



ICAO ENGINE EXHAUST EMISSIONS DATA SHEET

SUBSONIC ENGINES

ENGINE IDENTIFICATION: BR700-710D5-21
UNIQUE ID NUMBER: 01P20BR015
COMBUSTOR: Phase5 Tiled
ENGINE TYPE: MTF

BYPASS RATIO: 4.6
PRESSURE RATIO (π_{00}): 33.1
RATED THRUST (F_{00}) (kN): 68.4

REGULATORY DATA

CHARACTERISTIC VALUE:	HC	CO	NO _x	SMOKE NUMBER
D _p /F ₀₀ (g/kN) or SN	4.5	71.6	47.7	4.3
AS % OF ORIGINAL LIMIT	23.1	60.7	44.9	16.5
AS % OF CAEP/2 LIMIT (NO _x)			56.1	
AS % OF CAEP/4 LIMIT (NO _x)			61.8	
AS % OF CAEP/6 LIMIT (NO _x)			66.5	
AS % OF CAEP/8 LIMIT (NO _x)			73.9	

For non-volatile particulate matter (nvPM) emissions, please refer to the ICAO Engine nvPM Emissions Data Sheet.

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)
- OUT OF PRODUCTION (DATE: -)
- OUT OF SERVICE (DATE: -)

MEASURED DATA

MODE	POWER SETTING (%F ₀₀)	TIME (minutes)	FUEL FLOW (kg/s)	HC	CO	NO _x	SMOKE NUMBER
TAKE-OFF	100	0.7	0.682	0.02	0.32	26.63	2.9
CLIMB OUT	85	2.2	0.564	0.00	0.63	20.20	3.5
APPROACH	30	4.0	0.197	0.01	2.84	9.11	1.9
IDLE	7	26.0	0.080	2.13	34.97	3.07	1.7
LTO TOTAL FUEL (kg) or EMISSIONS (g)			275	265	4533	3082	-
NUMBER OF ENGINES				3	3	3	3
NUMBER OF TESTS				5	5	5	5
AVERAGE D _p /F ₀₀ (g/kN) or AVERAGE SN (MAX)				3.9	66.2	45.0	3.9
SIGMA (D _p /F ₀₀ in g/kN, or SN)				2.4	11.8	0.6	1.4
RANGE (D _p /F ₀₀ in g/kN, or SN)				1.8-6.5	54.9-78.4	44.4-45.6	2.4-5

ACCESSORY LOADS

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

ATMOSPHERIC CONDITIONS

BAROMETER (kPa)	100.4-102
TEMPERATURE (K)	279.9-287.8
ABS HUMIDITY (kg/kg)	0.00539-0.00777

FUEL

SPEC	
H/C	1.94
AROM (%)	15.36

MANUFACTURER: Rolls-Royce Deutschland
TEST ORGANIZATION: Rolls-Royce Deutschland
TEST LOCATION: Dahlewitz
TEST DATES: 29/03/2017-08/11/2018

NO_x REGULATION PARAGRAPH

	2.3.2 c) (CAEP/4)
	2.3.2 d) (CAEP/6)
x	2.3.2 e) (CAEP/8)

REMARKS

1. Data from Certification Report EDNS 01000729874
2. Certification in accordance with Part III, Chapter 2, of Amendment 8 of ICAO Annex 16 Vol. II.
3. NO_x levels in accordance with Part III, Chapter 2, 2.3.2 e) (CAEP/8)

Compliance with Fuel Venting requirements:

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