

Adaptive cruise control on a 5G Ford Ranger... when it is on, and the situation requires the brakes to be put on, is there a threshold (line pressure and such) before the brake lights come on??

Yes. On the 5G Ranger, **ACC can slow the truck without immediately illuminating the brake lights.** The brake lamps are not simply tied to "ACC commanded any braking."

There are really two ways ACC can reduce speed:

- 1. Lift the throttle / use engine braking.** No brake lights, just as if you took your foot off the accelerator.
- 2. Command the hydraulic brakes through the ABS/ESC unit.** At that point, the brake-light logic decides whether the commanded deceleration is significant enough to warrant the brake lamps.

Ford's Ranger owner's manual confirms that ACC actively applies the brakes when necessary, rather than merely backing off the throttle.  Owners Manuals +1

The interesting part — and I think this is what you're getting at — is that the threshold is generally based more on **requested/actual vehicle deceleration** than on a simple fixed hydraulic line-pressure number. The ABS/ESC module knows things like:

- ACC brake request
- actual longitudinal acceleration/deceleration
- wheel speeds
- brake pressure
- whether regenerative/engine drag is contributing — where applicable
- stability-control intervention

So a very slight ACC correction, say easing from 65 to 63 mph because you're creeping up on someone, **may not light the brakes**. Once ACC produces meaningful service-brake deceleration, the BCM/ABS system commands the brake lamps.

And that's desirable. Otherwise, in moderately heavy freeway traffic, an ACC-equipped Ranger would be flashing its brake lights constantly for tiny speed corrections.

I haven't yet found Ford's **5G Ranger engineering threshold expressed as an exact number**, such as "X bar brake pressure" or " 0.7 m/s^2 deceleration." The owner's manual isn't that granular. Anecdotal Ford testing does confirm that the lamps illuminate during appreciable ACC braking.  Ford Trucks

If you'd like, I can go one level deeper and look specifically through the **Ranger ABS/BCM service information / FORScan PIDs** to see whether Ford publishes the actual brake-lamp activation threshold. That could tell us whether it is pressure-based, decel-based, or a specific ACC brake-request flag.

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yes please

Worked for 22s ∨

I'll dig into the Ford service/diagnostic side specifically—ABS/ESC, BCM brake-lamp logic, and any Ranger/FORScan PIDs that expose the trigger.



Searched 5 websites

I found the useful Ford-level distinction: the Ranger has a specific **“Stop Lamp Brake Request”** generated by the ABS module for ACC braking, separate from the ordinary brake-pedal stop-lamp request.



Searched 5 websites

I found the Ford architecture, and it changes my earlier answer somewhat.

On the 5G Ranger, the brake lights are **not simply waiting for some hydraulic-pressure threshold** before coming on. Ford built a dedicated CAN message specifically for automatic braking:

ABS module → “Stop Lamp Brake Request” → Gateway → BCM → brake lamps.

Ford's network documentation identifies that message separately from the normal **"Stop Lamp Request"** generated when you physically press the brake pedal. The Ranger documentation shows the automatic request originating in the ABS module.  Ranger5G +1

More importantly, NHTSA has addressed almost exactly this situation. Their interpretation of FMVSS 108 says that when adaptive cruise automatically applies the **service brakes for the purpose of slowing the vehicle**, the stop lamps **must illuminate**. They explicitly considered ACC braking to maintain spacing.  NHTSA +1

So I would revise what I said earlier this way:

- **ACC backs off throttle:** no brake lights.
- **Transmission/downshift/engine drag only:** brake lights aren't necessarily required. ...
- **ACC actually commands the service brakes:** brake lights come on.
- It does not appear that Ford waits for, say, 100 psi or 0.1 g of braking before illuminating them.

That distinction is important. FMVSS 108 itself says stop lamps must activate upon application of the service brakes.

 Legal Inform... NHTSA has specifically said automatic application counts even though the driver's foot never touches the pedal.  NHTSA

What I could *not* find

I went looking for the tantalizing number — something like:

Stop Lamp Brake Request = TRUE when brake pressure
> 3 bar

or

ACC target deceleration < -0.5 m/s^2

I can't find one published for the 5G Ranger.

And there is a good reason that number may not exist in the way we were imagining. The **ABS module itself knows when it has transitioned from speed control by powertrain torque reduction to actual service-brake intervention**. When it makes that transition, it can simultaneously send the CAN brake-lamp request.

Conceptually, it's probably closer to:

ACC wants slower speed → first reduce engine torque → if insufficient, ABS requests hydraulic braking + sends Stop Lamp Brake Request → BCM illuminates stop lamps.

rather than:

hydraulic braking begins → pressure rises → measure pressure → when pressure exceeds X → turn lights on.

Ford even has a *different* CAN message called “Emergency Brake Lamp Request” for collision-avoidance/AEB braking, again originating in the ABS module. So Ford clearly distinguishes ordinary ACC automatic braking from emergency automatic braking at the network level.

 Ranger5G +1

And there's a neat way you could prove this on your Ranger

Since you're already equipped to get yourself into this sort of trouble 😊, FORScan logging could answer the practical question better than the service manual.

You could log something like vehicle speed, longitudinal acceleration, brake pressure/master-cylinder pressure if

exposed, accelerator/throttle position, ACC state/request, and whatever ABS brake-request/brake-lamp PID FORScan exposes. Then have someone follow you—or temporarily position a camera looking at the CHMSL reflection—and let ACC encounter a progressively slower car.

You'd be able to see exactly:

engine torque reduction → first hydraulic-brake activity → brake-lamp activation.

My expectation now is that the brake lamp will coincide essentially with **ACC's transition into actual service-brake application**, not some substantial braking threshold afterward.

And that answers the thing I think prompted your original question: **the Ranger shouldn't be quietly riding the hydraulic brakes enough to noticeably slow the truck while giving the guy behind you no brake-light warning.** Tiny ACC corrections can occur without brake lights because they're being accomplished by the powertrain; once Ford actually asks the service brakes to slow the vehicle, federal rules require the lights.  NHTSA +1



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