



# ICAO ENGINE EXHAUST EMISSIONS DATA SHEET

## SUBSONIC ENGINES

ENGINE IDENTIFICATION: CFM56-7B20  
UNIQUE ID NUMBER: 3CM030  
COMBUSTOR:  
ENGINE TYPE: TF

BYPASS RATIO: 5.4  
PRESSURE RATIO ( $\pi_{00}$ ): 22.6  
RATED THRUST ( $F_{00}$ ) (kN): 91.6

### REGULATORY DATA

CHARACTERISTIC VALUE:	HC	CO	NO <sub>x</sub>	SMOKE NUMBER
D <sub>p</sub> /F <sub>00</sub> (g/kN) or SN	8.4	58.0	48.5	14.7
AS % OF ORIGINAL LIMIT	42.9	49.2	56.9	60.6
AS % OF CAEP/2 LIMIT (NO <sub>x</sub> )			71.1	
AS % OF CAEP/4 LIMIT (NO <sub>x</sub> )			87.9	
AS % OF CAEP/6 LIMIT (NO <sub>x</sub> )			99.9	
AS % OF CAEP/8 LIMIT (NO <sub>x</sub> )			122.1	

### 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 (DATE: - )

### MEASURED DATA

MODE	POWER SETTING (%F <sub>00</sub> )	TIME (minutes)	FUEL FLOW (kg/s)	EMISSIONS INDICES (g/kg)			SMOKE NUMBER
				HC	CO	NO <sub>x</sub>	
TAKE-OFF	100	0.7	0.913	0.10	0.60	20.50	11.4
CLIMB OUT	85	2.2	0.761	0.10	0.50	17.40	8.0
APPROACH	30	4.0	0.274	0.10	3.20	9.50	0.0
IDLE	7	26.0	0.100	3.10	25.90	4.30	0.0
LTO TOTAL FUEL (kg) or EMISSIONS (g)			361	504	4324	3829	-
NUMBER OF ENGINES				1	1	1	1
NUMBER OF TESTS				3	3	3	3
AVERAGE D <sub>p</sub> /F <sub>00</sub> (g/kN) or AVERAGE SN (MAX)				5.4	47.2	41.8	11.4
SIGMA (D <sub>p</sub> /F <sub>00</sub> in g/kN, or SN)							
RANGE (D <sub>p</sub> /F <sub>00</sub> in g/kN, or SN)							

### ACCESSORY LOADS

POWER EXTRACTION 0 (kW)  
STAGE BLEED 0 (% CORE FLOW)

AT - POWER SETTINGS  
AT - POWER SETTINGS

### ATMOSPHERIC CONDITIONS

BAROMETER (kPa)	97.8-98
TEMPERATURE (K)	294-297
ABS HUMIDITY (kg/kg)	0.01-0.0157

### FUEL

SPEC	Jet A
H/C	1.86-1.97
AROM (%)	16.9-17.7

MANUFACTURER: CFM International  
TEST ORGANIZATION: CFM56-7B Eval Engineering  
TEST LOCATION: Peebles Test Operation (PTO), Peebles, Ohio  
TEST DATES: 01/07/1996

### REMARKS

1. FAA Certification Report CR-997, Dec 96.
2. Engine S/N 874-101/01

Compliance with Fuel Venting requirements:

- ('x' if complies, 'PR' if pre-regulation, '-' if information is not available)