

# $\psi(3770)$

$$I^G(J^{PC}) = 0^-(1^{--})$$

## $\psi(3770)$ MASS

VALUE (MeV)	DOCUMENT ID	TECN	COMMENT
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**3769.9 ± 2.5 OUR EVALUATION** Error includes scale factor of 1.8. From  $m_{\psi(2S)}$  and mass difference below.

• • • We do not use the following data for averages, fits, limits, etc. • • •

3764 ± 5	<sup>1</sup> SCHINDLER	80	MRK2	$e^+e^-$
3770 ± 6	<sup>1</sup> BACINO	78	DLCO	$e^+e^-$
3772 ± 6	<sup>1</sup> RAPIDIS	77	MRK1	$e^+e^-$

<sup>1</sup>Errors include systematic common to all experiments.

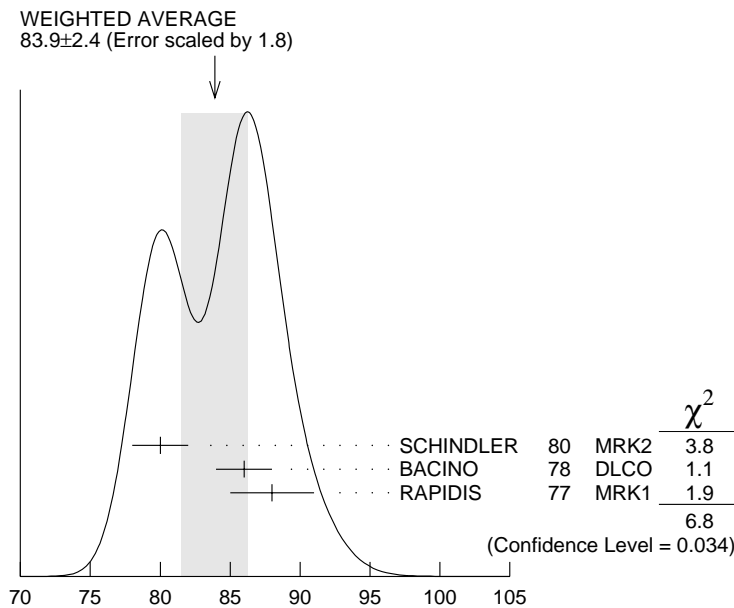
## $m_{\psi(3770)} - m_{\psi(2S)}$

VALUE (MeV)	DOCUMENT ID	TECN	COMMENT
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**83.9 ± 2.4 OUR AVERAGE** Error includes scale factor of 1.8. See the ideogram below.

80 ± 2	SCHINDLER	80	MRK2	$e^+e^-$
86 ± 2	<sup>2</sup> BACINO	78	DLCO	$e^+e^-$
88 ± 3	RAPIDIS	77	MRK1	$e^+e^-$

<sup>2</sup>SPEAR  $\psi(2S)$  mass subtracted (see SCHINDLER 80).



$m_{\psi(3770)} - m_{\psi(2S)}$  (MeV)

## $\psi(3770)$ WIDTH

<u>VALUE (MeV)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b>23.6 ± 2.7 OUR FIT</b>	Error includes scale factor of 1.1.		
<b>25.3 ± 2.9 OUR AVERAGE</b>			
24 ± 5	SCHINDLER	80 MRK2	$e^+ e^-$
24 ± 5	BACINO	78 DLCO	$e^+ e^-$
28 ± 5	RAPIDIS	77 MRK1	$e^+ e^-$

## $\psi(3770)$ DECAY MODES

Mode	Fraction ( $\Gamma_i/\Gamma$ )	Scale factor
$\Gamma_1$ $D\bar{D}$	dominant	
$\Gamma_2$ $e^+ e^-$	$(1.12 \pm 0.17) \times 10^{-5}$	1.2

## $\psi(3770)$ PARTIAL WIDTHS

$\Gamma(e^+ e^-)$	<u>VALUE (keV)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	$\Gamma_2$
	<b>0.26 ± 0.04 OUR FIT</b>	Error includes scale factor of 1.2.			
	<b>0.24 ± 0.05 OUR AVERAGE</b>	Error includes scale factor of 1.2.			
	0.276 ± 0.050	SCHINDLER	80 MRK2	$e^+ e^-$	
	0.18 ± 0.06	BACINO	78 DLCO	$e^+ e^-$	
	• • • We do not use the following data for averages, fits, limits, etc. • • •				
	0.37 ± 0.09	<sup>3</sup> RAPIDIS	77 MRK1	$e^+ e^-$	
	<sup>3</sup> See also $\Gamma(e^+ e^-)/\Gamma_{\text{total}}$ below.				

## $\psi(3770)$ BRANCHING RATIOS

$\Gamma(D\bar{D})/\Gamma_{\text{total}}$	<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	$\Gamma_1/\Gamma$
dominant		PERUZZI	77 MRK1	$e^+ e^- \rightarrow D\bar{D}$	
$\Gamma(e^+ e^-)/\Gamma_{\text{total}}$	<u>VALUE (units <math>10^{-5}</math>)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	$\Gamma_2/\Gamma$
	<b>1.12 ± 0.17 OUR FIT</b>	Error includes scale factor of 1.2.			
	<b>1.3 ± 0.2</b>	RAPIDIS	77 MRK1	$e^+ e^-$	

## $\psi(3770)$ REFERENCES

SCHINDLER	80	PR D21 2716	R.H. Schindler <i>et al.</i>	(Mark II Collab.)
BACINO	78	PRL 40 671	W.J. Bacino <i>et al.</i>	(SLAC, UCLA, UCI)
PERUZZI	77	PRL 39 1301	I. Peruzzi <i>et al.</i>	(Mark I Collab.)
RAPIDIS	77	PRL 39 526	P.A. Rapidis <i>et al.</i>	(Mark I Collab.)