

X(1750)

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

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 $\overline{K}K$ and $\overline{K}^*(892)K$ branching fractions.

X(1750) MASS				
VALUE (MeV)	DOCUMENT ID	TECN	COMMENT	
1753.8± 2.7 OUR AVERAGE				
1784 ±12 ⁺⁰ ₋₂₇	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 $\gamma p \rightarrow K \overline{K} X$
1690 ±10	ASTON	81F	OMEG	25–70 $\gamma p \rightarrow K^+ K^- X$

X(1750) WIDTH						
VALUE (MeV)			DOCUMENT ID		TECN	COMMENT
120	±10	OUR AVERAGE				
106	+22 -19	+ 8 -36	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 $\gamma p \rightarrow K \overline{K} X$
100	±40		ASTON	81F	OMEG	25–70 $\gamma p \rightarrow K^+ K^- X$

X(1750) DECAY MODES	
Mode	Fraction (Γ_i/Γ)
Γ_1 $K^+ K^-$	seen
Γ_2 $\overline{K}^*(892)^0 K_S^0$	not seen
Γ_3 $K^*(892)^\pm K^\mp$	not seen
Γ_4 $\eta \phi$	not seen

X(1750) BRANCHING RATIOS					Γ_2/Γ_1
VALUE	CL%	DOCUMENT ID	TECN	COMMENT	
<0.065	90	LINK	02K	FOCS	$\gamma p \rightarrow K^+ K^- p$

$\Gamma(K^*(892)^\pm K^\mp)/\Gamma(K^+ K^-)$				Γ_3/Γ_1
VALUE	CL%	DOCUMENT ID	TECN	COMMENT
<0.183	90	LINK	02K FOCS	$\gamma p \rightarrow K^+ K^- p$

$\Gamma(\eta\phi)/\Gamma_{\text{total}}$				Γ_4/Γ
VALUE	DOCUMENT ID	TECN	COMMENT	
not seen	¹ ZHU	23A RVUE	$e^+ e^- \rightarrow \eta\phi$	

¹ Reported with a 2 σ 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+)