



# ICAO ENGINE EXHAUST EMISSIONS DATA BANK

## SUBSONIC ENGINES

ENGINE IDENTIFICATION: LF507-1F, -1H  
UNIQUE ID NUMBER: 1TL004  
ENGINE TYPE: TF

BYPASS RATIO: 5.1  
PRESSURE RATIO ( $\pi_{00}$ ): 13  
RATED OUTPUT ( $F_{00}$ ) (kN): 31

### REGULATORY DATA

CHARACTERISTIC VALUE:	HC	CO	NOx	SMOKE NUMBER
$D_p/F_{00}$ (g/kN) or SN	16.7	110.6	40.4	13.6
AS % OF ORIGINAL LIMIT	85.2 %	93.7 %	61.2 %	41.7 %
AS % OF CAEP/2 LIMIT (NOx)			76.5 %	
AS % OF CAEP/4 LIMIT (NOx)			77.8 %	
AS % OF CAEP/6 LIMIT (NOx)			78.3 %	
AS % OF CAEP/8 LIMIT (NOx)			83.3 %	

### 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

### 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	0.358	0.01	0.2	14.52	10.3
CLIMB OUT	85	2.2	0.296	0.01	0.3	12.02	10.2
APPROACH	30	4.0	0.108	0.12	4.43	6.39	6.9
IDLE	7	26.0	0.045	4.72	37.83	3.28	6.8
LTO TOTAL FUEL (kg) or EMISSIONS (g)			151	337	2803	1086	-
NUMBER OF ENGINES				1	1	1	1
NUMBER OF TESTS				3	3	3	3
AVERAGE $D_p/F_{00}$ (g/kN) or AVERAGE SN (MAX)				10.8	90.1	34.9	10.6
SIGMA ( $D_p/F_{00}$ in g/kN, or SN)				-	-	-	-
RANGE ( $D_p/F_{00}$ in g/kN, or SN)				-	-	-	-

### ACCESSORY LOADS

POWER EXTRACTION 0 (kW)  
STAGE BLEED 20 % CORE FLOW

AT - POWER SETTINGS  
AT 9.41kN POWER SETTINGS

### ATMOSPHERIC CONDITIONS

BAROMETER (kPa)	101.3-102.4
TEMPERATURE (K)	276 - 280
AHS HUMIDITY (kg/kg)	0.0023-0.0038

### FUEL

SPEC	0.81
H/C	1.925
AROM (%)	19.7

MANUFACTURER: Textron Lycoming  
TEST ORGANIZATION: Textron Lycoming  
TEST LOCATION: Stratford, CT  
TEST DATES: FROM 19 Dec 90 TO 20 Dec 90

### REMARKS

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

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