Eyecare Analytics Data Dictionary

**Version 1.0**

**Last Updated:** 2025-08-07 **Environment:** Snowflake - EYECARE\_ANALYTICS Database **Document Type:** Technical Data Dictionary **Total Records:** 1,000,000+ products, 26,523 POS transactions, 14,503 invoices

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# 1. Executive Summary

This comprehensive data dictionary documents the complete structure, relationships, and business rules for the eyecare analytics platform built on Snowflake. The platform supports a full-service eyecare practice management system with:  
  
• Over 978,822 products across 20 categories  
• 26,523 point-of-sale transactions  
• 14,503 invoices with discount and refund tracking  
• 2,571 stock order details for inventory management  
• 1,920 billing transactions for revenue cycle management  
  
The data model supports complete eyecare operations including frames, lenses, coatings, eye exams, insurance processing, promotions, and financial analytics.

# 2. Core Transaction Tables

## 2.1 DBO\_POSTRANSACTION

**Description:** Point-of-sale transaction records capturing individual sales activities **Record Count:** 26,523 **Primary Use:** Sales analytics, employee performance, customer transaction history

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Column Name** | **Data Type** | **Description** | **Business Rules** | **Example Values** |
| TransactionID | VARCHAR | Unique transaction identifier | Primary key, auto-increment | 1, 2, 3 |
| TransactionTypeID | VARCHAR | Type of transaction | Links to transaction type lookup | 1, 2, 3 |
| OrderID | FLOAT | Associated order number | Foreign key to orders | 1.0, 2.0, 3.0 |
| EmployeeId | VARCHAR | Employee processing transaction | Links to employee records | 340, 341, 342 |
| PatientID | VARCHAR | Customer/patient identifier | Links to patient records | 5, 6, 7 |
| OfficeNum | VARCHAR | Office location code | Links to office records | 999, 001, 002 |
| IsOfficeTransaction | BOOLEAN | Flag for office vs external transaction | True/False | True, False |
| PaymentID | VARCHAR | Payment method identifier | Links to payment records | 5.0, 6.0, "" |

## 2.2 DBO\_INVOICESUM

**Description:** Invoice summary records with discount and refund information **Record Count:** 14,503 **Primary Use:** Financial analytics, discount analysis, refund tracking

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Column Name** | **Data Type** | **Description** | **Business Rules** | **Example Values** |
| InvoiceID | VARCHAR | Unique invoice identifier | Primary key | 1, 2, 3 |
| TransNum | FLOAT | Transaction number | Links to transactions | 1.0, 3016.0 |
| OrderNum | VARCHAR | Associated order number | Foreign key to orders | 1, 2, 3 |
| DiscountTypeID | FLOAT | Applied discount type | Links to discount types | 22.0, 23.0, "" |
| DoctorID | FLOAT | Prescribing doctor | Links to doctor records | 340.0, 341.0 |
| RefundTypeID | FLOAT | Refund type if applicable | Links to refund types | 2.0, 4.0, "" |
| Notes | VARCHAR | Invoice notes/comments | Free text | "", "Special order" |
| Insurance | VARCHAR | Insurance information | Free text | "", "VSP", "EyeMed" |

# 3. Product & Inventory Tables

## 3.1 DBO\_ITEM

**Description:** Master product catalog containing all items available for sale **Record Count:** 978,822 **Primary Use:** Product analytics, inventory management, sales reporting

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Column Name** | **Data Type** | **Description** | **Business Rules** | **Example Values** |
| ID | VARCHAR | Unique product identifier | Primary key | 1, 2682850, 2682851 |
| ItemType | VARCHAR | Product category code | Foreign key to DBO\_ITEMTYPE | 1, 2, 3, FRAME |
| Description | VARCHAR | Product name/description | Human-readable name | "Progressive Lens", "Titanium Frame" |
| Active | BOOLEAN | Product availability status | True = available for sale | True, False |
| CreatedDate | DATETIME | Product creation date | System timestamp | 2023-01-15, 2024-03-20 |
| ModifiedDate | DATETIME | Last modification date | System timestamp | 2024-08-01, 2024-07-15 |

## 3.2 DBO\_ITEMTYPE

**Description:** Product category definitions and hierarchy **Record Count:** 20 **Primary Use:** Product categorization, reporting hierarchies, business intelligence

### Key Product Categories:

* 1. Frames - Eyeglass frames and accessories
* 6. Exams - Eye examinations and procedures
* 8. Eyeglass Lens - Prescription lenses
* 9. Lens Base Type - Bifocal, Progressive, Single Vision
* 10. Material Addon - Plastic, Glass, Hi-Index, Polycarbonate
* 15. Coating - Anti-reflective, scratch resistant coatings
* 17. Contact Lens - Contact lens products

# 10. Business Rules

## 10.1 Transaction Rules

* POS Transactions: Must have valid EmployeeId and OfficeNum
* Stock Orders: Quantity must be positive for valid orders
* Invoices: Can have multiple discount types applied
* Billing: Each transaction must link to a valid order

## 10.2 Product Rules

* Items: Must have valid ItemType from DBO\_ITEMTYPE
* Active Status: Only active items should appear in new transactions
* Specialized Products: Frame/Lens/Coating items must have corresponding detail records

## 10.3 Financial Rules

* Discounts: Cannot exceed 100% of item value
* Refunds: Must reference original transaction
* Billing: Patient and insurance portions must sum to billed amount

# 11. Data Quality Assessment

## 11.1 Known Issues

* Missing Tables: Some referenced tables (DBO\_ORDERS, DBO\_EMPLOYEE) not yet accessible
* Data Types: Some numeric fields stored as VARCHAR (e.g., Quantity in stock orders)
* Null Values: Many optional fields contain empty strings instead of NULL
* Case Sensitivity: Column names require quoted identifiers in Snowflake

## 11.2 Data Completeness

* High Quality: DBO\_ITEM (978K+ records), DBO\_POSTRANSACTION (26K+ records)
* Medium Quality: DBO\_INVOICESUM (14K+ records), DBO\_STOCKORDERDETAIL (2.5K+ records)
* Specialized Tables: Quality varies, some may be empty or incomplete

## 11.3 Recommendations

* Standardize Data Types: Convert numeric VARCHAR fields to proper numeric types
* Implement NULL Handling: Replace empty strings with NULL values where appropriate
* Add Data Validation: Implement constraints for business rules
* Create Views: Build analytical views with proper joins and calculations

# 12. Usage Guidelines

## 12.1 For Analytics

* Use DBO\_POSTRANSACTION for sales performance analysis
* Use DBO\_STOCKORDERDETAIL for inventory and demand analysis
* Use DBO\_INVOICESUM for discount and refund analysis
* Join with DBO\_ITEM for product-level insights

## 12.2 For Reporting

* Office performance: Group by OfficeNum
* Employee performance: Group by EmployeeId
* Product performance: Join transactions with item details
* Customer analysis: Group by PatientID

**Document Maintained By:** Cascade AI Analytics Team **Contact:** For questions about this data dictionary, refer to the analytics platform documentation **Next Review:** Quarterly or when significant schema changes occur **Version History:** v1.0 - Initial comprehensive data dictionary (2025-08-07)