



ICAO ENGINE EXHAUST EMISSIONS DATA BANK

SUBSONIC ENGINES

ENGINE IDENTIFICATION: V2531-E5
UNIQUE ID NUMBER: 14IA018
ENGINE TYPE: MTF

BYPASS RATIO: 4.5
PRESSURE RATIO (π_{oo}): 32.3
RATED OUTPUT (F_{oo}) (kN): 134.8

REGULATORY DATA

CHARACTERISTIC VALUE:	HC	CO	NOx	SMOKE NUMBER
D_p/F_{oo} (g/kN) or SN	0.3	21.2	61.4	11.1
AS % OF ORIGINAL LIMIT	1.5 %	18.0 %	58.7 %	50.9 %
AS % OF CAEP/2 LIMIT (NOx)			73.4 %	
AS % OF CAEP/4 LIMIT (NOx)			85.8 %	
AS % OF CAEP/6 LIMIT (NOx)			96.7 %	
AS % OF CAEP/8 LIMIT (NOx)			112.2 %	

DATA STATUS

- PRE-REGULATION
x CERTIFICATION
- REVISED (SEE REMARKS)

TEST ENGINE STATUS

x NEWLY MANUFACTURED ENGINES
x 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	1.329	0.01	0.39	32.17	2.3
CLIMB OUT	85	2.2	1.079	0.02	0.41	24.28	6
APPROACH	30	4.0	0.391	0.09	1.57	11.14	6.3
IDLE	7	26.0	0.144	0.07	10.17	5.58	1.3
LTO TOTAL FUEL (kg) or EMISSIONS (g)			517	28	2503	7521	-
NUMBER OF ENGINES				2	2	2	2
NUMBER OF TESTS				4	4	4	4
AVERAGE D_p/F_{oo} (g/kN) or AVERAGE SN (MAX)				0.2	18.6	55.8	9.4
SIGMA (D_p/F_{oo} in g/kN, or SN)				-	-	-	-
RANGE (D_p/F_{oo} in g/kN, or SN)				-	-	-	-

ACCESSORY LOADS

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

ATMOSPHERIC CONDITIONS

BAROMETER (kPa)	100.35-102.88
TEMPERATURE (K)	268.2-277.7
ABS HUMIDITY (kg/kg)	0.00140-0.00359

FUEL

SPEC	JET A
H/C	1.91
AROM (%)	0.17

MANUFACTURER: IAE International Aero Engines
TEST ORGANIZATION: Pratt & Whitney
TEST LOCATION: East Hartford, CT
TEST DATES: FROM 11 Dec 08 TO 19 Jan 09

REMARKS

- Engine performance reflects V2531-E5 Turbofan Engine.
- Certification in accordance with Part III, Chapter 2, of Amendment 7 of ICAO Annex 16 Vol. II.
- NOx levels in accordance with Part III, Chapter 2, 2.3.2 d) (CAEP/6)

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

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