



# ICAO ENGINE EXHAUST EMISSIONS DATA BANK

## SUBSONIC ENGINES

ENGINE IDENTIFICATION: CFM56-7B18/3  
UNIQUE ID NUMBER: 8CM061  
ENGINE TYPE: TF

BYPASS RATIO: 5.5  
PRESSURE RATIO ( $\pi_{00}$ ): 21.4  
RATED OUTPUT ( $F_{00}$ ) (kN): 86.7

### REGULATORY DATA

| CHARACTERISTIC VALUE:      | HC     | CO     | NOx    | SMOKE NUMBER |
|----------------------------|--------|--------|--------|--------------|
| $D_p/F_{00}$ (g/kN) or SN  | 8.8    | 88.0   | 33.3   | 8.8          |
| AS % OF ORIGINAL LIMIT     | 45.0 % | 74.6 % | 40.2 % | 35.9 %       |
| AS % OF CAEP/2 LIMIT (NOx) |        |        | 50.3 % |              |
| AS % OF CAEP/4 LIMIT (NOx) |        |        | 62.0 % |              |
| AS % OF CAEP/6 LIMIT (NOx) |        |        | 70.0 % |              |
| AS % OF CAEP/8 LIMIT (NOx) |        |        | 85.5 % |              |

### 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 |
|---|-----------------------------|--------------|----------------|--------------------------|--------------|--------------|--------------|
|   |                             |              |                | HC                       | CO           | NOx          |              |
| TAKE-OFF  | 100                         | 0.7          | 0.842          | 0.03                     | 0.17         | 14.81        | 8            |
| CLIMB OUT                                       | 85                          | 2.2          | 0.702          | 0.03                     | 0.28         | 13           | 6.6          |
| APPROACH  | 30                          | 4.0          | 0.256          | 0.08                     | 5.54         | 7.78         | 2.1          |
| IDLE  | 7                           | 26.0         | 0.092          | 4.51                     | 46.64        | 3.65         | 2.1          |
| LTO TOTAL FUEL (kg) or EMISSIONS (g)            |                             |              | 333            | 656                      | 7055         | 2729         | -            |
| 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) |                             |              |                | 7.56                     | 81.34        | 31.46        | 8.04         |
| SIGMA ( $D_p/F_{00}$ in g/kN, or SN)            |                             |              |                | 0.72                     | 3.3          | 1.1          | 1.4          |
| RANGE ( $D_p/F_{00}$ in g/kN, or SN)            |                             |              |                | 6.74 to 7.9              | 77.6 to 83.5 | 30.4 to 32.5 | 6.8 to 9.6   |

### 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. Data also apply to CFM56-7B18/3
4. Certification in accordance with Part III, Chapter 2, of Amendment 7 of ICAO Annex 16 Vol. II.
5. 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)