



10503 Timberwood Circle  
Suite 120  
Louisville, KY 40223-5318

Voice: 502.423.7225  
Fax: 502.425.7064  
Web: [www.lumitron-ir.com](http://www.lumitron-ir.com)

---

Thursday, July 06, 2000

Subject: SVS-2000 Mk2 Non-Uniformity Correction (\*.nuc) File Format

Below is a portion of the source code that contains a list of define's and struct's that make up the Lumitron NUC file format.

The file is written out in the following manner:

- (1) **LFileHdr** (All Lumitron files, begins @ 0x0)
- (2) **NUCFileHdr** (begins @ 0x4D)
- (3) **NUC Data** (begins @ 0x64) Both the gain and offset coefficients are 2 bytes wide. The data begins with pixel 0 (Acq Card - 0, Chl - 0; then Acq Card - 0, Chl - 1 ...). The offset coefficient is 1<sup>st</sup> and the gain term follows.

Notes:

- a. short - signed (2 bytes)
- b. int - signed (4 bytes)
- c. DWORD - unsigned long (4 bytes)
- d. WORD - unsigned short (2 bytes)
- e. Structures are packed on 8 Byte boundaries, therefore some padding may exist.

```
struct _LFileHdr
{
    char    text[47];           // Man readable text
    char    eof;               // End of file character (decimal 26)
    char    signature[6];      // Lumitron signature ("LInc")
    UINT    product;           // Lumitron product code
    char    filetype;          // Product file type
    char    ver[13];           // Version of program that wrote this file
};
typedef struct _LFileHdr LFileHdr;

#define     LUM_SIGNATURE      "LInc" // For Mk2 v2.00 and above

// Define Lumitron product codes
#define     LUM_SVS2000       4      // Lumitron Standard SVS2000 Product

// Define Product file types
#define     LUM_NUC_TABLE     3      // NUC Table file

/*
=====
Below, define the NUC File header. This header is written to the disk after the base Lumitron
header has been written.
=====
*/
struct _NUCFileHdr
{
    short   format;            // Area or Linear
    short   type;              // Offset only or Offset & Gain
    short   numAcqCards;       // Number of acquisition cards we have data for
    int     chPerCard;         // Number of channels per acq card
    DWORD   hPix;              // Horizontal pixels per channel
    DWORD   vPix;              // Vertical pixels
};
```

```
        DWORD  dataSize;           // Size of NUC data
};
typedef struct _NUCFileHdr NUCFileHdr;
```