



# ICAO ENGINE EXHAUST EMISSIONS DATA SHEET

## SUBSONIC ENGINES

ENGINE IDENTIFICATION: CFM56-5-A1  
UNIQUE ID NUMBER: 1CM008  
COMBUSTOR:  
ENGINE TYPE: TF  
BYPASS RATIO: 6.0  
PRESSURE RATIO ( $\pi_{00}$ ): 26.6  
RATED THRUST ( $F_{00}$ ) (kN): 111.2

### REGULATORY DATA

CHARACTERISTIC VALUE:	HC	CO	NO <sub>x</sub>	SMOKE NUMBER
D <sub>p</sub> /F <sub>00</sub> (g/kN) or SN	4.0	34.2	46.9	20.3
AS % OF ORIGINAL LIMIT	20.4	29.0	50.4	88.5
AS % OF CAEP/2 LIMIT (NO <sub>x</sub> )			63.0	
AS % OF CAEP/4 LIMIT (NO <sub>x</sub> )			76.3	
AS % OF CAEP/6 LIMIT (NO <sub>x</sub> )			86.7	
AS % OF CAEP/8 LIMIT (NO <sub>x</sub> )			103.5	

### DATA STATUS

- PRE-REGULATION  
- CERTIFICATION  
x REVISED (SEE REMARKS)

### TEST ENGINE STATUS

x NEWLY MANUFACTURED ENGINES  
- DEDICATED ENGINES TO PRODUCTION STANDARD  
- OTHER (SEE REMARKS)

### EMISSIONS STATUS

x DATA CORRECTED TO REFERENCE  
(ANNEX 16 VOLUME II)

### CURRENT ENGINE STATUS

(IN PRODUCTION, IN SERVICE UNLESS OTHERWISE NOTED)  
x OUT OF PRODUCTION (DATE: - )  
- OUT OF SERVICE (DATE: - )

### MEASURED DATA

MODE	POWER SETTING (%F <sub>00</sub> )	TIME (minutes)	FUEL FLOW (kg/s)	HC	CO	NO <sub>x</sub>	SMOKE NUMBER
TAKE-OFF	100	0.7	1.051	0.23	0.90	24.60	15.8
CLIMB OUT	85	2.2	0.862	0.23	0.90	19.60	14.0
APPROACH	30	4.0	0.291	0.40	2.50	8.00	4.4
IDLE	7	26.0	0.101	1.40	17.60	4.00	2.3
LTO TOTAL FUEL (kg) or EMISSIONS (g)			385	285	3093	4506	-
NUMBER OF ENGINES				1	1	1	1
NUMBER OF TESTS				3	3	3	3
AVERAGE D <sub>p</sub> /F <sub>00</sub> (g/kN) or AVERAGE SN (MAX)				2.6	27.9	40.5	15.8
SIGMA (D <sub>p</sub> /F <sub>00</sub> in g/kN, or SN)				0.5	0.7	0.6	2.0
RANGE (D <sub>p</sub> /F <sub>00</sub> in g/kN, or SN)				2.3-3.2	27-28.4	39.9-40.9	13.5-17.3

### ACCESSORY LOADS

POWER EXTRACTION 0 (kW)  
STAGE BLEED 0 (% CORE FLOW)

AT - POWER SETTINGS  
AT - POWER SETTINGS

### ATMOSPHERIC CONDITIONS

BAROMETER (kPa)	94.7-95.6
TEMPERATURE (K)	280-291
ABS HUMIDITY (kg/kg)	0.0026-0.0034

### FUEL

SPEC	Jet A
H/C	1.95
AROM (%)	18

MANUFACTURER: CFM International  
TEST ORGANIZATION: CFM56 Evaluation Engineering  
TEST LOCATION: Peebles Site IIIC  
TEST DATES: 19/11/1986-20/11/1986

### REMARKS

1. Ref GE Report R87AEB368.
2. Engine S/N 730002/2.
3. Data revised and corrected April 93.

Compliance with Fuel Venting requirements:

- ('x' if complies, 'PR' if pre-regulation, '-' if information is not available)