

MAIN DIMENSIONS AND AREAS - COMPONENT LOCATION

EFFECTIVITY: ACFT MODEL(S) EMB-145

1. General

- A. This section gives the principal dimensions ([Figure 101](#)) for the wing surfaces, horizontal stabilizer surfaces, vertical stabilizer surfaces, and fuselage.

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2. Dimensions

A. Total Aircraft

Table 101

Length	29.87 m (98 ft 0 in)
Width	20.04 m (65 ft 9 in)
Height	6.76 m (22 ft 2 in)

B. Wing

Table 102

Span	20.04 m (65.75 ft)
Area (reference wing)	51.18 m ² (550.89 ft ²)
Chord at root (reference wing)	4.086 m (13.41 ft)
Chord at tip (reference wing)	1.038 m (3.41 ft)
Dihedral at wing reference plane	3.5°
Sweepback at 25% (reference wing)	22.73°

C. Aileron

Table 103

Span (WRP projection, measured on hinge line)	2.42 m (7.94 ft)
Chord at root (normal to hinge line)	0.422 m (1.38 ft)
Chord at tip (streamwise)	0.280 m (0.92 ft)

D. Flaps

Table 104

	INBOARD FLAP	OUTBOARD FLAP
Span	2.59 m (8.50 ft)	3.34 m (10.96 ft)
Area	1.93 m ² (20.77 ft ²)	2.25 m ² (24.22 ft ²)
Chord at root	0.870 m (2.85 ft)	0.865 m (2.84 ft)
Chord at tip	0.618 m (2.03 ft)	0.484 m (1.59 ft)

E. Speed breaker/ground spoiler

Table 105

Span	1.371 m (4.49 ft)
Area	0.560 m ² (6.03 ft ²)

F. Ground spoiler

Table 106

Span	1.316 m (4.32 ft)
Area	0.600 m ² (6.46 ft ²)

G. Horizontal Tail

Table 107

Area	11.20 m ² (120.53 ft ²)
Span	7.404 m (24.29 ft)
Chord at root	1.894 m (6.21 ft)
Chord at tip	1.11 m (3.64 ft)
Dihedral	0°
Sweepback at 25% chord line	17.79°

H. Elevator

Table 108

Hinge line	70% chord
Area aft of hinge line (two sides)	3.34 m ² (35.95 ft ²)

I. Vertical Tail

Table 109

Span	2.78 m (9.12 ft)
Chord at root	3.18 m (10.43 ft)
Chord at tip	2.00 m (6.56 ft)
Sweepback at 25% chordline	34.33°
Position of rudder I hinge line	70% chord
Position of rudder II hinge line	85% chord
Rudder area aft of rudder I hinge line	2.071 m ² (22.29 ft ²)
Dorsal fin area	1.43 m ² (15.39 ft ²)

J. Pylon

Table 110

Area	1.94 m ² (20.88 ft ²)
Chord at root (reference pylon)	3.611 m (11.85 ft)
Chord at tip (reference pylon)	3.456 m (11.34 ft)
Dihedral at pylon reference plane	4°

K. Nacelle

Table 111

Length	4.329 m (14.20 ft)
Maximum width	1.307 m (4.29 ft)

Table 111 (Continued)

Maximum height	1.539 m (5.05 ft)
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L. Fuselage

Table 112

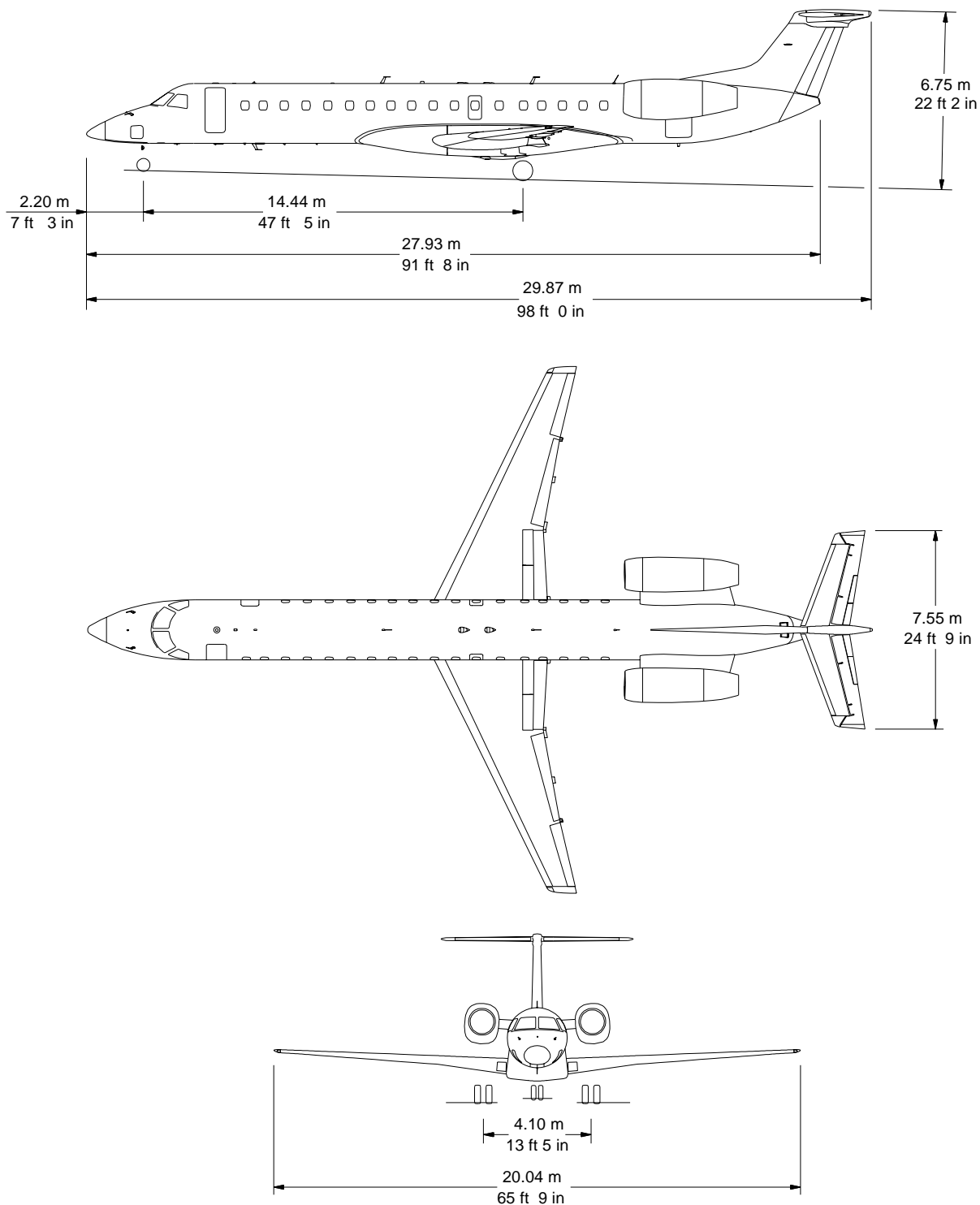
Total length	27.929 m (91.63 ft)
Length of pressurized section	23.222 m (76.19 ft)
Outside diameter	2.280 m (7.48 ft)

M. Aircraft Wetted Surface Area

Table 113

SURFACE	AREA m² (ft²)
Fuselage	165.5 (1781.4)
Wing	84.6 (910.6)
Horizontal Stabilizer	22.4 (241.1)
Vertical Stabilizer	14.4 (155.0)
Nacelles	32.5 (349.8)
Pylon	7.8 (84.0)
TOTAL	327.2 (3521.9)

EFFECTIVITY: ALL
Principal Dimensions
Figure 101



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