X(4660) BRANCHING RATIOS

$\Gamma(D^0 D^{*-} \pi^+)/\Gamma(\psi(2S)\pi^+\pi^-)$					Γ_3/Γ_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 × 10 ⁻⁶	90	⁷ PAKHLOVA 09	BELL	$e^+e^- \rightarrow X(4660) \rightarrow D^0 D^{*-} \pi^+$	

⁷ 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.)