



# ICAO ENGINE EXHAUST EMISSIONS DATA SHEET

## SUBSONIC ENGINES

ENGINE IDENTIFICATION: CFM56-5C2  
UNIQUE ID NUMBER: 1CM010  
COMBUSTOR:  
ENGINE TYPE: MTF  
BYPASS RATIO: 6.8  
PRESSURE RATIO ( $\pi_{co}$ ): 28.8  
RATED THRUST ( $F_{oo}$ ) (kN): 138.8

### REGULATORY DATA

CHARACTERISTIC VALUE:	HC	CO	NO <sub>x</sub>	SMOKE NUMBER
D <sub>p</sub> /F <sub>oo</sub> (g/kN) or SN	11.6	57.9	59.0	14.3
AS % OF ORIGINAL LIMIT	59.4	49.1	60.5	66.0
AS % OF CAEP/2 LIMIT (NO <sub>x</sub> )			75.6	
AS % OF CAEP/4 LIMIT (NO <sub>x</sub> )			90.7	
AS % OF CAEP/6 LIMIT (NO <sub>x</sub> )			103.0	
AS % OF CAEP/8 LIMIT (NO <sub>x</sub> )			121.8	

### DATA STATUS

- PRE-REGULATION  
x CERTIFICATION  
- 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>oo</sub> )	TIME (minutes)	FUEL FLOW (kg/s)	HC	CO	NO <sub>x</sub>	SMOKE NUMBER
TAKE-OFF	100	0.7	1.308	0.01	0.93	32.60	11.1
CLIMB OUT	85	2.2	1.076	0.01	0.80	25.80	8.5
APPROACH	30	4.0	0.356	0.08	1.75	10.00	1.0
IDLE	7	26.0	0.118	5.68	34.00	4.19	1.1
LTO TOTAL FUEL (kg) or EMISSIONS (g)			466	1050	6546	7077	-
NUMBER OF ENGINES				1	1	1	1
NUMBER OF TESTS				3	3	3	3
AVERAGE D <sub>p</sub> /F <sub>oo</sub> (g/kN) or AVERAGE SN (MAX)				7.6	47.2	50.9	11.1
SIGMA (D <sub>p</sub> /F <sub>oo</sub> in g/kN, or SN)				0.6	1.7	0.0	1.6
RANGE (D <sub>p</sub> /F <sub>oo</sub> in g/kN, or SN)				6.9-8.01	45.4-48.8	50.89-50.96	9.3-12.1

### ACCESSORY LOADS

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

AT - POWER SETTINGS  
AT - POWER SETTINGS

### ATMOSPHERIC CONDITIONS

BAROMETER (kPa)	97.8-98.1
TEMPERATURE (K)	286-295
ABS HUMIDITY (kg/kg)	0.0061-0.0074

### FUEL

SPEC	Jet A
H/C	1.95
AROM (%)	17.3

MANUFACTURER: CFM International  
TEST ORGANIZATION: CFM56 Evaluation Engineering  
TEST LOCATION: PTO Site IVD  
TEST DATES: 04/06/1991-05/06/1991

### REMARKS

1. Ref GE Report R91AEB471.
2. Engine S/N 740-105.
3. Core engine Smoke Numbers reported

Compliance with Fuel Venting requirements:

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