	Backgrounds		Signals	
Source	QCD	$Z \to \mu\mu\gamma$	$Z \to \Psi(nS)\gamma$	$H \to \Psi(nS)\gamma$
Integrated luminosity	—	—	1.6%	1.6%
Normalization uncertainties	From data	From CR		
QCD scale	—	—	3.5%	5.6%
PDF	—	—	1.7%	3.2%
Detector simulation, reconstruction	—	—		
Pileup weight	—	—	0.9%	0.8%
Trigger efficiency	—	—	3.5%	3.5%
Trigger timing shift	—	—	0.6%	2.7%
Muon identification/isolation	—	—	2.0%	1.4%
Photon identification	—	—	1.5%	1.5%
Pixel seed veto	—	—	1.0%	1.0%
Jet energy scale (VBF category)	—	—	—	2.9%
Jet energy resolution (VBF category)	—	—	—	1.0%
Jet b tagging (HF category)	—	—	—	5.4%
Background model	Discrete			
Signal model	—	1%	1%	1%
$m_{\mu\mu\gamma}$ mean (MC stat)	—	0.06%	0.06%	0.06%
$m_{\mu\mu\gamma}$ width (MC stat)	—	0.1%	0.1%	0.1%
$m_{\mu\mu\gamma}$ mean (μ calibration)	—	0.05%	0.05%	0.05%
$m_{\mu\mu\gamma}$ width (μ calibration)	—	0.8%	0.8%	0.8%
$m_{\mu\mu\gamma}$ mean (γ energy)	—	0.04%	0.04%	0.04%
$m_{\mu\mu\gamma}$ width (γ energy)	—	3.4%	3.4%	3.4%
$m_{\mu\mu\gamma}$ width (γ resolution)	—	1.8%	1.8%	1.8%