

# TALAS

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## 2022 catalog

For CO<sub>2</sub> and fiber laser consumables

Replacement parts suitable for LVD®



## Centricut delivers

- OEM quality nozzles, ceramics and optics
- Technical and application support from our OEM-trained technicians
- 100% satisfaction guarantee



# CO<sub>2</sub> and fiber laser nozzles

## Nozzle options

All Centricut nozzles are engineered and manufactured to the highest standards. Select the OEM quality nozzle best suited for your application needs

### Copper

Most commonly used nozzle offering good durability and nozzle life. Primary nozzle type for fiber lasers.

### Chrome plated

Shiny, mirror-like finish provides increased spatter resistance, improved durability and longer life than copper nozzles. Not recommended for use on fiber lasers.

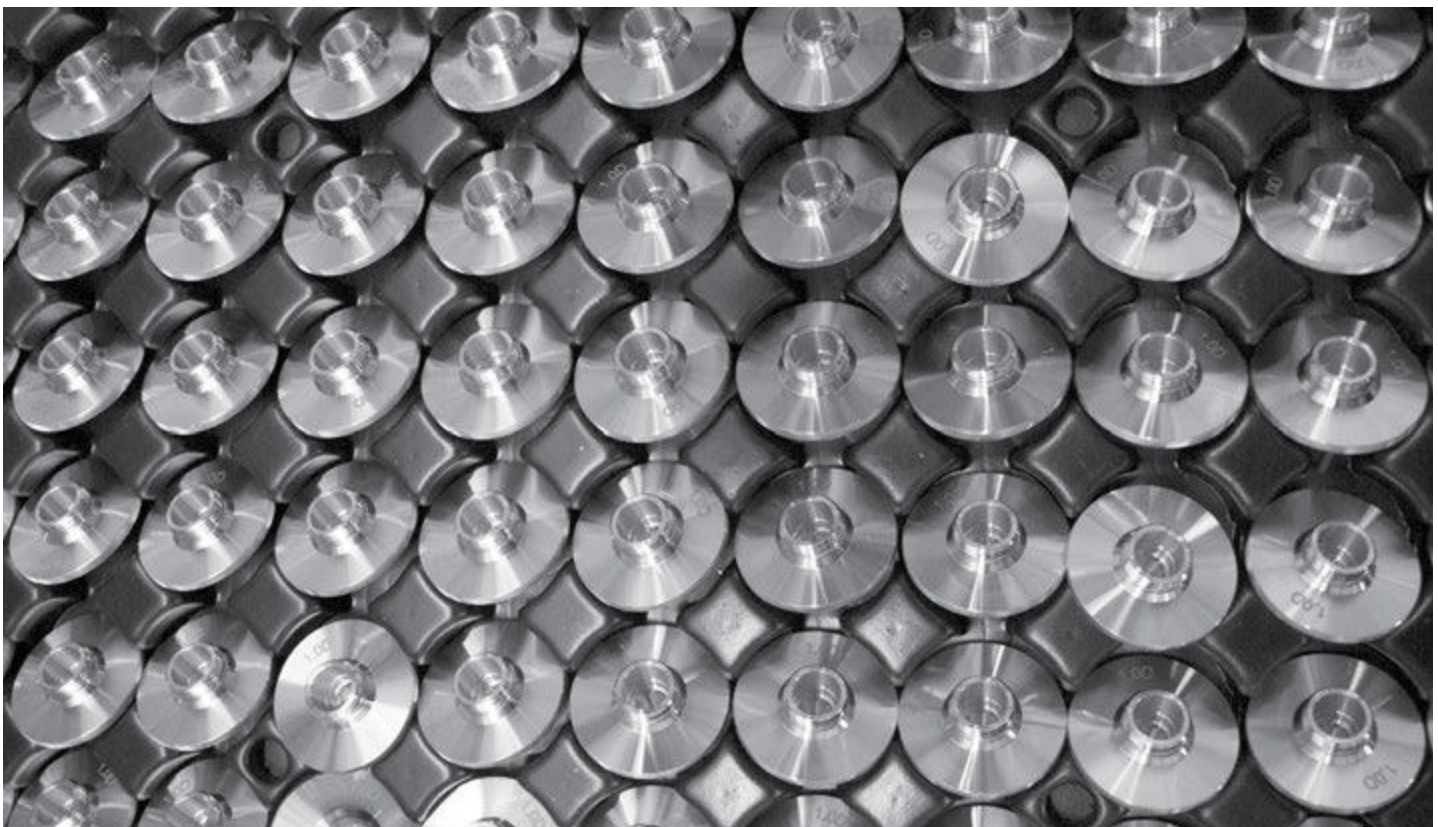
Look for CP in the part number to identify a chrome plated nozzle

### Hard chrome plated

Premium nozzles offering the highest level of durability and longest nozzle life. These nozzles are not as shiny as chrome plated and have a dull appearance. Not recommended for use on fiber lasers.

Look for HCP in the part number to identify a hard chrome nozzle.

|   |   |
|---|---|
| CP (chrome plated)                      | Nozzles plated with chrome for increased durability. These nozzles are easier to clean, resist damage due to 'tip-ups' and have better spatter resistance over non-plated nozzles. For use in all laser cutting applications.     |
| Conical                                 | Conical internal geometry for high pressure, non-ferrous cutting applications using nitrogen, air or argon.   |
| Cylindrical                             | Cylindrical internal geometry for low pressure, mild steel cutting applications using oxygen.   |
| Double                                  | Insert pressed into a standard cylindrical nozzle for improved edge quality, laminar gas flow and spatter resistance. Primarily used in mild steel applications.  |
| HCP (hard chrome plated)                | Enhanced durability chrome plated nozzles. These nozzles are easier to clean, resist damage due to 'tip-ups' and have better spatter resistance over non-plated nozzles. For use in all laser cutting applications.               |
| HP (high pressure)<br>HD (high density) | Conical style nozzle for high pressure, non-ferrous cutting applications using nitrogen, air or argon.  |
| Inner                                   | Also referred to as a 'nozzle insert'. Works in conjunction with an outer nozzle to create a double nozzle. Primarily used in mild steel applications.  |
| Low pressure                            | Cylindrical style nozzle for low pressure, mild steel cutting applications using oxygen.  |
| Outer                                   | Works in conjunction with an inner nozzle to create a double nozzle. Primarily used in mild steel applications.   |
| Shower                                  | Nozzles with a center orifice surrounded by smaller jets. The smaller jets focus the assist gas into the kerf, creating improved edge quality and the ability to cut thicker material. Primarily used in mild steel applications. |



# CO<sub>2</sub> and fiber laser optics

## Optics key

| Lens    |                      |
|---------|----------------------|
| MEN     | Meniscus             |
| PLX     | Plano-convex         |
| MTD     | Mounted              |
| Not MTD | Not mounted          |
| PO      | Plano                |
| ULA     | Ultra low absorption |
| AR      | Anti-reflection      |
| ZNSE    | Zinc selenide        |
| FS      | Fused silica         |
| DIA     | Diameter             |
| FL      | Focal length         |
| ET      | Edge thickness       |
| WD      | Working distance     |

## How to handle optics

Follow these easy steps, when cleaning or changing your optic, to help maximize the life and performance of your lens

- Avoid touching coated surfaces of the lens and hold the optic by its sides
- Wear powder-free finger cots or latex gloves when handling
- Do not use any tools or sharp objects when handling the optic or when removing it from its packaging
- Ensure the work surface is clean and free of oils, grease and dirt
- Do not place the optic on hard surfaces as they scratch easily
- Once the optic has been unpacked, carefully place it on the lens tissue in which it was originally wrapped

## Optics disposal

It is important to dispose of used laser optics at a licensed industrial waste facility which is in compliance with all local, state, and federal regulations. If you don't have access to a licensed industrial waste facility, and purchased your laser optics through Centricut, you may return them to Centricut for proper disposal. This service is only available to Centricut customers.

### All optics returned to Centricut must:

- Include return authorization and invoice numbers
- Be sealed in a plastic bag to minimize any hazards
- Remove excess ZnSe powder prior to sealing

\*Acceptance of goods will be refused if not packaged correctly or if the return authorization number isn't included



# Optics

| Centricut part number | Reference number         | Type    | Material | Diameter | Focal length | Edge thickness |
|-----------------------|--------------------------|---------|----------|----------|--------------|----------------|
| Fiber laser lens      |                          |         |          |          |              |                |
| NT375-7955            |                          | PLX     | FS       | 30 mm    | 123 mm       | 3.82 mm        |
| TR300-9799            | 1869799                  | PLX     | FS       | 30 mm    | 146 mm       | 8.0 mm         |
| TR300-3107            | 1603107                  | PLX     | FS       | 40 mm    | 150 mm       | 8.0 mm         |
| AM313-0238            | 7710238, 71565737        | PLX     | FS       | 50.8 mm  | 190 mm       | 11.4 mm        |
| SA384-0022            | 316-301-0022, 970128     | PLX     | FS       | 25.4 mm  | 200 mm       | 6.35 mm        |
| SA384-0026            | 316-301-0026, ESTFLO2119 | PLX     | FS       | 38.1 mm  | 210 mm       | 6.35 mm        |
| PR361-8988NM          | 968988, 344631           | PLX     | FS       | 1.5"     | 5.0"         | .280"          |
| MB312-8858            |                          | PLX     | FS       | 2.0"     | 7.5"         | .45"           |
| PR361-0773            | 970773/M15-15-B X-SP-7MM | PLX MTD | FS       | 1.5"     | 5.0"         | .275"          |
| PR361-8988            | LH968988PVL, 576.41.005  | PLX MTD | FS       | 1.5"     | 5.0"         | .280"          |

| Centricut part number | Reference number   | Material | Diameter  | Edge thickness |
|-----------------------|--|----------|-----------|----------------|
| Fiber laser windows   |  |          |           |                |
| PT317-1424            | P0588-1022-00001   | FS       | 21.5 mm   | 2.0 mm         |
| PT317-0589            | 970397, 6930003260, P0589-360-00002, R26RT006410, R26ZC90110 | FS       | 22.35 mm  | 4.0 mm         |
| PT317-9360            | 6930003260, P0589-360-00001                                  | FS       | 22.35 mm  | 4.0 mm         |
| MB312-2336            | 632336-117   | FS       | 25.4 mm   | 4.0 mm         |
| RT300-0035 <b>NEW</b> | 211LCG0035, 211LCG0037                                       | FS       | 27.9 mm   | 4.1 mm         |
| PT317-0010            | P0253-1034-00001   | FS       | 30.0 mm   | 1.5 mm         |
| TR300-6719            | 766719, P0795-1201-00002                                     | FS       | 30.0 mm   | 5.0 mm         |
| SA384-0007            | 316-304-0007, ESTFLO01407, 632755-117                        | FS       | 32.0 mm   | 6.35 mm        |
| BY314-5979 <b>NEW</b> | 10086368, 10071591, 5335979                                  | Sapphire | 34.0 mm   | 2.8 mm         |
| TR300-4767            | 1614767  | FS       | 34.0 mm   | 4.9 mm         |
| PR361-0089            | 1057.81000.089   | FS       | 35.0 mm   | 1.5 mm         |
| BY314-5746            | 968752, 10045746, 10-02-01-5511                              | QTZ      | 36.0 mm   | 5.0 mm         |
| PR361-0474            | 970474   | FS       | 37.0 mm   | 4.0 mm         |
| PT317-1551            | P0595-61551, P0595-58601-61551                               | FS       | 37.0 mm   | 7.0 mm         |
| PT317-1425            | SCR-01   | FS       | 38.0 mm   | 5.2 mm         |
| CN307-3987            | 913987, 71598028   | FS       | 38.1 mm   | 1.6 mm         |
| MZ315-6850 <b>NEW</b> | Z50ZZ016850  | FS       | 42.0 mm   | 9.0 mm         |
| MZ315-5350            | Z50SA015350, W495  | FS       | 42.0 mm   | 9.0 mm         |
| AM313-1308            | 71571308, 5172635  | FS       | 45.0 mm   | 3.0 mm         |
| PT317-5919            | 77005919   | FS       | 48.0 mm   | 7.0 mm         |
| PT317-1789            | 284.0402, 971789, 717062                                     | FS       | 50.0 mm   | 3.18 mm        |
| MB312-0137            | 633744-137   | FS       | 50.0 mm   | 8.0 mm         |
| AM313-0026            | 71570026   | FS       | OCTAGONAL | 1.5 mm         |

| Centricut part number                    | Reference number   | Type | Material | Diameter | Focal length | Edge thickness |
|--|--|------|----------|----------|--------------|----------------|
| CO <sub>2</sub> lenses                   |  |      |          |          |              |                |
| TR300-0115 <b>NEW</b><br>(Cut - No RFID) |  | MEN  | ZNSE     | 1.969"   | 4.528"       | .350"          |
| TR300-0130 <b>NEW</b><br>(Cut - No RFID) | 400130LMA , 0380117, D40 Cut, 630790-117                                     | MEN  | ZNSE     | 1.575"   | 5.118"       | .295"          |
| TR300-8123 <b>NEW</b>                    | 518123   | MEN  | ZNSE     | 1.575"   | 6.102"       | .295"          |
| TR300-0175 <b>NEW</b><br>(Cut - No RFID) | 1330448, 62440   | MEN  | ZNSE     | 1.969"   | 6.89"        | .350"          |
| TR300-0250 <b>NEW</b><br>(Cut - No RFID) | 400250LMA, 0380115, D40 Cut, 630789-117                                      | MEN  | ZNSE     | 1.575"   | 9.842"       | .295"          |
| TR300-2500 <b>NEW</b><br>(Cut - No RFID) | 1330443, 62439   | MEN  | ZNSE     | 1.969"   | 9.842"       | .350"          |
| LL342-1819                               | 166634, 61819  | MEN  | ZNSE     | 1.1"     | 5.0"         | .236"          |
| TR300-0163                               | 350163, 861143, LMZ1.5-0.29-10.00-2048                                       | MEN  | ZNSE     | 1.5"     | 10.0"        | .290"          |
| TR300-6477                               | 726477   | MEN  | ZNSE     | 1.5"     | 10.0"        | .354"          |
| BY314-0185                               | 4-00185, 4-00372, 142375, 60603  | MEN  | ZNSE     | 1.5"     | 3.75"        | .236"          |
| TR300-6104                               | 346104, 61962, 831393  | MEN  | ZNSE     | 1.5"     | 3.75"        | .290"          |
| BY314-0736                               | 414323, 4-10736  | MEN  | ZNSE     | 1.5"     | 3.75"        | .354"          |
| BY314-0186                               | 60260, 507790, 4-00186, 110111   | MEN  | ZNSE     | 1.5"     | 5.0"         | .236"          |
| TR300-8114                               | 088114, 60696, 406294, 110109, 61014, 658108, 29100023, 6930001002           | MEN  | ZNSE     | 1.5"     | 5.0"         | .290"          |
| BY314-5094                               | 767963, 60615, 4-05094, 110113, 358186, 62710                                | MEN  | ZNSE     | 1.5"     | 5.0"         | .354"          |
| PR361-0004                               | 62709, 621644, 120216  | MEN  | ZNSE     | 1.5"     | 5.0"         | .354"          |
| PT317-0001                               | 61851, 312370  | MEN  | ZNSE     | 1.5"     | 7.5"         | .125"          |
| BY314-0187                               | 784964, 60602, 4-00187, 110112   | MEN  | ZNSE     | 1.5"     | 7.5"         | .236"          |
| TR300-7517                               | 097517, 60697, 702232, 110110, 61983   | MEN  | ZNSE     | 1.5"     | 7.5"         | .290"          |
| LL342-1171                               | 61171  | MEN  | ZNSE     | 1.5"     | 7.5"         | .310"          |
| BY314-5095                               | 60616, 4-05095, 570721, 110114, 361129                                       | MEN  | ZNSE     | 1.5"     | 7.5"         | .354"          |
| BY314-8637                               | 698637   | MEN  | ZNSE     | 1.5"     | 7.5"         | .354"          |
| TR300-1972                               | 61961, 141972, 977976  | MEN  | ZNSE     | 1.5"     | 8.85"        | .290"          |
| TR300-8123                               | 518123   | MEN  | ZNSE     | 1.575"   | 6.102"       | .295"          |
| LV333-0176                               | 480176, 29100115   | MEN  | ZNSE     | 1.75"    | 5.0"         | .354"          |
| LV333-1551                               | 981551, LMZ2.0-0.380-10.0-2053, 29100061S                                    | MEN  | ZNSE     | 2.0"     | 10.0"        | .380"          |
| PT317-6326                               | 206326   | MEN  | ZNSE     | 2.0"     | 5.0"         | .378"          |
| LV333-1004                               | 458138, LMZ2.0-0.380-5.00-2051, PLLMZ0024, 29100154                          | MEN  | ZNSE     | 2.0"     | 5.0"         | .380"          |
| CN307-2376                               | 61405, 695399, 922376, 60698, 29100055                                       | MEN  | ZNSE     | 2.0"     | 7.5"         | .380"          |
| AM313-0305                               | 61161, 81140305, LPCZ-1.10-0.16-5.0-1044, PLLPZ0132, 561067                  | PLX  | ZNSE     | 1.1"     | 5.0"         | .160"          |
| AM313-6602                               | 726602   | PLX  | ZNSE     | 1.1"     | 7.5"         | .160"          |
| AM313-0657                               | 600657, 71502030, LPCZ-1.5-0.30-10.0-1128                                    | PLX  | ZNSE     | 1.5"     | 10.0"        | .300"          |
| TK374-2235                               | 312235   | PLX  | ZNSE     | 1.5"     | 12.5"        | .300"          |
| PT317-8950                               | 148950   | PLX  | ZNSE     | 1.5"     | 2.5"         | .085"          |
| MZ315-0130                               | 60830, Z50MB000130, 962834, 766479   | PLX  | ZNSE     | 1.5"     | 5.0"         | .118"          |
| TR300-0002                               | 61163, LMZ1.5-0.16-5.00-2043, 706491, 907557, PLCZ-1.5-0.16-5.0-1116         | PLX  | ZNSE     | 1.5"     | 5.0"         | .160"          |
| MZ315-0160                               | 60770, 227092, Z50MB000130H, LPCZ-1.5-0.236-5.0-1122, 834-319-002            | PLX  | ZNSE     | 1.5"     | 5.0"         | .236"          |
| PR361-9011                               | 834-319-011, 60905, 658108, ZC15500300, Z50MB000400, 578662, MLL00016        | PLX  | ZNSE     | 1.5"     | 5.0"         | .300"          |
| MB312-500                                | W500, 60905, 110144, LPCZ-1.5-0.30-5.0-1125, PLLPZ0132                       | PLX  | ZNSE     | 1.5"     | 5.0"         | .310"          |
| CN307-8085                               | 941031, 61001, 908085, ZC15513280, 110092, PLLPZ0033                         | PLX  | ZNSE     | 1.5"     | 5.0"WD       | .280"          |
| PR361-0003                               | 60784, LPCZ-1.5-0.236-7.5-1123   | PLX  | ZNSE     | 1.5"     | 7.5"         | .236"          |
| PR361-9012                               | 834-319-012, 60906, 618938, 306068, 741363, 60882, 299133, 71501070NM, 62649 | PLX  | ZNSE     | 1.5"     | 7.5"         | .300"          |
| MB312-018                                | 60906, W018, 383862, 60906LA, W018, 62649ULA, 383862, 62649LA                | PLX  | ZNSE     | 1.5"     | 7.5"         | .310"          |
| CN307-9484                               | 909484, 61002, 464497, 100096, LPCZ-1.5-0.280-5.13-1007, PLLPZ0052           | PLX  | ZNSE     | 1.5"     | 7.5"WD       | .280"          |
| PT317-8275                               | 628275, W502A, 630736-117  | PLX  | ZNSE     | 2.0"     | 10.0"        | .310"          |
| PT317-0537                               | 960537   | PLX  | ZNSE     | 2.0"     | 10.0"        | .380"          |
| CN307-4498                               | 154498, 926274   | PLX  | ZNSE     | 2.0"     | 10.0"WD      | .380"          |
| TK374-7338                               | 197338   | PLX  | ZNSE     | 2.0"     | 11.25"       | .310"          |
| MZ315-5980                               | 145980   | PLX  | ZNSE     | 2.0"     | 5.0"         | .300"          |
| MB312-505                                | W505, 110169, PLLPZ0162, 304725, 61003, Z50ZZ005160                          | PLX  | ZNSE     | 2.0"     | 5.0"         | .310"          |
| MZ315-0516A                              | 61019, Z50ZZ00516A, Z50ZZ013480, 81140307, 741363                            | PLX  | ZNSE     | 2.0"     | 5.0"         | .380"          |

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| Centricut part number              | Reference number   | Type    | Material | Diameter | Focal length | Edge thickness |
|------------------------------------|--|---------|----------|----------|--------------|----------------|
| CO <sub>2</sub> lenses (continued) |  |         |          |          |              |                |
| MZ315-3480HA                       | 158039, Z50ZZ013480 HIGH ACCURACY  | PLX     | ZNSE     | 2.0"     | 5.0"         | .380"          |
| CN307-0676                         | 870676, 61514, LPCZ-2.0-0.38-5.19-1141, PLLPZ0116                        | PLX     | ZNSE     | 2.0"     | 5.0"WD       | .380"          |
| MZ315-3470HA                       | 769062, Z50ZZ013470 HIGH ACCURACY  | PLX     | ZNSE     | 2.0"     | 7.5"         | .380"          |
| NT375-4494                         | 634494, LPCZ-2.0-0.30-7.5-1133   | PLX     | ZNSE     | 2.0"     | 7.5"         | .300"          |
| MB312-510                          | W510, 61004, 892020, 110122, PLLPZ0138                                   | PLX     | ZNSE     | 2.0"     | 7.5"         | .310"          |
| MZ315-0520A                        | 61405, 232771, Z50ZZ00520A, MLL00018, Z50ZZ005200, Z50ZZ013470, 81140186 | PLX     | ZNSE     | 2.0"     | 7.5"         | .380"          |
| CN307-1603                         | 61515, 781603, LPCZ-2.0-0.38-7.67-1143, PLLPZ0115                        | PLX     | ZNSE     | 2.0"     | 7.5" WD      | .380"          |
| TK374-3478                         | 541344, 263478, Z50ZZ00530A, LPCZ-2.0-0.31-7.45-1137                     | PLX     | ZNSE     | 2.0"     | 8.75"        | .310"          |
| TK374-6670                         | 236670, 61690, Z50ZZ00550A   | PLX     | ZNSE     | 2.5"     | 10.0"        | .390"          |
| TK374-1592                         | 178937   | PLX     | ZNSE     | 2.5"     | 11.25"       | .310"          |
| TK374-8593                         | 828593   | PLX     | ZNSE     | 2.5"     | 12.5"        | .390"          |
| TK374-3827                         | 243827, Z50ZZ00540A, LPCZ-2.5-0.31-8.75-1145                             | PLX     | ZNSE     | 2.5"     | 8.75"        | .310"          |
| AM313-0221                         | 81140221, 6067639  | PLX MTD | ZNSE     | 1.5"     | 3.75"        | .300"          |
| AM313-0306                         | 81140306, 65024, 578662/M16-15-1C-P5.0, PLLPZ0133, 6874793               | PLX MTD | ZNSE     | 1.5"     | 5.0"         | .300"          |
| AM313-1216                         | 578662/M20-15-1C-P5.0, 9001216A, 71501072, 7973109, 6360374              | PLX MTD | ZNSE     | 1.5"     | 5.0"         | .300"          |
| AM313-8662                         | 578662/M21-15-1C-P5.0, 6060415   | PLX MTD | ZNSE     | 1.5"     | 5.0"         | .300"          |
| AM313-9830                         | 65101, 578662, 6547252   | PLX MTD | ZNSE     | 1.5"     | 5.0"         | .300"          |
| AM313-1215                         | 9001215A, 306068/M21-15-1C-P7.5, 7973110, 71501070, 6395647              | PLX MTD | ZNSE     | 1.5"     | 7.5"         | .300"          |
| AM313-9831                         | 71369831, 65102, 6550214   | PLX MTD | ZNSE     | 1.5"     | 7.5"         | .300"          |
| AM313-10F1                         | 680154-001, 71710061, 6021844  | PLX MTD | ZNSE     | 2.0"     | 10.0"        | .380"          |
| AM313-0307                         | 65035, 81140307, 741363, 6068456   | PLX MTD | ZNSE     | 2.0"     | 5.0"         | .380"          |
| AM313-50F1                         | 71710059, 741363M30-20-1C-P5.0, 6296946                                  | PLX MTD | ZNSE     | 2.0"     | 5.0"         | .380"          |
| AM313-0400                         | 306068, 65025, 81140400, 6022704   | PLX MTD | ZNSE     | 2.0"     | 7.5"         | .300"          |
| AM313-0186                         | 65038, 81140186, PLLPZ0156, 6068413                                      | PLX MTD | ZNSE     | 2.0"     | 7.5"         | .380"          |
| AM313-75F1                         | 232771M31-20-1C-P7.5, 71710030, 6243925                                  | PLX MTD | ZNSE     | 2.0"     | 7.5"         | .380"          |
| BY314-7014ULA                      | 460386, 4-07014  | MEN     | ZNSE ULA | 1.5"     | 10.0"        | .354"          |
| BY314-0186ULA                      | 4-00186, 528717, 60260LA   | MEN     | ZNSE ULA | 1.5"     | 5.0"         | .236"          |
| TR300-8114ULA                      | 60696LA, 312503, 29100023, 88114, PLLPZ0125B                             | MEN     | ZNSE ULA | 1.5"     | 5.0"         | .290"          |
| BY314-5094ULA                      | 123397, 4-07475, 60615LA, LMZ1.5-0.354-5.0-2008                          | MEN     | ZNSE ULA | 1.5"     | 5.0"         | .354"          |
| BY314-0187ULA                      | 714512, 60602LA, 4-00187   | MEN     | ZNSE ULA | 1.5"     | 7.5"         | .236"          |
| TR300-7517ULA                      | 60697LA, 97517, 474644, PLLPZ0126B                                       | MEN     | ZNSE ULA | 1.5"     | 7.5"         | .290"          |
| BY314-5095ULA                      | 602033, 60616LA, 4-07476, LMZ1.5-0.354-7.5-2009, PLLPZ0130B, 62710       | MEN     | ZNSE ULA | 1.5"     | 7.5"         | .354"          |
| BY314-8294ULA                      | 996707, 10048294   | MEN     | ZNSE ULA | 1.5"     | 9.0"         | .354"          |
| HW405-4913                         | 114913   | MEN     | ZNSE ULA | 2.0"     | 10.0"        | .379"          |
| HW405-5270                         | 355270   | MEN     | ZNSE ULA | 2.0"     | 5.0"         | .378"          |
| HW405-7143                         | 527143, 467572, 60698LA, 291005-5, 308332, PLLMZ0025B                    | MEN     | ZNSE ULA | 2.0"     | 7.5"         | .379"          |
| MZ315-0160ULA                      | 60770LA, 857048, Z50MB000160   | PLX     | ZNSE ULA | 1.5"     | 5.0"         | .236"          |
| MZ315-0400ULA                      | 106106, PLLPZ0132B, 60905LA, Z50MB000400, 62670ULA                       | PLX     | ZNSE ULA | 1.5"     | 5.0"         | .300"          |
| CN307-8085ULA                      | 61001LA, 794914, 908085,   | PLX     | ZNSE ULA | 1.5"     | 5.0"WD       | .280"          |
| MB312-018ULA                       | 383862   | PLX     | ZNSE ULA | 1.5"     | 7.5"         | .300"          |
| CN307-9484ULA                      | PLLPZ0052B   | PLX     | ZNSE ULA | 1.5"     | 7.5"WD       | .315"          |
| MB312-505ULA                       | 61003LA, 922203, W505  | PLX     | ZNSE ULA | 2.0"     | 5.0"         | .310"          |
| AM313-0307NULA                     | 81140307, 61019LA, 753010  | PLX     | ZNSE ULA | 2.0"     | 5.0"         | .380"          |
| CN307-0211ULA                      | 540211, 61019LA, 922377  | PLX     | ZNSE ULA | 2.0"     | 5.0"WD       | .380"          |
| MB312-510ULA                       | 61004LA, 635061, W510,   | PLX     | ZNSE ULA | 2.0"     | 7.5"         | .310"          |
| CN307-2376ULA                      | 329011, 922376, 61515ULA,  | PLX     | ZNSE ULA | 2.0"     | 7.5"         | .380"          |
| MZ315-0520AULA                     | 392125, 61405LA, Z50ZZ000520A, PLLPZ0135B, 81140186 61405ULA             | PLX     | ZNSE ULA | 2.0"     | 7.5"         | .380"          |

| Centricut part number              | Reference number  | Type    | Material | Diameter | Focal length | Edge thickness |
|------------------------------------|---|---------|----------|----------|--------------|----------------|
| CO <sub>2</sub> lenses (continued) |   |         |          |          |              |                |
| AM313-0306ULA                      | 65024LA, 81140306, 106106, M16-15-1C-P5.0, 6936448              | PLX MTD | ZNSE ULA | 1.5"     | 5.0"         | .300"          |
| AM313-1216ULA                      | 106106, M20-15-1C-P5.0, 6071896                                 | PLX MTD | ZNSE ULA | 1.5"     | 5.0"         | .300"          |
| AM313-9830ULA                      | 71369830, 106106, 65101LA, 106106/M16-15-1C-P5.0-A2-NI-1A       | PLX MTD | ZNSE ULA | 1.5"     | 5.0"         | .300"          |
| AM313-0400ULA                      | 65025LA, 383862/M16-15-1C-P7.5-A2-NI-1A, 81140400, 383862       | PLX MTD | ZNSE ULA | 1.5"     | 7.5"         | .300"          |
| AM313-1215ULA                      | M21-15-1C-P7.5, 383862, 6071853                                 | PLX MTD | ZNSE ULA | 1.5"     | 7.5"         | .300"          |
| AM313-9831ULA                      | 65102LA, 71369831, 383862                                       | PLX MTD | ZNSE ULA | 1.5"     | 7.5"         | .300"          |
| AM313-0307ULA                      | 81140307, M16-20-1C-P5.0, 753010, 65035LA, 753010M16-20-1C-P5.0 | PLX MTD | ZNSE ULA | 2.0"     | 5.0"         | .380"          |
| AM313-0186ULA                      | 392125, 65038LA, M16-20-1C-P7.5, 81140186, 6816292              | PLX MTD | ZNSE ULA | 2.0"     | 7.5"         | .380"          |

## Accessories

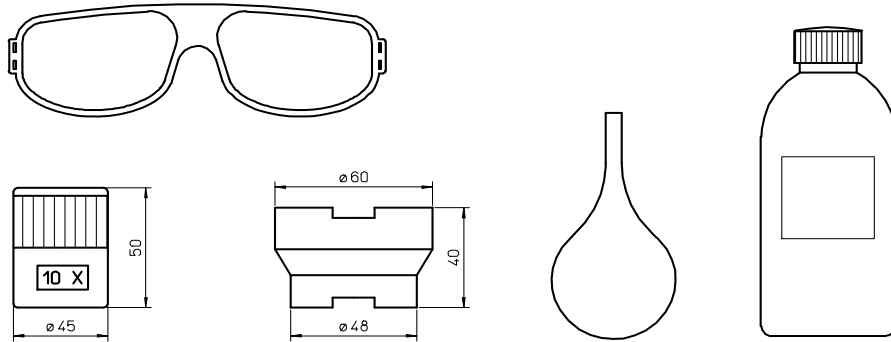
| Centricut part number | Reference number | Description                              | Pkg qty |
|-----------------------|------------------|--|---------|
| TR300-6452            |                  | Lens cleaning Tiffen paper (50 pcs)      | 1       |
| TR300-1115            |                  | Lens cleaning pre-cut cotton (100 pcs)   | 1       |
| TR300-1010            |                  | Dropper, lens cleaning fluid             | 1       |
| TR300-1112            |                  | Optical cleaning fluid                   | 1       |
| TR300-0699            | 70675699 REVA    | Lens cleaning swabs (25 pcs)             | 1       |
| TR300-7991            | 27991            | Polyester wipes 4" x 4" (100 pcs)        | 1       |
| TR301-0282            |                  | Injector                                 | 1       |
| TR300-LSA             |                  | Lens stress analyzer                     | 1       |
| TR300-255             |                  | Magnifying loop                          | 1       |
| TR300-271             |                  | Base, mirror maintenance                 | 1       |
| TR300-7388            | 787388           | Mirror polish .1UM 250ML                 | 1       |
| MZ335-115             | ALI115/M         | MZ-Wire, Indium .8 mm x 125 mm 1.5" Lens | 1       |
| MZ335-120             | ALI120/M         | MZ-Wire, Indium .8 mm x 160 mm 2.0" Lens | 1       |



# TALAS

Paardenkerkhofstraat 56 B-2800 Mechelen  
Tel. 015.61.60.07 Fax. 015.61.75.27 Email. info@talas.be

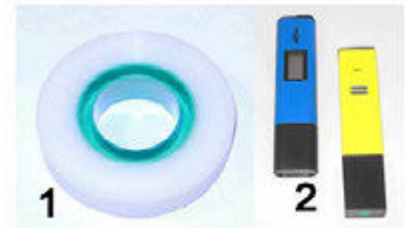
## ACCESSORIES

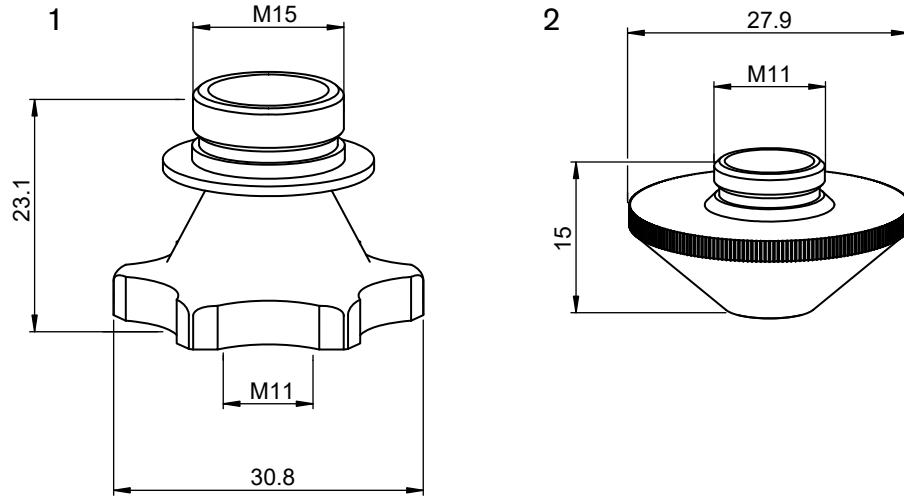


| POS | Talas CODE | ORIGINAL CODE | DESCRIPTION   |
|-----|------------|---------------|---|
|     | AL1100     |               | LASER CO <sup>2</sup> GLASSES CE APPROVED                     |
|     | AL1100017  |               | LASER ECO CO <sup>2</sup> GLASSES CE APPROVED 1.5-4.0kW       |
|     | AL1100015  |               | LASER PROTECTOR CO <sup>2</sup> GLASSES CE APPROVED 1.5-4.0kW |
|     | AL1100018  |               | LASER PROTECTOR CO <sup>2</sup> GLASSES CE APPROVED 1.5-4.0kW |
|     | GLADIATOR  |               | LASER OVERGLASSES CO <sup>2</sup> LIGHT VERSION 80g           |
|     | OVERSPEC   |               | LASER OVERGLASSES CO <sup>2</sup> VERSION 1500-4000W          |
|     | AL1001     | 123602        | LENS CLEANING LIQUID - ml 200                                 |
|     | AL1001/L   | 123602        | LENS CLEANING LIQUID - ml 1000                                |
|     | AL1003-100 | 240568-100    | LENS CLEANING POLISH - ml 100                                 |
|     | AL1003-200 | 240568-200    | LENS CLEANING POLISH - ml 200                                 |
|     | AL1004     |               | POLISH DETERGENT  |
|     | AL1010     |               | DROPPER FOR LENS CLEANING LIQUID                              |
|     | AL1120     |               | LATEX GLOVES - 10 pieces                                      |
|     | ALI115     |               | INDIUM WIRE Ø 1.0mm FOR 1.5" LENS                             |
|     | ALI115/M   |               | MAZAK® INDIUM 0.8mm FOR 1.5" MAZAK® LENS                      |
|     | ALI120     |               | INDIUM WIRE Ø 1.0mm FOR Ø 2.0mm LENS                          |
|     | ALI120/M   |               | MAZAK® INDIUM 0,8mm FOR 2,0" LENS                             |
|     | SC50       |               | LENS CLEANING PAPER - 75x135 - 50sheets                       |
|     | SC100      |               | KODAK LENS CLEANING PAPER - 70x120 - 50sheets                 |
|     | SC105      |               | LENS CLEANING PAPER - 100x105 - 50sheets                      |
|     | SC20       |               | COTTON SWAB -20 pieces  |
|     | AL1115     |               | LENS CLEANING PRE-CUT COTTON - 100 pieces                     |
|     | AL255      | 091860        | SCALE LUPE  |
|     | AL271      |               | BASE FOR LENS MAINTENANCE FOR 1,5" & 2,0" LENS                |
|     | AL282      |               | INJECTOR  |
|     | 350424-005 |               | Lens Cleaning Holder 1.5" with Polarisors                     |
|     | 350423-005 |               | Lens Cleaning Holder 2.0" with Polarisors                     |
|     | 910000     |               | Lens Cleaning Kit   |
|     | 020003-101 |               | EZ Clean Wipes for Easy Lens Cleaning/ 24Pack                 |

# TALAS

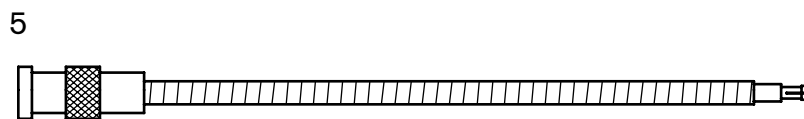
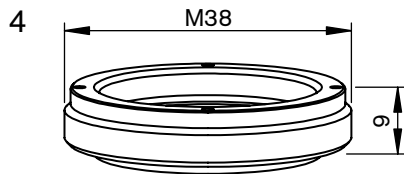
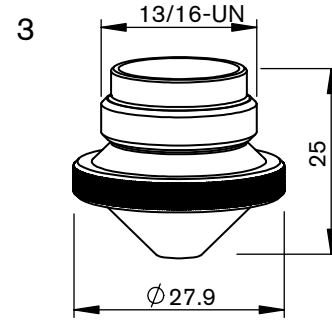
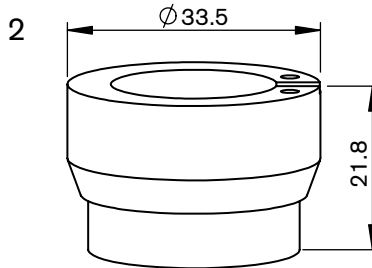
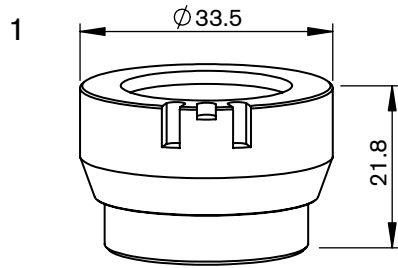
Paardenkerkhofstraat 56 B-2800 Mechelen  
Tel. +32(0)15.61.60.07 Fax. +32(0)15.61.75.27  
Email. info@talas.be





Consumables

|   | Centricut part number | Esse A part number | Reference number | Description           | Pkg qty |
|---|-----------------------|--------------------|------------------|-----------------------|---------|
| 1 | LV333-9093 <b>NEW</b> | AL595              | M000079093       | Nozzle holder adapter | 1       |
|   | LV333-2154 <b>NEW</b> | L2440              | M000112154       | Nozzle 4.0mm CH 6.0   | 1       |
| 2 | LV333-2153 <b>NEW</b> | L2450              | M000112153       | Nozzle 5.0mm CH 7.0   | 1       |
|   | LV333-2155 <b>NEW</b> | L2460              | M000112155       | Nozzle 6.0mm CH 8.0   | 1       |

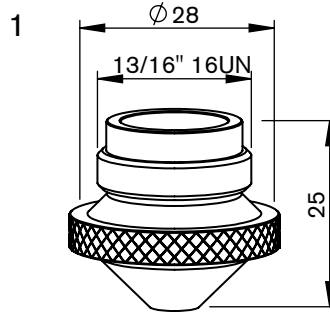

**Consumables**

|   | Centricut part number  | Esse A part number | Reference number                  | Description                              | Pkg qty |
|---|------------------------|--------------------|-----------------------------------|--|---------|
| 1 | PT311-1146             | AL130/S            | 281146, P0380-211-00001, 29100033 | PT-Nozzle holder ITM 1.5" DZ             | 1       |
|   | PT311-1146OEM          | AL130              | 281146, P0380-211-00001, 29100033 | PT-Nozzle holder ITM 1.5" DZ OEM         | 1       |
| 2 | PT311-0298             | AL298              | P0497-68871, P0497-615-00001      | PT-Nozzle holder KTM 1.5" DXN, Ceramic   | 1       |
| 3 | LV332-1993V            | L20757             | D5241993                          | LV-Nozzle cylindrical, 0.8 mm (5 pk)*    | 5       |
|   | LV332-5470V            | L20141             | D7945470                          | LV-Nozzle cylindrical, 1.0 mm (5 pk)*    | 5       |
|   | LV332-0001V            | L20758             | D5241982                          | LV-Nozzle cylindrical, 1.2 mm (5 pk)*    | 5       |
|   | LV332-5434V            | L20142             | D7945434                          | LV-Nozzle cylindrical, 1.5 mm (5 pk)*    | 5       |
|   | LV332-5452V            | L20143             | D7945452                          | LV-Nozzle cylindrical, 2.0 mm (5 pk)*    | 5       |
|   | LV332-5517V            | L20144             | D7945517                          | LV-Nozzle cylindrical, 2.5 mm (5 pk)*    | 5       |
|   | LV332-5518V            | L20145             |                                   | LV-Nozzle cylindrical, 3.0 mm (5 pk)*    | 5       |
|   | LV332-1993CPV          | L20757X            | D5241993                          | LV-Nozzle cylindrical, 0.8 mm CP (5 pk)  | 5       |
|   | LV332-5470CPV          | L20141X            | D7945470                          | LV-Nozzle cylindrical, 1.0 mm CP (5 pk)* | 5       |
|   | LV332-0001CPV          | L20758X            | D5241982                          | LV-Nozzle cylindrical, 1.2 mm CP (5 pk)* | 5       |
|   | LV332-5434CPV          | L20142X            | D7945434                          | LV-Nozzle cylindrical, 1.5 mm CP (5 pk)* | 5       |
|   | LV332-5452CPV          | L20143X            | D7945452                          | LV-Nozzle cylindrical, 2.0 mm CP (5 pk)* | 5       |
|   | LV332-5517CPV          | L20144X            | D7945517                          | LV-Nozzle cylindrical, 2.5 mm CP (5 pk)  | 5       |
|   | LV332-5518CPV          | L20145X            |                                   | LV-Nozzle cylindrical, 3.0 mm CP (5 pk)* | 5       |
| 4 | PT347-4297             | AL198              | P0492-702-00001, 29100021         | PT-Insulating ring outer body            | 1       |
|   | PT311-0001             | AL201              | P0492-702-00002                   | PT-Insulating ring                       | 1       |
| 5 | PT347-0101             | AL204              | P0360-100-00500, 46713300100      | PT-Sensor head connecting cable OEM      | 1       |
|   | AM326-6453 (not shown) | AL94               | 71366453                          | AM-O-ring for outer nozzle               | 1       |

\* Centricut parts available in single packs. To order single packs, remove the 'V' at the end of the part number (e.g. LV123-4567V would be LV123-4567).  
 For Esse A parts available in single packs. To order single packs, remove the '20' after the L in the part number (e.g. L20757 would be L757).

Replacement parts suitable for:

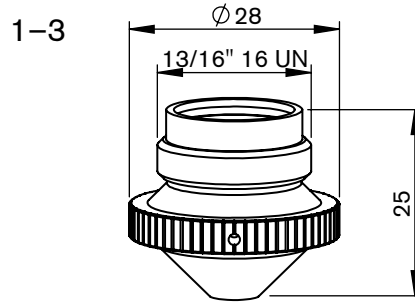
**LVD®**



**Consumables**

|   | Centricut part number | Esse A part number | Reference number      | Description                             | Pkg qty |
|---|-----------------------|--------------------|-----------------------|---|---------|
|   | LV332-1863V           | L20151             | D5241863              | LV-Nozzle conical HD, 1.0 mm (5 pk)*    | 5       |
|   | LV332-1982V           | L20759             |                       | LV-Nozzle conical HD, 1.2 mm (5 pk)*    | 5       |
|   | LV332-1862V           | L20152             | D5241862              | LV-Nozzle conical HD, 1.5 mm (5 pk)*    | 5       |
|   | LV332-2512V           | L20748             | D5242512              | LV-Nozzle conical HD, 1.7 mm (5 pk)*    | 5       |
|   | LV332-1855V           | L20146             | D5241855              | LV-Nozzle conical HD, 2.0 mm (5 pk)*    | 5       |
|   | LV332-2513V           | L20749             | D5242513, Z000000539D | LV-Nozzle conical HD, 2.3 mm (5 pk)*    | 5       |
|   | LV332-1856V           | L20147             | D5241856, Z000000563B | LV-Nozzle conical HD, 2.5 mm (5 pk)*    | 5       |
|   | LV332-1857V           | L20148             | D5241857, Z000000540B | LV-Nozzle conical HD, 3.0 mm (5 pk)*    | 5       |
|   | LV332-1877V           | L20149             | D5241877, Z000000564B | LV-Nozzle conical HD, 3.5 mm (5 pk)*    | 5       |
|   | LV332-1878V           | L20283             | D5241878, Z000000565B | LV-Nozzle conical HD, 4.0 mm (5 pk)*    | 5       |
|   | LV332-2531V           | L201303            | D5242531, Z000000566B | LV-Nozzle conical HD, 4.5 mm (5 pk)*    | 5       |
| 1 | LV332-2535V           | L201304            | D5242535, Z000000567B | LV-Nozzle conical HD, 5.0 mm (5 pk)*    | 5       |
|   | LV332-2536V           | L201305            | D5242536, Z000000568B | LV-Nozzle conical HD, 6.0 mm (5 pk)*    | 5       |
|   | LV332-1863CPV         | L20151X            | D5241863              | LV-Nozzle conical HD, 1.0 mm CP (5 pk)  | 5       |
|   | LV332-1982CPV         | L20759X            |                       | LV-Nozzle conical HD, 1.2 mm CP (5 pk)  | 5       |
|   | LV332-1862CPV         | L20152X            | D5241862              | LV-Nozzle conical HD, 1.5 mm CP (5 pk)* | 5       |
|   | LV332-2512CPV         | L20748X            | D5242512              | LV-Nozzle conical HD, 1.7 mm CP (5 pk)  | 5       |
|   | LV332-1855CPV         | L20146X            | D5241855              | LV-Nozzle conical HD, 2.0 mm CP (5 pk)* | 5       |
|   | LV332-2513CPV         | L20749X            | D5242513              | LV-Nozzle conical HD, 2.3 mm CP (5 pk)* | 5       |
|   | LV332-1856CPV         | L20147X            | D5241856, Z000000563B | LV-Nozzle conical HD, 2.5 mm CP (5 pk)* | 5       |
|   | LV332-1857CPV         | L20148X            | D5241857, Z000000540  | LV-Nozzle conical HD, 3.0 mm CP (5 pk)* | 5       |
|   | LV332-1877CPV         | L20149X            | D5241877              | LV-Nozzle conical HD, 3.5 mm CP (5 pk)  | 5       |
|   | LV332-1878CPV         | L20283X            | D5241878              | LV-Nozzle conical HD, 4.0 mm CP (5 pk)  | 5       |

\* Centricut parts available in single packs. To order single packs, remove the 'V' at the end of the part number (e.g. LV123-4567V would be LV123-4567).  
 For Esse A parts available in single packs. To order single packs, remove the '20' after the L in the part number (e.g. L20757 would be L757).


**Consumables**

|   | Centricut part number | Esse A part number | Reference number | Description                                       | Pkg qty |
|---|-----------------------|--------------------|------------------|---|---------|
| 1 | LV332-3013            | L1293              | G8040182         | LV-Nozzle double w/spring, 3.0 mm/inner 1.3 mm    | 1       |
|   | LV332-3015            | L1294              |                  | LV-Nozzle double w/spring, 3.0 mm/inner 1.5 mm    | 1       |
|   | LV332-0132            | L1292              | G8040132         | LV-Nozzle double w/spring, 3.0 mm/inner 2.0 mm    | 1       |
|   | LV332-0013CP          | L1290X             | G8040180         | LV-Nozzle double w/spring, 2.5 mm/inner 1.3 mm CP | 1       |
|   | LV332-0180CP          | L1291X             | G8040135         | LV-Nozzle double w/spring, 2.5 mm/inner 1.5 mm CP | 1       |
| 2 | LV417-0002            | L782               | 29100307         | LV-Nozzle double, 1.2 mm                          | 1       |
|   | LV417-0003            | L784               | 29100304         | LV-Nozzle double, 1.5 mm                          | 1       |
|   | LV417-0004            | L785               | 29100307         | LV-Nozzle double, 2.0 mm                          | 1       |
|   | LV410-0180            | L786               | 29100305D        | LV-Nozzle double, 2.5 mm                          | 1       |
|   | LV417-0006            | L787               | 29100306         | LV-Nozzle double, 3.0 mm                          | 1       |
|   | LV417-0008            | L789               |                  | LV-Nozzle double, 4.0 mm                          | 1       |
|   | LV417-0003CP          | L784X              |                  | LV-Nozzle double, 1.5 mm CP                       | 1       |
|   | LV417-0004CP          | L785X              |                  | LV-Nozzle double, 2.0 mm CP                       | 1       |
|   | LV417-0005CP          | L786X              |                  | LV-Nozzle double, 2.5 mm CP                       | 1       |
| 3 | LV332-1297            | L885               | Z000001297       | LV-Nozzle double, 4.0 mm/inner 2.0 mm             | 1       |
|   | LV332-1344            | L886               | Z000001344       | LV-Nozzle double, 5.0 mm/inner 2.0 mm             | 1       |
|   | LV332-0131            | L790               | G8040131         | LV-Nozzle double, 3.0 mm/inner 2.0 mm             | 1       |

# Sensor cones



## Centricut sensor cones provide substantial cost savings without sacrificing performance or quality

- Available for Amada, Mazak, Mitsubishi and Precitec
- Delivers the same OEM performance at a lower cost
- Unmatched performance and reliability
- Engineered and manufactured to Hypertherm's precise quality standards
- Backed by our one-year warranty and 100% satisfaction guarantee

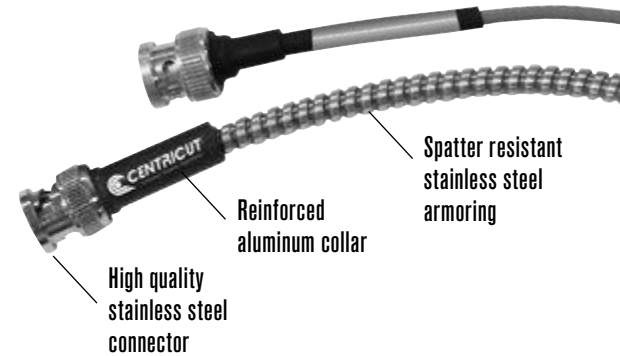
| Centricut part number | Esse A part number | OEM        | Reference number                        | Description                       |
|-----------------------|--------------------|------------|---|-----------------------------------|
| AM343-0091            | AL600              | Amada      | 71360091                                | AM-Sensor cone, HS95 mini         |
| AM343-1621*           | AL601              | Amada      | 71341621                                | AM-Sensor cone, HS95              |
| AM343-9107            | AL603              | Amada      | ECO cone                                | AM-Sensor cone, ECO               |
| AM343-1690            | AL602              | Amada      | 71341690                                | AM-Sensor cone, HS98              |
| AM343-L3015C          | AL550              | Amada      | 71374509                                | PT-Sensor cone, LC3015            |
| AM343-4233B*          | AL551              | Amada      | 71564233                                | AM-Sensor cone, HPL Black         |
| AM343-4233G*          | AL552              | Amada      | 71564233                                | AM-Sensor cone, HPL Gold          |
| PT347-3323            | AL611              | Mazak      | HNP                                     | PT-Sensor cone, HNP               |
| MZ335-HNPS*           | AL605              | Mazak      | HNPS                                    | MZ-Sensor cone, HNP short version |
| PT347-0007            |                    | Mazak      | 56743300500                             | PT-Sensor cone, HNZ (Mazak)       |
| PT347-0011*           | AL607              | Mitsubishi | P0354-110-00002                         | PT-Sensor cone, HNZ (Mitsubishi)  |
| MB334-W429A           | AL604              | Mitsubishi | P0461-270-00001                         | MB-Sensor cone, W429A             |
| PT347-0238*           | AL608              | Precitec   | BQ930D238G01                            | PT-Sensor cone, HNZ SMA           |
| PT347-8001            | AL612              | Precitec   | P0361-203-00001                         | PT-Sensor cone, 2.5Z/J            |
| PT347-0522*           | AL609              | Precitec   | P0599-520-00002                         | PT-Sensor cone, LRC               |
| PT347-1145            | AL610              | Precitec   | P0380-140-0002, P0380-130-00001, 281145 | PT-Sensor cone, DZ                |

\*Sensor cone repair service is available for most sensor cones in North America and select international regions. For more information contact [Ctlaser@Hypertherm.com](mailto:Ctlaser@Hypertherm.com).

# Armored sensor cables

## Centricut armored sensor cables outlast standard OEM cables

- Available for all major brands
- Robust design with extreme temperature rating (900–1200°)
- Longer life reduces downtime and production loss
- Spatter resistant stainless steel armoring
- Reinforced collars and high-quality connector



### Armored sensor cables

| Centricut part number | Esse A part number | OEM              | Reference number          | Description                                |
|-----------------------|--------------------|------------------|---------------------------|--|
| AM308-8965            | AL260              | Amada            | 71398965                  | AM-Sensor cable, 305 mm (12")              |
| AM308-8965A           | AL613              | Amada            | 71398965                  | AM-Sensor cable, 305 mm (12") armored      |
| AM313-1901            | AL200              | Amada            | 71341630                  | AM-Sensor cable HS-5, 305 mm (12")         |
| AM313-1901A           |                    | Amada            | 71341630                  | AM-Sensor cable HS-5, 305 mm (12") armored |
| AM313-8292            | AL615              | Amada            | 71398292                  | AM-Sensor cable dual shield, 7 m (275.6")  |
| AM313-9851A           |                    | Amada            | 71369851                  | AM-Sensor cable, 203 mm (8") armored       |
| CN306-0654A           | AL616              | Cincinnati       | 909654, 922686            | CN-Sensor cable, 114 mm (4.5") armored     |
| CN306-0951A           | AL617              | Cincinnati       | 842951                    | CN-Sensor cable, 140 mm (5.5") armored     |
| CN306-2951            | AL618              | Cincinnati       | 842951, PLTTW0015         | CN-Sensor cable, 140 mm (5.5")             |
| CN306-9654            | AL619              | Cincinnati       | 909654, 922686, PLTTW0002 | CN-Sensor cable, 114 mm (4.5")             |
| MZ335-0111A           | AL620              | Mazak            | 4674330111                | MZ-Sensor cable, 280 mm (11") armored      |
| MZ335-0181A           | AL621              | Mazak            | 46743300181               | MZ-Sensor cable, 317.5 mm (12.5") armored  |
| MZ335-1330A           | AL622              | Mazak            | 46683301330               | MZ-Sensor cable, 305 mm (12") armored      |
| MZ335-1980A           | AL643              | Mazak            | 46683301980               | MZ-Sensor cable, 280 mm (11") armored      |
| MZ335-5320            | AL105              | Mazak            | 6143355320                | MZ-Sensor cable, 61.5 mm (2.4") armored    |
| MZ335-630A            | AL623              | Mazak            | 00BSBA630MNC              | MZ-Sensor cable, 630 mm (25") armored      |
| MZ335-8290            | AL368              | Mazak            | 46143308290               | MZ-Sensor cable, 75 mm (3")                |
| NT426-1682            | AL624              | NTC              | 4R029911-001, J482D       | NT-Sensor cable, 216 mm (8.5")             |
| NT426-4991            | AL625              | NTC              | 3-0104991                 | NT-Sensor cable 0-0BNC/MCX, 482 mm (19")   |
| NT426-7492            | AL626              | NTC              | 3-0117492                 | NT-Sensor cable 90BNC/90BNC, 482 mm (19")  |
| NT426-8677            | AL627              | NTC              | 4R028677-001              | NT-Sensor cable, 508 mm (20") armored      |
| PR361-3150            | AL628              | Prima            | 820.63.150                | PR-Sensor cable, 150 mm (5.9")             |
| PR361-3151            | AL629              | Prima            | 820.63.150                | PR-Sensor cable, 150 mm (6") high profile  |
| PR361-3160            | AL560              | Prima            | 555.63.150                | PR-Sensor cable, 210 mm (8 17/64")         |
| PT347-0101A           | AL633              | Precitec         | P0360-100-00500           | PT-Sensor cable, 500 mm (20") armored      |
| PT347-0181            | AL358              | Precitec         | 46743300181               | PT-Sensor cable, 305 mm (12") armored      |
| PT347-0300A           | AL635              | Precitec         | P0492-014-00300           | PT-Sensor cable KE, 300 mm (11.8") armored |
| PT347-0450            |                    | Precitec         | P0497-002-00450           | PT-Sensor cable, 450 mm (17.7")            |
| PT347-KS13            | AL639              | Precitec/ Gunkyo | 00BMTKA-A-HS500mm         | PT-Sensor cable, 390 mm (15.5") armored    |
| PT347-1250            | AL637              | Precitec         | D5001-040-00250           | PT-Sensor cable, 250 mm (9.8") armored     |
| TR301-0930            | AL640              | Trumpf           | 280930                    | TR-Sensor cable, 152 mm (6") armored       |
| TR301-7833            | AL641              | Trumpf           | 227833                    | TR-Sensor cable, 432 mm (17")              |
| TR301-9983            | AL642              | Trumpf           | 359983, 342474            | TR-Sensor cable, 190 mm (7.5") armored     |



# Lens cleaning tips



## Centricut supplies suitable for all OEM CO<sub>2</sub> and fiber laser lenses

- Lens maintenance base is designed to secure a wide range of optics sizes for the cleaning process
- Centricut optical cleaning fluid is a safe, economical alternative to traditional high-purity and reagent-grade solvents
- Cleaning materials suited for all lens cleaning needs; lens paper, polyester swabs and polyester wipes

### Lens paper

Recommended for the routine maintenance cleaning of flat lenses.

### Polyester swabs

Recommended for cleaning curved lenses and where a more aggressive cleaning is required (interchangeable with polyester wipes).

### Polyester wipes

Recommended for cleaning CO<sub>2</sub> and fiber lenses and windows (interchangeable with polyester swabs and lens paper).

| Product description            | Part number | Quantity per order |
|--------------------------------|-------------|--------------------|
| Optical cleaning fluid (3 oz.) | TR300-1112  | 1                  |
| Lens cleaning swab             | TR300-0699  | 25                 |
| Lens cleaning paper, Tiffen    | TR300-6452  | 50                 |
| Polyester wipes 4" x 4"        | TR300-7991  | 100                |
| Base, lens maintenance         | TR300-271   | 1                  |

## Lens paper

Recommended for the routine maintenance cleaning of flat lenses.

### You will need:

- Lens maintenance base (lens holder)
- Optical cleaning fluid
- Air bulb
- Lint-free lens paper
- Latex or rubber gloves



### To get started

Using rubber gloves, place the lens in the lens holder and remove all loose contaminants with an air bulb. When contaminants are no longer visible, begin the cleaning process.



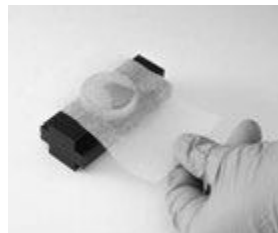
### Step 1

Place lens paper over the optic, covering it completely.



### Step 2

Apply a couple drops of lens cleaning fluid to the lens paper (far side of the lens).



### Step 3

Slowly pull the lens paper across the lens so the cleaning fluid comes in contact with the entire lens surface. Finish pulling the paper across so all of the fluid has dried from the lens.



### Step 4

Inspect the surface of the lens for dust and cleaning residue using a flashlight. Examine the lens from different angles. Repeat the process on the other side of the lens.

### Final step:

Place the cleaned lens in the machine quickly to avoid contamination from airborne particles. If spots, pits, or scratches are still noticeable, the lens may need to be replaced.

## Polyester swabs

Recommended for cleaning curved lenses and where more aggressive cleaning is required. Interchangeable with polyester wipes.

### You will need:

- Lens maintenance base (lens holder)
- Optical cleaning fluid
- Air bulb
- Polyester swabs
- Latex or rubber gloves



### To get started

Using rubber gloves, place the lens in the lens holder and remove all loose contaminants with an air bulb. When contaminants are no longer visible, begin the cleaning process.



### Step 1

Place a few drops of the optical cleaning fluid onto the swab.



### Step 2

Move the larger dirt particles and then finer contaminants to the edge of the lens using the swab. Do not rest the swab on the lens or on the work table. Do not reuse swabs.



### Step 3

Inspect the surface of the lens for dust and cleaning residue using a flashlight. Examine the lens from different angles. Repeat the process on the other side of the lens.

### Final step:

Place the cleaned lens in the machine quickly to avoid contamination from airborne particles. If spots, pits, or scratches are still noticeable, the lens may need to be replaced.

## Polyester wipes

Recommended for cleaning CO<sub>2</sub> and fiber lenses and windows. Interchangeable with polyester swabs and lens paper.

### You will need:

- Lens maintenance base (lens holder)
- Optical cleaning fluid
- Air bulb
- Polyester wipes
- Latex or rubber gloves



### To get started

Using rubber gloves, place the lens in the lens holder and remove all loose contaminants with an air bulb. When contaminants are no longer visible, begin the cleaning process.



### Step 1

Place a few drops of the optical cleaning fluid onto the polyester wipe.



### Step 2

Place the wipe with the wet side down on the lens and slide it across the lens, applying light pressure to the top of the wipe. Avoid contamination to the wipe and do not reuse wipes.



### Step 3

Inspect the surface of the lens for dust and cleaning residue using a flashlight. Examine the lens from different angles. Repeat the process on the other side of the lens.

### Final step:

Place the cleaned lens in the machine quickly to avoid contamination from airborne particles. If spots, pits, or scratches are still noticeable, the lens may need to be replaced.

# Steps to help optimize cut quality.

Striation marks, angularity and dross tell the story.

Optimizing CO<sub>2</sub> and fiber lasers to achieve maximum cut quality is a very important step in the overall cutting process. The critical points that produce good cuts are the width of the kerf (the material that is lost during the cut), oxidation and roughness of the cut surface, the geometry of the cut parts and the allowable tolerances. Some factors to be considered are the cut speed or 'feed rate', beam focus, gas pressure, standoff and nozzle size/type.

## Factory cut chart settings

The following samples show 12 mm, 6 mm and 3.2 mm (1/2", 1/4" and 10 ga.) mild steel, cut with O<sub>2</sub> on a 2 kW fiber laser with one variable changed to show how cut quality is affected. The adjustments will be similar for all CO<sub>2</sub> and fiber laser, cutting mild steel with O<sub>2</sub>.

## Is the kerf too narrow?

When the kerf is too narrow the cut will have a very smooth edge on the top, a lack of oxidation on the bottom and/or heavy dross.

### Probable causes:

- Focus is too low
- Feed rate is too fast
- Gas pressure is too low
- Nozzle size is too small
- Standoff is too low

### Follow these steps to optimize cut quality:

1. Use the closest known settings for the material being cut.
2. Use a test part that has both interior and exterior features.
3. Verify that the lens and/or window is clean and in good condition.
4. Verify that the nozzle is centered properly and is in good condition.
5. Adjust the focus up and down until the cut quality starts to get bad and then set to the middle of that range.
6. Adjust the gas pressure up and down until the cut starts to get bad and then set to the middle of that range.
7. Adjust the feed rate up by 5% increments. When the cut starts to get bad, set the feed rate 10% slower.

## Strike a balance between heat levels and gas flow

Cutting mild steel with a laser is a balance of how much material is heated by the laser beam and how much assist gas flows through the cut.

- Heating up too small of an area, or not having enough assist gas flow through the cut will result with the kerf (width of the cut) being too narrow.
- Heating up too large of an area or having too much assist gas flow through the cut will result in the kerf being too wide.

## Is the kerf too wide?

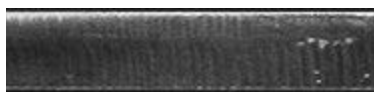
When the kerf is too wide the cut will have a rougher edge, more self burning in the corners of the part, more angularity on the cut edge and occasionally, dross.

### Probable causes:

- Focus is too high
- Feed rate is too slow
- Gas pressure is too high
- Nozzle size is too big
- Standoff is too high
- Incorrect nozzle type

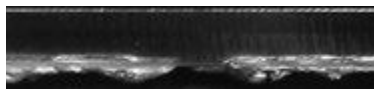
## 3.2 mm (10 ga.) mild steel cut resulting in too narrow kerf

### Factory cut chart settings



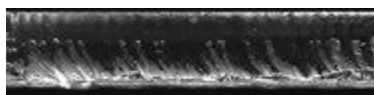
### Focus is too low

The kerf is too narrow and doesn't allow enough O<sub>2</sub> into the cut to remove all the molten material.



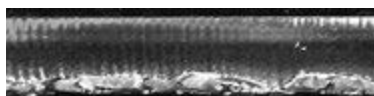
### Feed rate is too fast

The cut striations are trailing the direction of cutting and there is not enough time to remove all the molten material.



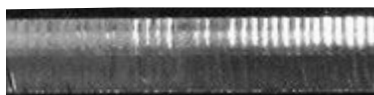
### Gas pressure is too low

There is not enough O<sub>2</sub> to remove all the molten material.



### Stand off is too low

The focus spot is in the wrong location, causing the rough edge.



## 3.2 mm (10 ga.) mild steel cut resulting in too wide kerf

### Factory cut chart settings



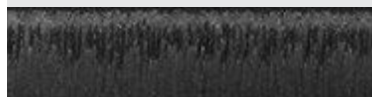
### Focus is too high

The laser is melting more material than can be removed from the cut.



### Feed rate is too slow

The cut surface is too rough and productivity is decreased.



### Gas pressure is too high

Too much O<sub>2</sub> results in overheating of the cut and causes intermittent gouges.



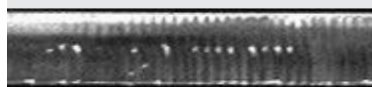
### Stand off is too high

The laser is melting more material than can be removed from the cut.



### Nozzle size is too big

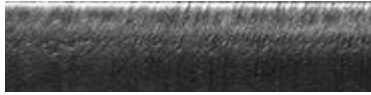
Too much O<sub>2</sub> results in overheating of the cut and causes intermittent gouges.



\*Above samples have been cut with O<sub>2</sub> on 2 kW fiber laser. Results will be similar for CO<sub>2</sub> laser cutting mild steel with O<sub>2</sub>.

## 6 mm (1/4") mild steel cut resulting in too narrow kerf

### Factory cut chart settings



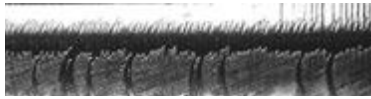
### Focus is too low

The kerf is too narrow and doesn't allow enough O<sub>2</sub> into the cut to remove all the molten material.



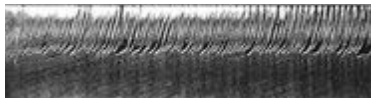
### Feed rate is too fast

The cut striations are trailing the direction of cutting and there is not enough time to remove all the molten material.



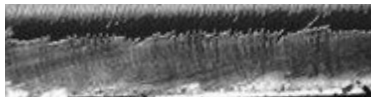
### Gas pressure is too low

There is not enough O<sub>2</sub> to remove all the molten material.



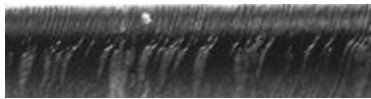
### Stand off is too low

The focus spot is in the wrong location, causing the rough edge.



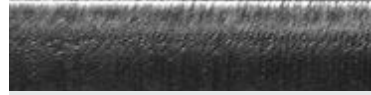
### Nozzle size is too small

There is not enough O<sub>2</sub> to cut uniformly.



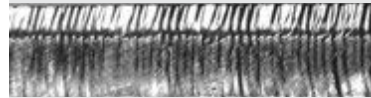
## 6 mm (1/4") mild steel cut resulting in too wide kerf

### Factory cut chart settings



### Focus is too high

The wider focus spot is letting too much O<sub>2</sub> into the cut and burning the material.



### Feed rate is too slow

The cut surface is too rough and productivity is decreased.



### Gas pressure is too high

Too much O<sub>2</sub> is entering the cut, causing a rougher edge and inconsistent cutting.



### Stand off is too high

Too much O<sub>2</sub> is entering the cut, causing a rougher edge and inconsistent cutting.



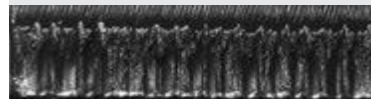
### Nozzle size is too big

Too much O<sub>2</sub> results in overheating of the cut and causes intermittent gouges.



### Nozzle type is incorrect

The shape of the gas flow is incorrect, causing a rougher edge.



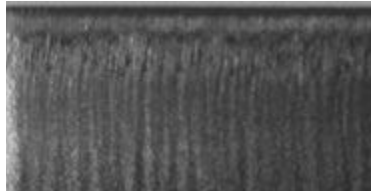
Cut direction

Cut direction

\*Above samples have been cut with O<sub>2</sub> on 2 kW fiber laser. Results will be similar for CO<sub>2</sub> laser cutting mild steel with O<sub>2</sub>.

# 12 mm (1/2") mild steel cut resulting in too narrow kerf

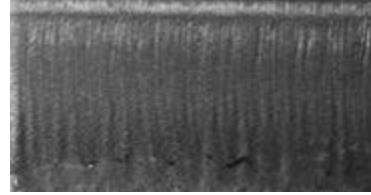
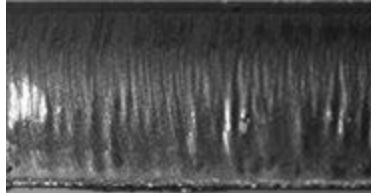
## Factory cut chart settings



## Factory cut chart settings

### Focus is too low

The kerf is too narrow and doesn't allow enough O<sub>2</sub> into the cut to remove all the molten material.

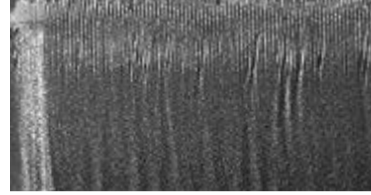
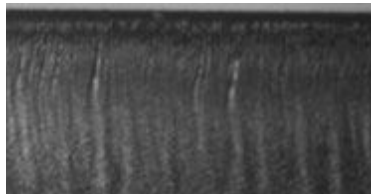


### Stand off is too low

The kerf is too narrow to allow enough O<sub>2</sub> into the cut. The oxidation is not covering the entire surface and cutting will be inconsistent.

### Feed rate is too fast

The machine is moving too fast to allow enough O<sub>2</sub> into the cut for consistent cutting.



### Nozzle size is too small

There is not enough O<sub>2</sub> to cut uniformly.

### Gas pressure is too low

The pressure is too low to allow enough O<sub>2</sub> into the cut. The oxidation is not covering the entire surface and cutting will be inconsistent.



Cut direction

Cut direction

\*Above samples have been cut with O<sub>2</sub> on 2 kW fiber laser. Results will be similar for CO<sub>2</sub> laser cutting mild steel with O<sub>2</sub>.

# 12 mm (1/2") mild steel cut resulting in too wide kerf

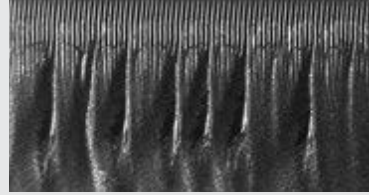
**Factory cut chart settings**



**Factory cut chart settings**

**Focus is too high**

Too much O<sub>2</sub> is entering the cut causing intermittent over burning.

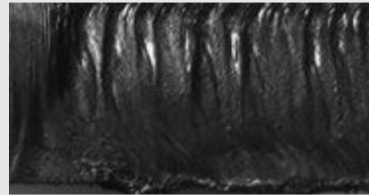
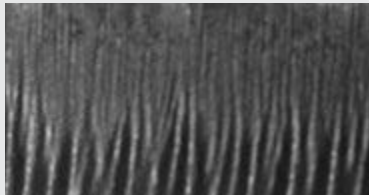


**Stand off is too high**

Too much O<sub>2</sub> is entering the cut resulting in intermittent over burning.

**Feed rate is too slow**

The machine is moving too slow resulting in the over burning of the bottom half of the cut. The slower feed rate also reduces productivity.

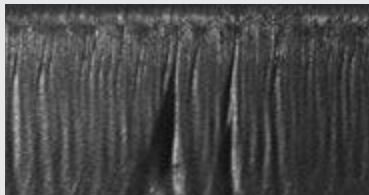


**Incorrect nozzle type**

The gas flow shape is not correct resulting in inconsistent cutting.

**Gas pressure is too high**

Too much O<sub>2</sub> is entering the cut resulting in intermittent over burning.



\*Above samples have been cut with O<sub>2</sub> on 2 kW fiber laser. Results will be similar for CO<sub>2</sub> laser cutting mild steel with O<sub>2</sub>.

## **DURALENS™**

### High Quality Lenses for High Power CO<sub>2</sub> Lasers

- Compatible with all major laser systems in the market
- Approved and used by leading OEMs
- Designed for high durability and accuracy
  - Manufactured by automated CNC technology to assure complete uniformity
- Manufactured according to the highest precision specifications
  - Absorption  $\leq 0.2\%$
- All manufacturing is done in-house

Established in 1976, Ophir Optronics is a global leader in precision IR optics components and laser measurement equipment.

Our CO<sub>2</sub> Optics Group produces a full range of OEM and replacement optics including beam-delivery and cavity optics as well as windows.

Ophir provides the highest quality CO<sub>2</sub> optics at the best price.

Our commitment to the customer is second to none, with a global distribution and support network. This unwavering commitment to forward thinking helps keep us "A Cut Above the Rest".



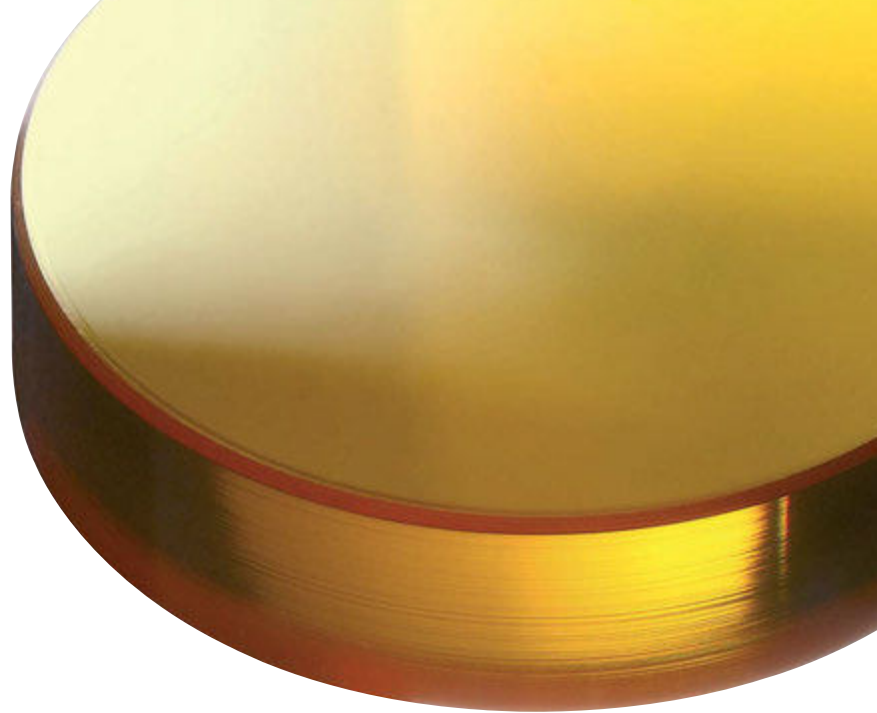
## **A Cut Above The Rest**

Ophir's **DURALENS™** lenses are available worldwide.

For more information please contact:

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# CLEAR *Magic*<sup>TM</sup>

## Transparent Black Magic<sup>TM</sup> Lens Ultra Low Absorption Guaranteed < 0.13%

- Best Focus Stability
- Increased Durability
- Recommended for High Power Lasers over 5KW
- Best Surface Quality

Established in 1976, Ophir Optronics is a global leader in precision IR optics components and laser measurement equipment.

Our CO<sub>2</sub> Optics Group produces a full range of OEM and replacement optics including beam-delivery and cavity optics as well as windows.

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**BLACK** *Magic*<sup>™</sup> 

## Low Absorption Lenses for High Power CO<sub>2</sub> Lasers

- Guaranteed absorption <0.15% - constant throughout the lens lifetime
  - Maximum focus stability
- Toughest coating in the industry. Remarkable Durability
  - Best ability to withstand back spatter
  - Easier to clean and maintain
  - Resistant to humidity
- Recommended and approved by leading OEMs
  - Used for all high powered CO<sub>2</sub> lasers including those over 5KW
- Radioactive free coating
- Excels in cutting aluminum and stainless steel
- Best cost-benefit ratio

Established in 1976, Ophir Optronics is a global leader in precision IR optics components and laser measurement equipment.

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Ophir Optics is dedicated to providing their customers superior OEM quality products, global distribution and a support network. Our unwavering commitment to forward thinking keeps us "A Cut Above the Rest."



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## Ophir & Centricut by Talas = 100% Kwaliteitsgarantie & 100% OEM compatibiliteitsgarantie.

Talas is exclusief verdeler van o.a. lenzen & spiegels van **Ophir** voor BeLux en nozzles & ceramieken van **Centricut/Hypertherm** waardoor wij zeer competitieve tarieven hebben. Deze fabrikanten zijn tevens ook leverancier van de grootste fabrikanten(OEM) van lasersnijmachines.

**Ophir**, een CO<sup>2</sup> Optica groep en tweede grootste leverancier in de wereld is producent van het volledige gamma optieken voor de OEM en de vervangingsmarkt.

Ophir fabriceert lenzen met verschillende coatings voor een lagere absorptie en voor een langere levensduur:

-**Duralens**: max. absorptie  $\leq 0,2\%$ ; standaard gele lens.

-**Black Magic**: max. absorptie  $< 0,15\%$ ; niet transparante, niet-radioactieve harde coating voor een stabielere focuspunt en hogere warmte geleiding, vochtbestendige coating.

-**Clear Magic**: max. absorptie  $< 0,13\%$ ; transparante, harde coating voor de beste focus stabiliteit en hoogste warmtebestendigheid, PMS-compatibel, vochtbestendige coating.

**Centricut/Hypertherm nozzles** in een kopertellurium legering, vervaardigd op CNC met diamanten werktuigen, gegarandeerd braamloze bewerking, optimale warmteweerstand, constante geleiding, verspanende tolerantie en concentriciteit  $< 0,01\text{mm}$ , zeer fijn afgewerkt binnenoppervlak voor een goede doorstroming van het gas en buitenafwerking tegen de hechting van de gesmolten materie, verchromde nozzles vermijden hechting van de gesmolten materie, dubbele nozzles voor een betere kwaliteit en hogere snijnelheid voor staal vanaf 8mm, lasermarkering van de diameter.

## Ophir & Centricut by Talas = garantie à 100% de qualité et 100% de garantie compatibilité OEM

Talas est le distributeur exclusif de e.a. les lentilles et les miroirs de **Ophir** pour le BeLux et des buses & des céramiques de **Centricut/Hypertherm**. De ce fait nous avons des tarifs très compétitifs. Ces fabricants sont aussi fournisseurs des plus grands fabricants (OEM) des machines de découpe au laser.

**Ophir**, un groupe d'optique CO<sup>2</sup> et deuxième fournisseur en importance dans le monde, produit la gamme complète d'optiques pour l'OEM et le marché de pièces de rechange. Ophir fabrique des lentilles avec des revêtements différents pour un taux d'absorption inférieur et une durée de vie plus longue:

-**Duralens**: absorption maximale  $\leq 0,2\%$ , lentille standard jaune

-**Black Magic**: absorption maximale  $< 0,15\%$ , non transparent, revêtement dur non radioactifs pour un point focal plus stable et une conductivité thermique plus élevée, revêtement résistant à l'humidité

-**Clear Magic**: absorption maximale  $< 0,13\%$ , revêtement dur transparent pour la meilleure stabilité du point focal et la meilleure résistance à la chaleur, le revêtement PMS-conforme et résistant à l'humidité

**Centricut/Hypertherm**: buses dans un alliage cuivre-tellurium usinés avec outils diamant sur tours à CN, usinage garanti sans bavures, excellente résistance thermique, conductivité constante, tolérances d'usinage et de concentricité  $< 0,01\text{ mm}$ , la surface intérieure finement travaillée pour une bonne fluidité du gaz et une finition extérieure lisse contre l'accrochage de la matière en fusion, buses chromées évitant l'accrochage de la matière en fusion, double buses pour une meilleure qualité et plus grande vitesse de coupe de l'acier de 8 mm, marquage au laser du diamètre.

## Type of nozzle & Reasons for selecting

**Adapter** This means that it is possible to use a different type of nozzle as long as the nozzle adaptor is purchased. It adapts from a big nozzle to a smaller nozzle and this can save the end-user money in the long run.

**CP (chrome plated)** CP nozzles are plated with chrome for increased durability. Chrome plated nozzles are much easier to clean and can withstand contact with material better than non-plated nozzles.

**Conical** This refers to the internal geometry of the nozzle. Due to the internal geometry the gas swirls and spirals down towards the material causing a coaxial flow, this flow prevents plugging of the orifice.

**Cylindrical** This refers to the internal geometry of the nozzle. Mainly used for gauge steel to 6,4 mm low pressure oxygen cutting.

**Double** Just as it sounds, this is a nozzle within a nozzle. Sometimes referred to as a "jacketed nozzle". Double nozzles are better for cutting thicker materials. "Better" refers to cut quality more than speed. Double nozzles have a high aspect ratio at the exit helping protect lens from back spatter.

**Double with holes or double nozzle insert** Used with the outer nozzle; the double nozzle insert inserts into the outer nozzle to form a double.

**Double hard** This is a double nozzle with the hard chrome plating (this type of chrome plating is only available in North America).

**Hard** Hard chrome plating (only available in North America), is harder than standard chrome therefore it is more durable.

**Hex** Hex refers to the machined edge of the nozzle, with the hex machined in it makes it possible to get an open end wrench on the nozzle for tightening and loosening.

**High pressure (HP) High density (HD)** Used in applications where the gas pressures are really high, used on thicker material and stainless steel and aluminium.

**Low pressure** Used for low pressure oxygen cutting applications such as gauge material up to 3,2 mm.

**Nozzle holder** The nozzle holder sometimes also known as the ceramic is the mating partner for the nozzle; the two are combined by threading the nozzle into the holder.

**Nozzle, long** Refers to the length of the nozzle.

**Nozzle, short** Refers to the length of the nozzle.

**Nozzle, w/step** This refers to the internal geometry of the nozzle. Mainly used in higher pressure cutting.

**Outer nozzle** See double nozzle. This is the mating partner of the double nozzle insert, the two combined make a double nozzle.

**Shower** Used to cut thick mild steel ( $> 6,4\text{ mm}$ ) w/O<sub>2</sub> assist gas. Shower nozzles have a center nozzle orifice, surrounded by several other holes. This design ensures more effective assist gas volume, without significantly increasing real volume.

**Straight taper** This refers to the internal geometry of the nozzle, mainly used in higher pressure cutting.

**WACS** Water-assist cutting system.