



# ICAO ENGINE EXHAUST EMISSIONS DATA BANK

## SUBSONIC ENGINES

ENGINE IDENTIFICATION: CFM56-5B5/3      BYPASS RATIO: 6  
UNIQUE ID NUMBER: 8CM056      PRESSURE RATIO ( $\pi_{oo}$ ): 23.1  
ENGINE TYPE: TF      RATED OUTPUT ( $F_{oo}$ ) (kN): 97.9

### REGULATORY DATA

CHARACTERISTIC VALUE:	HC	CO	NOx	SMOKE NUMBER
$D_p/F_{oo}$ (g/kN) or SN	6.2	70.1	33.0	10.7
AS % OF ORIGINAL LIMIT	31.6 %	59.4 %	38.3 %	44.9 %
AS % OF CAEP/2 LIMIT (NOx)			47.9 %	
AS % OF CAEP/4 LIMIT (NOx)			59.0 %	
AS % OF CAEP/6 LIMIT (NOx)			67.0 %	
AS % OF CAEP/8 LIMIT (NOx)			81.7 %	

### 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 (% $F_{oo}$ )	TIME minutes	FUEL FLOW kg/s	EMISSIONS INDICES (g/kg)			SMOKE NUMBER
				HC	CO	NOx	
TAKE-OFF	100	0.7	0.894	0.03	0.15	16.42	9.7
CLIMB OUT	85	2.2	0.743	0.03	0.2	14.01	8
APPROACH	30	4.0	0.264	0.08	4.94	8.03	2.1
IDLE	7	26.0	0.092	3.55	41.77	3.81	2.1
LTO TOTAL FUEL (kg) or EMISSIONS (g)			343	520	6343	3047	-
NUMBER OF ENGINES				3	3	3	3
NUMBER OF TESTS				7	7	7	7
AVERAGE $D_p/F_{oo}$ (g/kN) or AVERAGE SN (MAX)				5.31	64.82	31.13	9.7
SIGMA ( $D_p/F_{oo}$ in g/kN, or SN)				0.55	2.9	1.1	2.1
RANGE ( $D_p/F_{oo}$ in g/kN, or SN)				4.68 to 5.7	61.5 to 66.5	30.1 to 32.2	8.0 to 12.1

### 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)