



# ICAO ENGINE EXHAUST EMISSIONS DATA BANK

## SUBSONIC ENGINES

ENGINE IDENTIFICATION: AE3007A1E BYPASS RATIO: 4.7  
UNIQUE ID NUMBER: 6AL020 PRESSURE RATIO ( $\pi_{00}$ ): 19.1  
ENGINE TYPE: MTF RATED OUTPUT ( $F_{00}$ ) (kN): 37.2

### REGULATORY DATA

CHARACTERISTIC VALUE:	HC	CO	NOx	SMOKE NUMBER
$D_p/F_{00}$ (g/kN) or SN	10.9	99.6	46.8	0.0
AS % OF ORIGINAL LIMIT	55.8 %	84.4 %	59.9 %	0.0 %
AS % OF CAEP/2 LIMIT (NOx)			74.9 %	
AS % OF CAEP/4 LIMIT (NOx)			77.6 %	
AS % OF CAEP/6 LIMIT (NOx)			78.9 %	
AS % OF CAEP/8 LIMIT (NOx)			84.8 %	

### DATA STATUS

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

### TEST ENGINE STATUS

- 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)  
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	0.412	0.03	0.77	17.17	0.01
CLIMB OUT	85	2.2	0.343	0.03	0.64	14.91	0.01
APPROACH	30	4.0	0.120	0.03	5.63	7.42	0.01
IDLE	7	26.0	0.048	3.52	37.97	4.26	0.01
LTO TOTAL FUEL (kg) or EMISSIONS (g)			165	264	3018	1501	-
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)				7.1	81.18	40.38	0.01
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)	98.9 - 99.0
TEMPERATURE (K)	291 - 301
ABS HUMIDITY (kg/kg)	0.009 - 0.012

### FUEL

SPEC	Jet A
H/C	1.9
AROM (%)	16 - 20

MANUFACTURER: Rolls-Royce Corporation  
TEST ORGANIZATION: Rolls-Royce Corporation  
TEST LOCATION: Indianapolis, Indiana, USA  
TEST DATES: FROM 09 Jun 01 TO 11 Jun 01

### REMARKS

1. For effectivity see Rolls-Royce Notice to Operators No. AE3007A-076
2. Data in this form for AE3007A1E engine fitted with reduced emissions combustor & PAB fuel nozzles
3. Results based on Rolls-Royce report EDR 19587
4. Certification in accordance with Part III, Chapter 2, of Amendment 7 of ICAO Annex 16 Vol. II.
5. 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: 0 ('x' if complies, PR if pre-regulation)