

Requirement	DM		2HDM+ a	
	Unweighted	Weighted	Unweighted	Weighted
Initial sample	300000		90000	
Primary vertex	300000		90000	
Jet cleaning	298848		89688	
Electron channel				
≥ 2 electrons	76218		29842	
Trigger	75049		29504	
Trigger matching	74815		29464	
Medium electrons with $p_T^\ell > 20, 30$ GeV	74306		29297	
Exactly 2 electrons	74163		29245	
Opposite sign electrons	72819		28831	
$76 < m_{\ell\ell} < 106$ GeV	69838	136.5	27335	131.0
b -jet veto	66084	129.3	25067	120.3
$E_T^{\text{miss}} > 90$ GeV	48239	94.8	20962	100.7
$\Delta R_{\ell\ell} < 1.8$	38928	76.8	18339	88.1
$S_{E_T^{\text{miss}}} > 9$	35467	70.5	14480	69.7
$m_T > 200$ GeV	35422	70.4	14419	69.5
Muon channel				
≥ 2 muons	92067		34906	
Trigger	86718		33169	
Trigger matching	86120		33020	
Medium muons with $p_T^\ell > 20, 30$ GeV	85989		32987	
Exactly 2 muons	85874		32941	
Opposite sign muons	85873		32941	
$76 < m_{\ell\ell} < 106$ GeV	81547	150.8	30999	140.4
b -jet veto	77346	143.4	28394	128.9
$E_T^{\text{miss}} > 90$ GeV	55356	102.9	23812	108.1
$\Delta R_{\ell\ell} < 1.8$	43619	81.3	20683	94.0
$S_{E_T^{\text{miss}}} > 9$	39596	74.2	16439	75.1
$m_T > 200$ GeV	39554	74.1	16384	74.9