

Overview of CMS cross section results

CMS preliminary

3 μb^{-1} - 138 fb^{-1} (2.76, 5.02, 7, 8, 13, 13.6 TeV)

QCD

inelastic	7 TeV	Phys. Lett. B 722 (2013) 5
inelastic	13 TeV	JHEP 07 (2018) 161
Jet	7 TeV	PRD 90 (2014) 072006

Electroweak

γ	7 TeV	PRD 84 052011 (2011)
W	2.76 TeV	PLB 715 (2012) 66
W	5.02 TeV	SMP-20-004
W	7 TeV	JHEP 10 (2011) 132
W	8 TeV	PRL 112 (2014) 191802
W	13 TeV	SMP-20-004
Z	2.76 TeV	JHEP 03 (2015) 022
Z	5.02 TeV	SMP-20-004
Z	7 TeV	JHEP 10 (2011) 132
Z	8 TeV	PRL 112 (2014) 191802
Z	13 TeV	SMP-20-004
Z	13.6 TeV	SMP-22-017

di-Boson

W γ	7 TeV	PRD 89 (2014) 092005
W γ	13 TeV	PRL 126 252002 (2021)
Z γ	7 TeV	PRD 89 (2014) 092005
Z γ	8 TeV	JHEP 04 (2015) 164
WW	5.02 TeV	PRL 127 (2021) 191801
WW	7 TeV	EPJC 73 (2013) 2610
WW	8 TeV	EPJC 76 (2016) 401
WW	13 TeV	PRD 102 092001 (2020)
WZ	5.02 TeV	PRL 127 (2021) 191801
WZ	7 TeV	EPJC 77 (2017) 236
WZ	8 TeV	EPJC 77 (2017) 236
WZ	13 TeV	JHEP 07 (2022) 032
ZZ	5.02 TeV	PRL 127 (2021) 191801
ZZ	7 TeV	JHEP 01 (2013) 063
ZZ	8 TeV	PLB 740 (2015) 250
ZZ	13 TeV	EPJC 81 (2021) 200

tri-Boson

VVV	13 TeV	PRL 125 151802 (2020)
WWW	13 TeV	PRL 125 151802 (2020)
WWZ	13 TeV	PRL 125 151802 (2020)
WZZ	13 TeV	PRL 125 151802 (2020)
ZZZ	13 TeV	PRL 125 151802 (2020)
WV γ	8 TeV	PRD 90 032008 (2014)
WW γ	13 TeV	SMP-22-006
W $\gamma\gamma$	8 TeV	JHEP 10 (2017) 072
W $\gamma\gamma$	13 TeV	JHEP 10 (2021) 174
Z $\gamma\gamma$	8 TeV	JHEP 10 (2017) 072
Z $\gamma\gamma$	13 TeV	JHEP 10 (2021) 174

VBF and VBS

VBF W	8 TeV	JHEP 11 (2016) 147
VBF W	13 TeV	EPJC 80 (2020) 43
VBF Z	7 TeV	JHEP 10 (2013) 101
VBF Z	8 TeV	EPJC 75 (2015) 66
VBF Z	13 TeV	EPJC 78 (2018) 589
EW WV	13 TeV	PLB 834 (2022) 137438
ex. $\gamma\gamma \rightarrow WW$	8 TeV	JHEP 08 (2016) 119
EW qqW γ	8 TeV	JHEP 06 (2017) 106
EW qqW γ	13 TeV	PRD 108 032017
EW os WW	13 TeV	PLB 841 (2023) 137495
EW ss WW	8 TeV	PRL 114 051801 (2015)
EW ss WW	13 TeV	PLB 809 (2020) 135710
EW qqZ γ	8 TeV	PLB 770 (2017) 380
EW qqZ γ	13 TeV	PRD 104 072001 (2021)
EW qqWZ	13 TeV	PLB 809 (2020) 135710
EW qqZZ	13 TeV	PLB 812 (2020) 135992

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tt	5.02 TeV	JHEP 04 (2022) 144
tt	7 TeV	JHEP 08 (2016) 029
tt	8 TeV	JHEP 08 (2016) 029
tt	13 TeV	PRD 104 (2021) 092013
tt	13.6 TeV	Submitted to JHEP
t_{l-ch}	7 TeV	JHEP 12 (2012) 035
t_{l-ch}	8 TeV	JHEP 06 (2014) 090
t_{l-ch}	13 TeV	PLB 72 (2017) 752
tW	7 TeV	PRL 110 (2013) 022003
tW	8 TeV	PRL 112 (2014) 231802
tW	13 TeV	JHEP 10 (2018) 117
t_{s-ch}	8 TeV	JHEP 09 (2016) 027
tt γ	8 TeV	JHEP 10 (2017) 006
tt γ	13 TeV	JHEP 05 (2022) 091
tZq	8 TeV	JHEP 07 (2017) 003
tZq	13 TeV	JHEP 02 (2022) 107
ttZ	7 TeV	PRL 110 (2013) 172002
ttZ	8 TeV	JHEP 01 (2016) 096
ttZ	13 TeV	JHEP 03 (2020) 056
t γ	13 TeV	PRL 121 221802 (2018)
ttW	8 TeV	JHEP 01 (2016) 096
ttW	13 TeV	JHEP 07 (2023) 219
tWZ	13 TeV	TOP-22-008
tttt	13 TeV	Submitted to PLB

Higgs

ggH	7 TeV	EPJC 75 (2015) 212
ggH	8 TeV	EPJC 75 (2015) 212
ggH	13 TeV	Nature 607 60-68 (2022)
VBF qqH	7 TeV	EPJC 75 (2015) 212
VBF qqH	8 TeV	EPJC 75 (2015) 212
VBF qqH	13 TeV	Nature 607 60-68 (2022)
VH	8 TeV	EPJC 75 (2015) 212
VH	13 TeV	Nature 607 60-68 (2022)
ZH	13 TeV	Nature 607 60-68 (2022)
ttH	8 TeV	EPJC 75 (2015) 212
ttH	13 TeV	Nature 607 60-68 (2022)
tH	13 TeV	Nature 607 60-68 (2022)
HH	13 TeV	Nature 607 60-6