



ICAO ENGINE EXHAUST EMISSIONS DATA SHEET

SUBSONIC ENGINES

ENGINE IDENTIFICATION: RB211-524D4
UNIQUE ID NUMBER: 1RR007
COMBUSTOR: Package 1
ENGINE TYPE: TF

BYPASS RATIO: 4.3
PRESSURE RATIO (π_{eo}): 29.7
RATED THRUST (F_{eo}) (kN): 231.3

REGULATORY DATA

CHARACTERISTIC VALUE:	HC	CO	NO _x	SMOKE NUMBER
D _p /F _{eo} (g/kN) or SN	114.1	176.7	93.8	13.4
AS % OF ORIGINAL LIMIT	582.1	149.7	94.4	71.2
AS % OF CAEP/2 LIMIT (NO _x)			118.0	
AS % OF CAEP/4 LIMIT (NO _x)			141.0	
AS % OF CAEP/6 LIMIT (NO _x)			160.2	
AS % OF CAEP/8 LIMIT (NO _x)			188.7	

DATA STATUS

x PRE-REGULATION
- CERTIFICATION
x 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 (DATE: -)

MEASURED DATA

MODE	POWER SETTING (%F _{eo})	TIME (minutes)	FUEL FLOW (kg/s)	EMISSIONS INDICES (g/kg)			SMOKE NUMBER
				HC	CO	NO _x	
TAKE-OFF	100	0.7	2.510	0.00	0.51	56.90	12.2
CLIMB OUT	85	2.2	2.010	0.42	1.18	41.00	9.2
APPROACH	30	4.0	0.740	4.80	16.90	9.65	1.8
IDLE	7	26.0	0.300	46.46	73.80	4.11	0.6
LTO TOTAL FUEL (kg) or EMISSIONS (g)			1016	22707	37907	20514	-
NUMBER OF ENGINES				3	3	3	3
NUMBER OF TESTS				3	3	3	3
AVERAGE D _p /F _{eo} (g/kN) or AVERAGE SN (MAX)				97.8	163.4	88.6	12.2
SIGMA (D _p /F _{eo} in g/kN, or SN)							
RANGE (D _p /F _{eo} in g/kN, or SN)							

ACCESSORY LOADS

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

AT - POWER SETTINGS
AT - POWER SETTINGS

ATMOSPHERIC CONDITIONS

BAROMETER (kPa)	101
TEMPERATURE (K)	277
ABS HUMIDITY (kg/kg)	0.006

FUEL

SPEC	AVTUR
H/C	1.91
AROM (%)	20

MANUFACTURER: Rolls-Royce plc
TEST ORGANIZATION: Rolls-Royce Ltd
TEST LOCATION: SINFIN-Derby
TEST DATES: 01/11/1982

REMARKS

1. Package 1 combustor
2. SN mode data scaled from 1RR004

Compliance with Fuel Venting requirements:

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