

Common selection	$p_T^{\ell 1, \ell 2} > 25 \text{ GeV},  \eta^{\ell 1, \ell 2}  < 2.5$ for electron channel $p_T^{\ell 1, \ell 2} > 20 \text{ GeV},  \eta^{\ell 1, \ell 2}  < 2.4$ for muon channel $p_T^\gamma > 20 \text{ GeV},  \eta^\gamma  < 1.444$ or $1.566 <  \eta^\gamma  < 2.500$ $p_T^{j1, j2} > 30 \text{ GeV},  \eta^{j1, j2}  < 4.7$ $70 < m_{\ell\ell} < 110 \text{ GeV}, m_{Z\gamma} > 100 \text{ GeV}$ $\Delta R_{jj}, \Delta R_{j\gamma}, \Delta R_{j\ell} > 0.5, \Delta R_{\ell\gamma} > 0.7$
Control region	Common selection, $150 < m_{jj} < 500 \text{ GeV}$
EW signal region	Common selection, $m_{jj} > 500 \text{ GeV},  \Delta\eta_{jj}  > 2.5,$ $\eta^* < 2.4, \Delta\phi_{Z\gamma, jj} > 1.9$
Fiducial volume	Common selection, $m_{jj} > 500 \text{ GeV},  \Delta\eta_{jj}  > 2.5$
aQGC search region	Common selection, $m_{jj} > 500 \text{ GeV},  \Delta\eta_{jj}  > 2.5,$ $p_T^\gamma > 120 \text{ GeV}$