

Selection	Description
Trigger	Single lepton or single muon trigger
Lepton selection	1 isolated lepton with p_T larger than the trigger threshold, and no additional leptons
Higgs boson candidate	1 AK8 jet with $ \eta < 2.5$, $p_T > 300$ GeV, $M > 50$ GeV, $M_{SD} > 40$ GeV, highest ParticleNet Xbb score
VBS jets candidates	2 jets with $ \eta < 4.7$, $p_T > 30$ GeV, chosen as the largest momentum jets in each η -hemisphere
b-jet veto	no jets with $ \eta < 2.5$, $p_T > 30$ GeV, passing the Medium DeepJet working point
Signal region	$M_{jj} > 600$ GeV, $S_T > 900$ GeV, ParticleNet Xbb > 0.9 for the Higgs candidate, $ \Delta\eta_{jj} > 4$, $M_{SD} < 150$ GeV