



# ICAO ENGINE EXHAUST EMISSIONS DATA BANK

## SUBSONIC ENGINES

ENGINE IDENTIFICATION: CFM56-5B7/3      BYPASS RATIO: 5.7  
UNIQUE ID NUMBER: 8CM058      PRESSURE RATIO ( $\pi_{00}$ ): 27.3  
ENGINE TYPE: TF      RATED OUTPUT ( $F_{00}$ ) (kN): 120.1

### REGULATORY DATA

CHARACTERISTIC VALUE:	HC	CO	NOx	SMOKE NUMBER
$D_p/F_{00}$ (g/kN) or SN	3.1	48.5	39.8	14.7
AS % OF ORIGINAL LIMIT	15.6 %	41.1 %	42.1 %	65.3 %
AS % OF CAEP/2 LIMIT (NOx)			52.6 %	
AS % OF CAEP/4 LIMIT (NOx)			63.5 %	
AS % OF CAEP/6 LIMIT (NOx)			72.2 %	
AS % OF CAEP/8 LIMIT (NOx)			85.9 %	

### 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)  
- OUT OF PRODUCTION  
- OUT OF SERVICE

### MEASURED DATA

MODE	POWER SETTING (% $F_{00}$ )	TIME minutes	FUEL FLOW kg/s	EMISSIONS INDICES (g/kg)			SMOKE NUMBER
TAKE-OFF	100	0.7	1.142	0.02	0.25	21.57	13.4
CLIMB OUT	85	2.2	0.939	0.02	0.16	17.23	9.9
APPROACH	30	4.0	0.316	0.05	3.24	8.85	2.1
IDLE	7	26.0	0.102	1.92	32.07	4.22	2.1
LTO TOTAL FUEL (kg) or EMISSIONS (g)			407	314	5386	4511	-
NUMBER OF ENGINES				3	3	3	3
NUMBER OF TESTS				7	7	7	7
AVERAGE $D_p/F_{00}$ (g/kN) or AVERAGE SN (MAX)				2.61	44.84	37.56	13.4
SIGMA ( $D_p/F_{00}$ in g/kN, or SN)				0.36	2.4	1.1	4.5
RANGE ( $D_p/F_{00}$ in g/kN, or SN)				2.21 to 2.9	42.0 to 46.6	36.8 to 38.8	8.4 to 16.9

### ACCESSORY LOADS

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

### ATMOSPHERIC CONDITIONS

BAROMETER (kPa)	97.6 to 98.5
TEMPERATURE (K)	277 to 293
ABS HUMIDITY (kg/kg)	0.00150 to 0.00628

### FUEL

SPEC	Jet A
H/C	1.92 - 1.93
AROM (%)	16.2 - 17.5

MANUFACTURER: CFM International  
TEST ORGANIZATION: GE Aviation  
TEST LOCATION: PTO, Ohio, USA  
TEST DATES: FROM 29 Sep 05 TO 23 Mar 06

### REMARKS

1. Ref. GE REPORT CR-2097/3 Rev1
2. Engine S/N 874-026/01, 778-024/01B, and 892-769/01
3. Certification in accordance with Part III, Chapter 2, of Amendment 7 of ICAO Annex 16 Vol. II.
4. NOx levels in accordance with Part III, Chapter 2, 2.3.2 e) (CAEP/8)

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

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