```c
/*
 * Proyecto1.c
 *
 * Created: 5/02/2026 09:57:23
 * Author : samur
 */

// main_maestro.c
#include <avr/io.h>
#include <util/delay.h>
#include "I2C/I2C.h"
#include "UART/UART.h"
#include <stdint.h>
#include <stdio.h>

#define BH1750_ADDR_W  0x46
#define ESCLAVO_ADDR_R 0x61

char buffer[30];
uint8_t lux_h, lux_l, ldr0, ldr1, ldr2, ldr3;

int main(void) {
    I2C_master_init(100000, 1);
    UART_Init();
    _delay_ms(100);

    // Inicializar BH1750
    I2C_master_start();
    I2C_master_write(BH1750_ADDR_W);
    I2C_master_write(0x01);  //ON
    I2C_master_stop();
    _delay_ms(10);

    I2C_master_start();
    I2C_master_write(BH1750_ADDR_W);
    I2C_master_write(0x10);//Alta resolucion
    I2C_master_stop();
    _delay_ms(180);

    while(1) {
        //Leer BH1750
        I2C_master_start();
        I2C_master_write(BH1750_ADDR_W);  //Escritura
        I2C_master_repeatedstart();       //Repeated start
        I2C_master_write(0x47);           //Cambio a lectura
        I2C_master_read(&lux_h, 1);
        I2C_master_read(&lux_l, 0);
        I2C_master_stop();

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50          //Leer esclavo
51          I2C_master_start();
52          I2C_master_write(ESCLAVO_ADDR_R);
53          I2C_master_read(&ldr0, 1);
54          I2C_master_read(&ldr1, 1);
55          I2C_master_read(&ldr2, 1);
56          I2C_master_read(&ldr3, 0);
57          I2C_master_stop();
58
59          //Cálculo de lux
60          uint16_t raw_lux = (lux_h << 8) | lux_l;
61          uint16_t lux_entero = raw_lux * 10 / 12;
62
63          //Enviar por UART
64          sprintf(buffer, "L:%u  %u %u %u %u\r\n",
65          lux_entero, ldr0, ldr1, ldr2, ldr3);
66          UART_SendString(buffer);
67
68          _delay_ms(1000);
69      }
70  }
```