



## Overview

Optical Cable Corporation's (OCC®) family of MIL-PRF-29504/14 and /15 fiber optic termini is designed to achieve exceptional optical performance at extreme environments, including arctic, desert, seawater, high temperature and high pressure. The MIL-PRF-29504/14 and /15 was pioneered for integration into the MIL-C-28876 connector family and is the most accepted fiber optic termini for harsh or environmentally challenging applications. OCC incorporates several enhancements over the current MIL-PRF-29504/14 and /15 design which include accommodation of MIL-STD-2042B cut template, serrations on the external buffer guide to improve Kevlar™ retention and use of Beryllium Free alloys in the composition of the termini. OCC in-process quality assurance system ensures that all manufactured termini conform to inter-matability fit criteria set forth in MIL-PRF-28876. These improvements result in the best MIL-PRF-29504/14 and /15 available on the market and ensure compatibility with similar products.

## Features

- Inter-matable and inter-changeable with other M29504 /14 & /15 style termini
- Enhanced Kevlar™ Retention
- Complies MIL-STD-2042B cable template
- Superior Optical Performance
- Short Body Option
- Variety of fiber optic O.D.
- Single-mode, multimode

## Applications

- Aerospace/Airborne
- U.S. Navy Shipboard and Submarine
- Foreign Military Shipboard
- Mission Critical Combat Systems
- Mobile Tactical Shelters
- Battlefield Electronic Networks
- Mobile Emergency Telecommunication Stations
- Broadcast and Deployable Outdoor
- Petro-Chemical, Well Completion
- Energy and Exploration





### PERFORMANCE SPECIFICATION – M29504/14 PINS AND M29505/15 SOCKETS

| METRIC                   | PARAMETERS  |
|--------------------------|---|
| Operating Temperature    | -65°C to +150°C (dependent on epoxy and cable)      |
| Thermal Cycling          | -54°C to +65°C                                      |
| Thermal Shock            | -55°C to +85°C                                      |
| Temperature Life         | +110°C for 240 hours                                |
| Vibration                | 68 G random   |
| Physical Shock           | 500 G   |
| Mating Durability        | 500+ cycles   |
| Salt Spray               | 500 hours   |
| Pressure Sealing         | 32psi, (2,000 psi with wiper seal option)           |
| Terminus Mating Force    | 5 lbs. [22.2 N] nominal                             |
| Terminus Retention Force | 22 lbs. [97.9 N]                                    |
| Cable Retention Force    | 25 lbs. [111.2 N] (dependent on cable construction) |
| Weight                   | 0.7 grams max                                       |

### STANDARD MATERIALS AND FINISHES

| DESCRIPTION           | MATERIAL                | FINISH        |
|-----------------------|-------------------------|---------------|
| Terminus Body         | Stainless Steel         | Passivated    |
| Alignment Sleeve      | Zirconia                | None          |
| Alignment Sleeve Hood | Beryllium Free Material | Nickel Plated |
| Ferrule (bushing)     | Zirconia                | None          |
| Retaining Clip        | Beryllium Free Material | None          |
| Belleville Springs    | Beryllium Free Material | None          |
| O-Ring Seal           | Fluorosilicone          | None          |

### OPTICAL PERFORMANCE

| FIBER SIZE | INSERTION LOSS (MAX.) | INSERTION LOSS (TYP.) |
|------------|-----------------------|-----------------------|
| 9/125      | *-0.75 dB             | *-0.35 dB             |
| 62.5/125   | *-0.75 dB             | *-0.25 dB             |

### BACK REFLECTION (BR) – SINGLE-MODE

| FIBER TYPE  | BACK REFLECTION (dB) | TYPE OF POLISH |
|-------------|----------------------|----------------|
| Single-mode | ≤-40dB               | PC finish      |
| Single-mode | ≤-50dB               | UPC finish     |



# M29504/14 AND M29504/15



## Ordering Information



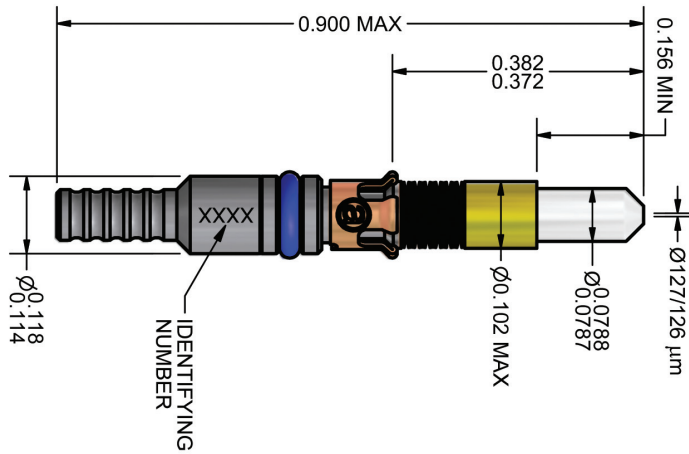
| MIL SPEC/M29504/14 PINS AND M29505/15 SOCKETS |          |                       |            |
|---|----------|-----------------------|------------|
| QUALIFIED PARTS LIST                          | OCC P/N  | DESCRIPTION           | FIBER SIZE |
| M29504/14-4131                                | TC1440CA | Pin Termini*          | 62.5/125um |
| M29504/14-4141                                | TC1440CA | Pin Termini*          | 9/125um    |
| M29504/14-4131C                               | TC1440CE | Pin Termini*          | 62.5/125um |
| M29504/14-4141C                               | TC1440CE | Pin Termini*          | 9/125um    |
| M29504/15-4171                                | TC1541CA | Socket Termini*       | 62.5/125um |
| M29504/15-4181                                | TC1541CA | Socket Termini*       | 9/125um    |
| M29504/15-4171C                               | TC1440CE | Socket Termini*       | 62.5/125um |
| M29504/15-4185C                               | TC1440CE | Socket Termini*       | 9/125um    |
| M29504/3-4038                                 | TC0339AA | Dummy Termini         | N/A        |
| (not listed)                                  | TC1549DA | Socket w/o Captivator | N/A        |
| (not listed)                                  | TC1546AA | Captivator Bushing    | N/A        |

\*Short versions available

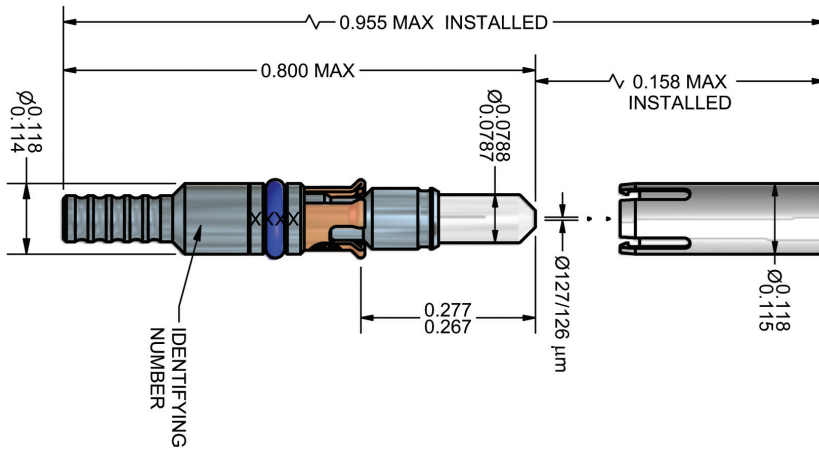
| CRIMP SLEEVE FOR ALL SIZES CABLE JACKET |              |                       |
|---|--------------|-----------------------|
| OCC P/N                                 | DESCRIPTION  | CABLE JACKET DIAMETER |
| PA35395-99-017                          | Crimp Sleeve | 2.0 mm O.D.           |
| PM83522/16-05-99B                       | Crimp Sleeve | 2.5 mm O.D.           |



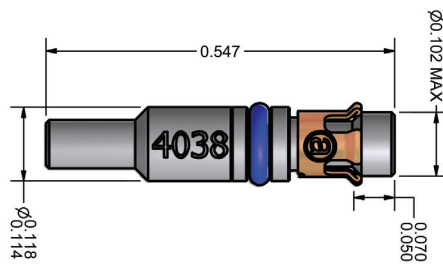
## Product Drawings



Pin Termini



Socket Termini



Dummy Termini