



ICAO ENGINE EXHAUST EMISSIONS DATA SHEET

SUBSONIC ENGINES

ENGINE IDENTIFICATION: RB211-22B
UNIQUE ID NUMBER: 1RR003
COMBUSTOR: Package 1
ENGINE TYPE: TF

BYPASS RATIO: 4.7
PRESSURE RATIO (π_{00}): 25.0
RATED THRUST (F_{00}) (kN): 182.5

REGULATORY DATA

CHARACTERISTIC VALUE:	HC	CO	NO _x	SMOKE NUMBER
D _p /F ₀₀ (g/kN) or SN	148.7	198.3	60.0	24.0
AS % OF ORIGINAL LIMIT	758.7	168.0	66.7	119.7
AS % OF CAEP/2 LIMIT (NO _x)			83.3	
AS % OF CAEP/4 LIMIT (NO _x)			101.7	
AS % OF CAEP/6 LIMIT (NO _x)			115.6	
AS % OF CAEP/8 LIMIT (NO _x)			139.3	

DATA STATUS

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

TEST ENGINE STATUS

- NEWLY MANUFACTURED ENGINES
- DEDICATED ENGINES TO PRODUCTION STANDARD
x 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 ₀₀)	TIME (minutes)	FUEL FLOW (kg/s)	EMISSIONS INDICES (g/kg)			SMOKE NUMBER
				HC	CO	NO _x	
TAKE-OFF	100	0.7	1.877	0.15	0.78	37.33	22.6
CLIMB OUT	85	2.2	1.546	0.25	1.68	26.89	19.8
APPROACH	30	4.0	0.566	5.96	20.65	8.18	12.3
IDLE	7	26.0	0.225	67.75	88.99	2.86	4.8
LTO TOTAL FUEL (kg) or EMISSIONS (g)			770	24653	34445	10545	-
NUMBER OF ENGINES				7	7	7	7
NUMBER OF TESTS				7	7	7	7
AVERAGE D _p /F ₀₀ (g/kN) or AVERAGE SN (MAX)				134.8	188.5	57.8	22.6
SIGMA (D _p /F ₀₀ in g/kN, or SN)				5.6	13.1	3.1	6.5
RANGE (D _p /F ₀₀ in g/kN, or SN)				169.8-204.1	169.8-204.1	52.2-60.7	14.6-33.4

ACCESSORY LOADS

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

AT - POWER SETTINGS
AT - POWER SETTINGS

ATMOSPHERIC CONDITIONS

BAROMETER (kPa)	99.6-102.2
TEMPERATURE (K)	275-287
ABS HUMIDITY (kg/kg)	0.0033-0.0077

FUEL

SPEC	DERD 2494
H/C	
AROM (%)	

MANUFACTURER: Rolls-Royce plc
TEST ORGANIZATION: NGTE, Pyestock, UK
TEST LOCATION: British Airways Test Facility, Heathrow
TEST DATES: 01/03/1979-01/04/1980

REMARKS

1. Package 1 combustor.
2. Tests performed on in-service engine(s), after overhaul.
3. SN mode data scaled from 1RR002

Compliance with Fuel Venting requirements:

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