

# Non-Directional Radio Beacon

## NDB

The NDB system manufactured and supplied by IACIT is a radio navigation system used in the CNS and ATM systems providing the NDB's direction and its identification (Morse code) for the aircrafts during execution of the procedures for approach and landing in Terminal Areas (TMA), en route or for offshore oil and gas platforms and buildings, in accordance with the instructions and aeronautical regulations in force.



The Non-Directional Beacon System can operate under emergency power supply (DC) in the absence or failure of the mains supply (AC).

### Offered Versions

- Low Power: 25 to 50 W
- Average Power: 100 to 250 W
- High Power: 500 to 1000 W

### General Characteristics

- Modular construction;
- Standard installation: 19" cabinet;
- Single or dual transmitter, main and stanby with automatic change-over;
- Automatic change-over to DC power supply in case of AC power failure;
- System operation without interruption when switching to emergency power (battery);
- Easy installation, operation and maintenance;
- Failure indication by module.

### System

- Transmitter: operating at the frequency range of 190 kHz to 550 kHz with the output power from 25W up to 1000W, adjustable and enough for the current needs of coverage.
- Antenna Tuning Unit: provides tuning and impedance matching between an antenna and a 50 ohm feeder cable from NDB transmitter.
- Antenna: composed by cable-stayed tower, height from 30m to 72m with top load and grounded plan in ground stations or helideck antennas for offshore oil and gas platforms and buildings.



# Non-Directional Radio Beacon - NDB

Transmitter	
Frequency Range	190 to 550 kHz
Configuration	Single or dual transmitter
Output Power	50 - 200 - 1000 W
Frequency Generation	Synthesizer
Emission Mode	A2A: AM Telegraphy NON: Only Carrier 600AE: AM Telephony
Identification Tone	1020 Hz $\pm$ 50Hz or 400Hz $\pm$ 20 Hz
Identification Code	International Morse Code up to 4 alphabetic digits and one of them with maximum 3 elements

Antenna Tuning Unit		
Frequency Range	190 kHz to 550 kHz	
Input Power	250 - 1000 W (average)	
Antenna Resistance Range	45 $\Omega$ to 25 $\Omega$	
Antenna Capacitance Range	1000 pF to 5000 pF	
VSWR	$\leq$ 1,5:1	
Efficiency	2% to 20%	
Coupling Type	Automatic	
Operation under normal conditions	Power Supply	220 V $\pm$ 10%
	Consumption	$\leq$ 60W

Mechanical Characteristics			
	50 W	200 W	1000 W
Height (mm)	1564	1910	1910
Width (mm)	560	612	560
Depth (mm)	660	660	660
Weight (kg)			
Transmitter	134	145	570
Antenna Coupler	50	50	50

Antennas	
Cable-Stayed Tower	
Models	TI-30, 1-42A, 1-72A
Frequency Range	190 kHz to 550 kHz
Power	Up to 1000 W
Height	30/42/72 m IACIT standard (it can be reduced according to the sort of the soil, requested coverage and altitude where the equipment will be installed)
Construction	Galvanized steel structure 5, 7 or 12 modules, 6 m each, cable-stayed tower with top load, earth plan, triangular straight section with 0,30 m width, photoelectric cell, cable shielded, aircraft warning lights and Kelvin transformer

Helideck Antenna	
Frequency Range	190 kHz to 550 kHz
Power	250 W (average)
Capacitance	400 pF to 1500 pF
Resistance	2 $\Omega$ to 25 $\Omega$
Gauge Copper Wire With Steel Core	12 AWG
Maximum Length	90 m
Minimum Length	56 m
Fixing	Around the helipad through support rods
Maximum Number of Support Rods	9
Spacing Between Support Rods	11 m (maximum)

Power Supply		
AC input supply	220 V $\pm$ 10%, 50/60 Hz single phase	
DC input supply	36 V $\pm$ 10%	
Consumption	NDB 1kW	3,3 KVA, 73 A
	NDB 250 W	1,1 KVA (AC)