

How Many Miles Per Gallon Does An Airbus A220 Get Compared To An Embraer E195-E2?



Credit:
Embraer, Airbus | Simple Flying



By [Victoria Agronsky](#) — Jul 30, 2026, 7:00 AM EDT

How efficient are today's smallest new-generation airliners? Two aircraft in particular, the **Airbus A220** and **Embraer E195-E2** are frequently described as the world's most efficient small single-aisle passenger airliners. Airlines often compare them when replacing aging **Embraer E-Jets**, **Bombardier CRJs**, **Airbus A319s**, and even smaller **Boeing 737** variants because fuel costs remain one of the industry's largest operating expenses. That naturally raises an interesting question: just how many miles per gallon do these aircraft actually achieve?

The answer is surprisingly impressive. Despite weighing tens of tonnes and carrying well over 100 passengers, the A220 achieves over 60 miles per gallon under test conditions. Their efficiency comes from clean-sheet design, advanced engines, and geared turbofan (GTF) engines. The aircraft's lightweight structures. In our article, we compare the A220's passenger capacity, fuel burn, and real-world efficiency to determine whether one truly outperforms the other.

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What Aircraft Is More Fuel Efficient?

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The simple answer is that both aircraft are exceptionally fuel efficient, and there is no overwhelming winner. Both offer advantages and disadvantages that airlines must consider before placing orders.

On longer routes, the larger Airbus A220-300 generally enjoys a slight per-seat advantage because its larger wing and highly optimized airframe spread fuel consumption across more passengers, as shown in the official Airbus online brochure. Several industry analyses estimate its per-seat fuel efficiency advantage at roughly 11% compared with the E195-E2 on longer sectors. Meanwhile, the Embraer E195-E2 has dramatically narrowed the gap and can equal, and occasionally outperform, the A220 on shorter missions where its lower trip costs become more important than absolute seat-mile efficiency.

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Both aircraft also share one major technological advantage: Pratt & Whitney's geared turbofan family. The **Airbus** uses the PW1500G, while the Embraer employs the PW1900G, giving both aircraft approximately 20–25% lower fuel burn per seat than the previous-generation regional jets they replaced, which attracted dozens of regional airlines.

Perhaps the most remarkable statistic is their passenger efficiency. Depending on seating layout and mission length, both routinely achieve well over 100 passenger-miles per gallon, placing them among the most efficient commercial aircraft ever built on a per-seat basis. That means a fully occupied A220 or E195-E2 can rival or even exceed much larger twin-aisle aircraft in fuel efficiency when measured per passenger.

What Makes The Airbus A220 And Embraer E195-E2 So Fuel Efficient?

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Comparing aircraft fuel efficiency is considerably more complicated than simply looking at how many gallons of fuel an airplane burns per hour. Unlike cars, commercial aircraft are typically measured by fuel burn per available

because they reflect how effectively an airline converts fuel into passenger transport rather than fuel consumption.

The mission itself also impacts efficiency. Short sectors require proportionally more fuel for take-off, climb, and descent, whereas cruise is typically more important on longer flights. Passenger configuration further complicates comparisons, as airlines can configure the Airbus A220-300 with anywhere from around 120 to 160 seats, while the Embraer E195-E2 typically accommodates 120 to 146 passengers. Filling more seats spreads fuel consumption across additional travelers, increasing passenger-miles per gallon even if total fuel burn remains unchanged. Weather, payload, airport elevation, reserve fuel requirements, taxi delays, and cruise altitude can all influence fuel consumption as well.

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Airbus A220 Vs Embraer E2: 5 Key Points Of Comparison

1:51

Both the Airbus A220-300 and Embraer E195-E2 achieve their impressive efficiency through a combination of advanced aerodynamics, lightweight structures, and Pratt & Whitney's geared turbofan (GTF) engine technology, although they arrived at that point through very different development paths. The A220 began life as Bombardier's clean-sheet C Series program before Airbus acquired a majority stake in 2018.

Designed from the outset around modern composite materials, advanced aluminum alloys, an aerodynamically efficient wing, and the Pratt & Whitney PW1500G, Airbus says the aircraft delivers approximately 25% lower fuel burn and CO₂ emissions per seat than the previous generation of similarly sized aircraft. Embraer, by contrast, chose to evolve rather than replace its successful first-generation E-Jet family.

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Instead of designing an entirely new aircraft, the manufacturer extensively redesigned the E195 with a new high-aspect-ratio wing, updated avionics, revised systems, and the Pratt & Whitney PW1900G engine. The result was a highly optimized aircraft that Embraer marketed as the 'Profit Hunter,' promising airlines substantially lower operating costs while retaining the commonality and reliability of the original E-Jet platform.

According to Embraer, these improvements reduced fuel consumption by approximately 20–25% compared with the first-generation E195, allowing the E195-E2 to close much of the efficiency gap to the larger Airbus A220. At the heart of both aircraft is Pratt & Whitney's geared turbofan architecture. Unlike conventional turbofan engines, the GTF uses a reduction gearbox that allows the large front fan and the low-pressure turbine to rotate at their own optimum speeds.

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This enables a larger, sl
while allowing the turbi
is significantly lower fue
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the primary reasons why both the Airbus A220-300 and Embraer E195-E2 are
now regarded as the most fuel-efficient aircraft in the 120- to 160-seat
market.

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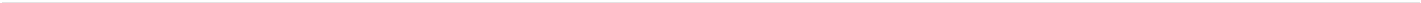
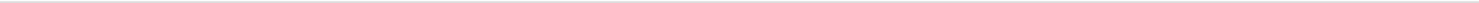
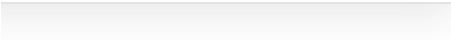
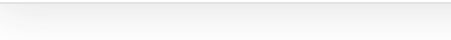
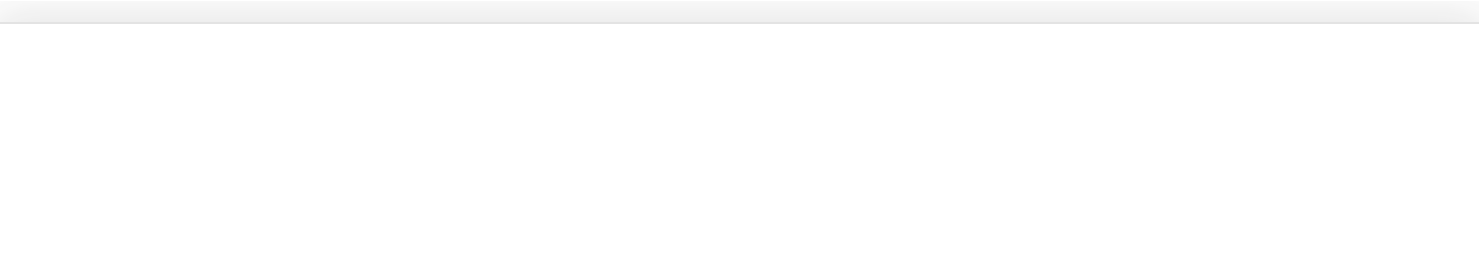
Industry analysts agree that the efficiency battle has become remarkably close. For instance, AirInsight noted that although the A220 initially established a noticeable efficiency lead, Embraer's continual improvements have enabled the E195-E2 to catch up significantly. According to its analysis, the gap has narrowed to the point where the Embraer can compete directly on many routes, particularly when lower trip costs are prioritized over absolute seating capacity.

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The Flying Engineer sim
dominates. Instead, airl
Operators requiring max
A220, while carriers pri
markets frequently find the E195-E2 more attractive.

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Mentour Pilot also emphasizes that operating economics depend on much more than fuel burn alone. Acquisition price, maintenance costs, airport charges, financing, fleet commonality and passenger demand often outweigh a small percentage difference in fuel consumption. As a result, airlines such as Air France, Delta Air Lines, JetBlue and **airBaltic** have embraced the A220, with the latter being the A220 mono fleet operator, while Porter Airlines, **KLM** Cityhopper, Azul and Royal Jordanian have invested heavily in the E195-E2.



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Porter Airlines' case is emblematic, as it dropped its initial Airbus A220 in favor of the Embraer E2, partly due to the smaller overall, the airline required DeHavilland Dash 8 turboprops exactly what would work in middle seats, akin to the Dash-8, which tested exceptionally well with passengers compared to the 2-3 layout of the A220. These purchasing decisions demonstrate that airlines view both aircraft as outstanding performers for slightly different missions.

Airbus A220-300 vs Embraer E195-E2

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Looking purely at performance, the Airbus holds several advantages. The A220-300 accommodates up to 160 passengers, compared with 146 for the E195-E2. It also offers substantially greater range at approximately 3,400 nautical miles (3,913 miles / 6,300 km) versus roughly 2,600 nautical miles (2,992 miles / 4,815 km) for the Embraer. Airbus also provides a larger maximum fuel capacity of 5,681 gallons (21,508 liters), enabling its superior endurance.

However, the Embraer counters with lower trip costs. Because it carries fewer passengers and has a lower overall operating weight, airlines can profitably operate routes that may not consistently fill an A220. This flexibility is particularly valuable for regional airlines and thinner point-to-point markets.

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Specification	Airbus A220-300	Embraer E195-E2
Typical seats	120–135	100–135
Maximum seats	160	145
Maximum range	3,400 nmi (6,300 km)	2,992 nmi (5,500 km)
Maximum fuel capacity	5,681 gallons (21,508 liters)	4,460 gallons (16,900 liters)
Cruise speed	Mach 0.82	Mach 0.82
Fuel burn improvement	~25% vs previous generation	~20–25% vs previous generation
Passenger efficiency	Typically over 100 passenger-miles per gallon	Typically over 100 passenger-miles per gallon
Best mission	Medium-haul, higher-capacity routes	Short- to medium-haul, lower-demand markets

The comparison illustrates why airlines remain divided. Airbus delivers greater capability, range, and seating capacity, while Embraer provides exceptional economics on routes where every additional seat cannot be filled.

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Main Drawbacks And Limitations

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The biggest limitation is that miles per gallon is not an ideal way to compare commercial aircraft. Airlines operate under constantly changing conditions: headwinds, routing restrictions, payload, reserve fuel policies, weather

Another consideration is engine durability. Both aircraft rely on Pratt & Whitney geared turbofan engine: solicited reliability and maintenance issues in r hitney has reported that the situation has ir lings of A220s and Embraer E2 aircraft hav nce considerations remain an important op eported by Reuters.

Finally, fuel efficiency alone rarely determines purchasing decisions. Airlines also evaluate acquisition cost, financing, maintenance programs, pilot training, fleet commonality, residual values, and airport infrastructure before selecting either aircraft.

Who Is The Winner?

Credit: Shutterstock

seemed almost impossible only two decades ago, routinely exceeding 100 passenger-miles per gallon. With quieter cabins, greater comfort and substantial fuel savings, the new aircraft they replace.

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If maximum range, additional seats and the lowest possible fuel burn per passenger are the priority, the Airbus A220-300 generally holds a modest advantage. If lower trip costs, greater flexibility and excellent economics on thinner routes matter more, the Embraer E195-E2 becomes an equally compelling choice. The difference is no longer dramatic enough to produce a universal winner.

This rivalry is likely to remain one of commercial aviation's most closely watched competitions in the regional aviation market. As airlines continue replacing older regional jets and smaller narrowbodies, both aircraft will play a major role in reducing fuel consumption and emissions while connecting cities more efficiently than ever before.

Question 1 of 5

What is the primary reason the Airbus A220-300 and Embraer E195-E2 achieve such high

- B

By using more engines than previous aircraft generations
- C

By minimizing passenger
- D

By flying only very short r

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Jonathan

2026-07-30 12:00:17

Why do you post 195-e2 with 2600 NM range when embrear has on their site as 3000 NM.

Marcel

2026-07-30 08:09:02

The Airbus 220 will always be
seat!

spective. It has a middle

 5   3  C

Jim

2026-07-30 10:23:14

How does the headroom compare, and the bin space?

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eva_pilot2

2026-07-30 14:30:16

Dissagree because when i'm traveling with family I like the option of sitting in a row of three OR two. It allows for flexibility. The headroom is nice too.

    Copy

tkamb60

2026-07-31 11:41:43

I disagree as well. E2's openness and spaciness compares to A220, I personally think is night and day! E2 ride like a regional jet, A220 feels like wide-body and it is not. Seating is airlines specific, but generally E2 seat are more cramped/leg room because the airlines need to make money without the middle seat.

(Edited)

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The A220 will always sound better than the Embraer. Sounds like a Vulcan when it spools up....

 1    Copy

ussling

2026-07-30 11:32:49

I have seen this same question on YouTube videos, and my comment is the same.

A car travels on a flat plane, and the odometer allows miles-per-gallon to be calculated.

An aircraft does not have an odometer, but measures fuel usage by gallons, or pounds per hour.

Fuel usage can vary, depending upon altitude, outside air temperature, and whether there is a head or tail wind.

 1    Copy

Jacksans

2026-07-31 03:43:23

Middle seat is an option for groups needing this. Also when empty, the middle seat allows more elbow room and space to put bags, phones, laptops etc. And the A220 has much more overhead space.

    Copy

Davaviation

2026-08-06 12:36:37

If we are going to look at OEM marketing we get a lot of mathematics which only work on paper and not in real world. I remember about a month ago the same question was asked when we were in an airline conference.

But the truth is an e195e2 is efficient than any a220 weight and design. That efficient per seat mile only works on paper and not in real world, ie a london paris flight or pick any 2 point on the map with the range each aircraft can fly you will never find an airline with a load factor of 100% that's a fact, CASM assume the aircraft is filled to it's maximum certified limit 145/160 which happens maybe once in 10 years on a shortest distance. Real world the 80% load on any 2 points on a 220 will give you 108/128 on a220 and will give you a 74%/88% on the e195e2 and the cost to fly that route will favor

ton more fuel than the e2 and that's only fuel add landing parking navigation pilots gates all which are higher than the e2.
Finally use the CASM in real v
airlines choice not the manuf
seat which is larger pitch ask

to the 220, comfort is the
220 with only the middle

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Lake Country Sail and Pad

2026-07-30 18:42:14

Thanks for the quiz! Learned something new and got 5/5 right.
Keen on 220 since I'm Cdn but recently flew on Porter's E2. My spouse prefers window, aisle for me - so enjoyed not having a "monkey" in the middle i.e. middle seat

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Cr

2026-07-30 08:53:32

Good article but can you please use Imperial and Metric measurements? Not everyone reading this is local plus it helps us convert the differences.

   2  Copy



Jake_SF

2026-07-30 10:16:11

Hi Cr, thanks for your comment - the data table does indeed have conversions.

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Davaviation

Even though the 220 tends to stay at the middle of main lines and regionals, like the 757 did

(Edited)

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