

E3905.13.1 Box volume calculations.

The volume of a wiring enclosure (box) shall be the total volume of the assembled sections, and, where used, the space provided by plaster rings, domed covers, extension rings, etc., that are marked with their volume in cubic inches or are made from boxes the dimensions of which are listed in Table E3905.13.1.

**TABLE E3905.13.1
MAXIMUM NUMBER OF CONDUCTORS IN METAL BOXES^a**

BOX DIMENSIONS (inches trade size and type)	MAXIMUM CAPACITY (cubic inches)	MAXIMUM NUMBER OF CONDUCTORS ^a						
		18 Awg	16 Awg	14 Awg	12 Awg	10 Awg	8 Awg	6 Awg
$4 \times 1\frac{1}{4}$ round or octagonal	12.5	8	7	6	5	5	4	2
$4 \times 1\frac{1}{2}$ round or octagonal	15.5	10	8	7	6	6	5	3
$4 \times 2\frac{1}{8}$ round or octagonal	21.5	14	12	10	9	8	7	4
$4 \times 1\frac{1}{4}$ square	18.0	12	10	9	8	7	6	3
$4 \times 1\frac{1}{2}$ square	21.0	14	12	10	9	8	7	4
$4 \times 2\frac{1}{8}$ square	30.3	20	17	15	13	12	10	6
$4\frac{11}{16} \times \frac{11}{4}$ square	25.5	17	14	12	11	10	8	5
$4\frac{11}{16} \times \frac{11}{2}$ square	29.5	19	16	14	13	11	9	5
$4\frac{11}{16} \times 2\frac{1}{8}$ square	42.0	28	24	21	18	16	14	8
$3 \times 2 \times 1\frac{1}{2}$ device	7.5	5	4	3	3	3	2	1

$3 \times 2 \times 2$ device	10.0	6	5	5	4	4	3	2
$3 \times 2 \times 2\frac{1}{4}$ device	10.5	7	6	5	4	4	3	2
$3 \times 2 \times 2\frac{1}{2}$ device	12.5	8	7	6	5	5	4	2
$3 \times 2 \times 2\frac{3}{4}$ device	14.0	9	8	7	6	5	4	2
$3 \times 2 \times 3\frac{1}{2}$ device	18.0	12	10	9	8	7	6	3
$4 \times 2\frac{1}{8} \times 1\frac{1}{2}$ device	10.3	6	5	5	4	4	3	2
$4 \times 2\frac{1}{8} \times 1\frac{7}{8}$ device	13.0	8	7	6	5	5	4	2
$4 \times 2\frac{1}{8} \times 2\frac{1}{8}$ device	14.5	9	8	7	6	5	4	2
$3\frac{3}{4} \times 2 \times 2\frac{1}{2}$ masonry box/gang	14.0	9	8	7	6	5	4	2
$3\frac{3}{4} \times 2 \times 3\frac{1}{2}$ masonry box/gang	21.0	14	12	10	9	8	7	4

For SI: 1 inch = 25.4 mm, 1 cubic inch = 16.4 cm³.

a. Where volume allowances are not required by Sections [E3905.13.2.2](#) through [E3905.13.2.5](#).