

OPTIMUS® PACKAGING SYSTEMS

HIGHLIGHTS

- Versatile, cost-efficient Type B(U)F packaging for ILW, TRU, LEU and FM materials
- Two package types (OPTIMUS-L & -H) for low- and high-activity contents
- Ships challenging waste, such as aerosol cans with compressed or liquified gas propellant
- Use of same Cask Containment Vessel (CCV) design in both OPTIMUS-L & -H versions allows interchangeability and standardization of operating procedures
- Easily reconfigured with shield inserts for contents requiring increased activity shielding
- Small, light packages ideal for facilities with restricted access and/or low crane capacity
- Pallets allow forklift handling to simplify loading and unloading operations

NAC International's newest additions to its Type B transportation fleet, the OPTIMUS®-L and OPTIMUS®-H Packaging Systems (OPTImal Modular Universal Shipping cask) accommodate a wide variety of challenging contents ranging from irradiated hardware, fissile, byproduct, and source materials to spent fuel and fresh fuel including CANDU, HALEU, and TRISO contents. The OPTIMUS systems were designed to be robust, versatile, compact transportation packages ideally suited for research/test reactors and hot-cell cleanout materials. It is ideal for sites with restricted access, material handling constraints, and crane limitations that require Type B transportation packaging.

The OPTIMUS systems' modularity allows reconfiguration of packaging components and internals for optimal shielding performance. Some of the integrally designed features of the OPTIMUS making it unique are its ease of operations for loading and unloading, its aluminum shipping pallet for forklift handling, and its three (3) design-tested shielding inserts for higher activity contents allowing flexibility for content configurations.

OPTIMUS system is a
TRANSFORMATION
in the world of
NAC's RAM packaging

OPTIMUS-H



OPTIMUS-L



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PACKAGING COMPONENT DESCRIPTION

CASK CONTAINMENT VESSEL (CCV)

- Stainless steel containment vessel
- Innovative bolted closure system to facilitate remote closure operations
- Universal and compatible lifting and anchoring attachments

OUTER SHIELD VESSEL (OSV)

- Cost-effective shield vessel to protect CCV
- Simplified mechanical closure with weather seal
- Integral trunnions, tie downs and attachment lugs for efficient handling
- Integrated drain and monitoring port

IMPACT LIMITER SYSTEM (ILS)

- Closed-cell polyurethane foam encased in stainless steel
- Swing-bolt connections for quick installation/removal

SAFETY BY DESIGN FEATURES

- 10 CFR 71 and SSR-6 Type B(U)F
- Designed to ASME Code Section III-NB and NF criteria
- Pressurization analysis
- Contingency combustion analysis, considering possible deflagration and detonation
- Up to 390 FGE per drum for plutonium and uranium wastes



PACKAGING ATTRIBUTE	OPTIMUS-H	OPTIMUS-L
Package Designation	B(U)F-96	
Controls	Exclusive Use	
Cavity Size (in.)	Ø32.5 x 47.0 (fits 110 Gallon Drum)	
MNOP (psig)	100	
Outer Dimensions (in.)	Ø74.2 x 83.2	Ø49.0 x 70.0
Empty Weight (lb.)	24,700	6,050
Maximum Content Weight (lb.)	7,300	3,150
Gross Weight (lb.)	~25,000 to 32,000	~6,500 to 9,200
Packages LWT Shipment	2	6