

Table 1. Quantitative Summary of GW Characteristics¹

Mass ²	L_{ν_e} ³	$ h_{+,max} $ ⁴	S/N _{LIGO} ⁵	S/N _{eLIGO} ⁶	S/N _{advLIGO} ⁷	$h_{char,max}$ ⁸	$f_{char,max}$ ⁹	E_{GW} ¹⁰
12	1.8	0.27	0.8	2.0	7.9	1.04	253	6.1
12	2.2	0.20	0.7	1.7	6.7	0.61	200	3.5
12	2.8	0.46	1.2	2.7	10.8	1.35	273	8.5
12	3.2	1.13	1.6	4.0	15.7	2.23	294	20.4
15	3.2	0.37	1.1	2.6	11.4	2.14	345	17.5
15	3.4	0.40	1.0	2.4	10.2	1.49	406	14.4
15	3.7	0.37	1.1	2.8	11.5	1.83	365	12.8
15	4.0	1.53	2.1	5.3	21.2	3.10	347	46.1
20	3.2	0.32	1.4	3.4	14.5	3.00	348	29.5
20	3.4	0.70	1.8	4.5	19.5	4.68	347	57.8
20	3.6	0.56	1.5	3.9	16.1	2.67	429	34.5
20	3.8	0.48	1.5	3.8	15.7	3.14	369	33.8
40	6.0	0.33	1.0	2.6	12.2	3.23	423	36.2
40	10.0	0.68	1.4	3.6	17.3	3.93	359	47.1
40	12.0	0.82	1.4	3.4	14.0	2.04	323	16.6
40	13.0	4.53	0.8	1.8	9.4	1.08	1 [†]	4.1

¹This table lists the integrated GW characteristics of the 2D simulations. These simulations represent a two-dimensional parametrization that investigates the dependence of GW emission on progenitor mass (column 1) and neutrino luminosity (column 2).

²Progenitor model (M_{\odot}).

³Neutrino Luminosity (10^{52} erg s⁻¹).

⁴Maximum GW strain (10^{-21} at 10 kpc).

⁵Optimal theoretical signal-to-noise using the initial LIGO sensitivity curve (Gustafson et al. 1999).

⁶Optimal theoretical signal-to-noise using the Enhanced LIGO sensitivity curve (Adhikari 2009).

⁷Optimal theoretical signal-to-noise using the burst-mode Advanced LIGO sensitivity curve (Shoemaker 2006).

⁸Maximum of the characteristic strain spectrum defined in eq. 17 (10^{-21} at 10 kpc).

⁹Frequency location of $h_{char,max}$ (Hz).

¹⁰GW energy emitted ($10^{-11} M_{\odot} c^2$).

[†]Because this simulation explodes early and with large asymmetry, the low frequency “memory” signature in the GW strain dominates the energy spectrum.