



# ICAO ENGINE EXHAUST EMISSIONS DATA BANK

## SUBSONIC ENGINES

ENGINE IDENTIFICATION: V2524-A5 SelectOne™ Upgrade BYPASS RATIO: 4.8  
UNIQUE ID NUMBER: 10IA012 PRESSURE RATIO ( $\pi_{00}$ ): 27  
ENGINE TYPE: MTF RATED OUTPUT ( $F_{00}$ ) (kN): 108.9

### REGULATORY DATA

CHARACTERISTIC VALUE:	HC	CO	NOx	SMOKE NUMBER
$D_p/F_{00}$ (g/kN) or SN	0.5	28.7	50.9	11.1
AS % OF ORIGINAL LIMIT	2.4 %	24.4 %	54.2 %	47.8 %
AS % OF CAEP/2 LIMIT (NOx)			67.7 %	
AS % OF CAEP/4 LIMIT (NOx)			81.8 %	
AS % OF CAEP/6 LIMIT (NOx)			93.0 %	
AS % OF CAEP/8 LIMIT (NOx)			110.9 %	

### 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	1.040	0.03	0.42	22.96	7
CLIMB OUT	85	2.2	0.867	0.04	0.44	19.25	7.8
APPROACH	30	4.0	0.326	0.07	2.28	9.69	3.7
IDLE	7	26.0	0.133	0.14	12.03	5.18	1.7
LTO TOTAL FUEL (kg) or EMISSIONS (g)			444	39	2747	5039	-
NUMBER OF ENGINES				2	2	2	2
NUMBER OF TESTS				4	4	4	4
AVERAGE $D_p/F_{00}$ (g/kN) or AVERAGE SN (MAX)				0.4	25.2	46.3	9.4
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) 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 (%)	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 new SelectOne™ package upgrades.
- Certification in accordance with Part III, Chapter 2, of Amendment 6 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)