



# ICAO ENGINE EXHAUST EMISSIONS DATA BANK

## SUBSONIC ENGINES

ENGINE IDENTIFICATION: CFM56-5C3  
UNIQUE ID NUMBER: 1CM011  
ENGINE TYPE: MTF

BYPASS RATIO: 6.7  
PRESSURE RATIO ( $\pi_{oo}$ ): 29.9  
RATED OUTPUT ( $F_{oo}$ ) (kN): 144.57

### REGULATORY DATA

CHARACTERISTIC VALUE:	HC	CO	NOx	SMOKE NUMBER
$D_p/F_{oo}$ (g/kN) or SN	10.8	54.6	62.4	15.2
AS % OF ORIGINAL LIMIT	55.0 %	46.3 %	62.5 %	71.0 %
AS % OF CAEP/2 LIMIT (NOx)			78.1 %	
AS % OF CAEP/4 LIMIT (NOx)			93.3 %	
AS % OF CAEP/6 LIMIT (NOx)			106.0 %	
AS % OF CAEP/8 LIMIT (NOx)			124.9 %	

### 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

### MEASURED DATA

MODE	POWER SETTING (% $F_{oo}$ )	TIME minutes	FUEL FLOW kg/s	EMISSIONS INDICES (g/kg)			SMOKE NUMBER
TAKE-OFF	100	0.7	1.373	0.008	0.98	34.7	11.8
CLIMB OUT	85	2.2	1.131	0.008	0.82	27.1	9.1
APPROACH	30	4.0	0.370	0.074	1.57	10.4	1
IDLE	7	26.0	0.120	5.35	32.6	4.26	1.1
LTO TOTAL FUEL (kg) or EMISSIONS (g)			483	1012	6436	7770	-
NUMBER OF ENGINES				1	1	1	1
NUMBER OF TESTS				3	3	3	3
AVERAGE $D_p/F_{oo}$ (g/kN) or AVERAGE SN (MAX)				7	44.5	53.8	11.8
SIGMA ( $D_p/F_{oo}$ in g/kN, or SN)				0.49	1.69	0.22	1.6
RANGE ( $D_p/F_{oo}$ in g/kN, or SN)				6.45-7.41	42.7-46.1	53.5-53.9	9.9-12.8

### ACCESSORY LOADS

POWER EXTRACTION 0 (kW) AT - POWER SETTINGS  
STAGE BLEED 0 % CORE FLOW AT - POWER SETTINGS

### ATMOSPHERIC CONDITIONS

BAROMETER (kPa)	97.77-98.11
TEMPERATURE (K)	286 - 295
ABS HUMIDITY (kg/kg)	.0061-.0074

### FUEL

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

MANUFACTURER: CFMI  
TEST ORGANIZATION: CFM56 Evaluation Engineering  
TEST LOCATION: PTO Site IVD  
TEST DATES: FROM 04 Jun 91 TO 05 Jun 91

### REMARKS

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

If REVISED, this data supersedes databank UID  
Compliance with fuel venting requirements:

0 ('x' if complies, PR if pre-regulation)