

Heavy Flavor Averaging Group
May 2004

Compilation of B Semi-leptonic and Radiative Branching Fractions
All branching fractions are in units of 10^{-6}

In PDG2002 New since PDG2002 (preliminary) New since PDG2002 (published)

RPP#	Mode	PDG2002 Avg.	BaBar	Belle	CLEO	New Avg.
63	$s\gamma$	330 ± 40	$388 \pm 36_{-46}^{+57}$	$359 \pm 32_{-31-7}^{+30+11}$	$321 \pm 43_{-29}^{+32}$	354_{-28}^{+30}
–	$s\gamma$ with baryons	New			$< 38 \dagger$	< 38
67	$\rho\gamma$	< 14	< 1.9	$1.8_{-0.5}^{+0.6} \pm 0.1$	< 14	$1.8_{-0.5}^{+0.6}$
97	$se^+e^- \ddagger$	< 57	$6.6 \pm 1.9_{-1.6}^{+1.9}$	$4.4 \pm 1.3 \pm 0.8$	< 57	5.0 ± 1.3
98	$s\mu^+\mu^- \ddagger$	< 58	$5.7 \pm 2.8_{-1.4}^{+1.7}$	$4.3 \pm 1.1 \pm 0.7$	< 58	4.5 ± 1.2
–	$sl^+l^- \ddagger$	New	$6.3 \pm 1.6_{-1.5}^{+1.8}$	$4.4 \pm 0.8_{-0.7}^{+0.8}$	< 42	4.8 ± 1.0
99	Ke^+e^-	< 1.3	$0.79_{-0.17}^{+0.19} \pm 0.07$	$0.48_{-0.13}^{+0.15} \pm 0.03$		0.60 ± 0.12
100	$K^*(892)e^+e^-$	< 5.6	$1.00_{-0.42}^{+0.50} \pm 0.12$	$1.49_{-0.46-0.13}^{+0.52+0.11}$		$1.25_{-0.33}^{+0.37}$
101	$K\mu^+\mu^-$	$0.99_{-0.32-0.14}^{+0.40+0.13}$	$0.48_{-0.20}^{+0.25} \pm 0.04$	$0.48_{-0.11}^{+0.13} \pm 0.04$		$0.48_{-0.10}^{+0.12}$
102	$K^*(892)\mu^+\mu^-$	< 3.1	$1.28_{-0.62}^{+0.78} \pm 0.17$	$1.17_{-0.31}^{+0.36} \pm 0.10$		$1.19_{-0.29}^{+0.34}$
103	Kl^+l^-	$0.75_{-0.21}^{+0.25} \pm 0.06$	$0.69_{-0.13}^{+0.15} \pm 0.06$	$0.48_{-0.09}^{+0.10} \pm 0.03$	< 1.7	$0.55_{-0.08}^{+0.09}$
104	$K^*(892)l^+l^-$	< 3.3	$0.89_{-0.29}^{+0.34} \pm 0.11$	$1.15_{-0.24}^{+0.26} \pm 0.08$	< 3.3	$1.06_{-0.20}^{+0.22}$
–	$Ke^\pm\mu^\mp$	New			< 1.6	< 1.6
–	$K^*e^\pm\mu^\mp$	New			< 6.2	< 6.2
–	$\pi e^\pm\mu^\mp$	New			< 1.6	< 1.6
–	$\rho e^\pm\mu^\mp$	New			< 3.2	< 3.2

$\dagger E_\gamma > 2.0 \text{ GeV}$; $\ddagger M(l^+l^-) > 0.2 \text{ GeV}/c^2$