

ψ(3770)

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

ψ(3770) MASS

VALUE (MeV)	DOCUMENT ID	TECN	COMMENT
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	¹ SCHINDLER	80	MRK2	e ⁺ e ⁻
3770 ±6	¹ BACINO	78	DLCO	e ⁺ e ⁻
3772 ±6	¹ RAPIDIS	77	MRK1	e ⁺ e ⁻

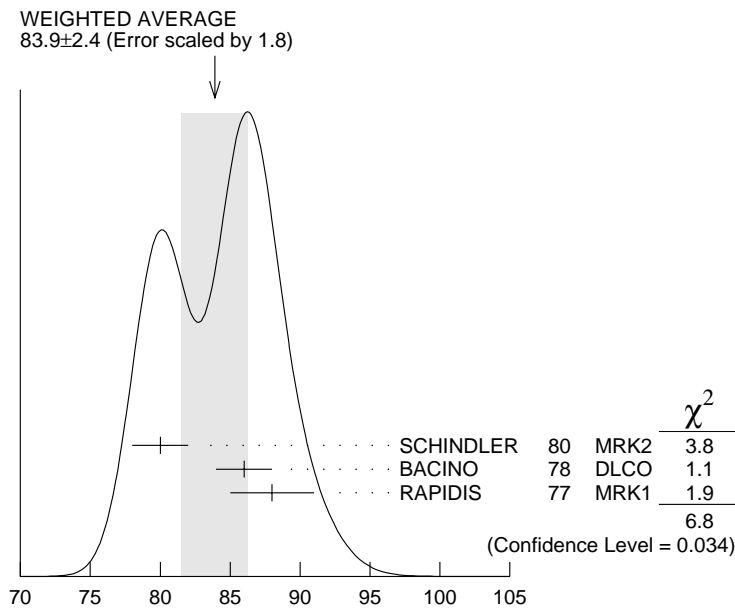
¹Errors include systematic common to all experiments.

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

VALUE (MeV)	DOCUMENT ID	TECN	COMMENT
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	² BACINO	78	DLCO	e ⁺ e ⁻
88 ±3	RAPIDIS	77	MRK1	e ⁺ e ⁻

²SPEAR ψ(2S) mass subtracted (see SCHINDLER 80).



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

$\psi(3770)$ WIDTH

VALUE (MeV)	DOCUMENT ID	TECN	COMMENT
23.6±2.7 OUR FIT	Error includes scale factor of 1.1.		
25.3±2.9 OUR AVERAGE			
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 (Γ_i/Γ)	Scale factor
Γ_1 $D\bar{D}$	dominant	
Γ_2 e^+e^-	$(1.12\pm 0.17) \times 10^{-5}$	1.2

$\psi(3770)$ PARTIAL WIDTHS

$\Gamma(e^+e^-)$	DOCUMENT ID	TECN	COMMENT	Γ_2
0.26 ±0.04 OUR FIT	Error includes scale factor of 1.2.			
0.24 ±0.05 OUR AVERAGE	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	³ RAPIDIS	77 MRK1	e^+e^-	
³ See also $\Gamma(e^+e^-)/\Gamma_{\text{total}}$ below.				

$\psi(3770)$ BRANCHING RATIOS

$\Gamma(D\bar{D})/\Gamma_{\text{total}}$	DOCUMENT ID	TECN	COMMENT	Γ_1/Γ
dominant	PERUZZI	77 MRK1	$e^+e^- \rightarrow D\bar{D}$	
$\Gamma(e^+e^-)/\Gamma_{\text{total}}$	DOCUMENT ID	TECN	COMMENT	Γ_2/Γ
1.12±0.17 OUR FIT	Error includes scale factor of 1.2.			
1.3 ±0.2	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.)