Living Room

14 ft × 16 ft · 224 sq ft · 9 ft ceiling

Assumptions: standard flat ceiling, recessed lighting allowed and preferred, 4 inch apertures, no unusual finishes, no dedicated art wall named. Correct any of these and the numbers shift.

These are targets and specifications, not guarantees. Real output depends on the fixtures selected and the surfaces they land on.

The Spec

The base: 20 foot-candles delivered. A 14 by 16 living room is 224 square feet. Moderate natural light and a flat 9 ft ceiling mean no adjustment in either direction, so the target holds at 20 fc. That is 4,480 delivered lumens, and once walls, fabric, and furniture absorb their share, you need about 9,000 lumens installed to reach it. That is the general wash, the level the room sits at when the ceiling layer runs alone.

AMBIENT

The density math calls for 5 recessed fixtures, but 5 cans carrying 9,000 lumens means 1,800 lumens each, and no residential can does that cleanly (a 4 inch tops out near 900, a 6 inch near 1,300). Resolved to **10 four-inch cans at 900 lumens each**, a clean grid at 4.7 ft spacing that hits 9,000 exactly and keeps the tighter beam. If ten ceiling penetrations is more than the room wants to wear, 7 six-inch cans at roughly 1,290 lumens each gets there with three fewer holes. Wide flood trims, regressed, so you see light on the room and not glare at the ceiling.

TASK

Two reading zones (a design call: the one-per-150-sq-ft rule gives one, but a seating group has more than one seat). A floor or table lamp at each, 450 lumens, throwing 30 to 50 fc onto the page at seat height.

ACCENT

Four sources, one per 60 square feet, 500 lumens each, MR16 or PAR20 aimed at art or architecture. Narrow beams, around 25 degrees, because accent is about contrast and a wide accent beam is just more ambient.

Color and control. 2700K across all three layers. 90+ CRI is the floor, with strong R9 so wood tones and skin read warm instead of grey. If an accent point lands on art, take that fixture to 95+ CRI. Put each layer

on its own dimmer, three circuits, because the room rarely runs all three at full. For ambient, dim-to-warm from 2700K down toward 1800K earns its cost in a living room. "Dimmable" on the box is not the spec: it needs a compatible dimmer, no flicker, no buzz, and a clean low end. Cheap warm-dim goes fake orange at the bottom. Skip it.

Adjacency. These targets treat the room in isolation. If this living room opens to a kitchen or entry through a wide threshold, it borrows light across it, so pull a can or two from the shared edge rather than double-lighting the seam.

Fixture Schedule

Inputs: 14 ft × 16 ft = 224 sq ft | Ceiling 9 ft, flat (×1.0) | Natural light moderate (×1.0) | Adjustment 1.0 | Base 20 fc | Ambient target 9,000 lm installed

LAYER	FIXTURE	COUNT	LM EACH	LM TOTAL	KELVIN	CRI / R9	BEAM / APERTURE	DIMMING	MOUNTING
Ambient	Recessed LED downlight, regressed trim	10	900	9,000	2700K	90+ / high R9	4 in, wide flood	Dim-to-warm 2700K to 1800K, dedicated dimmer, flicker-free	Ceiling grid, 4.7 ft spacing
Task	Floor or table lamp, reading	2	450	900	2700K	90+	Shaded, downward wash	Dimmable, separate circuit	One per reading seat, 30 to 50 fc at page
Accent	Adjustable MR16 or PAR20	4	500	2,000	2700K	90+, 95+ at art	~25° narrow	Separate dimmer	Ceiling, aimed at art or architecture

Alternate ambient, fewer penetrations: 7 six-inch cans at ~1,290 lm each (9,030 lm total, 5.7 ft spacing). Same Kelvin, CRI, and dimming spec.

> The reasoning behind every number here, the layers, the efficiency factor, the Kelvin and CRI thresholds, lives in Guide 01, The Residential Lighting Reference. If this living room is one room in a larger project, a whole-home plan keeps the color temperature and control strategy reading as one hand, and that is a natural consultation.