

# X(1750)

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

**OMITTED FROM SUMMARY TABLE**

The X(1750) was separated from the  $\phi(1680)$  in the 2022 listings due to its incompatible mass and incompatible pattern of  $\bar{K}K$  and  $\bar{K}^*(892)K$  branching fractions.

### X(1750) MASS

VALUE (MeV)	DOCUMENT ID	TECN	COMMENT
<b>1753.8 ± 2.7 OUR AVERAGE</b>			
1784 ± 12 $\begin{smallmatrix} +0 \\ -27 \end{smallmatrix}$	ABLIKIM	20F BES3	$\psi(2S) \rightarrow K^+ K^- \eta$
1753.5 ± 1.5 ± 2.3	LINK	02K FOCS	20–160 $\gamma p \rightarrow K^+ K^- p$
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●			
1726 ± 22	BUSENITZ	89 TPS	$\gamma p \rightarrow K^+ K^- X$
1760 ± 20	ATKINSON	85c OMEG	20–70 $\gamma p \rightarrow K \bar{K} X$
1690 ± 10	ASTON	81F OMEG	25–70 $\gamma p \rightarrow K^+ K^- X$

### X(1750) WIDTH

VALUE (MeV)	DOCUMENT ID	TECN	COMMENT
<b>120 ± 10 OUR AVERAGE</b>			
106 $\begin{smallmatrix} +22 & +8 \\ -19 & -36 \end{smallmatrix}$	ABLIKIM	20F BES3	$\psi(2S) \rightarrow K^+ K^- \eta$
122.2 ± 6.2 ± 8.0	LINK	02K FOCS	20–160 $\gamma p \rightarrow K^+ K^- p$
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●			
121 ± 47	BUSENITZ	89 TPS	$\gamma p \rightarrow K^+ K^- X$
80 ± 40	ATKINSON	85c OMEG	20–70 $\gamma p \rightarrow K \bar{K} X$
100 ± 40	ASTON	81F OMEG	25–70 $\gamma p \rightarrow K^+ K^- X$

### X(1750) DECAY MODES

Mode	Fraction ( $\Gamma_i/\Gamma$ )
$\Gamma_1$ $K^+ K^-$	seen
$\Gamma_2$ $\bar{K}^*(892)^0 K_S^0$	not seen
$\Gamma_3$ $K^*(892)^\pm K^\mp$	not seen
$\Gamma_4$ $\eta \phi$	not seen

### X(1750) BRANCHING RATIOS

$\Gamma(\bar{K}^*(892)^0 K_S^0)/\Gamma(K^+ K^-)$					$\Gamma_2/\Gamma_1$
VALUE	CL%	DOCUMENT ID	TECN	COMMENT	
<b>&lt;0.065</b>	90	LINK	02K FOCS	$\gamma p \rightarrow K^+ K^- p$	
$\Gamma(K^*(892)^\pm K^\mp)/\Gamma(K^+ K^-)$					$\Gamma_3/\Gamma_1$
VALUE	CL%	DOCUMENT ID	TECN	COMMENT	
<b>&lt;0.183</b>	90	LINK	02K FOCS	$\gamma p \rightarrow K^+ K^- p$	

$\Gamma(\eta\phi)/\Gamma_{\text{total}}$				$\Gamma_4/\Gamma$
<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	
<b>not seen</b>	<sup>1</sup> ZHU	23A	RVUE	$e^+e^- \rightarrow \eta\phi$

<sup>1</sup> Reported with a  $2\sigma$  significance in the fit and an upper limit of  $\Gamma(e^+e^-) B(X(1750) \rightarrow \eta\phi)$  in the range 136–322 eV.

### X(1750) REFERENCES

ZHU	23A	CP C47 113003	W. Zhu, X. Wang	(RVUE)
ABLIKIM	20F	PR D101 032008	M. Ablikim <i>et al.</i>	(BESIII Collab.)
LINK	02K	PL B545 50	J.M. Link <i>et al.</i>	(FNAL FOCUS Collab.)
BUSENITZ	89	PR D40 1	J.K. Busenitz <i>et al.</i>	(ILL, FNAL)
ATKINSON	85C	ZPHY C27 233	M. Atkinson <i>et al.</i>	(BONN, CERN, GLAS+)
ASTON	81F	PL 104B 231	D. Aston	(BONN, CERN, EPOL, GLAS, LANC+)