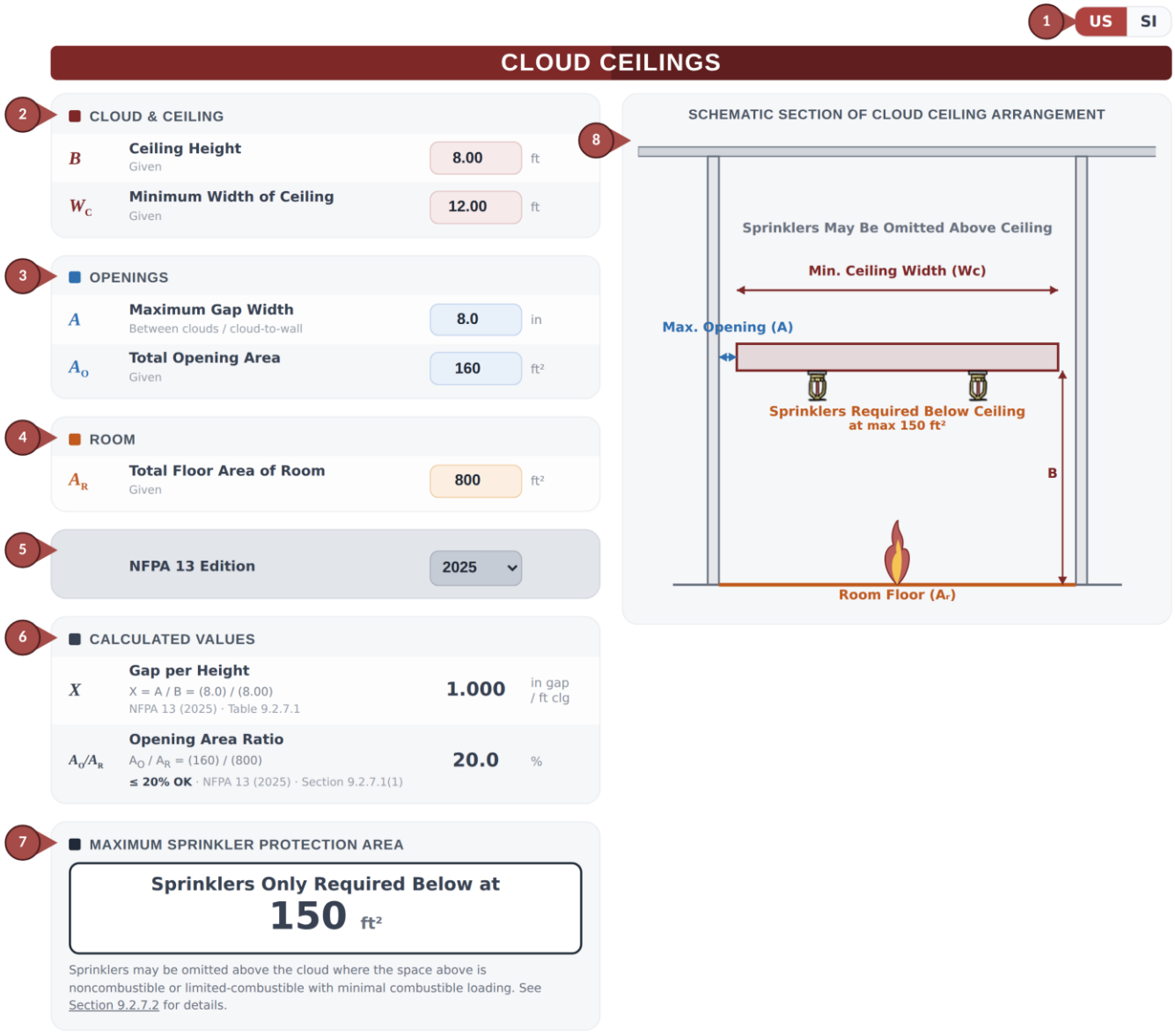
CLOUD CEILING CALCULATOR

A USER'S GUIDE



Reset Print

DESCRIPTION

PURPOSE: The Cloud Ceilings tool determines whether sprinklers can be omitted above a cloud ceiling and, when they can, the maximum sprinkler protection area allowed below it. It (1) checks the combined opening area around the cloud against the 20% limit, (2) evaluates the gap-per-height ratio and the minimum ceiling width against NFPA 13's cloud-ceiling table, and (3) reports the maximum sprinkler protection area below the cloud — or flags when sprinklers are required both above and below. Choose the NFPA 13 edition (2016–2025) to align every section reference, toggle US / SI units, and print a clean one-page report.

#1 UNIT TOGGLE: Switch between US Imperial units (US) and metric (SI). Every input, calculated value, and the schematic updates automatically.

#2 CLOUD & CEILING: Enter the Ceiling Height (B) and the Minimum Width of Ceiling (W_C) — the narrowest width of the cloud panel. These place the cloud in the section view and drive the gap-per-height check.

#3 OPENINGS: Enter the Maximum Gap Width (A) — the largest gap between clouds or between a cloud and a wall — and the Total Opening Area (A_O) of all openings around the cloud.

#4 ROOM: Enter the Total Floor Area of Room (A_R). The opening area is compared against this to confirm the openings stay at or below 20% of the ceiling area.

#5 NFPA 13 EDITION: Choose the applicable edition (2016–2025). Every section and table reference in the tool updates to match; the underlying table values are unchanged across these editions.

#6 CALCULATED VALUES: The tool computes the Gap per Height (X = A / B) and the Opening Area Ratio (A_O / A_R). Both are read-only — X is checked against the table columns and the ratio against the 20% limit.

#7 MAXIMUM SPRINKLER PROTECTION AREA: The result. When sprinklers may be omitted above the cloud, this gives the maximum protection area allowed below (e.g., 150 ft²) — or “Normal Spacing” when the cloud does not further limit it. Otherwise it reports that sprinklers are required both above and below.

#8 SCHEMATIC: A live section view of the arrangement — the cloud, the opening and ceiling-width dimensions, the ceiling height (B), the fire, and the sprinklers required below (and above, when applicable). It redraws as you edit.

#9 RESET & PRINT: Reset returns every input to its default. Print produces a clean one-page report of the inputs, calculated values, result, and schematic. Both buttons sit below the tool.