

LT-GDM-13

Ground-Detecting Module

Product Specifications

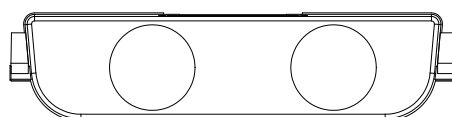
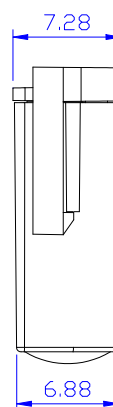
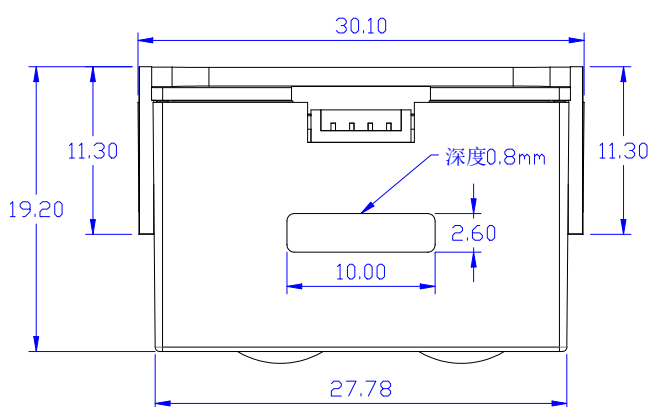
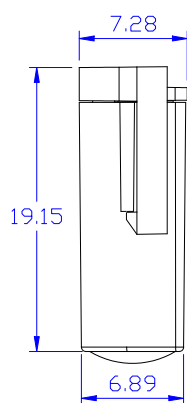
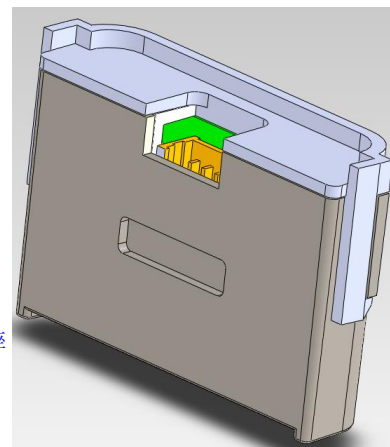
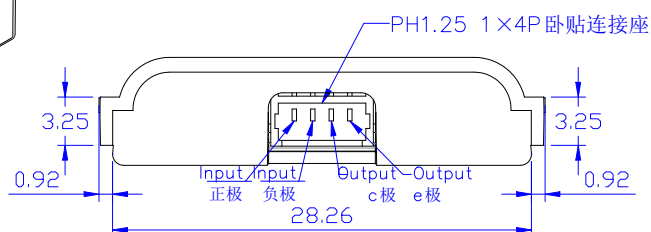
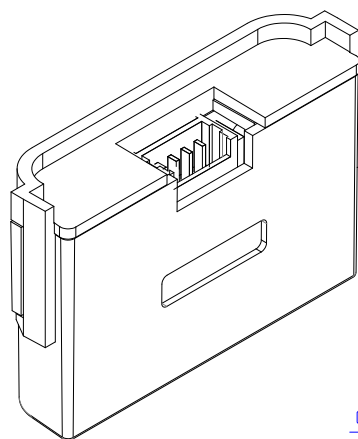
SPEC. NO. : SZ23080111
DATE : 2025/03/20
REV. : A/4

Approved By:

Checked By:

Prepared By:

Dimensions of the Single Module



Notes:

1. All dimensions are in millimeters.
2. Tolerance is $\pm 0.50\text{mm}$ unless otherwise noted.
3. Specifications are subject to change without notice.

Features

- ◆ Pb free product—RoHS compliant
- ◆ Fast response time
- ◆ High sensitivity
- ◆ Invisible wavelength $\lambda_p=940\text{nm}$
- ◆ Integration structure

Typical Applications

- ◆ Intelligent Sweeping Robot

Absolute Maximum Ratings at $T_a=25^\circ\text{C}$

Parameter		Symbol	Ratings	Unit
Input	Power Dissipation	P_d	170	mW
	Reverse Voltage	V_R	5	V
	Forward Current	I_F	50	mA
	Peak Forward Current*1	I_{FP}	250	mA
Output	Collector Power Dissipation	P_c	75	mW
	Collector Current	I_C	20	mA
	Collector-Emitter Voltage	V_{CEO}	30	V
	Emitter-Collector Voltage	V_{ECO}	5	V
Electrostatic Discharge (HBM)		ESD	4000	V
Operating Temperature Range		T_{opr}	-10°C to $+60^\circ\text{C}$	$^\circ\text{C}$
Storage Temperature Range		T_{stg}	-40°C to $+70^\circ\text{C}$	$^\circ\text{C}$

Note: 1. Pulse width $\leq 0.1\text{msec}$, duty cycle $\leq 1/10$.

Electrical Optical Characteristics at Ta=25°C

Input						
Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Peak Wavelength	λ_p	---	940	---	nm	$I_F=50mA$
Forward Voltage	V_F	---	1.35	1.60	V	$I_F=50mA$
Reverse Current	I_R	---	---	10	μA	$V_R=5V$

Output						
Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Collector-Emitter Breakdown Voltage	BV_{CEO}	30	---	---	V	$I_C=0.1mA$ $E_e=0mW/cm^2$
Emitter-Collector Breakdown Voltage	BV_{ECO}	5	---	---	V	$I_E=0.1mA$ $E_e=0mW/cm^2$
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	---	---	0.4	V	$I_C=2mA$ $E_e=1.0mW/cm^2$
Rise Time	T_r	---	15	---	μs	$V_{CC}=5V$ $R_L=1K\Omega$ $I_C=1mA$
Fall Time	T_f	---	15	---	μs	
Collector Dark Current	I_{CEO}	---	---	100	nA	$V_{CE}=10V$ $E_e=0mW/cm^2$
On State Collector Current	$I_{C(ON)}$	1.0	5.0	---	mA	$V_{CE}=5V$ $I_F=20mA$

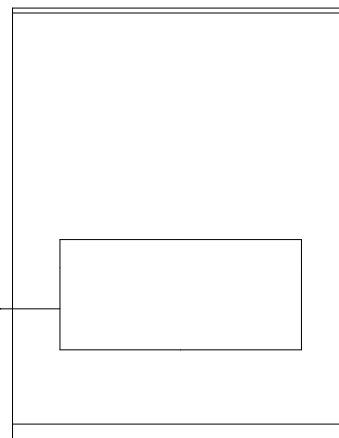
ADC value standard (Standard machine and Black carpet provided by customer)

- 1、The distance from the Ground-Detecting Module to the Gray carpet is 38mm;
- 2、The distance from the Ground-Detecting Module to the white interface is 80mm;
- 3、The Gray carpet ADC value ranges: >100 ;
- 4、The white ADC value ranges: <60 .

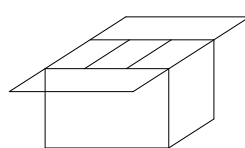
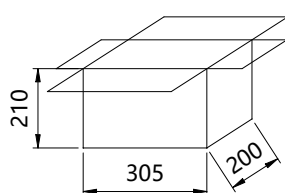
PACKAGE

LIGHT 深圳莱特光电股份有限公司 Light Electronics CO., LTD.		
TYPE NO. :		
QUANTITY :		
BIN :		
DATE CODE :		
REMARKS :		

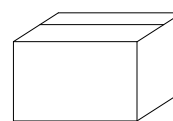
LOT NO. :

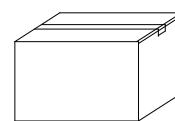
Bag



1



2



3

Bag volume (pcs / Bag)	Outer Carton volume (Bags / Carton)
TBD	TBD