



# ICAO ENGINE EXHAUST EMISSIONS DATA BANK

## SUBSONIC ENGINES

ENGINE IDENTIFICATION: CFM56-3C-1  
UNIQUE ID NUMBER: 1CM007  
ENGINE TYPE: TF

BYPASS RATIO: 5.1  
PRESSURE RATIO ( $\pi_{oo}$ ): 25.5  
RATED OUTPUT ( $F_{oo}$ ) (kN): 104.6

### REGULATORY DATA

CHARACTERISTIC VALUE:	HC	CO	NOx	SMOKE NUMBER
$D_p/F_{oo}$ (g/kN) or SN	4.3	65.7	53.1	9.9
AS % OF ORIGINAL LIMIT	21.7 %	55.7 %	58.3 %	42.4 %
AS % OF CAEP/2 LIMIT (NOx)			72.9 %	
AS % OF CAEP/4 LIMIT (NOx)			88.8 %	
AS % OF CAEP/6 LIMIT (NOx)			100.9 %	
AS % OF CAEP/8 LIMIT (NOx)			121.3 %	

### 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

### MEASURED DATA

MODE	POWER SETTING (% $F_{oo}$ )	TIME minutes	FUEL FLOW kg/s	EMISSIONS INDICES (g/kg)			SMOKE NUMBER
				HC	CO	NOx	
TAKE-OFF	100	0.7	1.154	0.03	0.9	20.7	7.7
CLIMB OUT	85	2.2	0.954	0.04	0.9	17.8	3.9
APPROACH	30	4.0	0.336	0.07	3.1	9.1	2.5
IDLE	7	26.0	0.124	1.42	26.8	4.3	2.3
LTO TOTAL FUEL (kg) or EMISSIONS (g)			448	287	5591	4810	-
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)				2.76	53.5	45.8	7.7
SIGMA ( $D_p/F_{oo}$ in g/kN, or SN)				0.38	2.85	0.82	0.76
RANGE ( $D_p/F_{oo}$ in g/kN, or SN)				2.33-3.06	51.2-56.7	45.3-46.8	6.8-8.3

### ACCESSORY LOADS

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

### ATMOSPHERIC CONDITIONS

BAROMETER (kPa)	95.98-97.49
TEMPERATURE (K)	279 - 286
ABS HUMIDITY (kg/kg)	.002-.009

### FUEL

SPEC	Jet A
H/C	1.93
AROM (%)	16

MANUFACTURER: CFMI  
TEST ORGANIZATION: CFM56 Evaluation Engineering  
TEST LOCATION: Peebles Site IVD  
TEST DATES: FROM 11 Nov 83 TO 14 Nov 83

### REMARKS

1. Ref GE Report R84AEB579.
2. Engine S/N 692441.
3. Revised based on 3/89 production status cycle.

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

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