



SCREEN LINE QUALITY GUIDE

Shenzhen, China: Our second home.



MOBILE DEFENDERS

WHOLESALE REPLACEMENT PARTS



INTRODUCTION

At Mobile Defenders, we realize that there is no one-size-fits-all solution for repair shops. That's why we offer a variety of screen lines, each designed to be perfect for a specific market.

This guide is meant to introduce you to all of the different screen line configurations that we offer. Think of it as an introduction to what our screens can do to help you grow your business.

Don't forget that businesses are more than the sum of their parts. If you find yourself curious about anything regarding this document or any other facet of your repair shop experience, feel free to reach out to us at sales@mobiledefenders.com. Our representatives will be more than happy to help you with whatever you need to make your company more successful.

We hope this guide helps you to understand all of the offerings the Mobile Defenders brings to the table. This information will help you understand how to give your customers exactly what they're looking for every time.



OUR SCREEN LINES AND YOU

MOBILE DEFENDERS OFFERS A NUMBER OF CONFIGURATIONS AND CUSTOMIZATIONS TO ENSURE THAT YOU CAN ALWAYS FIND A PART THAT SUITS YOUR CUSTOMERS' NEEDS. EACH AND EVERY ONE OF OUR SCREEN LINE CONFIGURATIONS IS DESIGNED WITH YOU AND YOUR CUSTOMERS IN MIND. (SEE PAGE 5 FOR A FULL COMPARISON OF ALL SCREEN LINES.)



CHOICE

Our **CHOICE** line was designed to give you the flexibility to choose your screen assembly's specific features. With the option to upgrade your LCD/OLED, backlight, or both, you have the ability to not only tailor your price, but also your customer's experience.



SELECT

Our **SELECT** line is continuously evolving with the latest technology in the industry. Our master technicians designed this screen line to be the "no compromise" aftermarket part, with specs that meet or exceed OEM standards in terms of performance, but not price.



PRIMEPARTS

Our **PRIME** screens are the industry leading OEM refurbished assembly. These feature OEM-refurbished displays and touch functionality so that your customers are sure to experience the exact quality that their phone had when they first purchased it. Our **PRIME** screens have also historically been resistant to iOS updates which saves you time and prevents headaches.

FULL COMPARISON OF SCREEN LINES

Sometimes it's easier to compare products side-by-side to see what suits your market best. Below you'll find a chart of how all of our products stack up against each other, so you know exactly which one to choose for even the pickiest repair.

IPHONE X, XS, XS MAX SCREEN LINE COMPARISON

| | CHOICE C2 | CHOICE (HARD) C3 | CHOICE (SOFT) C4 | SELECT (SOFT OEM HYBRID) | PRIMEPARTS |
|----------------------------------|----------------------|-----------------------|----------------------------|-----------------------------------|---------------------------------------|
| DISPLAY ¹ | In-Cell LCD | Aftermarket Hard OLED | Aftermarket Soft OLED | OEM Soft OLED Hybrid | Certified Refurbished Original (OLED) |
| DISPLAY SUBSTRATE ² | Glass | | Plastic | | |
| TOUCH PANEL & FLEX CABLE | Aftermarket | | | | Original |
| PRE-INSTALLED ALIGNMENT BRACKETS | ✓ | ✓ | ✓ | ✓ | ✓ |
| DRIVER IC & DISPLAY FLEX CABLE | Aftermarket | | | Aftermarket (Original Compatible) | Original |
| PRICING | Very Price Conscious | Price Conscious | Somewhat Quality Conscious | Quality Conscious | Quality Conscious OEM |

1. Original iPhone X, XS, and XS Max displays use OLED technology.
2. Original iPhone X, XS, and XS Max displays use plastic substrate material.

IPHONE XR SCREEN LINE COMPARISON

| | CHOICE | SELECT | PRIMEPARTS |
|--------------------------|-----------------------------------|------------------------------------|--------------------------------|
| DISPLAY ³ | Value Aftermarket (Chip-on-Glass) | Premium Aftermarket (Chip-on-Flex) | Certified Refurbished Original |
| TOUCH PANEL & FLEX CABLE | Aftermarket | | |
| BACKLIGHT | Aftermarket | High Brightness | |
| PRE-INSTALLED BACKPLATE | ✓ | ✓ | ✓ |
| DISPLAY FLEX CABLE | Aftermarket (One-Part) | Aftermarket (Two-Part) | Original (Two-Part) |
| PRICING | Price Conscious | Quality/Price Compromise | Quality Conscious OEM |

3. iPhone XR exclusively uses LCD display technology.

iPHONE 6-8 SERIES SCREEN LINE COMPARISON



| | | CHOICE | | | | SELECT | | PRIME |
|------------------------------|----------------------|----------------------|----|---------------------|----|----------------------------------|----|--------------------------------|
| | | C1 | C2 | C3 | C4 | S2 | S3 | P1 |
| DISPLAY | | Standard Aftermarket | | Premium Aftermarket | | Premium Aftermarket | | Certified Refurbished Original |
| FRAME | | Cold Press | | | | | | Cold Press |
| POLARIZER | | Linear | | 360 View | | 360 View | | 360 View |
| BACKLIGHT | | Standard Brightness | | Medium Brightness | | High Brightness-Wide Color Gamut | | High Brightness ⁵ |
| SMALL PARTS | | | ✓ | | | | ✓ | |
| ALIGNMENT BRACKETS | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| BACKPLATE⁴ | | | ✓ | | ✓ | ✓ | ✓ | ✓ |
| FLEX CABLES | | Aftermarket | | | | Aftermarket | | Original |
| GLASS | | Uncoated Aftermarket | | | | Coated Aftermarket | | Coated Aftermarket |
| MINIMUM BRIGHTNESS | (4.7" MODELS) | 350 nits | | 400 nits | | 550 nits | | 500 nits |
| | (5.5" MODELS) | 300 nits | | 350 nits | | 500 nits | | 500 nits |
| AVERAGE SRGB COVERAGE | | 65% | | 70% | | 90% | | Comparable to OEM |
| COLOR TEMPERATURE | (UP TO iPHONE 6S) | 7000K ± 1500K | | 7000K ± 1000K | | 6500K ± 650K | | 6500K ± 650K |
| | (iPHONE 7 AND LATER) | 7000K ± 1500K | | 7000K ± 1000K | | 7000K ± 750K | | 7500K ± 750K |
| DELTA E 2000 | | <14 | | <12 | | <7 | | <7 |
| MARKET | | Very Price Conscious | | Price Conscious | | Quality/Price Compromise | | Quality Conscious OEM |

4. This upgrade is available on iPhone 6s series and up.
 ■ = Specific metrics will vary based on device

5. PRIMEPARTS' original display technology eliminates the need for a wide color gamut backlight.

Most of the terms used in our chart are industry-standard terms, but these terms aren't always defined. Here's a little more information about some of our categories. We think it's important that you understand exactly what you're purchasing.

CERTIFIED REFURBISHED DISPLAYS

Our Certified Refurbished displays have been refurbished from used original devices OR they have been assembled using original, unused components. These assemblies may have a mix of both original and aftermarket components, but all undergo rigorous and thorough testing to ensure there are no defects in both the display panel and touch panel performance.

POLARIZED DISPLAYS

Polarized displays are screen assemblies that contain a polarizer. This layer allows customers to view their screen through sunglasses. However, there are a few different types of polarizers on the market. We primarily use 360 polarizers, which means your customers can view content on their phone screens through sunglasses no matter how they hold it. We do use linear polarizers on some configurations of CHOICE to ensure the assemblies are low cost for competitive areas.



ALIGNMENT BRACKETS & SMALL PARTS

When we talk about parts with "alignment brackets," we're referring to all of the brackets and meshes that would otherwise be transferred during a repair. Sometimes the industry calls this feature "sub-kitting." All of our screens with alignment brackets include the front camera ring, proximity sensor bracket, ear speaker bracket, and ear speaker mesh.

We offer two configurations of screens that come with pre-installed small parts. This is also sometimes called "loaded," and means that they'll have the ear speaker and front camera with proximity sensor pre-installed.

FRONT GLASS COATING

We know that any great repair professional will be upselling a tempered glass screen protector with every single repair. When you make a successful sale, it's important to get the glass adhered quickly and efficiently.

All of the front glass used for most of our CHOICE configurations come with an uncoated front glass. This allows repair professionals to quickly install tempered glass without having to rigorously wipe the screen. The glass on our SELECT and PRIMEPARTS lines comes with coating similar to OEM assemblies.

BRIGHTNESS

Consumers want a bright, fully visible screen in all situations, and you want to give your customers what they want. Mobile Defenders is here to help you provide exactly that. Similar to an amp in an audio setup, an LCD doesn't always output the maximum load that the device is capable of. Darker images utilize less of the screen's potential, where lighter images will utilize more of its maximum output. Although the LCD doesn't always push its maximum brightness, it is important to have an adequate brightness so that customers can still see the LCD assemblies outdoors and in direct sunlight.



As you can see in the picture above, screens with lower nits are harder to see in sunlight.

Brightness is typically measured in nits. The amount of light (luminance) of one nit is equal to 1 candela per square meter. A typical candle puts off roughly 1 candela per square meter. While LCDs in TVs display around 200 nits, widespread outdoor usage of smartphones means that model devices require a higher nit output. An OEM screen is approximately 500 nits, and the lower end of aftermarket screens usually produce around 200 nits. Although a 200 nit screen will perform adequately indoors in lower lighting, your customers need a screen that can stand up to the sun's glare and brightness and still display a visible and clear picture.

GAMUT COVERAGE (sRGB)

The ability of a display assembly to produce a proportion of a range of colors of called Gamut Coverage. We measure the range of colors a part can produce and compare it with a standard color gamut-- the sRGB gamut. sRGB is used across various industries, and it allows standardization to make sure that colors look the same across a variety of devices.

Original display assemblies are calibrated on a per-device basis, so actual coverage will vary when a display assembly is used on a different device. Higher measurements usually correlate with more saturated colors.

COLOR TEMPERATURE

Color temperature is a metric that is used to quantify the color tone of an LCD. An end-user's experience will be less than ideal if an LCD assembly displays inaccurate colors. Mobile Defenders monitors and standardizes color temperature in our LCD assemblies because we know that screens with poor performance have a negative effect on your bottom line.

The ideal color temperature reading is 6,500k. This is the color temperature of daylight, which is the reference whitepoint of the sRGB color gamut. A deviation from the ideal color temp of 6,500k by 1,000k or less is almost unnoticeable to end-users, and still provides an optimal experience. LCD assemblies with color temperatures below 5,500K will display colors with a red tint, and those with color temperatures above 7,500K will be tinted blue.



ΔE (OR DELTA E) 2000

ΔE (or Delta E) allows Mobile Defenders to measure our screens' color accuracy beyond human perception. Generally speaking, ΔE is the measurement of change in visual perception between the color that an LCD is intended to display and the color that the LCD is actually displaying. Ideally, we want to stay as close as possible to ΔE = 0.

| | |
|--------------------|--|
| ΔE | Human Perception |
| 1.0 or less | Not perceptible to the human eye |
| 1-2 | Perceptible through close examination |
| 2-10 | Perceptible at a glance |
| 11-49 | Colors remain more similar than opposite |
| 100 | Colors are opposite |



A CONTINUING JOURNEY

It's our constant goal to provide you and your customers with the best possible parts, and with parts that fit your every need. That's why we continue to innovate and update our screen requirements to better suit your needs. We know that when you purchase from Mobile Defenders, you'll be blown away by the quality and value of the parts you receive.

WE CAN'T WAIT TO HELP YOU GROW YOUR BUSINESS.

