

Selection	$2SS + 0\tau_b$	$2SS + 1\tau_b$	$SS + 0\tau_b$
Trigger	Single- and double-lepton triggers		Single-, double- and triple-lepton triggers
Lepton $p_T$	$p_T > 25 / 15\text{GeV}$ $p_T > 25 / 15$ (e) or $10\text{GeV}$ ( $\mu$ )		$p_T > 25 / 15 / 10\text{GeV}$
Lepton $\eta$	$ \eta  < 2.5$ (e) or $2.4$ ( $\mu$ )		$ \eta  < 2.5$ (e) or $2.4$ ( $\mu$ )
$\tau_b$ $p_T$	—	$p_T > 20\text{GeV}$	—
$\tau_b$ $\eta$	—	$ \eta  < 2.3$	—
Charge requirements	2 same-sign leptons and charge quality requirements		—
	$\sum_{\ell \in \tau_b} q = \pm 1$		$\sum_{\ell} q = \pm 1$
Jet multiplicity <sup>**</sup>	$\geq 3$ jets		$\geq 2$ jets
b tagging requirements <sup>**</sup>	$\geq 1$ medium b-tagged jet or $\geq 2$ loose b-tagged jets		
Light jet and b tag <sup>***</sup>	$\geq 1$ light jets, $\geq 1$ medium b-tagged jet		
Missing transverse momentum	$p_T^{\text{miss}} \text{LD} > 30\text{GeV}^{\text{§}}$		$p_T^{\text{miss}} \text{LD} > 45\text{GeV}^{\text{  }}$
Dilepton mass	$m_{\ell\ell} > 12\text{GeV}^{\text{¶}}$ , $ m_{\ell\ell} - m_Z  > 10\text{GeV}$		

<sup>\*</sup> Applied on all pairs of leptons that pass loose selection. <sup>\*\*</sup> If events do not pass these thresholds, <sup>\*\*\*</sup> is required. <sup>†</sup> If the event contains a same-flavour opposite-sign (SFOS) lepton pair and  $N_{\text{jet}} \leq 3$ . If  $N_{\text{jet}} \leq 3$  but there is no SFOS lepton pair, the threshold is  $30\text{GeV}$ . <sup>§</sup> Applied only to ee events.