

Mass $m > 476$ GeV, CL = 95% (electroweak fit)

Z_η of $E_6 \rightarrow \text{SU}(3) \times \text{SU}(2) \times \text{U}(1) \times \text{U}(1)_\eta$ (with $g_\eta = e/\cos\theta_W$)

Mass $m > 1.870 \times 10^3$ GeV, CL = 95% (pp direct search)

Mass $m > 619$ GeV, CL = 95% (electroweak fit)

Scalar Leptoquarks

Mass $m > 830$ GeV, CL = 95% (1st generation, pair prod.)

Mass $m > 304$ GeV, CL = 95% (1st gener., single prod.)

Mass $m > 840$ GeV, CL = 95% (2nd gener., pair prod.)

Mass $m > 73$ GeV, CL = 95% (2nd gener., single prod.)

Mass $m > 525$ GeV, CL = 95% (3rd gener., pair prod.)

(See the Particle Listings for assumptions on leptoquark quantum numbers and branching fractions.)

Diquarks

Mass $m > 3.750 \times 10^3$ GeV, CL = 95%

Axigluon

Mass $m > 3.360 \times 10^3$ GeV, CL = 95%

Axions (A^0) and Other Very Light Bosons, Searches for

The standard Peccei-Quinn axion is ruled out. Variants with reduced couplings or much smaller masses are constrained by various data. The Particle Listings in the full *Review* contain a Note discussing axion searches.

The best limit for the half-life of neutrinoless double beta decay with Majoron emission is $> 7.2 \times 10^{24}$ years (CL = 90%).