



# ICAO ENGINE EXHAUST EMISSIONS DATA BANK

## SUBSONIC ENGINES

ENGINE IDENTIFICATION: GEnx-1B70/P2  
UNIQUE ID NUMBER: 13GE161  
ENGINE TYPE: TF

BYPASS RATIO: 8.81  
PRESSURE RATIO ( $\pi_{00}$ ): 43.9  
RATED OUTPUT ( $F_{00}$ ) (kN): 321.6

### REGULATORY DATA

CHARACTERISTIC VALUE:	HC	CO	NOx	SMOKE NUMBER
$D_p/F_{00}$ (g/kN) or SN	0.8	20.1	45.5	0.8
AS % OF ORIGINAL LIMIT	4.0 %	17.0 %	35.6 %	4.4 %
AS % OF CAEP/2 LIMIT (NOx)			44.5 %	
AS % OF CAEP/4 LIMIT (NOx)			48.0 %	
AS % OF CAEP/6 LIMIT (NOx)			52.5 %	
AS % OF CAEP/8 LIMIT (NOx)			58.4 %	

### DATA STATUS

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

### TEST ENGINE STATUS

x 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  
- OUT OF SERVICE

### MEASURED DATA

MODE	POWER SETTING (% $F_{00}$ )	TIME minutes	FUEL FLOW kg/s	EMISSIONS INDICES (g/kg)			SMOKE NUMBER
TAKE-OFF	100	0.7	2.504	0.02	0.06	34.77	0
CLIMB OUT	85	2.2	2.042	0.02	0.17	20.87	0
APPROACH	30	4.0	0.654	0.05	1.82	11.02	0.52
IDLE	7	26.0	0.213	0.44	14.78	4.85	0.11
LTO TOTAL FUEL (kg) or EMISSIONS (g)			865	162	5256	12629	-
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)				0.5	16.34	39.27	0.58
SIGMA ( $D_p/F_{00}$ in g/kN, or SN)				0.04	0.022	0.25	0.34
RANGE ( $D_p/F_{00}$ in g/kN, or SN)				0.47-0.54	16.32-16.36	39.02-39.52	0.35-0.97

### ACCESSORY LOADS

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

### ATMOSPHERIC CONDITIONS

BAROMETER (kPa)	98.1 to 98.5
TEMPERATURE (K)	295.1 to 298.8
ABS HUMIDITY (kg/kg)	.01189 to .01439

### FUEL

SPEC	JET A
H/C	1.89
AROM (%)	15.4

MANUFACTURER: GE Aviation  
TEST ORGANIZATION: GE Aviation  
TEST LOCATION: PTO, Ohio, USA  
TEST DATES: FROM 19 Jun 12 TO 21 Jun 12

### REMARKS

1. Ref. GE REPORT R2010AE907
2. Engine S/N 956-101/4
3. Certification in accordance with Part III, Chapter 2, of Amendment 7 of ICAO Annex 16 Vol. II.
4. 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:

x ('x' if complies, PR if pre-regulation)