

datacombined	raw number	weighted number	ee	$\mu\mu$	$e\mu$
input	211632452±14547.5927	211632452.0000±14547.5927	82351274.0000±9074.7603	122528508.0000±11069.2596	6752670.0000±2598.5900
2 SS Loose Leptons	3976040±1994.0010	3976040.0000±1994.0010	1867016.0000±1366.3879	760968.0000±872.3348	1348056.0000±1161.0581
Tight Leptons,trigger match	82778±287.7117	82778.0000±287.7117	28800.0000±169.7056	19488.0000±139.5994	34490.0000±185.7148
B veto	72544±269.3399	72544.0000±269.3399	26224.0000±161.9383	16691.0000±129.1937	29629.0000±172.1308
$p_T(l)$	32715±180.8729	32715.0000±180.8729	18199.0000±134.9037	4130.0000±64.2651	10386.0000±101.9117
MET	29340±171.2892	29340.0000±171.2892	15558.0000±124.7317	3958.0000±62.9126	9824.0000±99.1161
DY	28959±170.1734	28959.0000±170.1734	15482.0000±124.4267	3893.0000±62.3939	9584.0000±97.8979
Z veto	19738±140.4920	19738.0000±140.4920	6261.0000±79.1265	3893.0000±62.3939	9584.0000±97.8979
$N_{jet} \geq 3$	2227±47.1911	2227.0000±47.1911	649.0000±25.4755	468.0000±21.6333	1110.0000±33.3167

diboson	raw number	weighted number	ee	$\mu\mu$	$e\mu$
input	44190122±6647.5651	572946.3333±347.1742	190986.7539±204.2391	244273.0944±183.7690	137686.4851±212.2387
2 SS Loose Leptons	5257081±2292.8325	34808.7988±137.5497	10534.1259±119.6524	7617.6434±36.6495	16657.0294±57.0969
Tight Leptons,trigger match	2804290±1674.6014	15139.2795±123.9707	2929.5887±114.2735	4678.4517±29.0890	7531.2391±38.2640
B veto	2660440±1631.0855	14581.8349±123.7190	2798.4613±114.2258	4521.2427±28.6912	7262.1309±37.8902
$p_T(l)$	1819028±1348.7135	9487.9109±119.4403	2026.1909±113.2368	2656.4554±21.1606	4805.2645±31.5537
MET	1756631±1325.3796	9178.7257±119.2337	1954.0782±113.1922	2573.1245±20.7731	4651.5230±31.1879
DY	1741949±1319.8292	9092.7968±119.1756	1942.2155±113.1841	2540.9065±20.6414	4609.6749±31.0822
Z veto	1689173±1299.6819	8763.9516±118.8429	1613.3703±112.8338	2540.9065±20.6414	4609.6749±31.0822
$N_{jet} \geq 3$	445628±667.5537	1235.2055±6.3337	285.7354±3.3278	301.7232±2.7776	647.7470±4.6181

DY	raw number	weighted number	ee	$\mu\mu$	$e\mu$
input	0±0.0000	0.0000±0.0000	0.0000±0.0000	0.0000±0.0000	0.0000±0.0000
2 SS Loose Leptons	0±0.0000	0.0000±0.0000	0.0000±0.0000	0.0000±0.0000	0.0000±0.0000
Tight Leptons,trigger match	0±0.0000	0.0000±0.0000	0.0000±0.0000	0.0000±0.0000	0.0000±0.0000
B veto	0±0.0000	0.0000±0.0000	0.0000±0.0000	0.0000±0.0000	0.0000±0.0000
$p_T(l)$	0±0.0000	0.0000±0.0000	0.0000±0.0000	0.0000±0.0000	0.0000±0.0000
MET	0±0.0000	0.0000±0.0000	0.0000±0.0000	0.0000±0.0000	0.0000±0.0000
DY	0±0.0000	0.0000±0.0000	0.0000±0.0000	0.0000±0.0000	0.0000±0.0000
Z veto	0±0.0000	0.0000±0.0000	0.0000±0.0000	0.0000±0.0000	0.0000±0.0000
$N_{jet} \geq 3$	0±0.0000	0.0000±0.0000	0.0000±0.0000	0.0000±0.0000	0.0000±0.0000

nonres	raw number	weighted number	ee	$\mu\mu$	$e\mu$
input	451460±671.9077	27.8122±0.1385	7.4500±0.0829	7.3855±0.0608	12.9768±0.0928
2 SS Loose Leptons	106040±325.6378	7.7115±0.0677	2.0374±0.0357	1.8228±0.0297	3.8512±0.0493
Tight Leptons,trigger match	51257±226.4001	4.0161±0.0456	0.7807±0.0261	1.2015±0.0220	2.0339±0.0303
B veto	44489±210.9242	3.5561±0.0432	0.6952±0.0255	1.0567±0.0192	1.8041±0.0291
$p_T(l)$	35416±188.1914	2.7353±0.0351	0.5682±0.0184	0.7925±0.0163	1.3746±0.0251
MET	34958±186.9706	2.6885±0.0349	0.5574±0.0183	0.7825±0.0162	1.3486±0.0249
DY	34932±186.9010	2.6861±0.0348	0.5572±0.0183	0.7814±0.0161	1.3476±0.0249
Z veto	34275±185.1351	2.6026±0.0344	0.4736±0.0174	0.7814±0.0161	1.3476±0.0249
$N_{jet} \geq 3$	19209±138.5965	1.3169±0.0231	0.2345±0.0082	0.4051±0.0116	0.6773±0.0182

ttbar	raw number	weighted number	ee	$\mu\mu$	$e\mu$
input	24037746±4902.8304	3231925.1270±689.9170	760156.7620±333.9363	859828.4772±355.4093	1611939.8879±488.0126
2 SS Loose Leptons	2192667±1480.7657	284048.0704±202.0483	84814.5768±110.2586	57013.0376±90.8414	142220.4560±142.8790
Tight Leptons,trigger match	41329±203.2954	5539.6736±28.9570	1158.0774±13.5154	1544.3507±14.8986	2837.2455±20.8296
B veto	12317±110.9820	1688.4904±16.0733	306.5324±7.0216	524.3673±8.7642	857.5906±11.4994
$p_T(l)$	3906±62.4980	543.8107±9.4313	140.6772±4.9792	120.8350±4.2437	282.2985±6.7932
MET	3838±61.9516	534.2926±9.3534	138.4049±4.9455	118.0713±4.1932	277.8164±6.7414
DY	3800±61.6441	529.3252±9.3173	137.6428±4.9354	116.6677±4.1707	275.0147±6.7127
Z veto	3698±60.8112	516.1600±9.2131	124.4776±4.7356	116.6677±4.1707	275.0147±6.7127
$N_{jet} \geq 3$	1578±39.7240	219.7368±5.9265	47.9167±2.9187	55.8402±2.8589	115.9799±4.2932

ttH	raw number	weighted number	ee	$\mu\mu$	$e\mu$
input	0±0.0000	0.0000±0.0000	0.0000±0.0000	0.0000±0.0000	0.0000±0.0000
2 SS Loose Leptons	0±0.0000	0.0000±0.0000	0.0000±0.0000	0.0000±0.0000	0.0000±0.0000
Tight Leptons,trigger match	0±0.0000	0.0000±0.0000	0.0000±0.0000	0.0000±0.0000	0.0000±0.0000
B veto	0±0.0000	0.0000±0.0000	0.0000±0.0000	0.0000±0.0000	0.0000±0.0000
$p_T(l)$	0±0.0000	0.0000±0.0000	0.0000±0.0000	0.0000±0.0000	0.0000±0.0000
MET	0±0.0000	0.0000±0.0000	0.0000±0.0000	0.0000±0.0000	0.0000±0.0000
DY	0±0.0000	0.0000±0.0000	0.0000±0.0000	0.0000±0.0000	0.0000±0.0000
Z veto	0±0.0000	0.0000±0.0000	0.0000±0.0000	0.0000±0.0000	0.0000±0.0000
$N_{jet} \geq 3$	0±0.0000	0.0000±0.0000	0.0000±0.0000	0.0000±0.0000	0.0000±0.0000

ttV	raw number	weighted number	ee	$\mu\mu$	$e\mu$
input	5717329±2391.0937	15166.1336±17.7433	6579.1521±13.0709	3842.3329±7.0032	4744.6486±9.7432
2 SS Loose Leptons	1015087±1007.5153	2701.1062±6.5722	841.1250±4.0767	531.1043±2.3470	1328.8769±4.5897
Tight Leptons,trigger match	513429±716.5396	1295.6026±4.1315	314.9718±2.3886	318.8247±1.5014	661.8061±3.0183
B veto	77012±277.5104	196.3242±1.6106	47.5787±0.9338	48.2381±0.5927	100.5073±1.1708
$p_T(l)$	63872±252.7291	164.4732±1.4689	40.5507±0.8604	39.8284±0.5343	84.0941±1.0640
MET	63057±251.1115	162.3056±1.4569	40.0759±0.8519	39.3304±0.5312	82.8994±1.0557
DY	62848±250.6950	161.7422±1.4551	39.9086±0.8508	39.1664±0.5302	82.6672±1.0548
Z veto	61000±246.9818	156.9069±1.4207	35.0733±0.7904	39.1664±0.5302	82.6672±1.0548
$N_{jet} \geq 3$	43616±208.8444	105.1812±1.2315	24.3926±0.6998	24.4543±0.4312	56.3343±0.9170

tV	raw number	weighted number	ee	$\mu\mu$	$e\mu$
input	2300266±1516.6628	234709.0107±170.8688	55667.6184±82.7448	63042.9058±88.0011	115998.4864±120.8522
2 SS Loose Leptons	176630±420.2737	16580.1398±44.8543	5069.6026±24.8052	3210.0932±19.7482	8300.4440±31.7273
Tight Leptons,trigger match	14334±119.7247	542.0708±7.7194	124.5226±3.7195	136.1166±3.7454	281.4315±5.6325
B veto	4695±68.5201	241.8352±5.3166	51.4796±2.4675	67.3146±2.7636	123.0410±3.8131
$p_T(l)$	2896±53.8145	87.2045±3.0382	24.8594±1.6762	17.9915±1.3051	44.3537±2.1721
MET	2857±53.4509	85.7525±3.0034	24.5888±1.6715	17.6678±1.2908	43.4959±2.1355
DY	2842±53.3104	85.1102±2.9912	24.5620±1.6714	17.5148±1.2840	43.0334±2.1225
Z veto	2729±52.2398	82.3587±2.9547	21.8105±1.6053	17.5148±1.2840	43.0334±2.1225
$N_{jet} \geq 3$	614±24.7790	20.1575±1.4916	5.6887±0.7975	4.1532±0.6661	10.3156±1.0702

Vgam	raw number	weighted number	ee	$\mu\mu$	$e\mu$
input	7376412±2715.9551	4852925.3896±4763.7720	1933206.8109±2945.1072	2852444.8100±3729.1067	67273.7687±337.0912
2 SS Loose Leptons	181129±425.5925	62706.4332±376.9890	35006.4908±305.8604	1730.1871±58.8563	25969.7553±212.3819
Tight Leptons,trigger match	18343±135.4363	5292.6244±95.2365	2153.4240±65.5602	50.8242±11.7901	3088.3763±68.0650
B veto	17892±133.7610	5160.4614±93.8804	2096.2052±64.3439	46.8316±11.6628	3017.4246±67.3600
$p_T(l)$	10663±103.2618	2563.9933±67.6314	1104.2651±49.7661	3.5338±1.9421	1456.1943±45.7555
MET	10063±100.3145	2392.6537±65.0023	1022.4505±47.8626	3.5338±1.9421	1366.6693±43.9397
DY	9737±98.6762	2277.1480±63.4925	997.0973±47.5203	3.5338±1.9421	1276.5169±42.0636
Z veto	8446±91.9021	2027.1600±57.2125	747.1093±38.7317	3.5338±1.9421	1276.5169±42.0636
$N_{jet} \geq 3$	624±24.9800	141.7260±10.0823	58.9388±6.9850	0.8015±0.5944	81.9856±7.2464

VVV	raw number	weighted number	ee	$\mu\mu$	$e\mu$
input	308446±555.3791	430.2157±1.2672	108.0375±0.6091	126.9383±0.6757	195.2399±0.8822
2 SS Loose Leptons	49813±223.1883	86.2830±0.5959	20.9332±0.2833	22.3033±0.3134	43.0465±0.4202
Tight Leptons,trigger match	31049±176.2073	58.1132±0.4933	11.4430±0.2128	17.7727±0.2806	28.8975±0.3455
B veto	29309±171.1987	54.7932±0.4783	10.8152±0.2064	16.7180±0.2720	27.2600±0.3349
$p_T(l)$	24574±156.7610	46.0966±0.4400	9.3980±0.1941	13.8312±0.2490	22.8674±0.3064
MET	24308±155.9102	45.5982±0.4376	9.3140±0.1933	13.6594±0.2476	22.6248±0.3046
DY	24251±155.7273	45.5047±0.4371	9.2941±0.1931	13.6068±0.2471	22.6038±0.3045
Z veto	23520±153.3623	44.5707±0.4335	8.3601±0.1847	13.6068±0.2471	22.6038±0.3045
$N_{jet} \geq 3$	4572±67.6166	7.3436±0.1726	1.5034±0.0748	2.0690±0.0969	3.7713±0.1218

Wjets	raw number	weighted number	ee	$\mu\mu$	$e\mu$
input	3234380±1798.4382	2103467.9574±10989.5601	713597.4123±6098.3463	342091.4637±4168.3839	1047779.0814±8136.6565
2 SS Loose Leptons	1321589±1149.6038	759897.4364±6171.3824	287118.6654±3787.4332	88853.1541±1919.0631	383925.6169±4478.6725
Tight Leptons,trigger match	31733±178.1376	15802.0850±721.4007	2267.5146±247.0841	4575.3177±293.3569	8959.2526±610.9912
B veto	25929±161.0248	14933.5851±718.3433	2152.1054±246.2894	4230.9909±290.3423	8550.4889±609.1469
$p_T(l)$	2122±46.0652	1111.8452±266.7419	22.0694±68.9715	220.4068±97.4997	869.3690±238.5120
MET	2062±45.4093	997.0046±255.6948	18.4314±68.7460	222.5452±95.6982	756.0281±226.9265
DY	2019±44.9333	1013.2157±251.8139	8.2247±68.1215	222.8832±95.6978	782.1078±222.7367
Z veto	1978±44.4747	991.5690±251.7090	-13.4220±67.7327	222.8832±95.6978	782.1078±222.7367
$N_{jet} \geq 3$	415±20.3715	68.9748±20.5916	6.7481±1.8074	22.2560±16.3685	39.9707±12.3619

Zjets	raw number	weighted number	ee	$\mu\mu$	$e\mu$
input	161181432±12695.7249	175983006.3557±80965.4251	69764990.4168±49100.7560	105521824.9343±64235.8866	696191.0047±4273.9551
2 SS Loose Leptons	1932790±1390.2482	799908.3526±5184.3643	749780.0658±5097.7924	8347.8085±321.4469	41780.4783±887.0278
Tight Leptons,trigger match	87485±295.7786	15849.8506±589.6829	13796.1112±567.7827	467.6900±47.8557	1586.0494±151.8506
B veto	71393±267.1947	15178.4507±588.5765	13252.5886±567.0164	431.0277±46.2045	1494.8344±150.9296
$p_T(l)$	57976±240.7821	12582.0903±557.5465	11942.3285±546.4317	39.5813±15.4506	600.1805±109.6896
MET	52824±229.8347	10684.6508±496.0352	10157.7684±487.0900	38.7455±15.4348	488.1369±92.4986
DY	52812±229.8086	10673.1212±495.9398	10156.5852±487.0881	38.6944±15.4347	477.8416±91.9956
Z veto	10139±100.6926	2832.2642±319.2275	2315.7282±305.2946	38.6944±15.4347	477.8416±91.9956
$N_{jet} \geq 3$	2932±54.1479	50.0126±148.8140	30.0750±148.6410	4.1206±4.0862	15.8169±5.8952