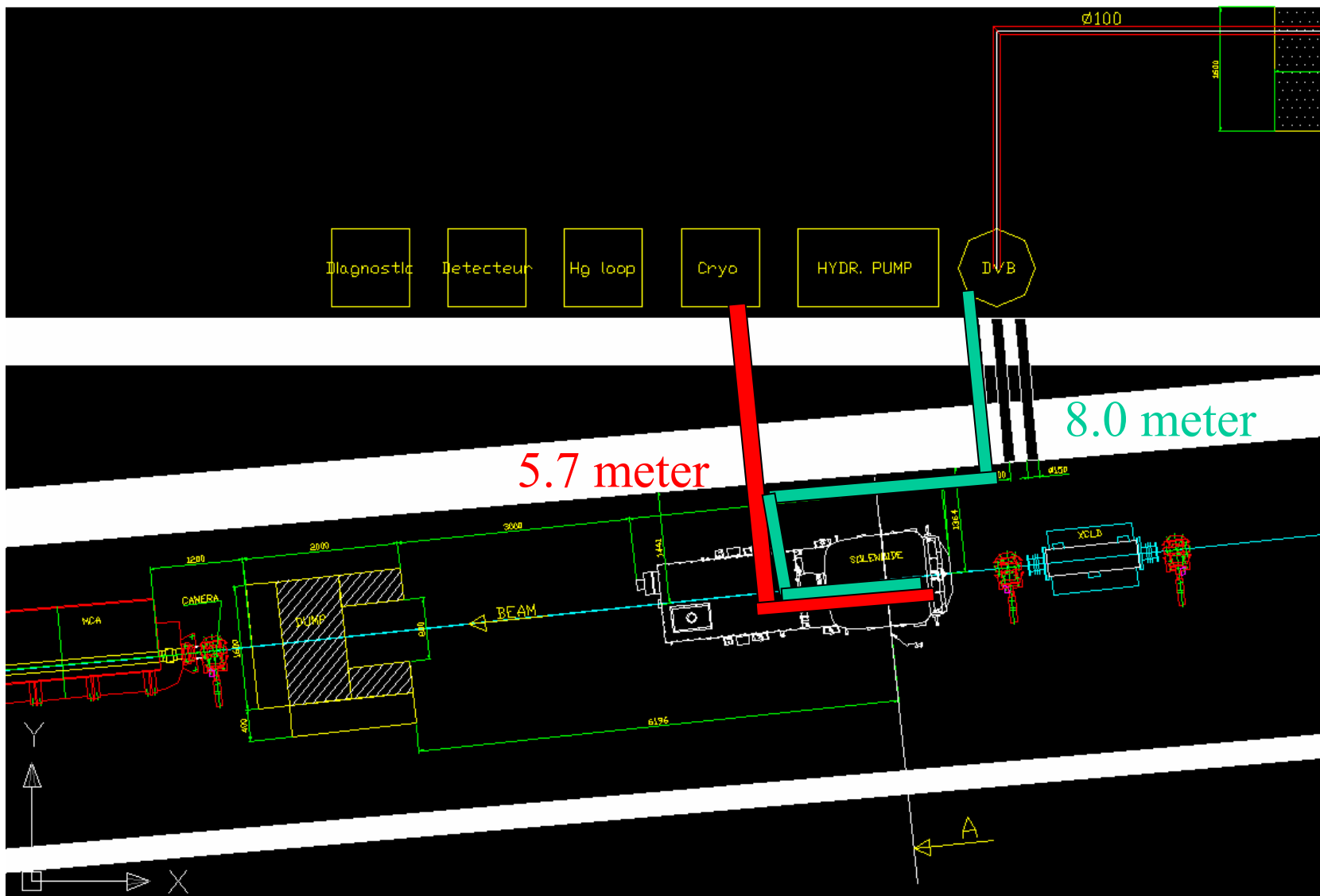
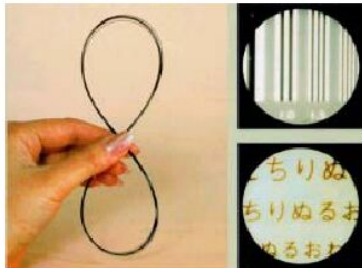


# Optics Layout and Imaging Fiber Update, T. Tsang, BNL, 25 Jan 2006



# Sumitomo imaging fibers



SEI

## Product Lineup

TP03105B

	IGN-02/03	IGN-028/06	IGN-035/06	IGN-037/10	IGN-05/10	IGN-08/30	IGN-15/30	IGN-20/50
Number of picture elements	3,000	6,000	6,000	10,000	10,000	30,000	30,000	50,000
Jacketing diameter (um)	200	280	350	370	500	800	1,500	2,000
Picture elements area diameter (um)	180	252	315	333	450	720	1,350	1,800
Coating diameter (Primary) (um)	250	340	420	450	590	960	1,900	2,400
Coating diameter (Secondary) (um)	---	---	---	---	---	---	2,500	3,000
Circularity	>= 0.93							
Core material	GeO2 Containing Silica							
Cladding material	F Containing Silica						Pure Silica	
Coating material	Silicone						Silicone + PFA	
Numerical aperture	0.35						0.30	
Lattice defect (%)	<= 0.1							
Allowable bending radius (mm)	10	15	15	20	25	40	75	100
Allowable max temp. (C)	150							

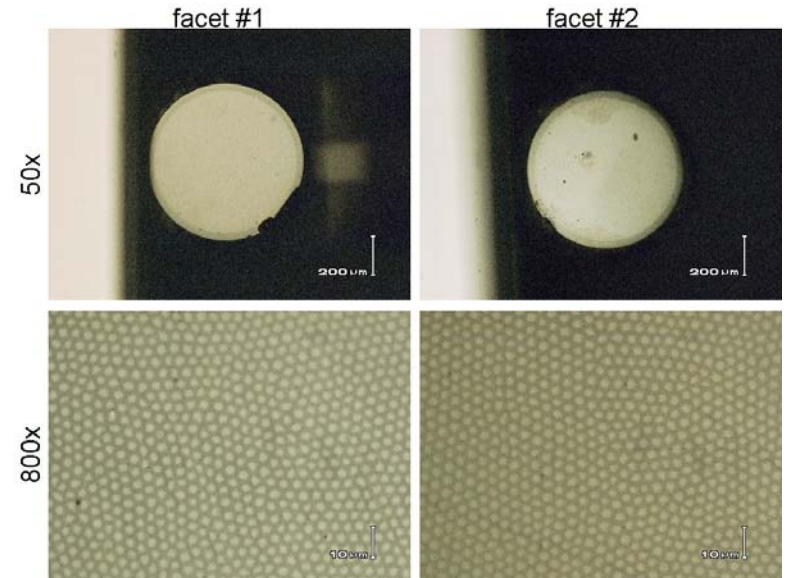
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SUMITOMO ELECTRIC

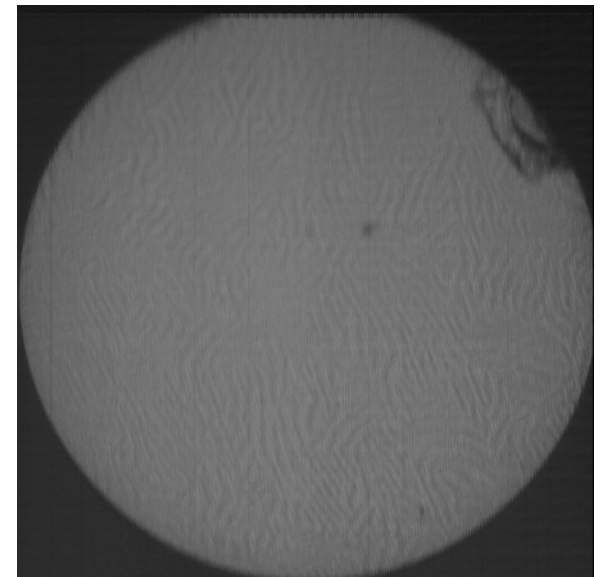
All have small  
imaging area  
~ 1 mm diameter  
Rad-hard to 1 Mrad

>20 meter  
available

5 meter  
limit



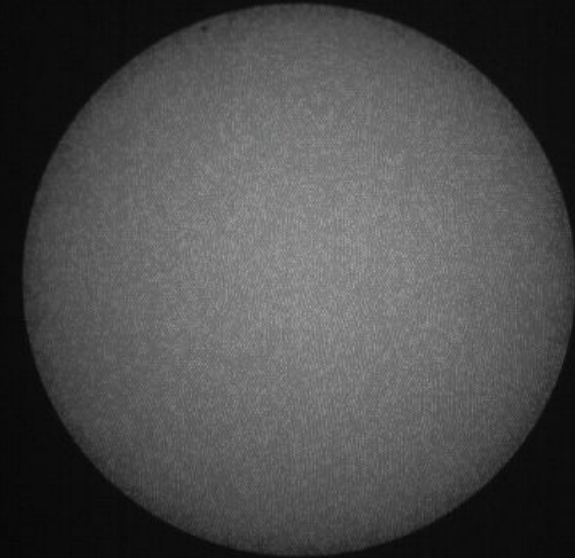
BNL data, IGN-08/30 sample  
illumination uniformity after 0.3-meter  
of 30,000 pixel imaging fiber



# Fujikura imaging fibers



Fujikura data, FIGH-30  
illumination uniformity after 20-meter  
of 30,000 pixel imaging fiber



## ULTRATHIN IMAGEFIBER SPECIFICATIONS (FIGH series N-Type 50k-100k)

Table 3

Item	FIGH-30-850N	FIGH-50-1100N	FIGH-70-1300N	FIGH-100-1500N
Number of picture elements(nominal)	30,000	50,000	70,000	100,000
Imagecircle diameter (um)	790 ± 50	1,025 ± 80	1,200 ± 100	1,400 ± 120
Fiber diameter (um)	850 ± 50	1,100 ± 80	1,300 ± 100	1,500 ± 120
Coating diameter (um)	950 ± 50	1,200 ± 100	1,450 ± 100	1,700 ± 150
Minimum bending radius (mm)	90 <sup>*1</sup> _50 <sup>*2</sup> _	110 <sup>*1</sup> _80 <sup>*2</sup> _	150 <sup>*1</sup> _100 <sup>*2</sup> _	200 <sup>*1</sup> _130 <sup>*2</sup> _
Coating material	Silicone resin			
Lattice defect (%)	< 0.1			
Uncircularity (%)	< 5			
length/pc	Maximum length of 1pc : 10ft. Cut and rough polish are available. Cut length of 1pc : Customer order			



image quality comparison:

