

BMW Head Up Display (HUD) Teardown

BMW ヘッドアップディスプレイ ティアダウン

FEATURES:

製品の特徴

- CPU: Cypress (Fujitsu)

MB88F333BA

- Display: LCD

3.15-inch

WVGA (800 x 480 dot)

IPS (stripe alignment)



[Click here for detailed data from Fomalhaut's teardown analysis.](#)

Manufacturer	Nippon Seiki
Model Number	6230-9 367 800
Carrier	-
Assembled in	Japan
Retail Price	unknown
Product Release	unknown
Report Release	2016.09.02
Document ID	1053

BASIC	Product Name	BMW HUD, 6230-9 367 800						
	Manufacturer	Nippon Seiki Co., Ltd						
	Minimum Size (mm)	315 x 185 x 205						
	Weight (g)	2100						
BATTERY TIME	Standby (hours)	3.9G: FDD-LTE: -	3.9G: TD-LTE: -	3G: WCDMA: -	3G: CDMA: -	3G: TD-SCDMA: -	2G: GSM: -	
	Voice Call (minutes)	3.9G: FDD-LTE: -	3.9G: TD-LTE: -	3G: WCDMA: -	3G: CDMA: -	3G: TD-SCDMA: -	2G: GSM: -	
	Video Call (minutes)	-						
	Digital TV (minutes)	-						
	Other	-						
	Battery (size in mm)	-						
SYSTEM	OS	unknown						
	CPU / ROM / RAM	CPU: Fujitsu MB88F333BA ROM: unknown RAM: unknown						
DISPLAY	Main Display	3.15-inch, 16,777,216 colors, 800 x 480 dot, WVGA IPS LCD						
	Sub Display	-						
COMMUNICATION	Protocol (MHz)	3.9G: FDD-LTE: - 3.9G: TD-LTE: - 3G: WCDMA: - 3G: CDMA: - 3G: TD-SCDMA: - 2G: GSM: -						
	HSDPA/HSUPA (Mbps)	3G: -			LTE: -			
	Wireless LAN	-						
	Bluetooth	-						
	GPS	-						
	Infrared	-						
	RFID/NFC	-						
CAMERA	Main Camera	-						
	Sub Camera	-						
SENSOR	Motion	Accelerometer: -		Digital Compass: -		Gyroscope: -		Barometer: -
		Gesture Recognition: -		-		-		-
	Ambient	Light Sensor: -		Proximity Sensor: -		RGB Sensor: -		Laser Auto Focus Sensor: -
		Temperature Sensor: -		Humidity Sensor: -		-		-
	Security	Fingerprint Sensor: -		-		-		-
	Healthcare	Heart Rate Monitor: -						
	Touch Panel	-						
OTHER	HDMI	-						
	MicroSD (max capacity)	-						
	Waterproof/Anti-shock	-						

Supplier : Nippon Seiki - the biggest HUD supplier in the world.
Max angle of view among all mass-produced HUDs.
Multi-colored and high resolution LCD implemented.
The sensitive part, the concave mirror, is produced in-house
to secure quality.



Front Panel



Inner Frame



PCB#1



LED Unit
&
PCB#3



Mirror
&
Holder



Rear Cover



PCB#2



Display Unit



Mirror Unit



PCB#1 SIDE A: KEY COMPONENTS

Unit: millimeter otherwise specified

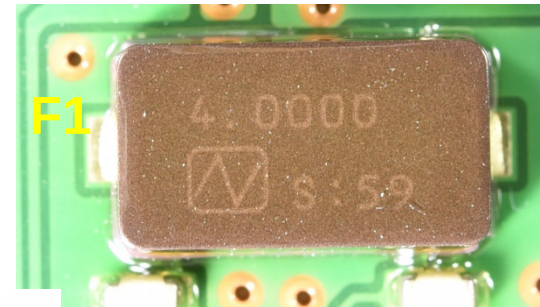
QUARTZ

(F1) AT-XTAL (NDK)

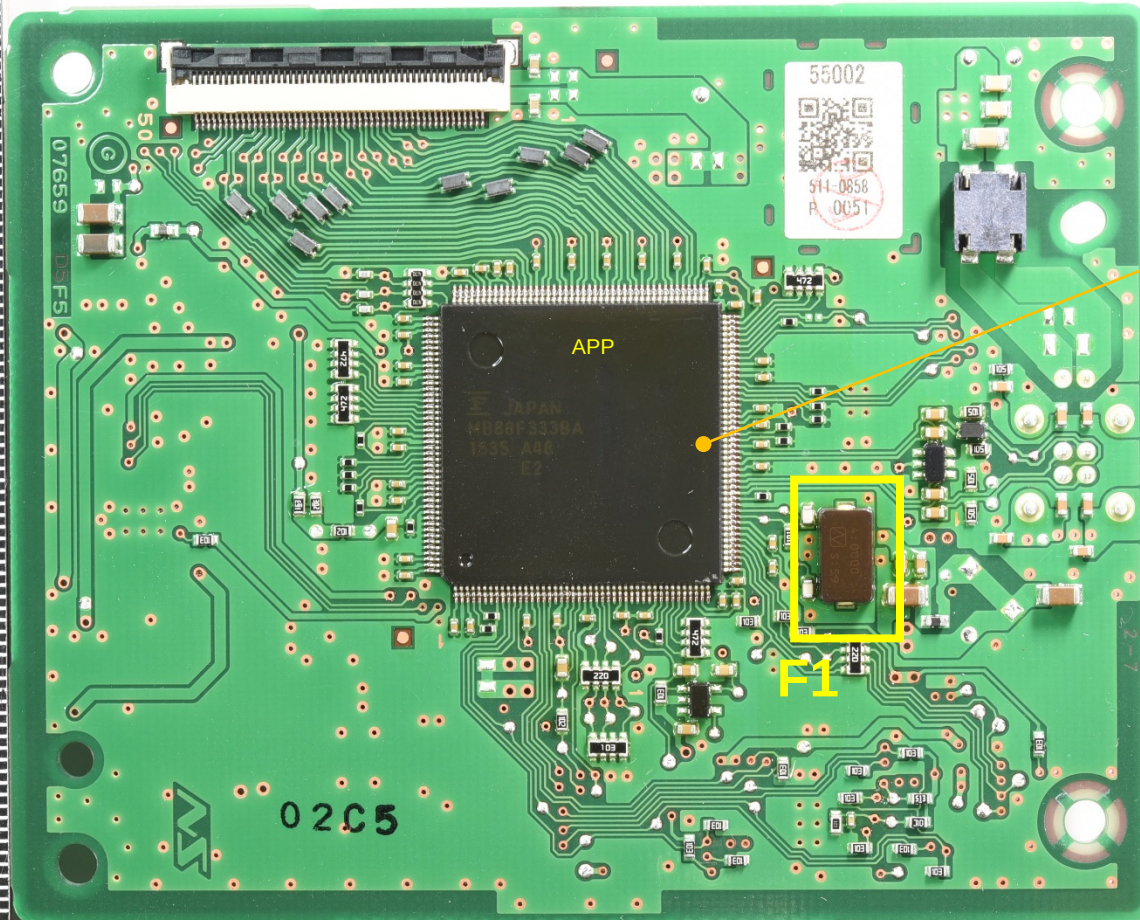
4.0000

(LOGO) S:59

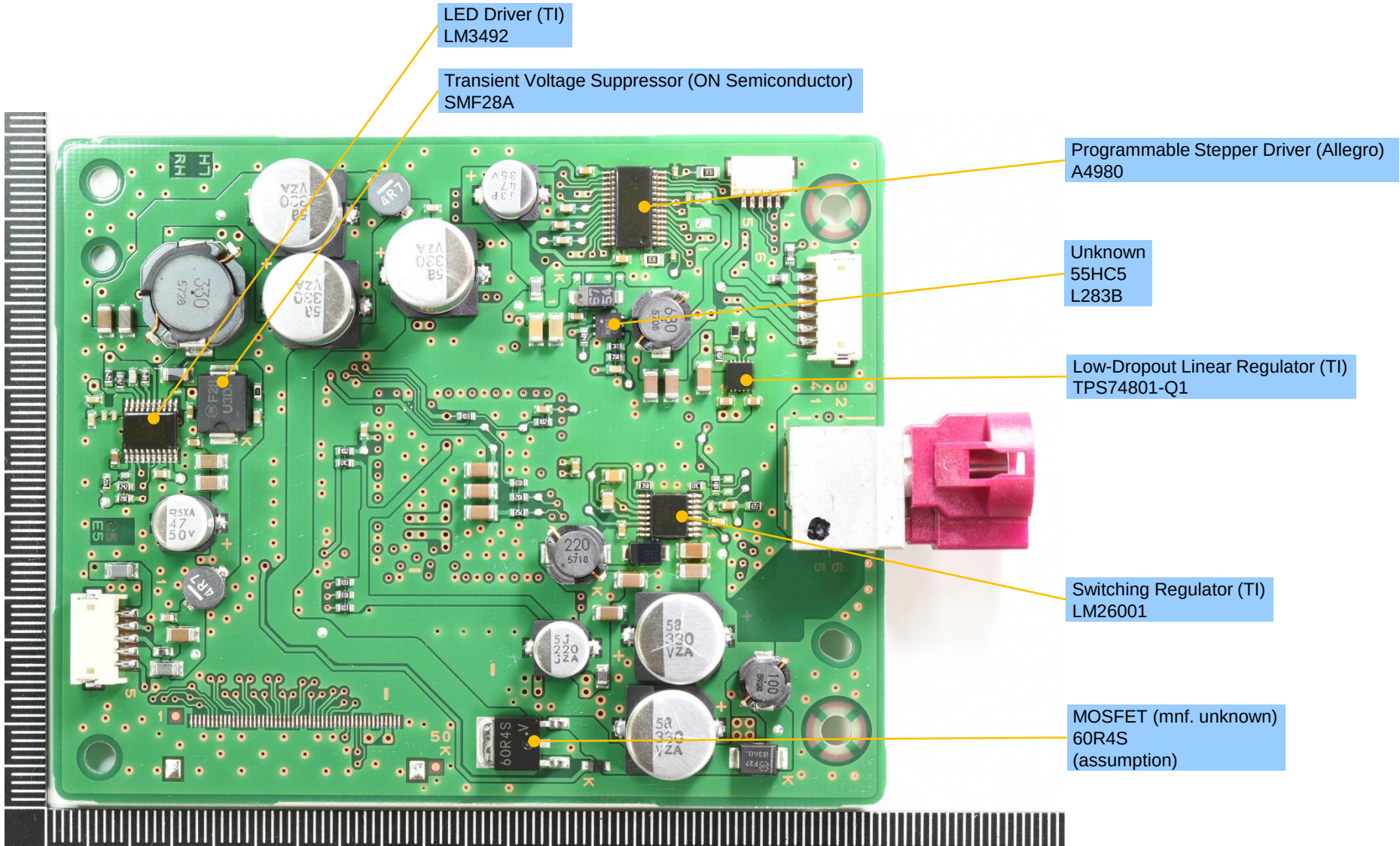
8.10 x 4.67 x 1.87



Application Processor (Cypress)
MB88F333BA



PCB#1 SIDE B: KEY COMPONENTS



LED UNIT (1)

1 notch = 1mm

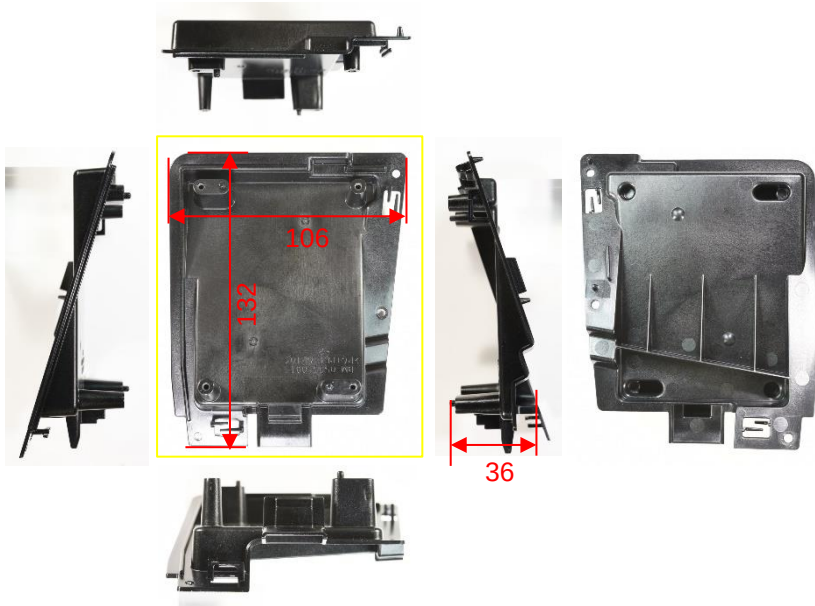


LED UNIT (2)

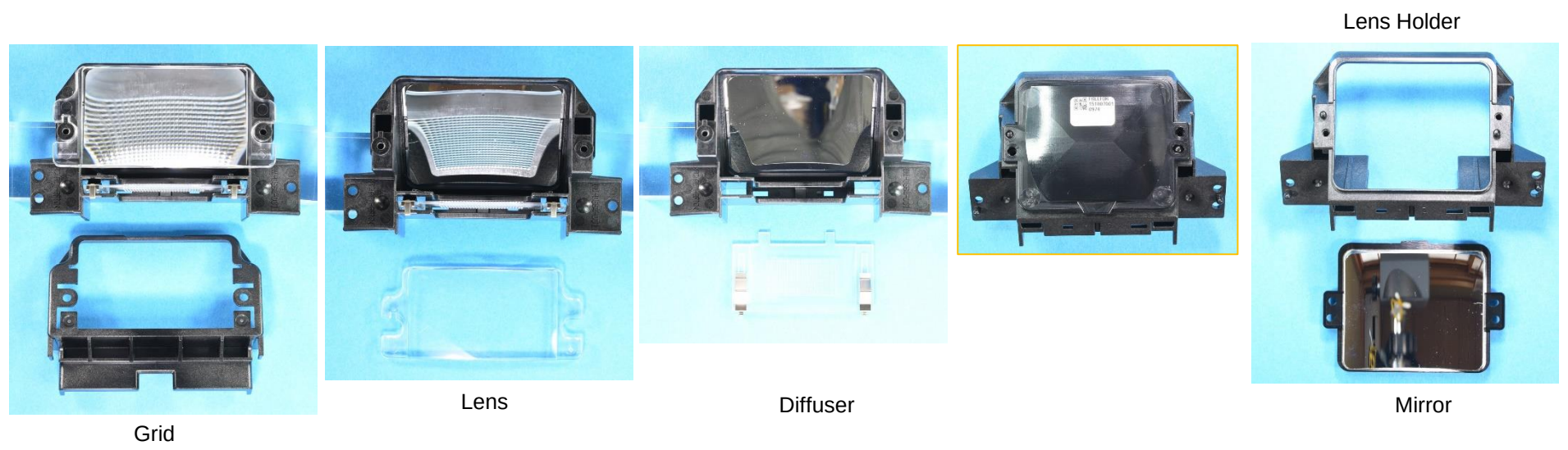
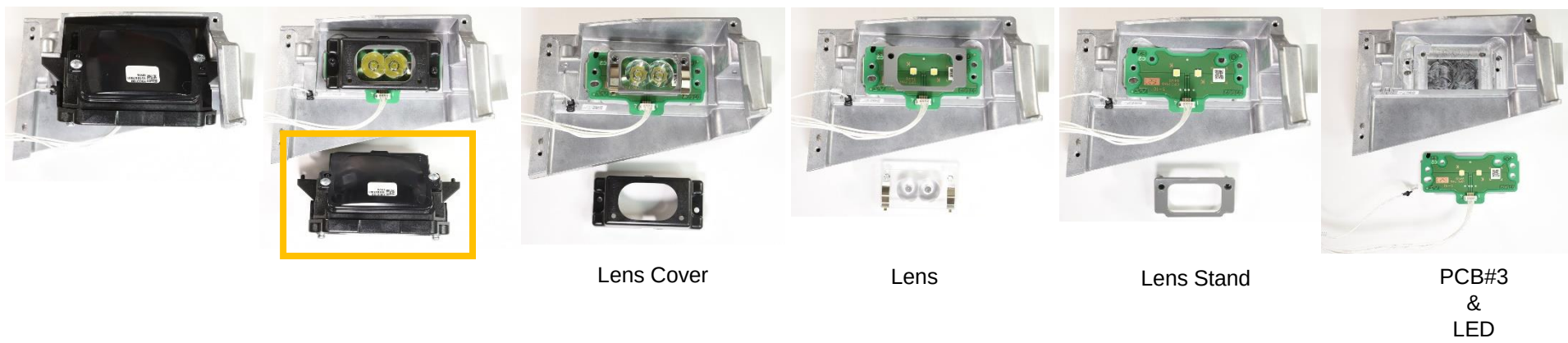
1 notch = 1mm



Part: PCB Stand
Size (mm): 106 x 191 x 45
Weight (g): 40
Material: PC+PET-GF10
Finish: -



LED UNIT (3)



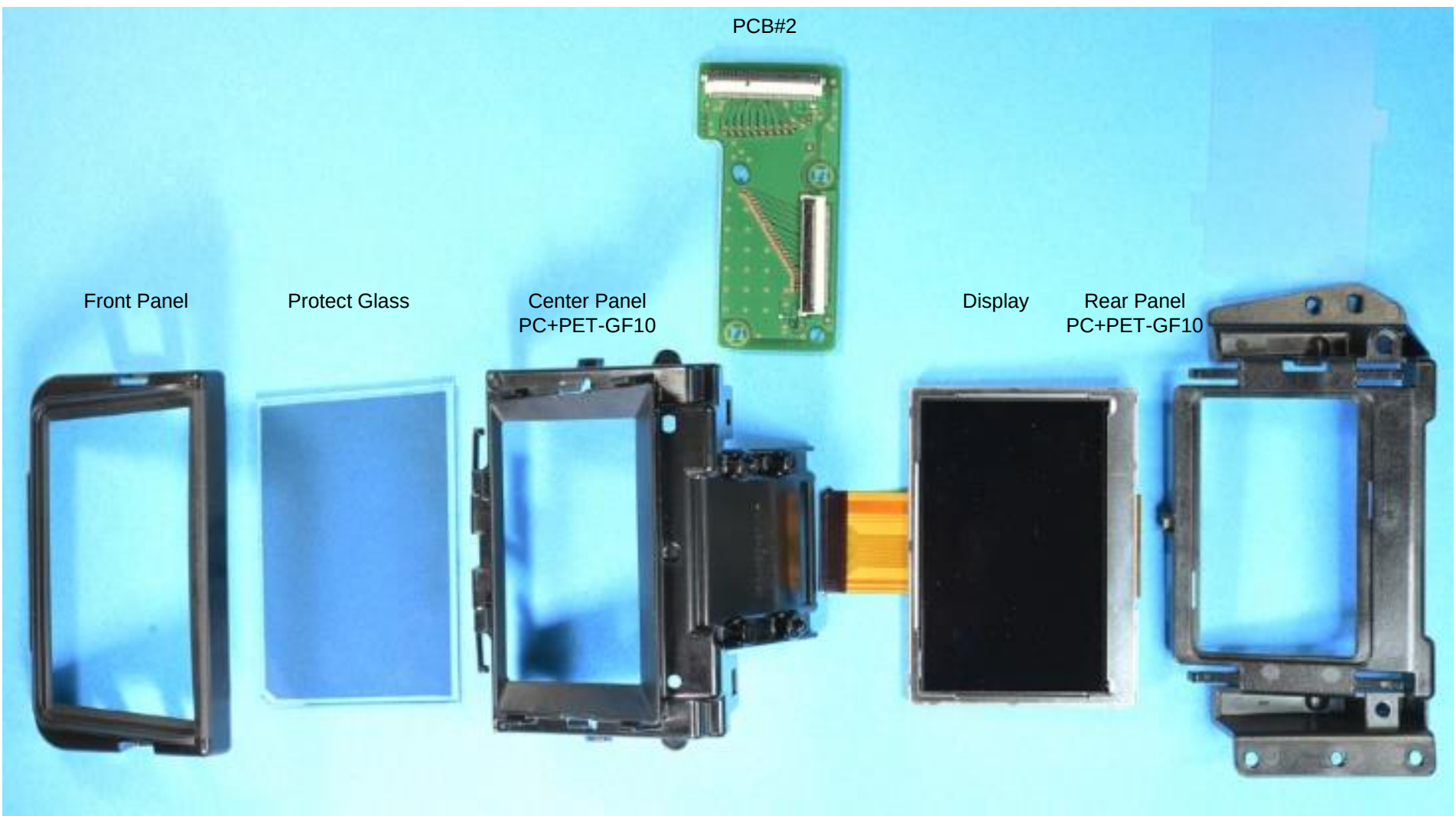
LED UNIT (4)



DISPLAY UNIT (1)



Diffuser

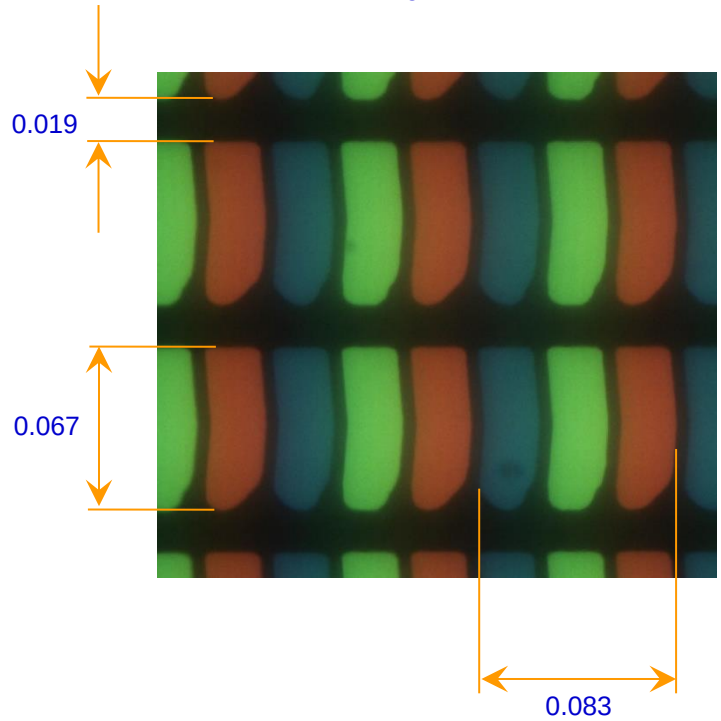


Display Module Size		73.05 x 50.75 x 1.66
Display Marking (location)		LPM0313623B N01A50378225907 (ID Sticker)
Display Panel Manufacturer		unknown
Display Diagonal Size (inch)		3.15
Display Mode (alignment)		IPS (stripe alignment)
Pixel Count (dot)		800 x 480
Resolution (pixel per inch)		297
Peripheral Margin (from reverse side)	Left	2.25
	Top	2.23
	Right	2.22
	Bottom – up	1.14
	Bottom – low	4.78
Seal marking: Y/N (length in mm)		No
Display Component Thickness	1a: LCD Top Polarizer	0.15
	1b: LCD Panel	1.21
	1c: LCD Lower Polarizer + Reflector	0.30
	2: Diffuser	-
	3: Brightness Enhancement Film	-
	4: Brightness Enhancement Film	-
	5: Diffuser	-
	6: Light Guide	-
	7: Reflector	-
	Display Component Total Thickness (clearance)	n/a
Display Backlight LED Count (size)		2 (4.02 x 4.00 x 0.82)
Display Cable Width (mm) / Pin Pitch (mm) / Pin Count		25.43 / 0.50 x 50

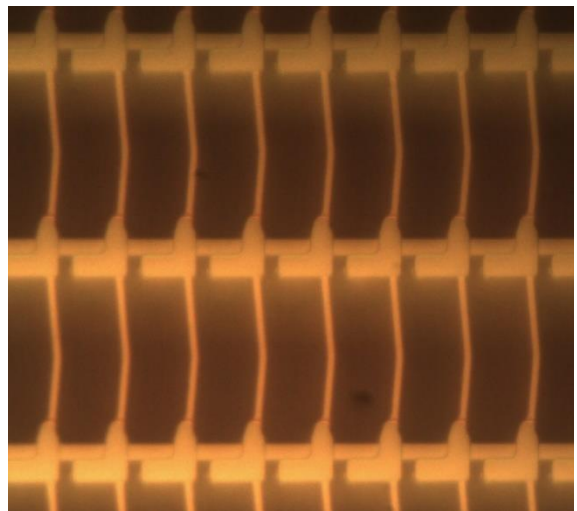
MAIN DISPLAY: PIXEL & FOOTPRINT

Unit: millimeter otherwise specified

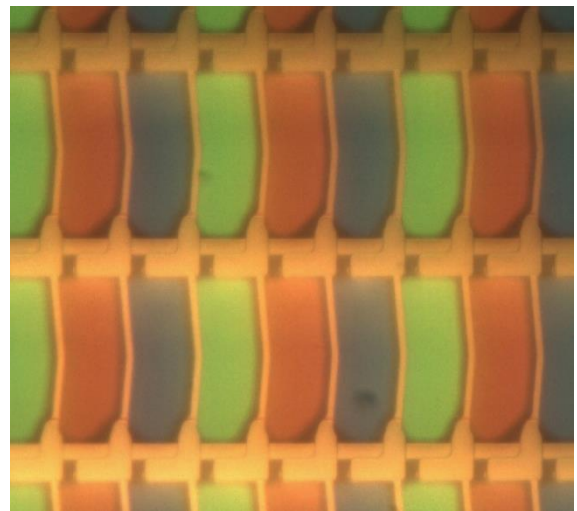
Backlight: ON
Front Light: OFF



Backlight: OFF
Front Light: ON



Backlight: ON
Front Light: ON



MIRROR UNIT (3): MOTOR UNIT



SERVICES

- TEARDOWN: on cellular phone, smartphone, tablet, laptop PC, digital still camera, LCD TV, and other mobile equipments.
- BILL OF MATERIALS: all-component-cost breakdown into more than 100 categories.
- MARKET REPORT: based on requests.
- SEMINAR: based on requests. Free seminars offered to regular subscribers every quarter.
- INTELLECTUAL PROPERTY: old phones available since 1996 up to date. Most of them are functional.

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