

Label	Channels	Q_ℓ	OSSF n	M_{OSSF}	N_b	S_T	p_{T3}	M_ℓ	Dilepton mass
$W\phi(ee/\mu\mu)$ SR1Low	3L($ee\mu/e\mu\mu$)	1	1	OffZ	0	—	—	$<76, >106$	$M_{ee}/M_{\mu\mu}$
$W\phi(ee/\mu\mu)$ SR2Low	3L($eee/\mu\mu\mu$)	1	1	OffZ	0	—	—	$<76, >106$	$M_{ee}^{\min}/M_{\mu\mu}^{\min}$
$W\phi(ee/\mu\mu)$ SR1High	3L($ee\mu/e\mu\mu$)	1	1	OffZ	0	>200	>15	>150	$M_{ee}/M_{\mu\mu}$
$W\phi(ee/\mu\mu)$ SR2High	3L($eee/\mu\mu\mu$)	1	1	OffZ	0	>200	>15	>150	$M_{ee}^{\max}/M_{\mu\mu}^{\max}$
$Z\phi(ee/\mu\mu)$ SRLow	4L+3L1T+2L2T	0	≥ 1	Not double-OnZ	0	—	—	—	$M_{ee}^{\min}/M_{\mu\mu}^{\min}$
$Z\phi(ee/\mu\mu)$ SRHigh	4L+3L1T+2L2T	0	≥ 1	Not double-OnZ	0	>200	—	>150	$M_{ee}^{\max}/M_{\mu\mu}^{\max}$
$t\bar{t}\phi(ee/\mu\mu)$ SR1Low	3L($ee\mu/e\mu\mu$)	1	1	OffZ	≥ 1	>350	—	>100	$M_{ee}/M_{\mu\mu}$
$t\bar{t}\phi(ee/\mu\mu)$ SR2Low	3L($eee/\mu\mu\mu$)	1	1	OffZ	≥ 1	>350	—	>100	$M_{ee}^{\min}/M_{\mu\mu}^{\min}$
$t\bar{t}\phi(ee/\mu\mu)$ SR1High	3L($ee\mu/e\mu\mu$)	1	1	OffZ	≥ 1	>400	>15	>100	$M_{ee}/M_{\mu\mu}$
$t\bar{t}\phi(ee/\mu\mu)$ SR2High	3L($eee/\mu\mu\mu$)	1	1	OffZ	≥ 1	>400	>15	>100	$M_{ee}^{\max}/M_{\mu\mu}^{\max}$
$t\bar{t}\phi(ee/\mu\mu)$ SR3Low	4L+3L1T+2L2T	0	≥ 1	OffZ	—	>350	—	—	$M_{ee}^{\min}/M_{\mu\mu}^{\min}$
$t\bar{t}\phi(ee/\mu\mu)$ SR3High	4L+3L1T+2L2T	0	≥ 1	OffZ	—	>400	—	—	$M_{ee}^{\max}/M_{\mu\mu}^{\max}$